



**City of Hamilton**  
**GENERAL ISSUES COMMITTEE**  
**REVISED**

**Meeting #:** 21-004  
**Date:** February 17, 2021  
**Time:** 9:30 a.m.  
**Location:** Due to the COVID-19 and the Closure of City Hall

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

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**1. APPROVAL OF AGENDA**

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

**2. DECLARATIONS OF INTEREST**

**3. APPROVAL OF MINUTES OF PREVIOUS MEETING**

3.1. February 3, 2021

**4. COMMUNICATIONS**

**5. DELEGATION REQUESTS**

**6. CONSENT ITEMS**

6.1. 2020 Music Strategy Update (PED21041) (City Wide)

**7. PUBLIC HEARINGS / DELEGATIONS**

- 7.1. Shane Coleman, Hamilton Farmers' Market Stallholder Association, respecting Rent Relief for the Hamilton Farmers' Market
- 7.2. Jennifer Hompoth, Friends of the Hamilton Farmers' Market, respecting the Well-Being of the Hamilton Farmers' Market (no copy)
- 7.3. Tom Manzuk, Advisory Committee for Persons with Disabilities, respecting Matters Related to COVID-19 and its Impact on Persons with Disabilities

**8. STAFF PRESENTATIONS**

- 8.1. Information and Communications Technology (ICT) and Digital Media Sector FDI Strategy: Findings and Recommendations (PED21027) (City Wide)
- 8.2. COVID-19 Verbal Update

**9. DISCUSSION ITEMS**

- 9.1. City of Hamilton - Ministry of Transportation 2020-2021 Dedicated Gas Tax Funding Agreement (FCS21011) (City Wide)
- 9.2. Hate Prevention and Mitigation Initiative Update (CM19006(d)) (City Wide)
- 9.3. Advisory Committee for Persons with Disabilities Report 21-001, January 12, 2021
- \*9.4. Chedoke Creek Remediation Workplan (PW19008(j)) (City Wide)

**10. MOTIONS**

- 10.1. Establishing Fair Wages for Musicians: Guidelines and-or Policy for City Run or City-Funded Events Utilizing Musicians

**11. NOTICES OF MOTION**

**12. GENERAL INFORMATION / OTHER BUSINESS**

**13. PRIVATE AND CONFIDENTIAL**

## 13.1. Closed Session Minutes - February 3, 2021

Pursuant to Section 8.1, Sub-section (f) of the City's Procedural By-law 18-270, as amended, and Section 239(2), Sub-section (f) of the *Ontario Municipal Act*, 2001, as amended, as the subject matter pertains to advice that is subject to solicitor-client privilege, including communications necessary for that purpose; Section 239(3)(b) of the *Ontario Municipal Act*, 2001, as amended, as the subject matter pertains to an ongoing investigation respecting the municipality, a local board or a municipally-controlled corporation by the Ombudsman, appointed under the *Ombudsman Act*; and, Section 239(3)(b) of the *Ontario Municipal Act*, 2001, as amended, Section 113.14(1) – Investigation - every investigation by the Ombudsman shall be conducted in private.

## 13.2. Greater Hamilton Volunteer Firefighters Association - CLAC Local 911, Ratification of Collective Agreement (HUR21003) (City Wide)

Pursuant to Section 8.1, Sub-section (d) of the City's Procedural By-law 18-270, as amended, 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.

## \*13.3. Central Composting Facility (LS21005) (City Wide)

Pursuant to Section 8.1, Sub-sections (e), (f) and (k) of the City's Procedural By-law 18-270, as amended, and Section 239(2), Sub-sections (e), (f) and (k) of the *Ontario Municipal Act*, 2001, as amended, as the subject matter pertains to litigation or potential litigation, including matters before administrative tribunals, affecting the municipality or local board; advice that is subject to solicitor-client privilege, including communications necessary for that purpose; and, a position, plan, procedure, criteria or instruction to be applied to any negotiations carried on or to be carried on by or on behalf of the municipality or local board.

## \*13.4. Litigation Matter (no copy)

Pursuant to Section 8.1, Sub-sections (b), (d), (e) and (f) of the City's Procedural By-law 18-270, as amended, and Section 239(2), Sub-sections (b), (d), (e) and (f) of the *Ontario Municipal Act*, 2001, as amended, as the subject matter pertains to personal matters about an identifiable individual, including municipal or local board employees; labour relations or employee negotiations; litigation or potential litigation, including matters before administrative tribunals, affecting the municipality or local board; advice that is subject to solicitor-client privilege, including communications necessary for that purpose.

## 14. ADJOURNMENT



## GENERAL ISSUES COMMITTEE MINUTES 21-003

9:30 a.m.

Wednesday, February 3, 2021

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

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**Present:** Mayor F. Eisenberger, Deputy Mayor M. Wilson (Chair)  
Councillors J. Farr, 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:** Councillors T. Whitehead – Personal

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### THE FOLLOWING ITEMS WERE REFERRED TO COUNCIL FOR CONSIDERATION:

**1. Correspondence from the Hamilton Police Services Board, respecting Business Improvement Area Crime Statistics (Item 4.1)**

**(Clark/Pauls)**

That the correspondence from the Hamilton Police Services Board, respecting Business Improvement Area Crime Statistics, be received and referred to the Business Improvement Area Advisory Committee for information.

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

Yes	-	Mayor Fred Eisenberger
Yes	-	Ward 1 Councillor Maureen Wilson, Deputy Mayor
Yes	-	Ward 2 Councillor Jason Farr
Absent	-	Ward 3 Councillor Nrinder Nann
Yes	-	Ward 4 Councillor Sam Merulla
Yes	-	Ward 5 Councillor Chad Collins
Absent	-	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. Stoney Creek Business Improvement Area (BIA) Revised Board of Management (PED21026) (Ward 5) (Item 6.1)**

**(Johnson/VanderBeek)**

That the following individuals be appointed to the Stoney Creek Business Improvement Area (BIA) Board of Management:

- (i) Sandy Pavao; and,
- (ii) Natasha Guidi.

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

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

**3. Advisory Committee for Persons with Disabilities Report 20-007, December 8, 2020 (Item 9.1)**

**(Nann/Pearson)**

(a) That Items 1 to 3 and 8, of the Advisory Committee Report 20-007, respecting the following, be approved:

- (i) Appointment of Committee Chair and Vice-Chair for 2021 (Item 1);
- (ii) Reduction in the Advisory Committee for Persons with Disabilities' Transportation Working Group and Built Environment Working Group Memberships (Item 2);
- (iii) Housing Issues Working Group Work Plan (Item 3); and,
- (iv) Strategic Planning Working Group Update (Item 8);

- (b) That Item 4 of the Advisory Committee for Persons with Disabilities Report 20-007, respecting Accessible Housing, be referred to the General Manager of the Healthy and Safe Communities Department, for a report back to the Emergency and Community Services Committee;
- (c) That Item 5 of the Advisory Committee for Persons with Disabilities Report 20-007, respecting the Ban of Electric Scooters from Public Property, be referred to the General Manager of Planning and Economic Development for consideration with respect to additional locations where e-scooters may be permitted to operate, and for consideration in developing the forthcoming report to the Planning Committee, with respect to commercial e-scooter operations;
- (d) That Item 6 of the Advisory Committee for Persons with Disabilities Report 20-007, respecting HSR / ATS / DARTS Passenger Policies for Persons with Disabilities, be referred to the General Manager of Public Works, for a report back to the Public Works Committee; and,
- (e) That Item 7 of the Advisory Committee for Persons with Disabilities Report 20-007, respecting Acoustic Vehicle Alerting System Requirement for Electric Scooters be referred to the General Manager of Planning and Economic Development for consideration with respect to additional locations where e-scooters may be permitted to operate, and for consideration in developing the forthcoming report to the Planning Committee, with respect to commercial e-scooter operations.

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

Yes	-	Mayor Fred Eisenberger
Yes	-	Ward 1 Councillor Maureen Wilson, Deputy Mayor
Yes	-	Ward 2 Councillor Jason Farr
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. Funding to Backfill the Administrative Staff Position in Ward 6 (Item 10.1)**

**(Jackson/Johnson)**

WHEREAS, the Ward budgets do not reflect the funding required to backfill for administrative staff on maternity leave;

WHEREAS, at its meeting of April 8, 2020, Council approved \$30,300; \$25,000 from the General Legislative Budget (300100) and \$5,300 from the Tax Stabilization Reserve (110046), to backfill the administrative staff position in Ward 6 during a maternity leave in 2020; and,

WHEREAS, in 2021, Ward 6 is required to backfill the same administrative staff position, for a temporary length of time, to cover the balance of that maternity leave;

THEREFORE, BE IT RESOLVED:

That funding, to an upset limit of \$3,500, to backfill the administrative staff position in Ward 6, during the balance of a maternity leave in 2021, to be funded from the Contingency fund in the General Legislative Budget (300100), be approved.

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

Yes	-	Mayor Fred Eisenberger
Yes	-	Ward 1 Councillor Maureen Wilson, Deputy Mayor
Yes	-	Ward 2 Councillor Jason Farr
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. Ombudsman's Inquiry (FCS21019/LS21004) (City Wide) (Item 13.2)**

**(Collins/Farr)**

(a) That the direction provided to staff in Closed Session, respecting Report FCS21019/LS21004 - Ombudsman's Inquiry, be approved; and,

**Result: Motion CARRIED by a vote of 9 to 5, as follows:**

Yes	-	Mayor Fred Eisenberger
No	-	Ward 1 Councillor Maureen Wilson, Deputy Mayor
Yes	-	Ward 2 Councillor Jason Farr
No	-	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
No	-	Ward 9 Councillor Brad Clark
Yes	-	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
Yes	-	Ward 15 Councillor Judi Partridge

**(Collins/Farr)**

(b) That Report FCS21019/LS21004 - Ombudsman's Inquiry, remain confidential.

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

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

**(a) APPROVAL OF AGENDA (Item 1)**

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

**13. PRIVATE & CONFIDENTIAL**

**13.2 Ombudsman's Inquiry (FCS21019 / LS21004) (City Wide)**

Pursuant to Section 8.1, Sub-section (f) of the City's Procedural By-law 18-270, as amended, and Section 239(2), Sub-section (f) of the *Ontario Municipal Act*, 2001, as amended, as the subject matter pertains to advice that is subject to solicitor-client privilege, including communications necessary for that purpose; Section 239(3)(b) of the *Ontario Municipal Act*, 2001, as amended, as the subject matter pertains to an ongoing investigation respecting the municipality, a local board or a municipally-controlled corporation by the Ombudsman, appointed under the *Ombudsman Act*, and, to Section 239(3)(b) of the *Ontario Municipal Act*, 2001, as amended, Section 113.14(1) – Investigation - every investigation by the Ombudsman shall be conducted in private.

**(VanderBeek/Pearson)**

That the agenda for the February 3, 2021 General Issues Committee meeting, be approved, as amended.

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

Yes	-	Mayor Fred Eisenberger
Yes	-	Ward 1 Councillor Maureen Wilson, Deputy Mayor
Yes	-	Ward 2 Councillor Jason Farr
Absent	-	Ward 3 Councillor Nrinder Nann
Yes	-	Ward 4 Councillor Sam Merulla
Yes	-	Ward 5 Councillor Chad Collins
Absent	-	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 2)**

There were no declarations of interest.

**(c) APPROVAL OF MINUTES OF PREVIOUS MEETING (Item 3)**

**(i) January 13, 2021 (Item 3.1)**

**(Johnson/Partridge)**

That the Minutes of the January 13, 2021 General Issues Committee meeting be approved, as presented.

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

Yes	-	Mayor Fred Eisenberger
Yes	-	Ward 1 Councillor Maureen Wilson, Deputy Mayor
Yes	-	Ward 2 Councillor Jason Farr
Absent	-	Ward 3 Councillor Nrinder Nann
Yes	-	Ward 4 Councillor Sam Merulla
Yes	-	Ward 5 Councillor Chad Collins
Absent	-	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) COMMUNICATIONS (Item 4)**

**(Clark/Pauls)**

That Communication Items 4.2.a to 4.2.e. be approved, as follows:

- (i) Correspondence respecting Rent Relief for the Hamilton Farmers' Market Stallholders (Item 4.2)
1. Liz Lamb (Item 4.2.a.)
  2. Charlie Chiarelli, CC Produce, Hamilton Farmers' Market Stallholder (Item 4.2.b.)
  3. Katie McCrindle (Item 4.2.c.)

4. Ron Jepson, Jepson's Fresh Meats, Hamilton Farmers' Market Stallholder (Item 4.2.d.)
5. Sheri Adams Selway (Item 4.2.e.)

Recommendation: Be received.

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

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

**(e) DELEGATION REQUESTS (Item 5)**

**(Eisenberger/Merulla)**

That the Delegation Requests, Items 5.1 to 5.3, be approved, as follows:

- (i) Ian Hamilton, Hamilton Oshawa Port Authority, respecting the Hamilton Oshawa Port Authority Ports Update (For the March 24, 2021 GIC) (Item 5.1)
- (ii) Shane Coleman, Hamilton Farmers' Market Stallholders' Association, requesting Rent Relief for the Hamilton Farmers' Market (For the February 17, 2021 GIC) (Item 5.2)
- (iii) Jennifer Hompoth, Friends of the Hamilton Farmers' Market, respecting the Well-Being of the Hamilton Farmers' Market (For the February 17, 2021 GIC) (Item 5.3)

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

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

**(f) STAFF PRESENTATIONS (Item 8)**

**(i) COVID-19 Verbal Update (Item 8.1)**

Paul Johnson, General Manager of the Healthy and Safe Communities Department; and, Dr. Elizabeth Richardson, Medical Officer of Health, provided Committee with a verbal update respecting COVID-19.

**(Eisenberger/Pearson)**

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

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

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

**(g) GENERAL INFORMATION/OTHER BUSINESS (Item 12)**

**(i) Amendments to the Outstanding Business List (Item 12.1)**

**(Danko/Pauls)**

That the amendments to the General Issues Committee's Outstanding Business List be approved, as follows:

1. Proposed New Due Dates (12.1.a.)
  - (aa) Multi-Purpose Community Hub for Diverse and Marginalized Communities - Business Case (Item 12.1.a.a.)
 

Current Due Date: December 9, 2020  
Proposed New Due Date: June 16, 2021
  - (bb) Community Benefits Protocol Advisory Committee (Item 12.1.a.b.)
 

Current Due Date: November 20, 2020  
Proposed New Due Date: September 24, 2021
  - (cc) Feasibility of Developing a Hamilton Biodiversity Action Plan (Item 12.1.a.c.)
 

Current Due Date: December 9, 2020  
Proposed New Due Date: April 7, 2021
  - (dd) Grant or Low-Interest Loans from FCM (Item 12.1.a.d.)
 

Current Due Date: November 4, 2020  
Proposed New Due Date: December 8, 2021
  - (ee) Parkland Acquisition Strategy (Item 12.1.a.e.)
 

Current Due Date: December 8, 2021  
Proposed New Due Date: June 15, 2022

2. Items to be removed (Item 12.1.b.)

Results of the Public Consultation of the Draft Employment Land Review Report, in addition to other GRIDS 2 and MCR Intensification and Density Targets (Item 12.1.b.a.)

(Addressed at the December 14, 2020 Special GIC as Item 6.1 - Report PED17010(g); and, Item 8.1 - Report PED17010(h))

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

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

**(h) PRIVATE & CONFIDENTIAL (Item 13)**

**(i) Closed Session Minutes – January 13, 2021 (Item 13.1)**

**(Nann/Pearson)**

- (a) That the Closed Session Minutes of the January 13, 2021 General Issues Committee meeting, be approved, as presented; and,
- (b) That the Closed Session Minutes of the January 13, 2021 General Issues Committee meeting remain confidential.

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

Yes	-	Mayor Fred Eisenberger
Yes	-	Ward 1 Councillor Maureen Wilson, Deputy Mayor
Yes	-	Ward 2 Councillor Jason Farr
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
Yes	-	Ward 12	Councillor Lloyd Ferguson
Yes	-	Ward 13	Councillor Arlene VanderBeek
Absent	-	Ward 14	Councillor Terry Whitehead
Yes	-	Ward 15	Councillor Judi Partridge

**(Farr/Ferguson)**

That Committee move into Closed Session respecting Item 13.2, pursuant to Section 8.1, Sub-section (f) of the City's Procedural By-law 18-270, as amended, and Section 239(2), Sub-section (f) of the *Ontario Municipal Act, 2001*, as amended, as the subject matter pertains to advice that is subject to solicitor-client privilege, including communications necessary for that purpose; Section 239(3)(b) of the *Ontario Municipal Act, 2001*, as amended, as the subject matter pertains to an ongoing investigation respecting the municipality, a local board or a municipally-controlled corporation by the Ombudsman, appointed under the *Ombudsman Act*; and, to Section 239(3)(b) of the *Ontario Municipal Act, 2001*, as amended, Section 113.14(1) – Investigation - every investigation by the Ombudsman shall be conducted in private.

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

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

**(i) ADJOURNMENT (Item 14)**

**(Nann/Pearson)**

That there being no further business, the General Issues Committee be adjourned at 12:50 p.m.

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

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

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Deputy Mayor Maureen Wilson  
Chair, General Issues Committee

Stephanie Paparella  
Legislative Coordinator,  
Office of the City Clerk



# INFORMATION REPORT

<b>TO:</b>	Mayor and Members General Issues Committee
<b>COMMITTEE DATE:</b>	February 17, 2021
<b>SUBJECT/REPORT NO:</b>	2020 Music Strategy Update (PED21041) (City Wide)
<b>WARD(S) AFFECTED:</b>	City Wide
<b>PREPARED BY:</b>	Debbie Spence (905) 546-2424 Ext. 3049
<b>SUBMITTED BY:</b>	Carrie Brooks-Joiner Director, Tourism and Culture Planning and Economic Development Department
<b>SIGNATURE:</b>	<i>Carrie Brooks-Joiner</i>

## COUNCIL DIRECTION

Not Applicable

## INFORMATION

### Background

The City of Hamilton recognizes the importance of music culturally and economically. In 2013, Council approved a Music Strategy for the City. The Music Strategy's goals and principles guide City-wide efforts (e.g. by-law, planning, funding, policies, etc.) to support some of the infrastructure necessary to maintain and enhance music in Hamilton.

Hamilton's Music Strategy was developed with strong community engagement. The City continues to work with and seek advice from the local music community through a citizen-based, volunteer group called the Hamilton Music Advisory Team (HMAT).

This annual update provides selected highlights of the City's efforts to advance the Music Strategy and recognizes the work and support received from HMAT.

### 2020 Highlights - Key Recovery Initiatives, Projects and Accomplishments

The year 2020 saw significant negative impacts and losses to the music industry and its

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**SUBJECT: 2020 Music Strategy Update (PED21041) (City Wide) - Page 2 of 5**

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workers due to the restrictions and impacts caused by COVID-19. These impacts were especially significant for musicians and live music venues. In response to the pandemic, staff focused on recovery efforts for the sector and worked to modify previously planned projects where possible.

Key recovery efforts led by the City, including those done in partnership with others, as well as projects that helped the City fulfil its on-going commitment to music are listed below:

**Virtual Mentor Program for Musicians and Music Managers**

Developed in collaboration with Canada Music Incubator (CMI), the City launched a mentorship program in late March. The goal of the program was to provide free, high-quality, hands-on professional business development tools to Hamilton musical artists and artist managers. Musicians who resided in Hamilton and met the eligibility criteria received free access to a bundle of three 60-minute one-on-one video meetings with CMI mentors. A total of 27 music sector individuals participated and received important business-related training including Grant Writing, Branding and Fee Negotiation.

**Music Mondays**

Music Mondays, a free lunch time music series held at City Hall each year was cancelled in 2020 due to COVID-19 gathering restrictions.

**Musician Conference**

In response to the pandemic, the fourth annual City-led musician conference shifted to a virtual format. The conference expanded from a one-day event to a five-day online event (from October 19 to 23, 2020) during national Small Business Week. Each day featured a different 60-minute panel discussion with topics providing practical business tools aligning with the overall conference theme of “How to release your next album”.

Conference attendance surpassed the 2019 event with a total of 236 conference registrations and an average of 47 attendees at each session. Panel discussions were recorded and remain online as a resource for the sector. As of January 2021, there have been 1,700+ views of these free resources.

In keeping with previous years, HMAT and the Musician’s Sub-Committee were instrumental in providing promotional assistance for the conference. Additional information and conference videos can be found at [www.hamilton.ca/musicianconference](http://www.hamilton.ca/musicianconference)

**Virtual Business Coaching**

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**SUBJECT: 2020 Music Strategy Update (PED21041) (City Wide) - Page 3 of 5**


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One-to-one virtual business coaching opportunities for creative industries entrepreneurs (i.e. music, film, fashion, visual arts) was launched by the City in April. The City hired Capacity Creator to assist businesses (regardless of their stage of development), in pivoting, refocusing and/or scaling-up in response to the pandemic. A total of five sessions or 10 hours of business coaching assistance was leveraged by music-based businesses.

### **City Enrichment Fund for Artists**

The City funds the creative output of artists and collectives through the Creation and Presentation stream, as well as the creative output of organizations through the Operating, Festivals and Capacity Building stream.

A total of \$894,769 in funding was provided to 40 music-based individuals and organizations, various artists, i.e. musicians and music organizations who deliver music-based programs or events to the public.

In recognition of the impact of the pandemic, the City committed to funding successful applicants and allowing modifications to their program, or for cancelled programming where costs were incurred due to COVID-19.

### **“Hamilton Shows Up” - Virtual Events Series**

As one of the first deliberate initiatives in Hamilton to provide online content as a response to the pandemic, Hamilton Shows Up was developed and led by Cobalt Connects with the City providing funding and promotional assistance. In total, 22 artists were hired resulting in four hours of free public programming for the first evening. The City funded the first night of performances where there were 2,700 views of the video and a consistent audience of over 500 for the four-hour event.

### **Music on Patios**

To further support the music sector and facilitate public access to live music, in August Council temporarily revised the Music/Entertainment on Patios By-law and extended it to December 31, 2020. The revised By-law permitted music on patios in all Downtown areas and lands zoned D1, D2 and D3. Following this change, many live music venues leveraged the revised By-law and were able to make music part of their offerings to customers.

### **York Boulevard Live Performance Series**

Through a competitive bid process, the City offered access to the top level of the York Boulevard Parkade along with seed funding of \$7,500 to create a temporary, outdoor performance venue for public programming. The successful proponent, Supercrawl

**SUBJECT: 2020 Music Strategy Update (PED21041) (City Wide) - Page 4 of 5**

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Inc., developed a live performance series that included live music, fashion and visual arts.

The series took place over four days (September 24 to 27, 2020) with six separate performances, four of which sold out. This series assisted with the live music/gig economy and resulted in the hiring of musicians, their support teams, artists, production crews, vendors, facility and security staff as well as utilizing the services of local James Street businesses.

**Creative Enterprise Facilities Property Tax Sub-Class**

In November 2020, the Arts and Creative Industries working group of the Mayor's Task Force for Economic Recovery recommended consideration of a property tax relief or reduction for creative industries, specifically live music venues.

A motion asking the Province for approval to create a Creative Enterprise Facilities Property Tax Sub-Class was approved by Council in December 2020. In January 2021, the Mayor of Hamilton sent correspondence to the Premier requesting this approval. If approved, the Creative Enterprise Facilities Property Tax Sub-Class would provide a reduction in property tax for eligible creative enterprises and live music venues in Hamilton and contribute to their on-going viability.

**Anne Foster Music Window Displays**

The Anne Foster Music Window Displays are in the original Anne Foster music shop window at the Lister Block building located at 28 James Street North. The City issues a call for artists then contracts an artist to create a display that celebrates and recognizes an element of Hamilton's musical past, present or future. The displays for 2020 included:

- "World Records" by Juliana LaChance
- "PUSH! An Exhibition of Analog Music Machines" by Todd Murray
- "Some Outsider Music Hamilton" by Becky Katz and Aaron Hutchinson with featured artists Charli, Sahra Soudi and Katie McDonald

Photos and information about this project can be found at [www.hamilton.ca/annefosterwindows](http://www.hamilton.ca/annefosterwindows)

**Live Music Research**

Live music helps create and support a strong urban core and quality of life. On June 15, 2020 an Information Report (PED20112) was shared with Council providing information on economic impact data and key issues impacting live music venues. Though the research was based on 2018 data and completed pre-pandemic in 2019, it



**SUBJECT: 2020 Music Strategy Update (PED21041) (City Wide) - Page 5 of 5**

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detailed the importance of the music sector in Hamilton.

**Music Blog Series**

The City of Hamilton website ([www.hamilton.ca/music](http://www.hamilton.ca/music)) hosts a music blog series written by local, contracted subject matter experts. In 2020, the topics for the articles focused on assisting and promoting Hamilton musicians. Three articles were created on the following topics: Improving Your Home Show; How Hamiltonians Can Help and Support Local Musicians; and Marketing Tips for Indie Artists. An article was also written and posted to the Invest website highlighting musicians and music businesses (<https://investinhamilton.ca/blog/2020/11/09/music-loves-hamilton/>).

**HMAT Member Updates**

The City continues to value and appreciate the efforts of HMAT in providing advice to the City on music, and in supporting the implementation of the Music Strategy. Many thanks to Kojo Dampety (Music Artist/Music Curator) for his work and support as HMAT Chair in 2020, and to Janna Malseed (Hamilton Musicians Guild) for her efforts and support in her role as Co-Chair in 2019 and 2020.

The new Chair and Co-Chair of HMAT for 2021 to 2022 are Tricia LeClair (Hamilton Children's Choir) and Lisa LaRocca (Sonic Unyon/Supercrawl).

HMAT welcomed one new member, Marie Cassidy (Mohawk College - The Hawk) who replaced Bry Webb (Mohawk College - The Hawk). Mr. Webb was a valued member of HMAT and has retired from Mohawk College.

**Looking Ahead - Selected Examples of Up-Coming Projects for 2021**

The City will continue to focus on recovery efforts for the music sector in response to the on-going effects of the pandemic. Several projects and initiatives will support these efforts including:

- Virtual mentoring for musician and music managers
- Development of a fifth Annual Musician Conference (October 17 to 23, 2021)
- Development of a Strategic Music Business Plan in collaboration with various local partners that will drive a refresh of the City's current music strategy

**APPENDICES AND SCHEDULES ATTACHED**

None

DS:ac

Subject: Rent Relief Hamilton Farmers Market

To the Mayor and Members of Council.

Covid has impacted the market profoundly.

Our digital people counter at the door has shown a decrease in customer traffic of 50-75% year over year. -Attachment 1

Some businesses were required to close completely during the lockdown. 5 restaurants have not reopened due to the office employees working from home, and other vendors are closing as vendors cannot sustain their business. Most vendors don't qualify for other grant programs April- September of 2020

The Hamilton Farmers Market Board of Directors had originally approved rent relief with the approved landlord rent relief program announced by the Federal and Provincial government.

We have already been invoiced rent April, May June at 25%, and we were told that we were being considered for July- September as the government program was extended.

Premier Doug Ford who has urged landlords to cooperate with tenants. Premier Ford is quoted as saying "It's not going to be forever. It's going to be for a few months. Help people out. You have an obligation to do that as a landlord" (Toronto Star, May 19<sup>th</sup>, 2020)

Did you know that the market limited access to the market by closing the mall door?  
Did you know that we limited hours of shopping less 3 hours per day, 12 hours a week less than our contract with the City has written?

Why is council not treating market vendors the same as they are treating owners of taxis or other commercial businesses. Jackson Square gave its tenants rent relief, as did Limeridge mall. Other Farmers Markets also had rent relief such as London and Kitchener market.

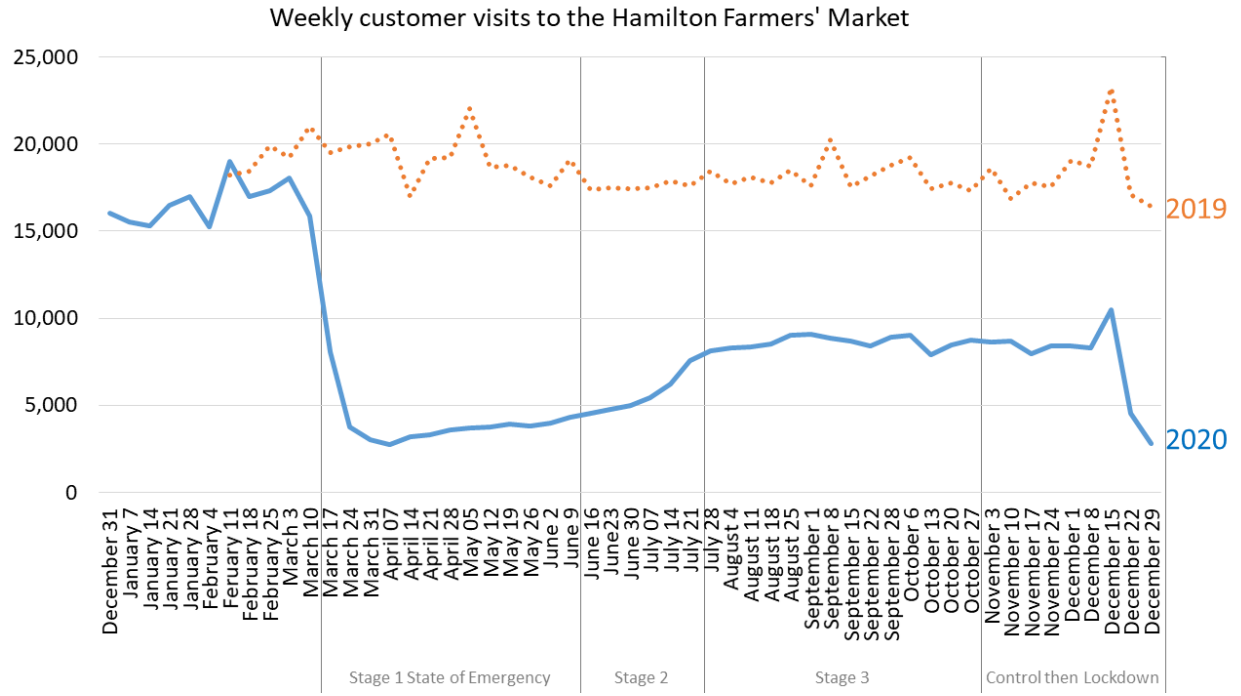
Why did council not have an open discussion previously regarding rent relief as requested.

The Hamilton Farmers Market has run a surplus with the Meridian sponsorship for several years. It's not bonusing to use sponsorship funds, or covid funds provided to the City.

It is not unreasonable to help vendors during these difficult times so we can remain viable for many years to come. The vendors need to have rent relief during these unprecedented times.

Thank You -Shane Coleman -Long term vendor Dilly's Farmacy  
Hamilton Farmers Market Stallholder Association President.

Attachement 1



## Attachement 2



December 18, 2020

**IMPORTANT 2021 CONTRACT MEMO TO HFM VENDORS:**

Dear HFM Stallholder,

On November 23, the City of Hamilton directed the Hamilton Farmers' Market Board to adopt the *City of Hamilton COVID-19 Occupant Support Framework*, which provides the Market with the authority to defer up to 6 months of outstanding 2020 stall fees owing to the Market by HFM vendors.

What this means is that *the 75% of Stall fees from April, May, June 2020 which remain outstanding to the Hamilton Farmers' Market will not be eliminated as originally hoped.*

You may recall that at the end of June, we invoiced you at 25% of your regular contracted rate in anticipation that the City of Hamilton would align with the Federal Government's Canada Emergency Commercial Rent Assistance (CECRA) program and cover the remaining 75% of those fees. However, that is not the decision the City of Hamilton ultimately made, and instead we were granted the flexibility to develop a deferral option that will help vendors to spread out payments *interest free* until the end of 2021.

The deferral option will be available to vendors as part of their 2021 Stallholder Agreement.

We understand that this may not be welcome news, and it is not the outcome the Board had advocated for however, you do have the option to defer your outstanding 2020 fees at this time.

Full details of the deferral option are available to vendors during contract renewals which will begin promptly. Please notify the Market Office as soon as possible if you wish to explore this option.

Bill Slowka  
Market Manager  
905-546-2424 x 2097

## **COVID-19 and Persons with Disabilities**

The members of the Advisory Committee for Persons with Disabilities (ACPD) are concerned that during this COVID pandemic there have been many measures undertaken by the City of Hamilton in support of all citizens that have had an alternate impact upon persons with disabilities.

The following are but a sample of concerns and challenges surrounding COVID faced by persons with disabilities before, during and after provisions and restrictions were imposed and subsequently lifted by the City or province.

### Transportation

- lack of communication from the City about, and unsatisfactory service adjustments related to accessible transit
- Accessible Transportation Services was closed with no options for contact with them where necessary
- Taxi Scrip program was unavailable to purchase scrip for many months restricting transportation options for persons with disabilities unable to travel via either DARTS or HSR
- service alternate to pick up persons using a wheelchair by DARTS upon request from typical HSR bus stops was activated with no consultation whatsoever with members of ACPD resulting in many limitations including persons with other forms of mobility needs (e.g. users of a walker) being excluded
- insufficient communication from the HSR and DARTS to the general public, and more specifically to all persons using DARTS, of the DARTS and HSR bus stop pick-up process

## COVID-19 and Persons with Disabilities

Page 2 of 5

- wait times for arranging trips via DARTS increased dramatically to the point where callers would be required to wait 15 to 20 callers ahead in line which is contrary to agreement with ACPD in years past where callers should have no more than 4 - 5 caller wait times
- online trip booking with DARTS was cancelled with no notice to passengers of this change
- requirement for customers using walkers, wheelchairs, scooters and all other personal mobility devices to travel with a companion aboard the HSR was not communicated nor immediately possible for persons with disabilities wishing to travel aboard the HSR
- when travelling aboard the HSR by persons using a mobility device there was an obligation for an untrained companion to deploy the ramp as bus operators did not leave their seats
- DARTS utilized two special vans to transport customers who failed the COVID-19 screener, but these vans were also used to transport other healthy customers
- DARTS ran a program that would pick a customer up at a bus stop throughout the City for customers who could not enter through the rear doors, but this was not communicated effectively
- persons with walkers were excluded in the users permitted to use DARTS in lieu of HSR if not previously DARTS registered
- need for DARTS to be compliant with AODA regulations regarding assisting passengers with aids they bring aboard a bus, especially during the period of Covid where such assistance would reduce the need for personal assistants

- the limitation of 1 person per DARTS van was not effectively communicated

### Retail and Commercial Business Access

- floor decals and signage related to physical distancing requirements are not user-friendly for persons with disabilities, in that they are not uniform in design and do not contain any tactile walking surface indicators. They are used in lieu of other forms of instruction, however, they are inaccessible to persons with limited or no eyesight
- no information or regulations were put forth to recommend physical distancing measures for persons with various assistive devices
- there was no direction from the City to retail or other businesses (e.g. animal care) to provide consideration for persons with disabilities as accommodation to use services or patronize businesses.
- some temporary outdoor patio set-ups blocked accessible parking spots and curb ramps
- lack of open, accessible restrooms in public spaces causing issues for persons who because of medical conditions require washroom access
- dedicated one-way store entrances and exits create extended travel distances for persons with disabilities already restricted from full access because of their disability. Alternatives were unavailable demonstrating a clear lack of consideration

## Personal Care

- when the pandemic started everyone was mandated to hold a single job, which left people who hire personal care attendants independently as a secondary job high and dry and needing to make alternative arrangements which may not have been possible limiting their full and proper care
- dedicated senior shopping hours are too early for some people and employees aren't equipped to offer assistance to persons with disabilities
- some retail store outlets restricted hours of operation requiring patrons to shop during shorter hours causing more people into potential contact with each other which was contrary to health recommendations for distancing
- residential care facility evictions

## City of Hamilton Services and Administration

- felt like the City abandoned the AODA and all its requirements and guidelines established for transportation, built environment, etc.
- no flexibility in altering regulations for persons with disabilities
- lack of representation by or consultation with persons with disabilities on the Emergency Operations Centre Team
- accessible pedestrian signals were disabled, but notification of this change was not provided in an accessible format
- the digital divide, being the gap that exists between individuals



who have access to modern information and communication technology and those who do not, disproportionately hits the disabled population and is compounded by employment programs and libraries, often used for public internet access, being closed by emergency orders

- residential care facility evictions

### General

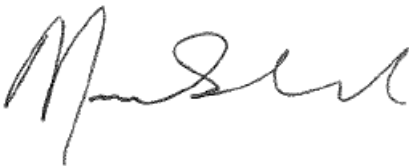
- increased social isolation, loss of personal support workers, disruption of vital health services and difficulties accessing basic necessities and information

- the digital divide, being the gap that exists between individuals who have access to modern information and communication technology and those who do not, disproportionately hits the disabled population and is compounded by employment programs and libraries, often used for public internet access, being closed by emergency orders

ACPD therefore respectfully requests that consultation be made with the aforementioned Committee when developing future policies and procedures, with the understanding that Public Health Services and the City's Emergency Operations Centre, hold the public's health as paramount. However, some policies and procedures have had unexpected consequences for persons with disabilities. The Committee believes they may be able to mitigate some of these consequences.



## INFORMATION REPORT

<b>TO:</b>	Mayor and Members General Issues Committee
<b>COMMITTEE DATE:</b>	February 17, 2021
<b>SUBJECT/REPORT NO:</b>	Information and Communications Technology (ICT) and Digital Media Sector FDI Strategy: Findings and Recommendations (PED21027) (City Wide)
<b>WARD(S) AFFECTED:</b>	City Wide
<b>PREPARED BY:</b>	Carolynn Reid (905) 546-2424 Ext. 4381
<b>SUBMITTED BY:</b>	Norm Schleeahn Director, Economic Development Planning and Economic Development Department
<b>SIGNATURE:</b>	

### COUNCIL DIRECTION

Not Applicable

### INFORMATION

In October 2019, MDB Insight, a leading Canadian management consulting firm specializing in economic development, was awarded the contract to undertake an Information and Communications Technology (ICT) and Digital Media Sector Foreign Direct Investment (FDI) Strategy, further to be known as 'The Strategy', (Appendix A).

The Strategy describes the current state and value proposition of Hamilton's ICT and Digital Media sector. It includes detailed research and analysis, a comprehensive consultation process with businesses and industry partners and potential FDI targets for the City. It provides a clear description of the current state of the sector, identifies gaps and opportunities along with providing guidance on the required actions that will assist the City of Hamilton to encourage and support this growing and evolving sector.

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**SUBJECT: Information and Communications Technology (ICT) and Digital Media Sector FDI Strategy: Findings and Recommendations (PED21027) (City Wide) - Page 2 of 6**

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**Defining the Information and Communications Technology (ICT) & Digital Media Sector in Hamilton**

The working definition of the ICT and Digital Media Sector in Hamilton is based on the North American Industry Classification System (NAICS) codes. The definition is further informed by the Innovation, Science and Economic Development, Canadian ICT Sector Profile. The ICT and Digital Media sector are further sub-divided into six sub-sectors based on industry focus, namely, manufacturing, wholesale, information and cultural, professional and technical services, educational services and other services. The sub-sectors are further detailed below:

- Manufacturing – includes firms specializing in the manufacturing of computer and peripheral equipment, communications equipment, electronic components, audio and video equipment and magnetic and optical media.
- Wholesale – includes firms engaged in wholesaling new and used computers, computer peripherals and pre-packaged computer software, electronic components, navigational and communications equipment and supplies.
- Information and Cultural – includes firms engaged in core sub-sectors including software publishers, computer systems design and telecommunications carriers along with digital media economies including film and sound industries.
- Professional and Technical Services – includes firms engaged in core professional and technical services such as digital design, video game and computer systems design.
- Educational Services – includes computer training and professional schools that form an important part of the ICT & Digital Media value chain.
- Other Services – includes firms engaged in repairing and maintaining electronic equipment and precision instruments.

**Information and Communications Technology (ICT) and Digital Media Sector Report Highlights**

Economic snapshot of the sector:

- 4% of all industries in the City can be classified as ICT & Digital Media
- Hamilton's ICT & Digital Media sector makes a strong and growing contribution of \$1.3 billion to the local economy
- Sector has experienced a steady increase from 1,487 enterprises in 2016 to 1,808 or 22% in 2019
- 60% of ICT & Digital Media businesses in Hamilton are in the professional scientific and technical services
- Hamilton ranks 6<sup>th</sup> in number of ICT & Digital Media business compared to ten select communities

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**SUBJECT: Information and Communications Technology (ICT) and Digital Media Sector FDI Strategy: Findings and Recommendations (PED21027) (City Wide) - Page 3 of 6**

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- Of the 1,808 businesses 68% are sole proprietorships
- 55% of the businesses are in the growth phase with increasing revenues and customers
- 79% of businesses expect business revenues to increase

Top occupations include:

- Information systems analysts and consultants
- Computer programmers and interactive digital media developers
- Graphic designers and illustrator
- Software engineers and designers
- Computer and information system managers

### **Advancing Hamilton's ICT & Digital Media Sector**

The City of Hamilton is well-positioned to capitalize on the growing opportunities and strengths of the ICT and Digital Media sector. The sector has seen a higher rate of growth compared to all other industry sectors within the City. This has been driven primarily by professional and technical services and the information and cultural services. Digital media is an important aspect of these industries for the production and delivery of content including motion pictures, videos, television programs or commercials. Niche opportunities exist for the City, including Interactive Digital Media (IDM) and health-based technologies.

#### **1. Key Opportunity Areas and Considerations**

Interactive Digital Media (IDM) refers to the industry of user engaged digital platforms. IDM includes games developers and publishers, eLearning software developers, VR/AR/MR developers, VR arcades, mobile app developers, digital advertising firms, interactive site web developers and software developers servicing the above companies. Digital media is one of the fastest-growing parts of the creative cultural industries, both as a sector onto itself, tied closely to gaming, and as a force transforming the creation and distribution of a wide range of cultural content. The recent investment of a production hub in the City-owned Barton-Tiffany lands will enable crossover opportunities in post-production, animation, visual effects, and game development. The City has a strategic opportunity to position Hamilton as a top city in Ontario for investment in digital media supporting digital content producers in film and television.

Hamilton has several successful businesses in the digital media space including Q4, Pipeline Studios, Fluidmedia, Hifyre and Operatic. Supporting these businesses is a network of innovation and education partners. Some key examples include start-up

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**SUBJECT: Information and Communications Technology (ICT) and Digital Media Sector FDI Strategy: Findings and Recommendations (PED21027) (City Wide) - Page 4 of 6**

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programming provided by Innovation Factory, the Forge accelerator, iDeaWORKS and Mohawk College's Graphic Design Advanced Diploma. Also, the AVR Development Lab at Mohawk College functions as a training and research hub for AR/VR (augmented and virtual reality).

Hamilton's technology strengths are also visible in the health sector, specifically in digital health. Opportunities include system integration, interoperability to prototype novel technologies and educating the next generation of digital health entrepreneurs.

The mHealth & eHealth Development and Innovation Centre (MEDIC) at Mohawk College with a focus on digital health serves to bridge the gap between innovative industries and the mobile health and ehealth needs of the healthcare system. In addition to MEDIC, McMaster University offers Canada's only masters in eHealth, designed to build capacity around digital health informatics. Further, the Institute for Applied Health Sciences, a collaboration between Mohawk and McMaster, enables real-world experiences for more than 2,000 students a year. And, Hamilton Health Sciences (HHS) and the CREATE (CentRE for dAta science and digiTal hEalth) will help clinicians in the multi-site hospital and in the surrounding area produce information technology solutions that can raise the quality of patient care and improve medical outcomes.

## **2. Leveraging Digital Transformation During COVID-19**

COVID-19 is significantly impacting the technology sector. More positively, disruption in the sector has caused an acceleration of remote working. The Strategy findings further predict that in the mid to long-term, the sector will witness a digital transformation and 'servicisation' trend. Remote working, distance learning, online media content, telemedicine, eCommerce, and Real Estate "Servicisation" are among the key industries driving this transformation. Hamilton is in a unique position to capitalize on their digital businesses and pave the way for digital transformation. A strong digital strategy is critical in this regard.

## **3. ICT & Digital Media FDI Opportunity**

As part of The Strategy development for the ICT & Digital Media sector, a potential company targets exercise was completed. The results of the FDI analysis complements the sector analysis results that identified niche opportunities for Hamilton in IDM.

High priority potential targets were identified that are larger and medium-sized high growth companies. The targets are in IDM, cloud solutions, gaming, AR/VR, autonomous vehicles and AI. Data science/analytics and video conferencing are also identified as sectors that will benefit from the COVID-19 pandemic. EdTech is also an

**SUBJECT: Information and Communications Technology (ICT) and Digital Media Sector FDI Strategy: Findings and Recommendations (PED21027) (City Wide) - Page 5 of 6**

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important sector given the impact of COVID-19. Companies are likely to be experiencing a growth spike due to the surge in remote learning in education.

Medium and low priority targets were also identified. Hamilton's 2016-2020 Economic Development Action Plan noted a key action to establish a Sports Analytics Cluster. This sector, while small, is rapidly evolving. Notably, this sub-sector has little or no presence in Canada so Hamilton could have a first-mover advantage here. This sector is identified to be one of the sectors adversely affected by COVID-19.

Motion capture was also identified. They show long term prospect and are a great fit for Hamilton as a) it combines sports and manufacturing applications and b) is at the intersection of AR/VR and artificial intelligence. This sector is identified to be one of the sectors adversely affected by COVID-19.

#### **4. ICT and Digital Media Sector Action Plan**

The primary focus of the City of Hamilton's ICT & Digital Media Sector FDI Strategy was to build a strong body of knowledge to inform subsequent, research, consultation, and strategy formulation. The following recommendations were determined to help position and prepare the City for future sector investment and strategic planning:

- **Foster an ICT & Digital Media Growth Environment**  
A cohesive sector with the data, support services and networks to enable business growth, innovation, and investment.
- **Support Skills Development, Talent Attraction and Retention**  
A world-class quality talent pipeline committed to mutual success ensures local firm growth and serves as a global marketing tool for the City.
- **Targeted Investment Attraction in Niche Sectors**  
A growth sector with ongoing investment in niche industries, enhanced competitiveness, and job creation.
- **Showcase Hamilton's ICT & Digital Media Sector through Marketing and Branding**  
A global Hamilton brand with a unique value proposition that is effectively marketed to local, regional, and international markets.

The completion of The Strategy was an identified action item in the City's Economic Development Action Plan 2016 – 2020 and more importantly, it will position the sector for the upcoming update to the 2021- 2025 Economic Development Action Plan.

**SUBJECT: Information and Communications Technology (ICT) and Digital Media  
Sector FDI Strategy: Findings and Recommendations (PED21027)  
(City Wide) - Page 6 of 6**

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**APPENDICES AND SCHEDULES ATTACHED**

Appendix A – ICT & Digital Media FDI and Sector Strategy

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Engaged Empowered Employees.





# **City of Hamilton Information and Communications Technology (ICT) and Digital Media Sector FDI Strategy**

February 2020



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## Executive Summary

The Information and Communications Technology (ICT) and Digital Media Sector FDI Strategy is a sector profile initiated by the City of Hamilton that describes the current state and value proposition of this sector and provides direction for the City of Hamilton to foster a thriving ICT & Digital Media sector.

The Strategy development process started in October 2019. It included research and analysis, a comprehensive consultation process with businesses and industry partners, the development of a unique value proposition and potential FDI targets for the city and recommendations to advance the sector.

The city of Hamilton is well-positioned to capitalize on the growing opportunities and strengths of the ICT and Digital Media sector. The sector which saw a higher rate of growth compared to all other industry sectors within the city has been driven primarily by professional and technical services and the information and cultural services. Digital media is an important aspect of these industries for the production and delivery of content including motion pictures, videos, television programs or commercials. Niche opportunities exist for the City, including Interactive Digital Media (IDM) and Health based Technologies. Also, potential FDI targets, primarily Californian companies looking to expand across North America, Europe, and the Asia Pacific, present prospects for the city to realize growth and investment. The following infographic sheets present an economic snapshot of Hamilton's Information and Communications Technology (ICT) and Digital Media Sector.

The City has been a strong enabler of businesses growth and support, innovation and talent. Central to these efforts are the Hamilton Business Centre and local incubators, accelerators and innovation support that include The Forge, McMaster Innovation Park, ideaWORKS, mHealth & eHealth Development and Innovation Centre (MEDIC), Surge, Hamilton Health Sciences (HHS) and the CREATE (CentRE for dAta science and digiTal hEalth) team along with major post-secondary institutions such as McMaster University and Mohawk College. New investments by the City, including the creation of a "Technology and Medical Innovation Centre" and the McMaster Innovation Park's (MIP) Master Plan, are central to supporting the continued growth of the sector.

The Information and Communications Technology (ICT) and Digital Media Sector FDI Strategy defines a value proposition for Hamilton's ICT & Digital Media sector, one that goes beyond the traditional messages and focuses on the assets and attributes that can enable the City to realize success in sector-based investment attraction and marketing. Key attributes for the city include its strong and highly qualified labour force, a world-class education and innovation system with a unique digital technology focus, a growing digital economy industry base and a strong base for ICT & Digital Media growth and investment. Hamilton is in a unique position to capitalize on its digital businesses and pave the way for digital transformation, particularly during the current COVID-19 period.

Actions identified within the Information and Communications Technology (ICT) and Digital Media Sector FDI Strategy align with four high-level recommendations to achieve stated outcomes. The recommendations and outcomes for the Strategy are highlighted below.

<b>Recommendations</b>	<b>Foster an ICT &amp; Digital Media Growth Environment</b>	<b>Support Skills Development, Talent Attraction and Retention</b>	<b>Targeted Investment Attraction in Niche Sectors</b>	<b>Showcase Hamilton's ICT &amp; Digital Media Sector through Marketing and Branding</b>
<b>Outcomes</b>	A cohesive sector with the data, support services and networks to enable business growth, innovation, and investment.	A world-class quality talent pipeline committed to mutual success ensures local firm growth and serves as a global marketing tool for the city.	A growth sector with ongoing investment in niche industries, enhanced competitiveness, and job creation.	A global Hamilton brand with a unique value proposition that is effectively marketed to local, regional, and international markets.

# Hamilton's ICT & Digital Media Sector

4%

Of all industries in the city can be classified as ICT & Digital Media

+22%

Sector experienced a steady increase from 1,487 enterprises in 2016 to 1,808 in 2019

60%

Of ICT & DM businesses in Hamilton are in the professional, scientific and technical services

6<sup>TH</sup>

Hamilton ranks sixth in number of ICT & DM businesses compared to ten selected communities

68%

Of the 1,808 businesses, the majority are sole proprietorships

55%

Of businesses in the sector are in the growth phase with increasing revenues and customers

79%

Of businesses in the sector expect business revenues to increase

## \$1.3 billion



Hamilton's ICT & Digital Media sector makes a strong and growing contribution to its economy

20%

Of the ICT & DM professionals work in the ICT & DM sector

## Top Occupations



Information systems analysts and consultants



Computer programmers and interactive media developers



Graphic designers and illustrators



Software engineers and designers



Computer and information systems managers

## Key Successes



- Located within the Toronto-Waterloo technology corridor
- As per the BRANHAM300 list, Hamilton is listed as a place for one of the Top 25 ICT Up and Comers in the country
- New initiatives by the City include the "Technology and Medical Innovation Centre" which includes a tech campus – a net leasable area of 572,000 sq. ft, a wellness center, flex workspaces and social spaces
- Local ICT & DM businesses consider Hamilton a favourable location for growth, and are highly satisfied with the quality of broadband/hi-speed Internet

## Niche Opportunities

- Interactive Digital Media (IDM) – games developers and publishers, eLearning software developers, VR/AR/MR developers, VR arcades, mobile app developers, digital advertising firms, interactive site web developers and software developers
- Health based Technologies – e-Health, digital health informatics
- Digital media is one of the fastest-growing parts of the creative cultural industries, both as a sector onto itself, tied closely to gaming, and as a force transforming the creation and distribution of a wide range of cultural content

## ICT & Digital Media FDI Opportunity

- Cloud solutions, AR/VR, autonomous vehicles, AI HQ. Cloud applications, Data science/analytics and Video conferencing
- EdTech
- Gaming
- Sports Analytics
- Motion Capture





# 1. Introduction

The Information and Communications Technology (ICT) and Digital Media Sector FDI Strategy is a sector profile initiated by the City of Hamilton to describe the current state and value proposition of this sector in the Hamilton economy. The Information and Communications Technology (ICT) and Digital Media Sector FDI Strategy (ICT & Digital Media Strategy) provides direction for the City of Hamilton to foster a thriving ICT & Digital Media and provide support for the city's digital industries.

Key components of the Strategy include:

- Target sub-sector opportunities
- Labour force development initiatives to address skills gaps identified
- Marketing messages that identify the unique value proposition of Hamilton to differentiate it from its competitors
- Required activities to underpin investment attraction potential within the sector including new or enhanced infrastructure
- Local, regional, and national partnerships and network development with organisations and applicable professional/industry associations
- A vision for the growth and retention of businesses and investment in the sector
- Recommendations related to marketing strategies for the retention, expansion, and attraction of new business investment and talent including ICT and Digital Media events to attend and attract to Hamilton
- Key performance indicators to ensure ongoing monitoring of success, growth, and areas of improvement in the sector

## 1.1 Project Process

The Information and Communications Technology (ICT) and Digital Media Sector FDI Strategy process began in September 2019 and included the following phases.



The process began with Research and Analysis (October 2019), providing a detailed analysis of the current state of Hamilton's Information and Communications Technology (ICT) and Digital Media Sector. This analysis included:

- A review of the City of Hamilton's existing strategies and initiatives of relevance to ICT and Digital Media sector development
- A statistical analysis of the ICT and Digital Media sector
- An assessment of the economic impact associated with Hamilton's ICT and Digital Media sector
- A benchmark analysis comparing Hamilton's ICT and Digital Media sector against ten comparator communities
- An asset inventory providing an initial universe of information of the ICT and Digital Media sector that the City can build

This was followed by a comprehensive community consultation process (January 2020), that provided insight into relevant opportunities and challenges in the sector, the role of Hamilton Economic Development Office and economic development partners in advancing these opportunities and initiatives needed to make the sector competitive in Hamilton. This engagement phase included:

- A CATI survey of 80 ICT and Digital Media businesses
- Eleven (11) targeted one – on – one interview with ICT & Digital Media businesses and economic development partners
- A targeted in-community workshop with ICT & Digital Media businesses and economic development partners

The results of the Research and Analysis and the sector CATI survey are provided as Appendix I: ICT and Digital Media Sector FDI Strategy Key Findings Report to this strategy report.

The final strategy development phase (February 2020) concluded in this Strategy. It included a summary of research and consultation and a value proposition that defines Hamilton's strengths as a digital city and economy, together with a series of strategic themes emerging from engagement. This was followed by actions and potential recommendations to advance the sector and its sub-sectors.

## **1.2 Defining Hamilton's ICT and Digital Media Sector**

The working definition of the ICT and Digital Media Sector in Hamilton is based on the North American Industry Classification System (NAICS) codes identified in the City of Hamilton's Terms of Reference for this strategy. The definition is further informed by the Innovation, Science and Economic Development, Canadian ICT Sector Profile.

### **1.2.1 ICT and Digital Media Industries**

The ICT and Digital Media industries defined using the North American Industry Classification System (NAICS) codes at the six-digit level are listed below. Approximately 44 industries were identified as part of the sector.

The ICT and Digital Media sector are further sub-divided into six sub-sectors based on industry focus, namely, manufacturing, wholesale, information and cultural, professional and technical services, educational services and other services. The sub-sectors are further detailed below:

- **ICT & DM – Manufacturing** – includes firms specializing in the manufacturing of computer and peripheral equipment, communications equipment, electronic components, audio and video equipment and magnetic and optical media.
- **ICT & DM – Wholesale** – includes firms engaged in wholesaling new and used computers, computer peripherals and pre-packaged computer software, electronic components, navigational and communications equipment and supplies.
- **ICT & DM - Information and Cultural** – includes firms engaged in core sub-sectors including software publishers, computer systems design and telecommunications carriers along with digital media economies including film and sound industries.
- **ICT & DM - Professional and Technical Services** – includes firms engaged in core professional and technical services such as digital design, video game and computer systems design.
- **ICT & DM - Educational Services** – includes computer training and professional schools that form an import part of the ICT & Digital Media value chain.
- **ICT & DM - Other Services** – includes firms engaged in repairing and maintaining electronic equipment and precision instruments.

NAICS	Industries
<b>ICT &amp; DM - Manufacturing</b>	
334110	Computer and peripheral equipment manufacturing
334210	Telephone apparatus manufacturing
334220	Radio and television broadcasting and wireless communications equipment manufacturing
334290	Other communications equipment manufacturing
334310	Audio and video equipment manufacturing
334410	Semiconductor and another electronic component manufacturing
334511	Navigational and guidance instruments manufacturing
334512	Measuring, medical and controlling devices manufacturing
334610	Manufacturing and reproducing magnetic and optical media
<b>ICT &amp; DM - Wholesale</b>	
417310	Computer, computer peripheral and pre-packaged software merchant wholesalers
417320	Electronic components, navigational & communications equipment & supplies merchant wholesalers
<b>ICT &amp; DM - Information and Cultural</b>	
511211	Software publishers (except video game publishers)
511212	Video game publishers
512110	Motion picture and video production
512120	Motion picture and video distribution
512130	Motion picture and video exhibition
512190	Post-production and other motion picture and video industries



NAICS	Industries
512230	Music publishers
512240	Sound recording studios
512250	Record production and distribution
512290	Other sound recording industries
515110	Radio broadcasting
515120	Television broadcasting
515210	Pay and specialty television
517310	Wired and wireless telecommunications carriers (except satellite)
517410	Satellite telecommunications
517911	Telecommunications resellers
517919	All other telecommunications
518210	Data processing, hosting, and related services
519110	News syndicates
519121	Libraries
519122	Archives
519130	Internet broadcasting and web search portals
519190	All other information services
<b>ICT &amp; DM - Professional and Technical Services</b>	
541410	Interior design services
541420	Industrial design services
541430	Graphic design services
541490	Other specialized design services
541514	Computer systems design and related services (except video game design and development)
541515	Video game design and development services
<b>ICT &amp; DM - Educational Services</b>	
611410	Business and secretarial schools
611420	Computer training
611430	Professional and management development training
<b>ICT &amp; DM - Other Services</b>	
811210	Electronic and precision equipment repair and maintenance

### 1.2.2 ICT and Digital Media Occupations

In addition to the foregoing, MDB Insight has identified 15 occupations in the National Occupation Classification System (NOCs) considered crucial to the development of Hamilton’s ICT&DM sector.

NOC	Occupations
0131	Telecommunication carriers’ managers
0213	Computer and information systems managers
2133	Electrical and electronics engineers
2147	Computer engineers (except software engineers and designers)
2171	Information systems analysts and consultants

NOC	Occupations
2172	Database analysts and data administrators
2173	Software engineers and designers
2174	Computer programmers and interactive media developers
2175	Web designers and developers
2241	Electrical and electronics engineering technologists and technicians
2281	Computer network technicians
2282	User support technicians
2283	Information systems testing technicians
5224	Broadcast technicians
5241	Graphic designers and illustrators

### 1.2.3 Notes to the Reader

Given that the ICT sector and digital media are constantly evolving sectors of the economy and in some instances act as enablers for other industry sectors, we identify that providing set definitions for the sector using the NAICS should be approached with caution. The ICT and digital economy encompass many fields, including business intelligence, enterprise content management, supply chain management, video games, digital media, IT security, e-health, and e-commerce. The lack of set NAICS and NOC codes to define these connections and also to define key emerging economies such as cryptography and encryption, mobile authentication, cybersecurity, public safety and product certification, prove difficult in describing the breadth of the sector.

However, the data provided throughout the report provides a baseline of information for the City of Hamilton in defining and exploring the sector and in understanding contributions to the value chain and the economy more generally. Throughout this report, selected ICT and Digital Media NAICS codes are used to define Hamilton’s sector, determine its performance and contributions to the economy, understand the labour force and occupations that are critical to the sector and benchmark it against comparator communities.

## 1.3 The Canadian Digital Landscape

The 2017 OECD Digital Economy Outlook identifies that despite the global economic crisis, the long-term prospects for sustained growth in the ICT sector among the OCED countries is strong. However, Canada lags behind its trading partners in the creation of large digital technology firms and in having a community of successful high-growth firms. It is estimated that between 2013-2016, China, Chinese Taipei, Japan, Korea, and the United States together accounted for 72% to 98% of the top 25 fast-accelerating digital technologies. Comparatively, Canada lacks deep technology ecosystems to best support accelerated innovation and firm growth.

The 2018 interim report for the Digital Industries Economic Strategy<sup>1</sup> in recognizing the opportunities

<sup>1</sup> Canada's Economic Strategy Tables: Digital Industries. The Economic Strategy Tables—a new model for industry-government collaboration—were announced as part of the Government of Canada's Innovation and Skills Plan to support economic growth in six key sectors, including digital industries.

and challenges associated with Canadian digital industries has identified the following interrelated priority themes:

- Increasing the domestic uptake of digital innovation will improve productivity. It is estimated that a 1% increase in digital technology adoption could generate \$2.5 billion for Canada. Also, increased technology uptake will enable sustainable, inclusive growth, creating high-value jobs and making Canadian companies more globally competitive.
- Leveraging intellectual property (IP) will promote the value of data. It is understood that frameworks that leverage and promote Canada's data and IP assets at home and abroad will boost innovation and wealth creation in the global economy. Companies need to pay close attention to the strategic importance of data and IP as well as be confident they will reap returns on their investments in data tools and analytics.
- Need to foster the growth of homegrown digital companies to realize growth. Canada lags behind its trading partners in the creation of large digital technology firms and in having a community of successful high-growth firms. As a result, Canada lacks deep technology ecosystems to best support accelerated innovation and firm growth.
- Need to grow the digital talent base. Canada is ranked first in the G7 in the share of science, technology, engineering, and math (STEM) PhD graduates. Yet, fewer than half of Canadian high school graduates have senior credits in STEM, suggesting Canada has tremendous potential to expand the talent base. Key actions to build Canada's talent base include growing the number of students in science, technology, engineering, arts and math (STEAM); increasing participation by groups underrepresented in the technology workforce; encouraging continuous workplace learning; and addressing the challenges in attracting global talent and building our C-Suite capacity.

In addition to these priorities, it is identified that five technologies will drive the Canadian digital economy to heighten innovation and growth, increase productivity, reduce costs, and generate revenues. These technologies provide important considerations for Hamilton as it advances its ICT & Digital Media Ecosystem.

- **Virtual and augmented reality** – the sector is projected to rapidly grow to a \$150 billion market in the current year, largely driven by augmented reality.
- **Artificial intelligence** –AI has the ability to impact all industry sectors and is expected to reach \$7-\$13 trillion in value by 2025.
- **5G mobile** – this sector is a facilitator for emerging technologies, including autonomous vehicles, industrial automation, and education. It will enable the Internet of Things growth by facilitating better connection with high reliability and ultra-low latency connectivity. Canada's major telecoms are already investigating and implementing 5G technology.
- **3D printing** – enables a shift to a customized production model and is estimated to generate an economic impact of \$230-\$550 billion annually by 2025.
- **Blockchain** – a facilitator for the financial services, retail, and energy sectors as it allows the collection and storage of information independent of central control and protection against hacking. Canadian banks and the healthcare system are already banking on this technology.

## 2. Hamilton's ICT & Digital Media Sector Planning Environment

A document review conducted as part of this strategy development suggests the City has a strong enabling environment to realize growth in the ICT & Digital Media sector. Key insights that emerged are described in the following paragraphs. A detailed background review is set out in **Appendix I**.

The City of Hamilton has recognized the ICT and Digital Media sector as one of its key industry sectors through its 2016-2020 Economic Development Action Plan. Key focus areas identified in the plan calls for programs and services that assist new and growing businesses and supports Hamilton's entrepreneurial ecosystem. The Hamilton Business Centre, operating as an arm of the City's Economic Development Division, is an important support resource for business information and sector-specific entrepreneurial programming. Given that Hamilton's ICT and Digital Media sector is largely comprised of start-ups, single operator firms and small businesses, the programs offered by the Centre is of critical importance.

In addition to business support, the City's strategic location as part of the Greater Toronto and Hamilton Area (GTHA) and the Innovation Corridor<sup>2</sup>, affordable office market when compared to surrounding regions and a strong innovation ecosystem provides a strong and enabling environment for growth and investment. Critical partners acting as important support systems for ICT & Digital Media Sector include The Forge<sup>3</sup>, McMaster Innovation Park, and the Hamilton Technology Centre. The Innovation Factory (iF) is another important provincial resource with strong expertise in the Information Technology sector.

The City is well-positioned to build on and grow workforce development initiatives to ensure the viability of the ICT and Digital Media sector. Post-secondary institutions such as McMaster University and Mohawk College are key in ensuring the city has a reliable supply of quality tech talent. They are also viewed as highly adaptable; for example, the Bachelor of Technology Combined Degree/Diploma program was created in response to local business needs. The 2016-2020 Economic Development Action Plan has identified targeted actions to ensure workforce development, including increased support for youth through mentorship, entrepreneurship and peer programs and career pathways.

The City of Hamilton has also developed initiatives to ensure investment and business growth through the Office Tenancy Assistance Program (OTAP) and data intelligence gathering that identifies gaps and opportunities for new investment and reveals possible international parent companies and business contacts. As per the 2015 City of Hamilton Foreign Direct Investment Economic Development Strategy, the city has key advantages in ICT manufacturing, software and computer services and communications services along with Interactive Digital Media (IDM) subsectors.

Opportunities exist for the City to expand business development and investment activities, specifically by improving ICT Infrastructure across the City. The 2016-2020 Economic Development Action Plan identifies the need for a Digital Strategy, improving internet speeds in business parks and major commercial areas and establishing a data centre within the city to support the ICT sector.

<sup>2</sup> Canada's Innovation Corridor is the Toronto-Waterloo Region Corridor. <https://thecorridor.ca>

<sup>3</sup> Start-up incubator for McMaster University and Hamilton Region.

## 2.1 Key Sector Initiatives

The City of Hamilton is undertaking key initiatives to support the growth of the ICT & Digital Media sector. These include the Technology and Medical Innovation Centre and the McMaster Innovation Park's (MIP) Master Plan.

### 2.1.1 Technology and Medical Innovation Centre (MetroPartners Inc)

Metro Partners proposed the creation of a "Technology and Medical Innovation Centre" to Hamilton City Council in February 2020. The Centre is proposed to be developed on the south end of the City Hall property, on lands of the existing parking facilities. In general, Metro Partners is seeking a real estate acquisition of the identified lands at "fair-market-value" under the condition that they build, construct and finance the creation of Class "A" office and medical space for this center. The center is to include:

- Tech Campus – 20 & 24 Storey office towers with a combined net leasable area of 572,000 sq. ft. The campus also includes a 3 Storey podium space with 250,000 sq.ft. of leasable area. A net Zero, double facade building with premier office space and rooftop amenity spaces with auditorium space. Approximately 1,350 Parking spaces with 200 secure bicycle spaces - Integrated "social function" podium connects the two towers - Flex office space atriums provide a convenient public-private meeting space.
- Wellness Centre – Modern gym facilities providing a broad range of equipment and spaces. A public orientated gym facility located adjacent to the City Hall will provide continuous pedestrian activity and interaction with the existing municipal grounds
- Transition Space – Expansive atriums provide a flex workspace where the public and private realms can interact. Multi-storey atrium spaces with living Garden Walls, Meeting Spaces (private, semi-private, lounges, etc.) & security interface between public and tower users
- Social Functions – 3 Storey podium structure provides the social programming for the towers including cafes, cafeterias, meeting spaces, conference space, social clubs, grocery store, internal running track, rooftop gardens and rooftop skating rink.

### 2.1.2 McMaster Innovation Park's (MIP) Master Plan

McMaster Innovation Park (MIP) is gaining international recognition as a thriving campus for innovation, commercialization, and entrepreneurship. The heart of Ontario's Life Sciences Corridor, MIP is a 50+ acre community of forward-thinkers coming together in a common space to work, live, play, and CREATE. MIP's Vision is to be internationally recognized as a thriving hub for innovation, commercialization and entrepreneurship aligned with the research strengths and priorities of McMaster University.

MIP's Mission is to be a bridge between research and industry, to leverage the resources and capabilities of McMaster University and the community to foster and accelerate the innovator's journey from ideation to business reality develop and sustain an environment that facilitates and accelerates innovation, encourages successful collaboration amongst private sector, government, hospital, university and college, has global reach resulting in regional prosperity, educates and excites the community about the vital role of the University in the innovation process. The goals of the MIP's Master Plan are to:

- develop a compelling Vision for the Park
- identify potential partners (capitol & tenant) / ideal mix
- communicate with stakeholders including authorities
- integrate building opportunities with sustainable goals
- develop an implementation strategy (short & long-term phases)

The desired outcomes of the MIP's Master Plan are to:

- Foster an Innovation community culture: Build state of the art infrastructure to substantively enhance McMaster Innovation Park's ability to create economic growth, conduct research and encourage collaboration
- Lead in sustainable design: Develop and transfer new technologies including Energy Conservation
- The connector in Hamilton Business Community: Provide industry with the information it needs to build upon the previous work based on Hamilton's current economic strengths, the global competitive landscape, and the feedback from business owners, developers, citizens
- Research Excellence: Build on current research and technological development in emerging areas of Business Incubators, Accelerators and Clusters, Life Sciences, Advanced Materials and Manufacturing and Aero Space
- World Class: Support the activity of world-class research that meets the McMaster Innovation Park mandate to address strategic themes, competitive advantage, environment, and community
- The plan is expected to result in over \$1B CDN total investment, 400 residential condo units, over 1 million sq. ft. of commercial laboratory and office space growth in 11 buildings and over 35 acres of developable brownfield with world-class adaptive reuse opportunity with direct highway access and visibility.

## 3. Hamilton’s ICT & Digital Media Sector Economic Context

Hamilton’s manufacturing heritage has enabled the city to grow a technologically advanced and innovative economy. The city today is part of a rapidly growing regional economy with a labour force of more than 270,000 with strengths in traditional sectors and growth in tech-based health and digitally-focused businesses. Hamilton’s professional, scientific, and technical services and the information and culture form two major industries within the ICT & Digital Media sector. These sectors are also important components of the Finance, Insurance and Real Estate (FIRE) and the creative industries. The following sub-sectors provide a detailed economic view of Hamilton’s ICT & Digital Media Industry.

- Sector Profile
- Economic Impact Assessment
- Sector Benchmark Analysis
- Asset Inventory

### 3.1 Sector Profile

This section of the report provides an overview of the ICT and Digital Media Sector in Hamilton. The analysis is intended as an educative piece for the City, to illustrate the current nature and composition of ICT and Digital Media Sector goods and services in the community and contributions to economic growth.

#### 3.1.1 ICT & Digital Media Industries

In 2018, Hamilton’s ICT & Digital Media Industries with contributions of \$817 million, accounted for 3.5% of total GDP generated by all industry sectors (Figure 1). From 2016 to 2018, GDP generated by the sector grew by 4% from \$787 to \$817 million, indicating room for continued growth in the sector.

Figure 1: City of Hamilton Gross Domestic Product (GDP), 2016-2018

GDP (\$ 2012 million)	2016	2017	2018
All Industries (Total Economy)	\$22,015	\$22,628	\$23,050
ICT & Digital Media Sector	\$787	\$811	\$817
ICT & Digital Media Sector (% Shares)	3.6%	3.6%	3.5%

Source: *metroeconomics*

Hamilton is an important contributor to Ontario’s ICT & Digital Media sector, which saw GDP contributions of \$64.83 billion in 2018 (Figure 2).

GDP contributions of the ICT & Digital Media accounted for 8.9% of total GDP by all industries sectors in the Province. Ontario is the largest output contributor to total ICT & Digital Media GDP in Canada, accounting for approximately 46% of the national ICT & Digital Media GDP in 2018 with \$64.83 billion.

**Figure 2: ICT & Digital Media Sector Gross Domestic Product (GDP), Ontario & Rest of Canada, 2016-2018**

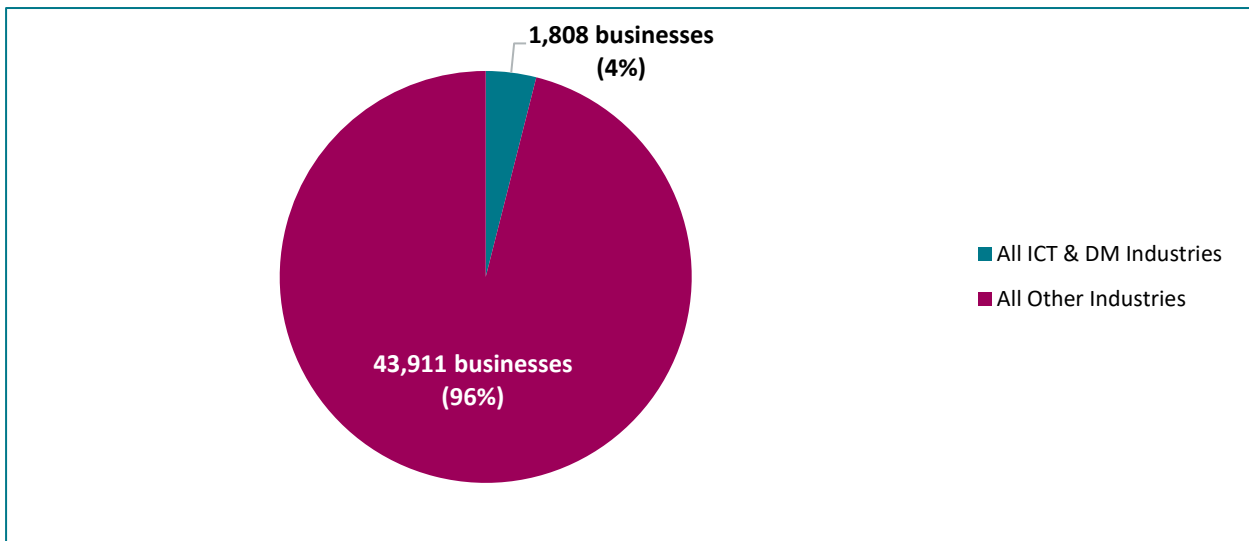
ICT & Digital Media Sector GDP (\$ 2012 billion)	2016	2017	2018
Canada	\$129.74	\$135.52	\$140.72
Ontario	\$59.33	\$61.86	\$64.83

Source: Statistics Canada. Table 36-10-0402-01

**Industry Size and Composition**

As per the 2019 Canadian Business Counts, a total of 1,808 businesses were classified as ICT & Digital Media Industries. This relates to 4% of all industries in the city.

**Figure 3: Hamilton’s ICT & DM Industries, 2019**



Source: Canadian Business Counts, June 2019

Similar to national and provincial trends, Hamilton’s ICT and Digital Media sector are characterized by a significant number of sole proprietorships (Figure 4).

Of the 1,808 industries in this sector, 68% of all businesses fall into this category. Micro and small businesses are also an important part of Hamilton’s ICT, and Digital Media sector, around 23% of businesses were micro-establishments employing between 1-4 employees, while 5% employ between 5-9 employees.

**Figure 4: Total Industries in the ICT & Digital Media Sector, 2019**

Hamilton	Total	Without employees	With employees							
			1-4	5-9	10-19	20-49	50-99	100-199	200-499	500+
ICT & DM Industries	1,808	1,221	415	93	46	21	9	1	2	-
ICT & DM Industries (%)	100%	68%	23%	5%	3%	1.2%	0.5%	0.1%	0.1%	0%

Source: Canadian Business Counts, June 2019



It is understood that single operator companies or small businesses are focussed on providing professional services to local clients. While the presence of small firms is important to the viability and sustainability of the sector, the lack of medium and large firms is considered to affect the long term growth of the sector as they are often export-oriented and R&D intensive firms. Furthermore, large establishments can help foster cluster development and enable the growth and viability of an entrepreneurial economy.

### Industry Subsectors and Value Chain

Hamilton's ICT & Digital Media sector is diverse and shows strength in several sub-sectors. The ICT & Digital Media sector is divided into manufacturing and services, which include wholesale, information and culture, professional and technical, educational and other support services. The subsectors are further detailed below and shown in [Figure 5](#) and in [Appendix II](#).

**Professional and Technical Services** – was determined to be one of the strongest ICT industry sub-sectors in Hamilton by the number of firms. In 2019, this subsector comprised of 1,083 businesses (60% of all ICT and Digital Media industries). The majority of firms in this sub-sector were sole-proprietorships (739 businesses - 68% of all Professional and Technical Services). The top services within this sector were:

- *Computer systems design and related services (except video game design and development)* account for the majority of businesses with approximately 772 businesses (43% of all total ICT & DM industries). Businesses are primarily engaged in writing, modifying, testing and supporting software and include computer consulting, computer facilities management and custom programming services. 491 of these businesses were sole-proprietorships, and 231 were micro-businesses employing 1 to 4 employees.
- Approximately 134 businesses provide *graphic design services* in Hamilton, the majority of which are sole proprietorships: 108 businesses. Of the 26 businesses employing workers, 23 are micro-establishments.

**Information and Cultural Services** – This sub-sector accounted for the second-highest number of firms in Hamilton with approximately 547 businesses (30% of all ICT and Digital Media industries). Similar to the professional and technical services, the majority of firms were sole-proprietorships (167 businesses – 68% of all information and cultural services). The top services within this sector were:

- *Motion picture and video production*, accounting for the majority of businesses with approximately 202 businesses (11% of all total ICT & DM industries). Digital media is an important aspect of these industries for the production and delivery of content including motion pictures, videos, television programs or commercials. 167 of these businesses were sole-proprietorships, and 31 were micro-businesses employing 1 to 4 employees.
- *Telecommunications*, accounting for 95 businesses (5% of all ICT and Digital Media industries). Wired and wireless telecommunications carriers (except satellite) account for 23% (22 businesses) of Hamilton's telecommunications market. Wireless telecommunications include establishments that provide cellular phone services, paging services and personal communication services. These industries are identified to be one of the strongest ICT industry sub-sectors in Canada.
- *Software publishers (except video game publishers)*, accounting for 30 businesses (2% of all ICT and Digital Media industries). These establishments are involved in computer software publishing

(including designing and developing). Of the 30 establishments, 16 were sole proprietorships while 6 were micro-businesses employing 1 to 4 employees.

**Educational Services** – this subsector represents an important support sector for the ICT & DM sector with approximately 79 businesses providing educational services related to the ICT & DM sector. Support in the educational sector is provided through Professional and management development training (61 establishments), Computer training (15 establishments) and Business and secretarial schools (3 establishments). Of the 79 businesses, 60 are sole-proprietorships, possibly meaning they may be online training services.

**Other Services** – this subsector comprises solely of *electronic and precision equipment repair and maintenance* and includes 50 firms of which 30 are sole-proprietorships, and 18 were micro-businesses employing 1 to 4 employees. This is an important support sector to the ICT and Digital Media sector, predominately comprising of establishments that are engaged in repairing and maintaining electronic equipment and precision instruments.

**Wholesale** – Approximately 25 firms are involved in this ICT and Digital Media support subsector. The majority of firms in this sector were employee-based establishments; 14 firms. Firms within this subsector are either *computer, computer peripheral and pre-packaged software merchant wholesalers* or *electronic components, navigational & communications equipment & supplies merchant wholesalers*

**Manufacturing** – Approximately 24 businesses can be attributed to Hamilton’s ICT and Digital Media manufacturing subsector. Approximately 5 firms are *computer and peripheral equipment* manufacturers, who make equipment for computers such as monitors, storage devices, mice and printers. Approximately 2 firms are involved in *Semiconductor and another electronic component manufacturing*. The semiconductor industry is an area of strength for Canada, specifically as it relates to niche sectors including fabless semiconductor and microelectronics<sup>4</sup>. *Radio and television broadcasting and wireless communications equipment manufacturing* form a major part of ICT manufacturing specifically as it relates to wireless communications manufacturing. Within Ontario’s ICT manufacturing, approximately 103 firms (7% of all ICT manufacturing) specialize in this subsector, centred in Toronto, Ottawa and Markham. In terms of companies with strengths in exports, Canada shows particular strength in wireless manufacturing and services including wireless infrastructures<sup>5</sup>. Thus, the lack of firms in Hamilton that specialize in this particular subsector may indicate a gap in Hamilton’s telecommunications value chain.

**Figure 5: Hamilton’s ICT & DM Industries by Sub-sectors, 2019**

ICT & DM Industries Sub-sectors	Total		Without employees		With employees	
	Count	% of total	Count	% of total	Count	% of total
Total	1,808	100%	1,221	68%	587	32%
ICT & DM - Professional and Technical Services	1,083	60%	739	68%	344	32%
ICT & DM - Information and Cultural	547	30%	370	68%	177	32%
ICT & DM - Educational Services	79	4%	60	76%	19	24%

<sup>4</sup> Growing the ICT Industry in Canada: A Knowledge Synthesis Paper.

<sup>5</sup> Ibid.

ICT & DM Industries Sub-sectors	Total		Without employees		With employees	
	Count	% of total	Count	% of total	Count	% of total
ICT & DM - Other Services	50	3%	30	60%	20	40%
ICT & DM - Wholesale	25	1.4%	11	44%	14	56%
ICT & DM - Manufacturing	24	1.3%	11	46%	13	54%

Source: Canadian Business Counts, June 2019

### Sector Growth

Comparing the Canadian Business Counts between 2016 and 2019, the following observations can be drawn. The number of registered businesses in Hamilton’s ICT and Digital Media sector has grown from 1,487 industries in 2016 to 1,808 industries in 2019. This relates to a net increase in 321 firms or a 22% growth from 2016 to 2019. Hamilton’s ICT and Digital Media sector have grown at a far higher pace than all other industry sectors in the City, which showed a growth rate of 16% for the same time period.

The major growth subsectors were *professional and technical services* and *information and cultural* industries which showed growth by of 18% (net increase of 168 firms) and 35% (net increase of 141 firms), respectively. Hamilton showed a decline in firms in support sectors, including *wholesale* and *electronic and precision equipment repair and maintenance*.

Figure 6: Hamilton’s ICT & DM Industries by Sub-sectors, Net Change 2016 – 2019

ICT & DM Industries Sub-sectors	Total Firm Count		Firm Count Change 2016-2019	
	2016	2019	Net Change	% Change
Total	1,487	1,808	321	22%
ICT & DM - Manufacturing	22	24	2	9%
ICT & DM - Wholesale	29	25	-4	-14%
ICT & DM - Information and Cultural	406	547	141	35%
ICT & DM - Professional and Technical Services	915	1,083	168	18%
ICT & DM - Educational Services	58	79	21	36%
ICT & DM - Other Services	57	50	-7	-12%

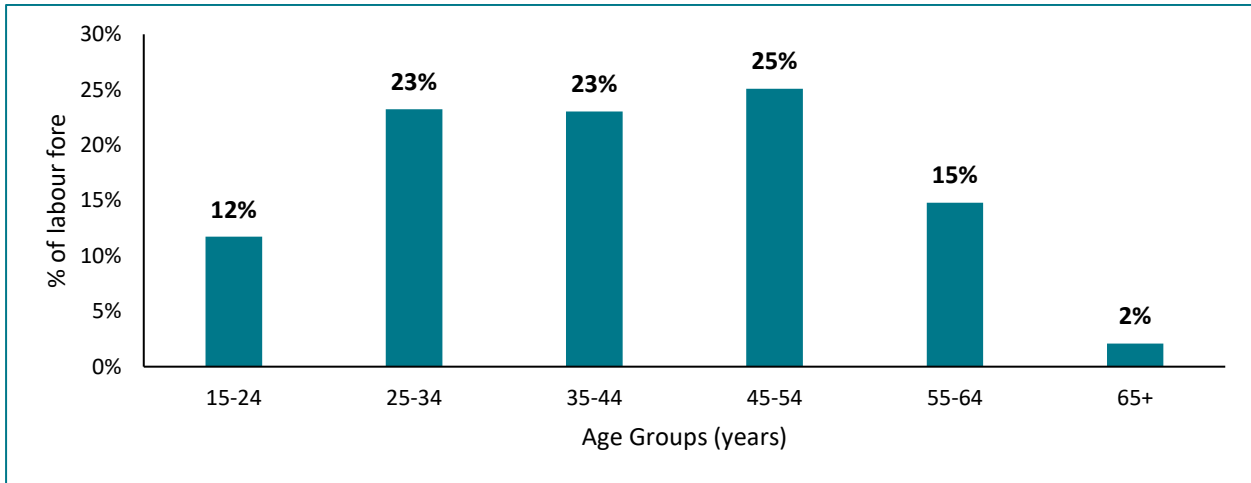
Source: Canadian Business Counts, June 2019

### 3.1.2 Sector Labour Force

In 2016, Hamilton had a labour force of approximately 10,745 people in the ICT & DM Industries, accounting for 4% of the total labour force.

The ICT & DM industries are equally distributed among almost all broad age groups. The majority of workers are between 45 to 54 years; accounting for 25% of the total labour force. Approximately 23% are early professionals between 25-34 years of age.

**Figure 7: Age of the Labour force, Hamilton's ICT & DM Industries, 2016**

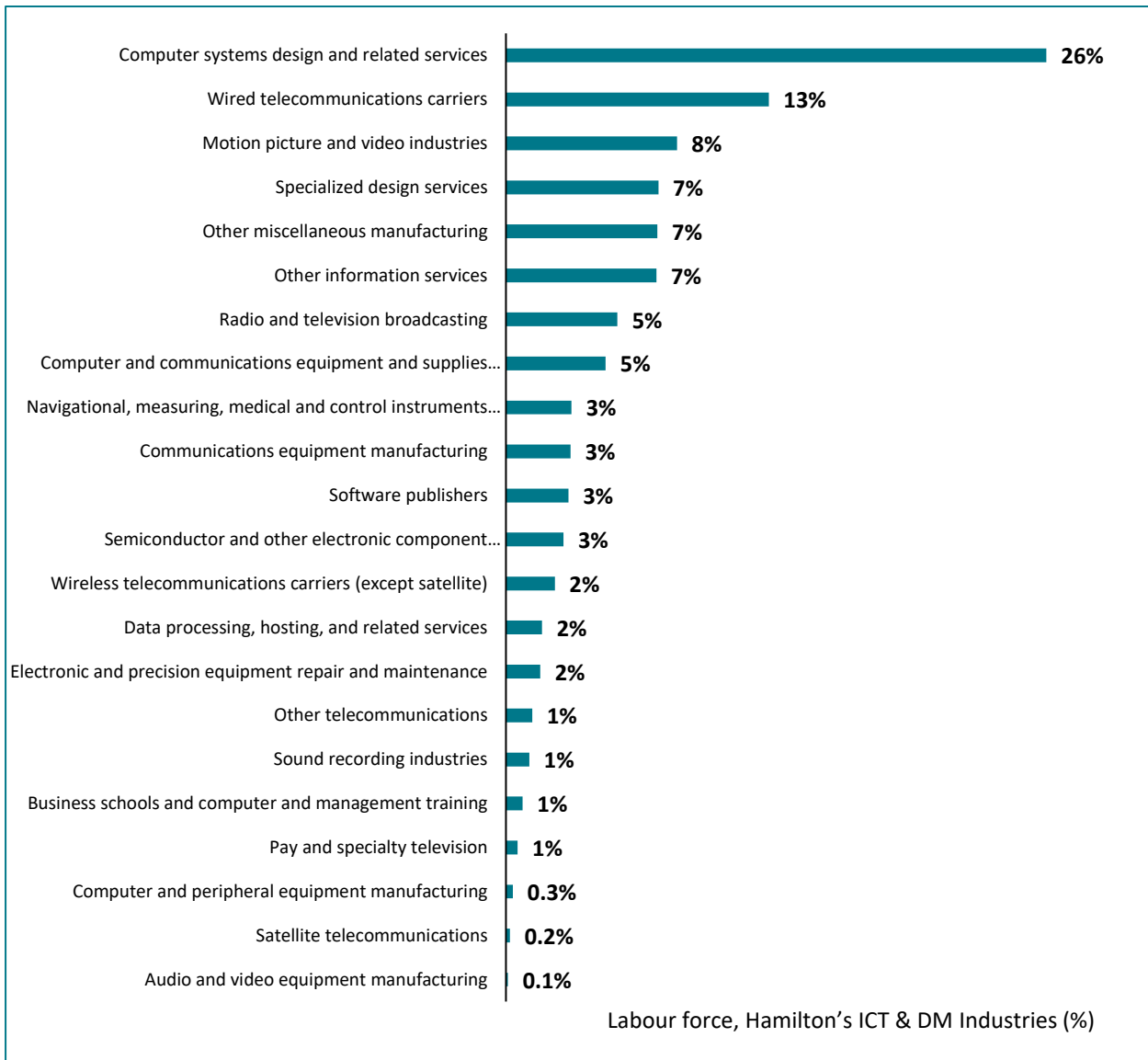


Source: Statistics Canada, 2016 Census of Population.

In 2016, the majority of Hamilton's ICT & DM Industries labour force was centred in the following industry sectors:

- Computer systems design and related services – 2,765 people (26% of the total labour force)
- Wired telecommunications carriers – 1,345 people (13% of the total labour force)
- Motion picture and video industries – 875 people (8% of the total labour force)
- Specialized design services – 780 people (7% of the total labour force)
- Other miscellaneous manufacturing – 775 people (7% of the total labour force)
- Other information services – 770 people (7% of the total labour force)

**Figure 8: Labour force, Hamilton’s ICT & DM Industries (%), 2016**



Source: Statistics Canada, 2016 Census of Population.

From 2011 to 2016, the labour force in this sector grew by 18%; an approximate increase of 1,610 labour force. Labour force in this sector grew at a faster rate than labour force growth in all other industries, which showed a growth of 12%.

The majority of labour force growth was in the *ICT & DM - information and cultural*, which saw a net increase of 1,005 people from 2011 to 2016. The *ICT & DM - professional and technical services* also saw a net increase in the labour force, an approximate increase of 790 people. Labour force in support sectors, including the *ICT & DM – wholesale, education and manufacturing* saw a decline from 2011 to 2016.

**Figure 9: Hamilton’s ICT & DM Industries Labour force, Net Change 2011 – 2016**

ICT & DM Industries Sub-sectors	Labour Force		Labour force Change 2011 - 2016	
	2011	2016	Net Change	% Change
Total Labour force	9,135	10,745	1,610	18%
ICT & DM - Manufacturing	1,795	1,780	-15	-1%
ICT & DM - Wholesale	655	510	-145	-22%
ICT & DM - Information and Cultural	3,645	4,650	1,005	28%
ICT & DM - Professional and Technical Services	2,755	3,545	790	29%
ICT & DM - Educational Services	130	85	-45	-35%
ICT & DM - Other Services	155	175	20	13%

Source: Statistics Canada, 2016 Census of Population.

### Labour Force Commuting Patterns

The labour force commuting patterns indicate if Hamilton’s labour force is employed in the ICT & Digital Media industries within Hamilton or if they commute outside the city to work. The commuting patterns are important in this regard, as it indicates where Hamilton’s ICT & Digital Media labour force live and work.

As illustrated in the **Figure 10**, approximately 26,160 residents of Hamilton work in Hamilton’s ICT & Digital Media sector. The majority work within educational services (15,285 residents) followed by professional, scientific and technical services (5,250 residents) and repair and maintenance (2,070 residents). Approximately 15,365 Hamilton residents work outside Hamilton (A). Most of the residents travelling to communities outside Hamilton to work in ICT & Digital Media sectors are employed in educational services, professional, scientific and technical services and machinery, equipment & supplies merchant wholesalers. Hamilton attracts approximately 9,185 people from outside communities to work in its in ICT & Digital Media sector (B). Educational services and professional, scientific and technical services are the top sectors that attract the greatest number of workers.

**Figure 10: Net Export (-)/Net Import (+) of Labour for Hamilton’s ICT & DM Industries, 2016**

Industry	Resident working IN Hamilton	Hamilton resident ‘working outside’ Hamilton (A)	Non-resident ‘working in’ Hamilton (B)	B-A = Net Import (+)/Net Export (-)
Total ICT & Digital Media labour force	26,160	15,365	9,185	-6,180
Computer and electronic product manufacturing	175	695	90	-605
Miscellaneous manufacturing	455	405	175	-230
Machinery, equipment & supplies merchant wholesalers	670	1,205	515	-690
Publishing industries (except Internet)	525	315	185	-130
Motion picture and sound recording industries	315	240	100	-140
Broadcasting (except Internet)	180	320	140	-180
Telecommunications	645	715	210	-505
Data processing, hosting, and related services	35	90	-	-90
Other information services	555	125	170	45

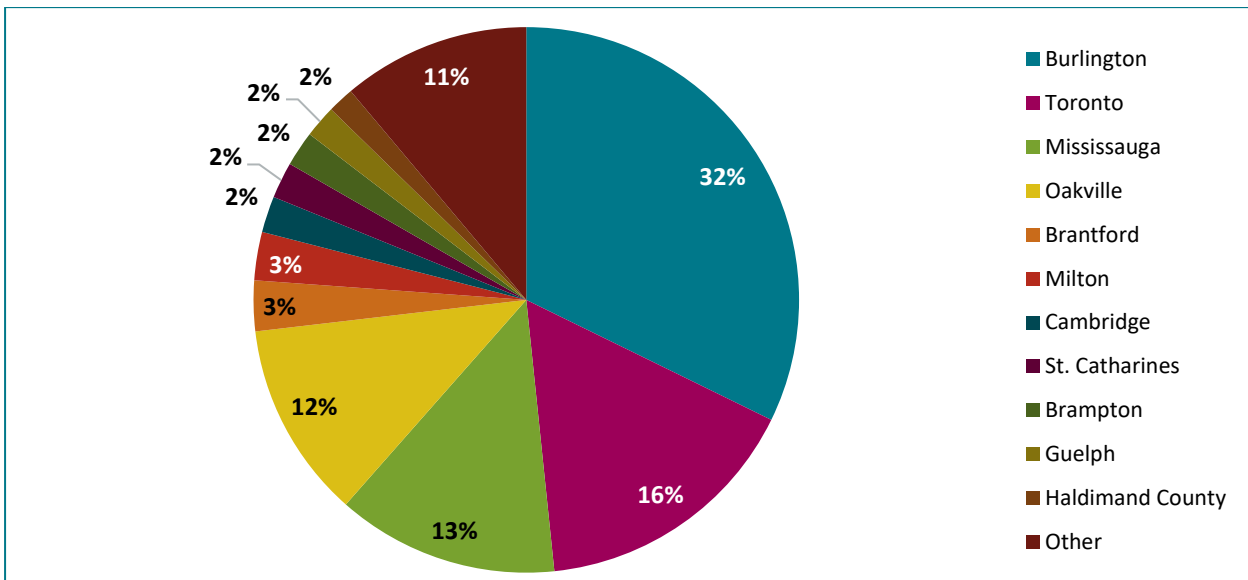
Industry	Resident working IN Hamilton	Hamilton resident 'working outside' Hamilton (A)	Non-resident 'working in' Hamilton (B)	B-A = Net Import (+)/Net Export (-)
Professional, scientific and technical services	5,250	5,145	2,165	-2,980
Educational services	15,285	5,315	4,815	-500
Repair and maintenance	2,070	795	620	-175

While the City attracts approximately 9,185 workers, it still saw a loss of 15,365 residents to employment opportunities outside of Hamilton. Considering the net flow of labour (B-A), it can be understood that Hamilton is a net exporter of workers, with net exports of 6,180 people. Hamilton shows the greatest outflow in the professional, scientific and technical services.

Figure 11 and Figure 12 shows the communities that Hamilton’s ICT & Digital Media labour force commutes to and from.

Of the 15,365 residents who commute to employment opportunities outside of Hamilton, the majority commute to work in Burlington’s ICT and Digital Media sector (4,955 residents – 32% of the commuting labour force) (Figure 11). Another 2,475 residents – 13% of the commuting labour force, commute to work in Toronto’s ICT and Digital Media sectors. Other communities that the Hamilton residents commute to include Mississauga and Oakville.

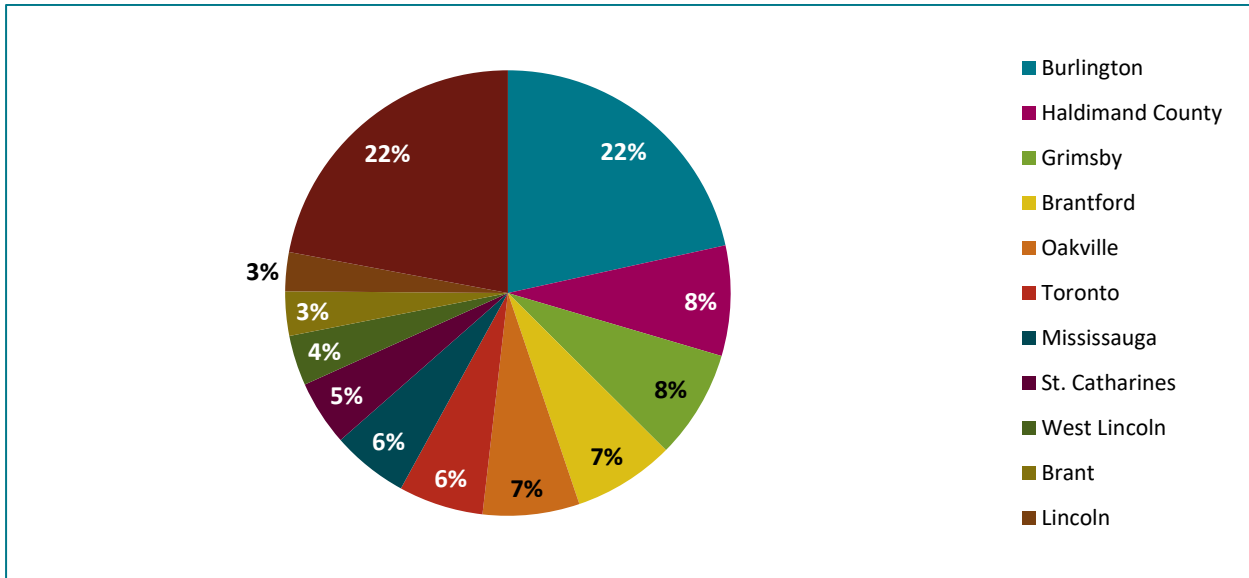
Figure 11: Place of Work for Hamilton’s Residents, ICT & DM Industries, 2016



Source: Statistics Canada, 2016 Census of Population. Other communities include Waterloo, Kitchener, Grimsby, Lincoln and Vaughan, among others.

Figure 12 shows the commuting patterns of workers who commute to Hamilton to work in its ICT and Digital Media sector. Of the 9,185 workers that the City attracts, the majority are from Burlington (1,980 people – 22% of total), followed by Haldimand County and Grimsby.

**Figure 12: Place of Residence for Workers who Commute to Hamilton to Work, 2016**



Source: Statistics Canada, 2016 Census of Population. Other communities include Guelph, Cambridge, Milton and Brampton, among others.

### 3.1.3 Sector Related Occupations

MDB Insight identified 15 occupations considered of critical importance to the ICT and Digital Media sector.

The data presented below is for Hamilton CMA. In 2016, Hamilton’s labour force population aged 15 years and over accounted for 369,070 occupations. Of these, approximately 13,905 occupations were related to the ICT & Digital Media sector. This equates to 3.8% of all occupations by industry sectors.

In 2016, the top occupation in the ICT and Digital Media sector were:

- Information systems analysts and consultants
- Computer programmers and interactive media developers
- Computer and information systems managers
- Graphic designers and illustrators
- Computer network technicians

**Figure 13: ICT and Digital Media sector Occupation, Hamilton CMA, 2016**

ICT & Digital Media Occupations (NOC)	Occupations	% of total
Total	13,905	100%
Information systems analysts and consultants	2,870	21%
Computer programmers and interactive media developers	1,565	11%
Computer and information systems managers	1,340	10%



ICT & Digital Media Occupations (NOC)	Occupations	% of total
Graphic designers and illustrators	1,320	9%
Computer network technicians	1,265	9%
Electrical and electronics engineers	1,065	8%
Electrical and electronics engineering technologists and technicians	1,035	7%
User support technicians	900	6%
Software engineers and designers	765	6%
Web designers and developers	550	4%
Database analysts and data administrators	375	3%
Computer engineers (except software engineers and designers)	360	3%
Telecommunication carriers' managers	310	2%
Information systems testing technicians	95	1%
Broadcast technicians	90	1%

Source: Statistics Canada, 2016 Census of Population

## 3.2 Economic Impact Assessment

This section of the report provides an assessment of the economic impact associated with Hamilton’s ICT and Digital Media sector. The impact assessment was completed by Metroeconomics at the request of MDB Insight and is based on a sub-provincial employment projection system and on the following Statistics Canada information sets:

- Census 2016 data regarding employment in Hamilton on a place-of-work basis by detailed industry at the 4-digit NAICS level
- Sources and uses information regarding the Ontario economy by detailed industry in 2014; and
- Gross Domestic Product information for Ontario by industry from 2016 through to 2018

*Appendix III provides a description of metroeconomics’ Community-Based Projection System.*

The economic importance details Hamilton’s ICT and Digital Media sector output, GDP and Labour Income (\$ millions) and Employment in 2020. It provides a snapshot of the sector’s overall health and enables growth and new business opportunities. Furthermore, using the sub-provincial projection system, the labour market requirements of the sector is detailed for 2020 and projected to 2025. The assessment identifies the top industries within the sector and occupations that will be critical to the continued growth of the sector.

### 3.2.1 Economic Importance

Figure 14 quantifies the economic importance of the ICT&DM sector to the City. Based on these various sources, it is estimated that in 2020:

- the city’s ICT&DM sector’s output (sales) will reach \$1.623 billion

- its Gross Domestic Product associated with this sector (GDP, the value it adds to the inputs it purchases from other industries) will reach \$845 million
- the sector will pay workers \$470 million in wages and salaries; and
- the sector will employ just over 6,000 people

**Figure 14: City of Hamilton Economic Impacts of the ICT & DM Sector in 2020 Output, GDP and Labour Income (\$ millions) and Employment**

Economic Concepts	Impacts			
	Direct	Indirect	Induced	Total
Output (\$ millions)	1,623	911	600	3,134
GDP (\$ millions)	845	255	182	1,282
Labour income (\$ millions)	470	87	53	609
Employment	6,008	4,497	3,026	13,531

Source: Statistics Canada various sources and metroeconomics

The sector will indirectly – through its purchases of goods and services from other industries – generate an additional:

- \$911 million in output
- \$255 million in GDP
- \$87 million in wages and salaries; and
- jobs for almost 4,500 workers

Note that it is not possible to determine the extent to which the induced impacts will benefit businesses and workers located in the City of Hamilton since an unknown portion of the inputs will be sourced from businesses located in other parts of Ontario, Canada and the rest of the world.

In addition – since the sector employs people who live in Hamilton or nearby and who spend their incomes in the area – the sector will induce an additional:

- \$600 million in output (sales)
- \$182 million in GDP
- \$53 million in labour income; and
- more than 3,000 more jobs

Overall – through these direct, indirect and induced impacts – the City’s ICT&DM sector leads to:

- more than \$3 billion in sales
- almost \$1.3 billion of GDP
- more than \$600 million in labour income; and
- more than 13,500 jobs

To place these estimates in context:

- the City's GDP in 2020 economy-wide will reach almost \$24 billion measured in constant 2012 dollars; thus, the City's ICT&DM sector directly accounts for 3.5 percent of its GDP
- the City's total employment on a place-of-work basis will reach more than 212,000 this year; thus, the City's ICT&DM sector directly accounts for 2.8 percent of its jobs; and
- that the sector accounts for a much larger GDP share than employment share reflects the fact that productivity in the sector significantly exceeds the average economy-wide level (Note that these shares do not include the indirect or induced impacts).

### 3.2.2 Labour Market Requirements To 2025

Metroeconomics also developed a correspondence between the 44 6-digit NAICS industries identified by MDB Insight as defining the ICT&DM sector and 2016 Census data regarding employment by industry at the 4-digit level. That procedure, coupled with metroeconomics' detailed estimates and projections of the City's employment by industry at the 4-digit level, led to the estimate in the previous section that just over 6,000 people will be directly employed in the ICT&DM sector in Hamilton in 2020. It is projected that the sector's total employment will grow to almost 6,700 in 2025. Thus the sector will employ almost 700 more people in 2025 than is the case today.

**Figure 15** shows the employment estimates for 2020 and the projection for 2025 for the ICT&DM sector into the 22 4-digit industries that correspond to the 44 6-digit industries cited earlier:

- within the sector as a whole, the most important from an employment viewpoint across all occupations is computer systems design and related services (NAICS code number 5415); this industry alone accounts for 1,733 of the sector's total of 6,008 employees or 29%.
- the next most important are other information services (5191) at 769; wired telecommunications carriers (5171) at 707; specialized design services (5414) at 603; motion picture and video industries (5121) at 559; and radio and television broadcasting (5151) at 359; collectively these 5 industries account for 2,997 jobs (or half of all the jobs in the sector).

MDB Insight identified 15 occupations considered of critical importance to the sector. These 15 collectively account for 2,163 of the 6,008 people employed by the ICT&DM sector in 2020, or 36 percent of the sector's total. The gains in employment within the sector for the selected group of 15 occupations are also indicated by industry in Figure 15. Computer systems design and related services – which, as noted above, employs 29 percent of all those employed within the sector – employs 54 percent of those employed in the sector in the 15 selected occupations.

**Figure 15: City of Hamilton ICT & DM Sector Employment Estimated for 2020 and Projected for 2025 All Occupations and 15 Selected Occupations**

ICT & Digital Media Industries (NAICS)	All 500 Occupations			15 Selected Occupations		
	2020	2025	Change	2020	2025	Change
Total All Industries	212,327	231,041	18,714	7,128	7,667	538
Total ICT and Digital Media Sector Industries	6,008	6,693	685	2,170	2,462	293
Computer and peripheral equipment manufacturing	19	16	-3	5	5	-1
Communications equipment manufacturing	57	50	-8	20	17	-3
Audio and video equipment manufacturing	0	0	0	0	0	0
Semiconductor and other electronic component manufacturing	92	86	-6	21	19	-1
Navigational, measuring, medical and control instruments manufacturing	119	123	4	24	25	1
Manufacturing and reproducing magnetic and optical media	0	0	0	0	0	0
Computer and communications equipment and supplies merchant wholesalers	196	177	-18	72	65	-7
Software publishers	135	165	30	77	94	17
Motion picture and video industries	559	682	123	56	68	12
Sound recording industries	99	121	22	3	4	1
Radio and television broadcasting	359	363	4	43	44	0
Pay and specialty television	10	13	2	1	2	0
Wired telecommunications carriers	707	684	-23	237	229	-8
Wireless telecommunications carriers (except satellite)	182	166	-16	52	48	-5
Satellite telecommunications	15	15	0	6	6	0
Other telecommunications	100	122	22	35	43	8
Data processing, hosting, and related services	74	90	16	32	39	7
Other information services	769	889	120	63	72	10
Specialized design services	603	669	66	220	244	24
Computer systems design and related services	1,733	2,081	348	1,174	1,409	235
Business schools and computer and management training	56	52	-5	5	5	0
Electronic and precision equipment repair and maintenance	121	128	7	23	24	1

Source: *metroeconomics*

The projections summarized in **Figure 15** have significant importance for the City (note that the percent changes cited below are not included in **Figure 14**):

- total employment City-wide across all industries and occupations is expected to grow by 8.8 percent between 2020 and 2025

- total employment in the ICT&DM sector across all occupations is expected to grow 11.4 percent
- total employment City-wide for the 15 selected occupations is expected to grow 7.6 percent; and
- total employment for the selected 15 occupations within the ICT&DM sector only is projected to grow 13.5 percent

The total need for new workers across the 15 selected occupations as a group is 538, of which 293 will be needed by the ICT&DM sector and the rest by other industries. Thus, the sector faces significant competition from other industries in the area for the skills crucial to its continued success. The 22 industries in the ICT&DM sector employ 2,170 workers in the selected 15 occupations while all industries as a whole employ 7,128. **Figure 16** indicates the relative importance of the number employed in each occupation within the ICT&DM sector relative to their employment economy-wide. Key insights include:

- economy-wide the ICT&DM sector employs 30 percent of all those employed in the group of 15 selected occupations
- the ICT&DM sector dominates in the employment of people employed as telecommunication carriers’ managers (NOCs number 131) at 87 percent, and broadcast technicians (5224) at 84 percent
- the sector accounts for at least 40 percent of those occupied in the City as software engineers and designers (2173) at 47 percent; graphic designers and illustrators (5241) at 43 percent; information systems testing technicians (2283) at 42 percent; computer programmers and interactive media developers (2174) at 41 percent; and computer engineers (except software engineers and designers) (2147) at 40 percent
- the sector accounts for between 20 and 40 percent of those employed as web designers and developers (2175) at 39 percent; information systems analysts and consultants (2171) at 27 percent; computer and information systems managers (213) at 26 percent; and user support technicians (2282) at 22 percent

The ICT&DM sector is not the dominant employer for the remaining 4 occupations.

**Figure 16: City of Hamilton ICT & DM Sector Employment Estimated for 2020 and Projected for 2025 All Occupations and 15 Selected Occupations**

ICT & Digital Media Occupations (NOC)	22 ICT&DM Industries	All 303 Industries	ICT&DM % Share
Total ICT and Digital Media Sector Selected Occupations	2,163	7,134	30
Telecommunication carriers’ managers	103	118	87
Computer and information systems managers	167	640	26
Electrical and electronics engineers	61	439	14
Computer engineers (except software engineers and designers)	88	220	40
Information systems analysts and consultants	469	1714	27
Database analysts and data administrators	40	235	17
Software engineers and designers	205	436	47

ICT & Digital Media Occupations (NOC)	22 ICT&DM Industries	All 303 Industries	ICT&DM % Share
Computer programmers and interactive media developers	351	858	41
Web designers and developers	95	246	39
Electrical & electronics engineering technologists & technicians	49	444	11
Computer network technicians	126	656	19
User support technicians	96	429	22
Information systems testing technicians	32	77	42
Broadcast technicians	20	24	84
Graphic designers and illustrators	260	598	43

Source: *metroeconomics*

Figure 15 indicated that the ICT&DM sector would require almost 300 new workers between 2020 and 2025 across the 15 selected occupations as a group. Exhibit 6 breaks this total down into the number to be required over that span in each of the 15 occupations. Figure 17 indicates that within the City’s ICT&DM sector:

- the largest need is for 76 additional information systems analysts and consultants (2171);
- the next largest need is for 63 computer programmers and interactive media developers (2174);
- another 33 workers will be required for each of software engineers and designers (2173) and graphic designers and illustrators (5241); and
- another 26 computer and information systems managers (213) will be required.

These 5 occupations collectively account for 79 percent of the total need of 293 workers across the 15 selected occupations within the ICT&DM sector. Those industries that employ people in these 15 occupations in the City – both those inside and outside of the ICT&DM sector – will need to recruit new workers (a) as their businesses grow and (b) because a number of the workers in these occupations will retire over that span. The total recruitment needs for each of these occupations faced by employers City-wide are summarized in Figure 18. Considering the 15 occupations as a group, employers over the next 5 years will need to recruit:

- 538 workers to fill the positions created by economic growth and
- 201 new workers to fill the positions that arise due to retirements.

The greatest total needs by occupation (economic growth plus retiree replacement) include:

- 193 information systems analysts and consultants (2171);
- 102 computer programmers and interactive media developers (2174);
- 70 computer network technicians (2281);
- 66 graphic designers and illustrators (5241); and
- 58 computer and information systems managers (213).

- These 5 occupations collectively account for two-thirds of the City’s requirements for new workers across all industries for the group of 15 selected occupations.

**Figure 17: City of Hamilton ICT & DM Sector Employment Total and by 15 Selected Occupations Estimated for 2020 and Projected for 2025**

ICT & Digital Media Occupations (NOC)	Employed		Economic Demand
	2020	2025	2020 to 2025
Total ICT and Digital Media Sector Selected Occupations	2,170	2,462	293
Telecommunication carriers’ managers	103	102	-1
Computer and information systems managers	167	193	26
Electrical and electronics engineers	61	63	2
Computer engineers (except software engineers and designers)	89	94	6
Information systems analysts and consultants	470	546	76
Database analysts and data administrators	40	46	6
Software engineers and designers	206	238	33
Computer programmers and interactive media developers	352	415	63
Web designers and developers	95	112	17
Electrical and electronics engineering technologists and technicians	49	51	1
Computer network technicians	127	141	14
User support technicians	97	108	12
Information systems testing technicians	32	38	6
Broadcast technicians	20	21	1
Graphic designers and illustrators	261	294	33

Source: *metroeconomics*

**Figure 18: City of Hamilton Employment in 15 Selected Occupations Projected Economic Demand and Retiree Replacement Demand 2020 to 2025**

ICT & Digital Media Occupations (NOC)	Employed		Economic Demand	Retiree Replacement Demand	Total Demand
	2020	2025	20 to 25	20 to 25	20 to 25
Total 15 Selected Occupations Across All 303 Industries	7,128	7,667	538	201	739
Telecommunication carriers’ managers	117	116	-1	1	0
Computer and information systems managers	639	687	48	11	58
Electrical and electronics engineers	438	449	10	29	40

ICT & Digital Media Occupations (NOC)	Employed		Economic Demand	Retiree Replacement Demand	Total Demand
	2020	2025	20 to 25	20 to 25	20 to 25
Computer engineers (except software engineers and designers)	220	230	10	7	17
Information systems analysts and consultants	1,713	1,857	144	49	193
Database analysts and data administrators	234	250	16	9	25
Software engineers and designers	437	477	40	8	48
Computer programmers and interactive media developers	859	943	84	17	102
Web designers and developers	247	273	26	1	27
Electrical and electronics engineering technologists and technicians	442	465	23	20	44
Computer network technicians	654	702	48	22	70
User support technicians	428	456	28	10	39
Information systems testing technicians	77	85	8	1	8
Broadcast technicians	24	25	1	0	1
Graphic designers and illustrators	599	651	52	14	66

Source: *metroeconomics*

### 3.3 Sector Benchmark Analysis

In addition to understanding the nature and characteristics of the ICT and Digital Media Sector, Hamilton’s ICT & Digital Media sector was benchmarked against those in select peer regions, to determine overall success in the growth of the sector.

The ten selected geographies were the City of Toronto, City of Markham, Kitchener-Waterloo, City of London, City of Ottawa, City of Calgary, City of Halifax, City of Winnipeg and the GTHA (Greater Toronto and Hamilton Area). The regions were selected based on:

- Size and nature – urban centres
- ICT and Digital Media assets and amenities
- A critical mass of technology-based industries

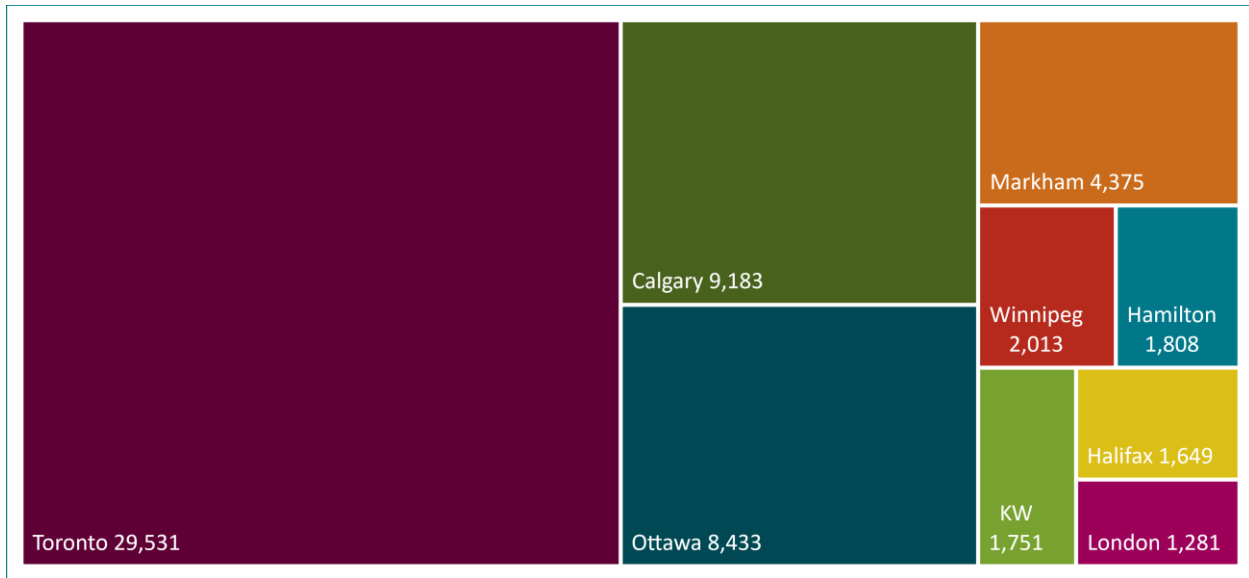
#### 3.3.1 Industry Size and Concentration

As per the Canadian Business Counts, a total of 1,808 businesses were classified as ICT & Digital Media Industries. This relates to 4% of all industries in the city and 3% of all GTHA ICT & Digital Media businesses. Placing Hamilton in the context of the Province and the Nation, it can be said that ICT & Digital Media Industries at 4% is lower than the provincial rate at 6% and 5% in Canada. As shown in [Figure 19](#), Hamilton’s ICT & Digital Media business counts are comparable to counts in Kitchener-



Waterloo, London, and Halifax. The city of Toronto with 29,531 businesses in the sector accounts for 45% of all GTHA and 33% of Ontario’s ICT & Digital Media businesses.

**Figure 19: Number of ICT and Digital Media businesses, 2019**

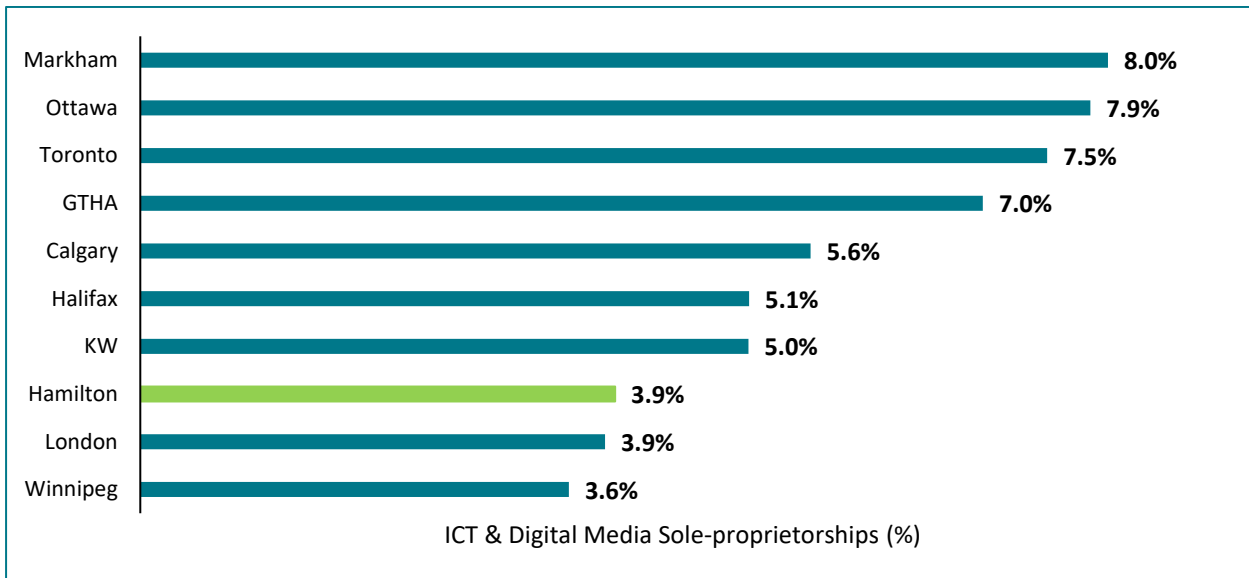


Source: Canadian Business Counts, June 2019

As shown in **Figure 20**, 3.9% of ICT & Digital Media businesses in Hamilton are sole-proprietorships. While sole-proprietorships by definition, are not job creators, these businesses are an important part of the entrepreneurial ecosystem. Within the sector, many sole-proprietorships perform functions such as consulting, IT specialists, software, and design agents.

Compared to comparator communities, Hamilton’s percentage of sole-proprietorships is lower than the GTHA average and is comparable to London and Winnipeg. Communities such as Markham, Ottawa and Toronto show a higher proportion of sole-proprietorships, possibly due to the presence of anchor firms. These communities have more developed sectors with high quality and innovative anchor/flagship firms. These firms act as incubators, enabling knowledge, innovation and business model spillover that can result in the overall growth of sole-proprietorships and enable existing sole-proprietorships to improve their business competitiveness, resulting in a high-value small business sector.

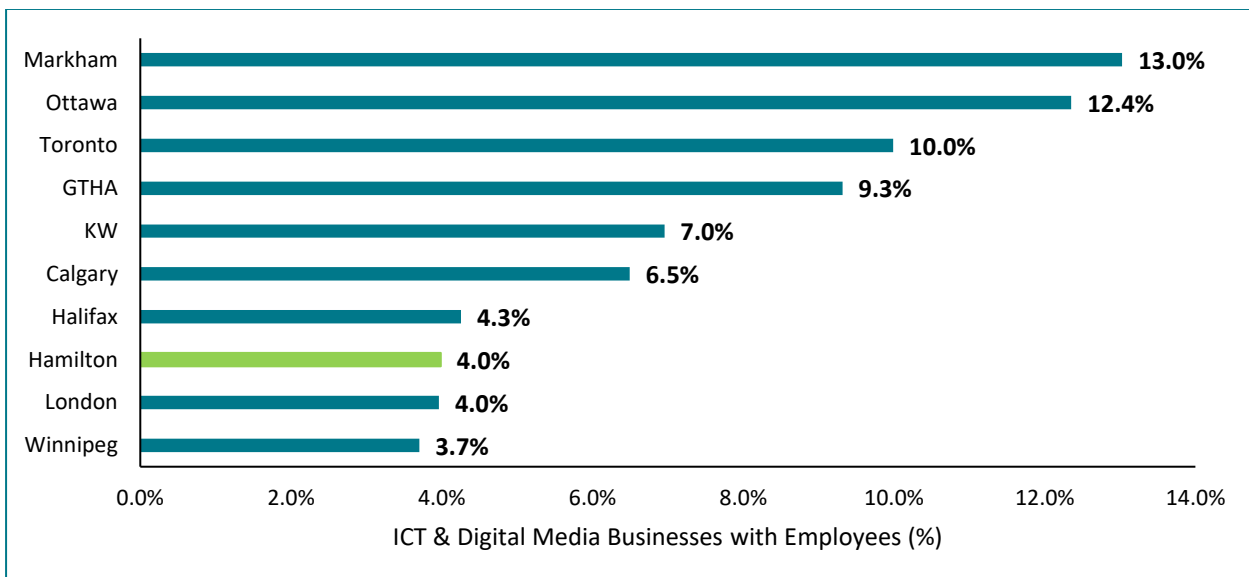
**Figure 20: ICT & Digital Media Sole-proprietorships (%), 2019**



Source: Canadian Business Counts, June 2019

**Figure 21** shows the percentage share of ICT & Digital Media businesses with employees. Similar to sole-proprietorships, Hamilton has a lower proportion of ICT & Digital Media businesses with employees. Markham, Ottawa, and Toronto show a higher proportion of employee establishments, which may indicate that those communities are a desired destination for high-tech firms.

**Figure 21: ICT & Digital Media Businesses with Employees (%), 2019**



Source: Canadian Business Counts, June 2019

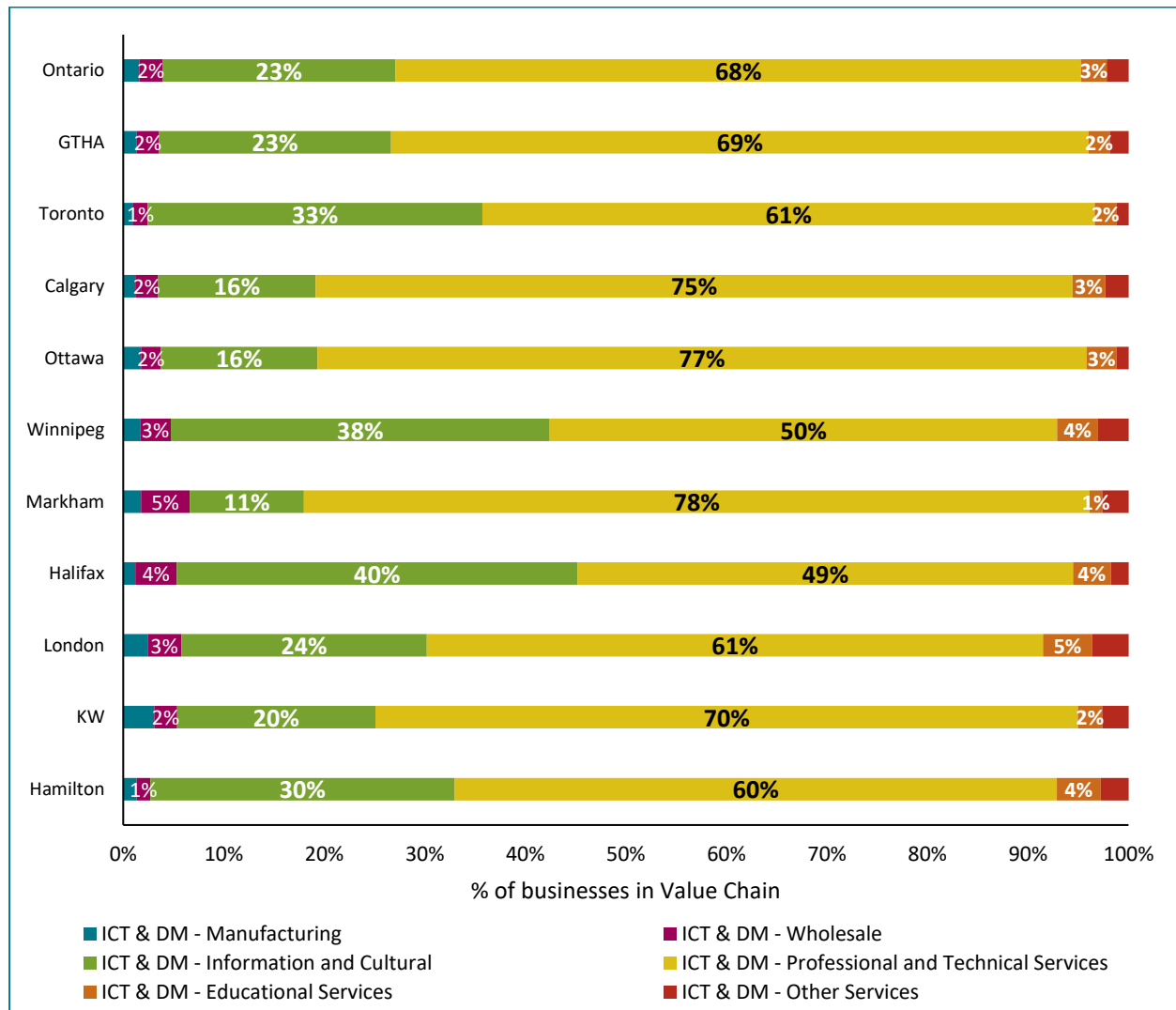
As illustrated in **Figure 22**, while firms in the ICT & DM – manufacturing and wholesale are comparable across all comparator communities, the largest differences are in core sub-sectors including ICT & DM - professional and technical services and information and cultural services.

Approximately 30% of firms in Hamilton are in information and cultural services and is comparable to Toronto at 33% and ranks higher than Markham, Ottawa, Calgary, KW, London and the GTHA. Hamilton ranks lower than Winnipeg and Halifax.

Approximately 60% of firms in Hamilton are in professional and technical services and is comparable to Toronto and London at 61%. Hamilton ranks higher than Winnipeg and Halifax and lower than KW, Calgary, Ottawa, and Markham.

Approximately 4.4% of firms in Hamilton are in educational services. Hamilton ranks higher than almost all communities in this subsector and is only lower than London at 4.9%.

**Figure 22: ICT & Digital Media Businesses by Sub-sectors, 2019**

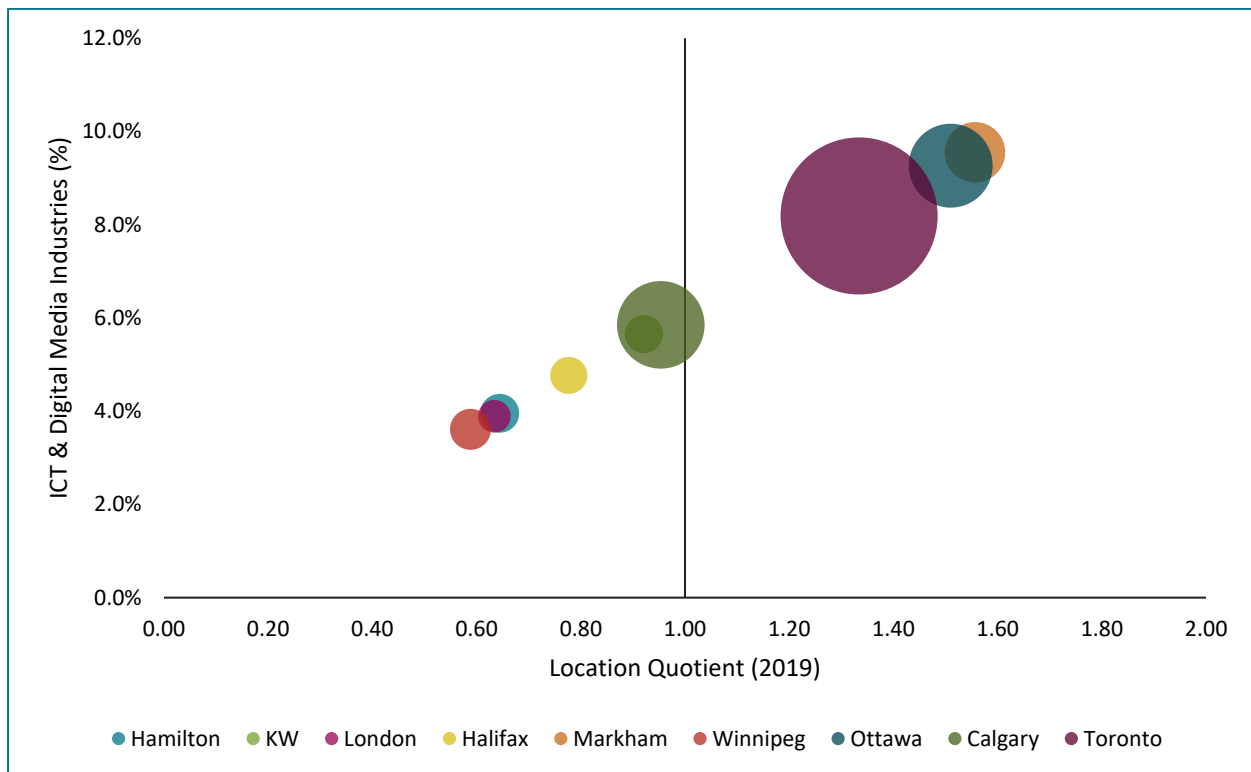


Source: Canadian Business Counts, June 2019

Hamilton’s ICT and Digital Media sector concentration (LQ) and % of ICT & Digital Media Industries in 2019 were analysed in relation to regional comparators. **Appendix III** provides a description of Location Quotient (LQ). Studying **Figure 23** provides the following insight:

- The bubble size indicates the number of ICT and Digital Media businesses in each community in 2019 (this is similar to Figure 19)
- Hamilton’s ICT and Digital Media sector concentration with an LQ of 0.64, shows that the concentration of businesses in the city is below the provincial average of 1.00
- Markham (LQ 1.56), Ottawa (LQ 1.51) and Toronto (LQ 1.33) show high LQ’s indicating that ICT & Digital Media are highly concentrated in these communities. In tandem with the high LQ’s, these communities show a higher % of ICT & Digital Media Industries when compared to Hamilton and the Province.
- Hamilton’s ICT and Digital Media sector concentration are comparable to the cities of London and Winnipeg.

**Figure 23: Percentage of ICT and Digital Media businesses and Industry Concentration, 2019**



Source: Canadian Business Counts, June 2019

### 3.3.2 Industry Labour Force

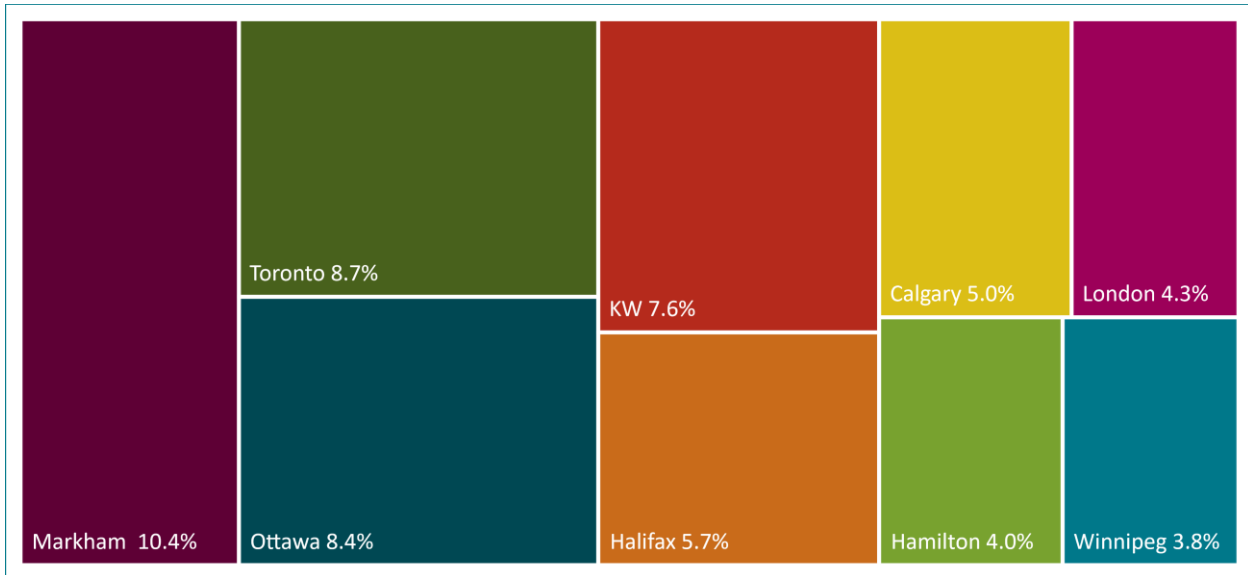
The labour force analysis showed that in 2016, Hamilton had a labour force of approximately 10,745 people in the ICT & DM Industries, accounting for 4% of the total labour force. Hamilton’s labour force percentage in the sector is lower than the provincial rate of 6% and Canada at 6%.

Furthermore, Hamilton accounted for 4% of the GTHA’s labour force compared to the city of Toronto with a labour force of 124,830 in the sector, representing 47% of the GTHA’s labour force.

As shown in

**Figure 24**, Hamilton’s ICT & Digital Media labour force percentage is comparable to rates in Winnipeg (3.8%), Hamilton (4.0%) and London (4.3%). The city of Markham leads among comparator communities in terms of the sector labour force with 10.4%, followed by Toronto and Ottawa.

**Figure 24: ICT and Digital Media Labour force, 2016**



Source: Statistics Canada, 2016 Census of Population

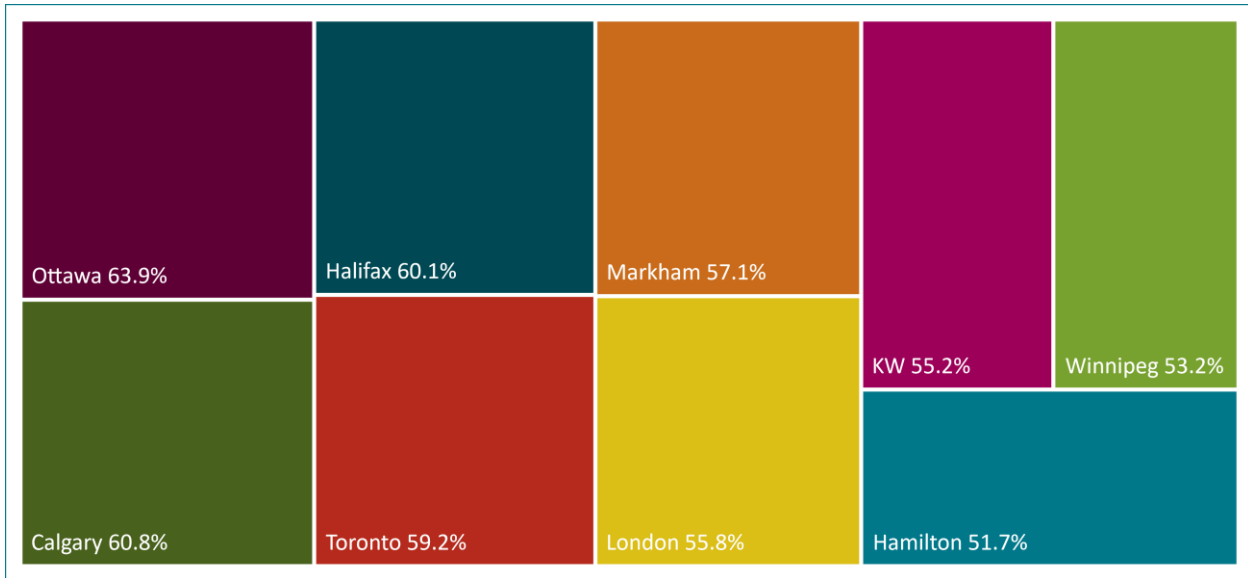
### 3.3.3 Education Levels

Measuring the share of the population with a post-secondary degree often correlates with the overall health and prosperity of a community and enables an assessment of the skilled talent available to participate in the ICT & Digital Media sector.

**Figure 25** illustrates the share of the population (15 years or older) with a post-secondary degree. Over 51% of Hamilton’s population has a post-secondary degree.

Hamilton’s share of the population with a post-secondary degree is lower than all other comparator communities. Ottawa ranks highest at 64%, followed by Calgary at 61%. The GTHA and provincial rates are at 57.4% and 55% respectively.

**Figure 25: Percentage of Population with Post-Secondary Degree, All Fields of Study, 2018**

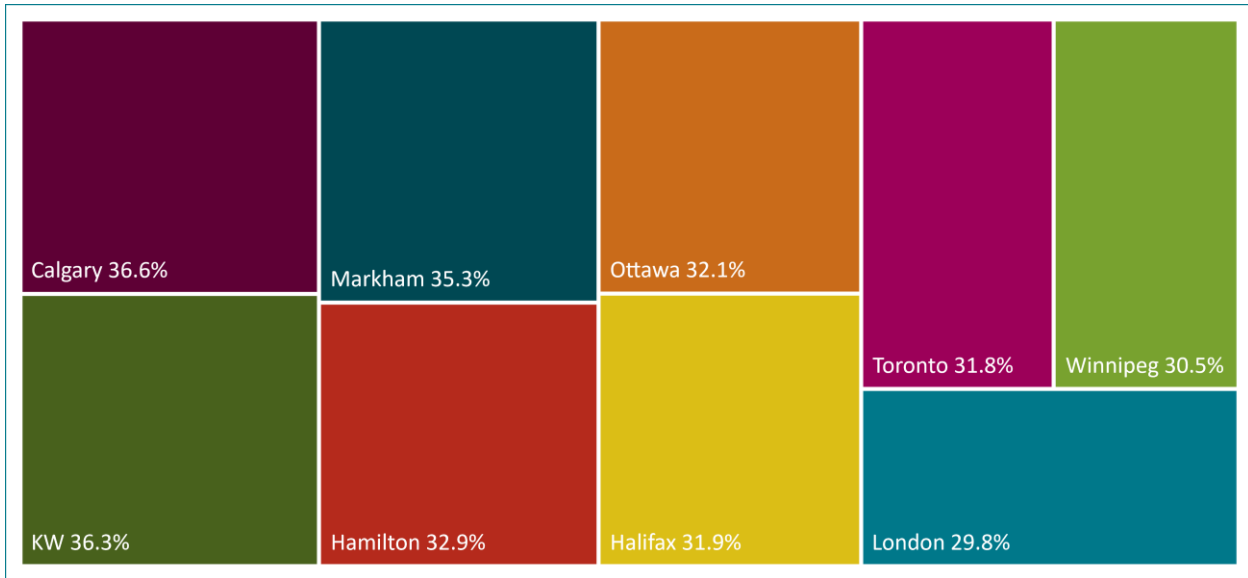


Source: Manifold data, 2018

Hamilton’s share of population post-secondary degrees in all fields of study are comparable to Ottawa, Halifax and Toronto and is higher than Winnipeg and London. Calgary ranks highest at 37%, followed by Kitchener-Waterloo at 36%. The GTHA and provincial rates are at 32.8% and 33% respectively.

**Figure 26** presents a further examination of the share of the population with a post-secondary degree with degrees related to ICT & Digital Media. Broad fields of study associated with the sector include visual and performing arts, and communications technologies, mathematics, computer and information sciences, physical and life sciences and technologies and engineering, and related technologies. Hamilton’s share of population post-secondary degrees related to the sector are comparable to Ottawa, Halifax and Toronto and is higher than Winnipeg and London. Calgary ranks highest at 37%, followed by Kitchener-Waterloo at 36%. The GTHA and provincial rates are at 32.8% and 33% respectively.

Figure 26: ICT & Digital Media Related Fields of Study, 2018

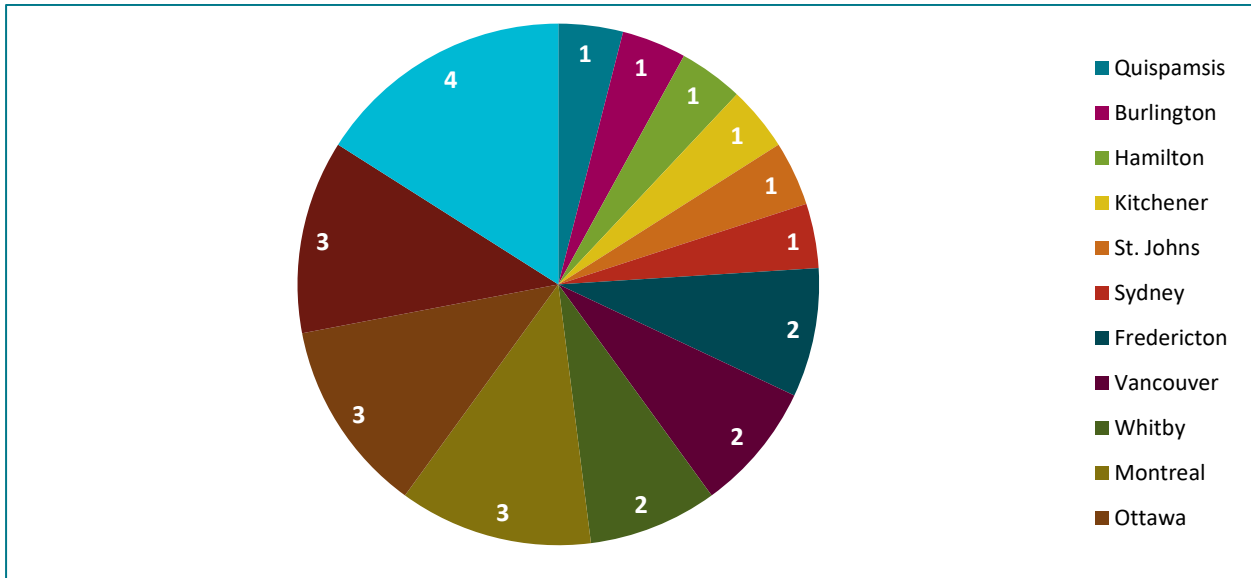


Source: Manifold data, 2018

### 3.3.4 Top 25 ICT

- The BRANHAM300 is an annual ranking of Canadian tech companies, providing insights on the Top 250 Canadian ICT Companies, Top 25 ICT Multinationals and Top 25 ICT Up and Comers.
- As per the survey results, the Canadian ICT sector has seen a major growth thrust. The performance of the companies reflects the continual maturation and growth of the Canadian ICT Industry as a key economic contributor and rising brand both domestically and globally. Key insights of the survey include:
  - In 2018, the Top 250 Canadian ICT Companies (ranked by revenue) generated cumulative revenue of \$115.3 Billion in fiscal 2018 compared to \$106.3 Billion in the previous year. This represents a year-over-year revenue increase of 8.5%, compared to 1.14% growth in fiscal 2017.
  - In fiscal 2018, the top 25 multinationals generated \$89.5 Billion in this country, an 12.4% increase over the \$79.6 Billion total the year prior. Notable growth performers include Facebook, up an impressive 35%, and Amazon up 33%.
  - Hamilton is listed as a place for one of the Top 25 ICT Up and Comers in the country (Figure 27). The Top 25 ICT Up and Comers are defined by Branham Group as promising young companies at the beginning of their successes. It is the only Branham300 list not based on revenue. Nine (36%) of this year’s class of 25 Up and Comers are from Atlantic Canada. This reflects the increasing focus on ICT innovation in this region of Canada.

Figure 27: Top 25 ICT Up and Comers by City, 2018



Source: BRANHAM300, 2018.

### 3.4 ICT and Digital Media Asset Inventory

In addition to the analysis of Business Counts, the Key Findings Report also includes an asset inventory (or business listing) for Hamilton’s ICT and Digital Media sector. The asset inventory was developed using various sources of data, namely,

- Dun & Bradstreet, Inc.
- City of Hamilton business List
- City of Hamilton Salesforce List
- Software Hamilton List

The data from the various sources were categorized based on three factors (a): corresponding ICT & Digital Media NAICS and (b): a description of business activities (c): listed phone numbers. The four data sources were combined to remove duplicates and errors and create one ‘master list’. A total of 500 assets were determined to be in the final directory that was used to develop the asset inventory. The same asset inventory was used to administer the ICT, and Digital Media Business Survey discussed later in this report.

The complete asset inventory list is provided to the client in an excel format. The asset inventory forms a baseline for the City to build upon and develop a comprehensive business directory for the sector.

The key insights that emerged from this exercise are described below:

**Information and Communications Technologies (ICT) and Related** – Approximately 376 businesses were identified as ICT. These include core ICT sectors such as custom computer programming and support services, software publishers and developers, telecommunications, data processing,



hosting, and related services, and wholesalers. ICT firms engaged in sectors including healthcare, digital media, engineering and advanced process and business services also form part of the asset inventory. The core sectors within this include:

- **Custom Computer Programming and Support Services** – Approximately 125 businesses were identified in this sub-sector. Firms include those that are involved in custom computer programming services (72 firms), computer system design services (38 firms) and computer and office machine repair and maintenance.
- **Telecommunications** – Approximately 90 businesses were identified as Telecommunication firms. These firms are engaged in providing telecommunications and/or video entertainment services over their own networks or over networks operated by others and include Wired telecommunications carriers and wireless telecommunications carriers (except satellite).
- **Data Processing, Hosting, and Related Services** – Approximately 32 businesses were identified in this sub-sector. Firms are primarily engaged in providing hosting or data processing services and include automated data processing, computer services and video and audio streaming services.
- **Software Publishers and Related** – Approximately 34 businesses were identified in this sub-sector. Firms are primarily engaged in publishing computer software, usually for multiple clients and generally referred to as packaged software.
- **ICT Wholesalers** – Approximately 5 businesses were identified in this sub-sector, primarily engaged in the merchant wholesale distribution of computers, computer peripheral equipment, loaded computer boards, and/or computer software.
- **Design & Digital Media** – Approximately 105 businesses were identified as Design & Digital Media firms. These include both support and core firms including graphic designers, design studios, film and animation studios. Digital design marketing and advertising agencies were also identified as part of the subsector.

The asset inventory analysis shows that there is a significant opportunity for the City to build upon this baseline and build a comprehensive and current business directory. The 2019 Canadian Business Counts shows a total of 1,808 businesses compared to the 500 businesses identified in the inventory. A comprehensive business directory is an important tool for the City to grow and support the ICT and Digital Media sector. In addition, it can also serve as a resource for local firms to gain visibility in the local and regional market, improve their brand, identify industry partnerships and business resources, and support available to grow and improve the customer base.

### 3.5 Summary of Observations

The following section provides high-level insights into the sector current economic performance.

#### ICT & Digital Media Businesses

Hamilton's ICT & Digital Media sector is a dynamic and global economic sector that has experienced a

steady increase from 1,487 enterprises in 2016 to 1,808 industries in 2019<sup>6</sup>. This relates to a net increase in 321 firms or a 22% growth from 2016 to 2019. The sector has grown at a faster pace than all other industry sectors in the city, which showed a growth rate of 16% for the same period.

The sector is dominated by small, single operator firms. Of the 1,808 businesses, accounting for 4% of all industries in the city, the majority are sole proprietorships (68% of all businesses). While sole-proprietorships by definition, are not job creators, these businesses are central to the economic growth and the viability of the local supply chain. Within the sector, many sole-proprietorships perform functions such as consulting, IT specialists, software, and design agents. The sector is also characterized by micro-establishments employing between 1-4 employees (23% of all businesses) or small businesses employing between 5-9 employees (5% of all businesses).

The strong economic performance of Hamilton's ICT & Digital Media sector has been driven by the professional and technical services, which saw a net increase from 915 firms in 2016 to 1,083 firms in 2019. This subsector accounts for 60% of all ICT and Digital Media industries. Computer systems design and graphic design are some of the services driving growth within the sub-sector.

Another major growth driver is information and cultural services with 547 businesses in 2019, witnessing a high growth rate of 35% from 2016 to 2019 (net increase of 141 firms). The majority of businesses in this subsector are *Motion picture and video production firms* (202) while 30 businesses are involved in the publishing of software. Digital media is an important aspect of these industries for the production and delivery of content including motion pictures, videos, television programs or commercials.

As per the 2018 ICT Sector Snapshot, growth in these subsectors is primarily driven by technologies including Cybersecurity, data analytics and artificial intelligence. The shift to cloud computing delivery models is also a primary driver of growth, given that these models have led to declines in the prices of several IT services, resulting in stronger demand for these services. It has also resulted in the outsourcing of data storage and management, in turn, creating stronger growth in the sector.

### ICT & Digital Media Economic Impact

Hamilton's ICT & Digital Media sector makes a strong and growing contribution to its economy. As per current-year estimates, GDP associated with this sector will reach almost \$1.3 billion<sup>7</sup>. The city's GDP in 2020 economy-wide will reach almost \$24 billion measured in constant 2012 dollars; thus, the ICT & Digital Media sector directly accounts for 3.5% of its GDP.

Of the \$1.3 billion in GDP contributions, direct GDP associated with this sector will reach \$845 million. Economic contributions have posted strong growth of 7.4% from \$787 million in 2016 to \$845 million in 2020; only one percentage point lower than the rest of Hamilton economic growth.

It is further estimated that through direct, indirect, and induced impacts, the city's ICT & Digital Media sector leads to more than \$3 billion in sales in 2020<sup>8</sup>. Of this, approximately 54% or \$1.623 billion is directly associated through sales in the sector.

In addition to GDP and sales growth, the sector has witnessed labour force and associated income growth. Through direct, indirect, and induced impacts, the sector leads to more than \$600 million in

<sup>6</sup> Canadian Business Counts, December 2016 & 2019.

<sup>7</sup> metroeconomics' Community-Based Projection System.

<sup>8</sup> Ibid.

labour income and a labour force of more than 13,500<sup>9</sup>. Direct impacts of the sector will pay workers \$470 million in wages and salaries and employ just over 6,000 people.

To place these estimates in context, the ICT & Digital Media sector directly accounts for 2.8% of all total jobs in the city. The sector's direct productivity in the sector significantly exceeds the average economy-wide level as reflected in the much larger GDP share than employment share.

### **ICT & Digital Media Employment**

As per current-year estimates, approximately 10,993 people are employed in Hamilton's ICT & Digital Media ecosystem<sup>10</sup>. This includes 6,008 ICT & Digital Media professionals working in Hamilton's ICT & Digital Media sector and 4,985 ICT & Digital Media professionals working in non-ICT & Digital Media industries.

The ICT & Digital Media sector employing 6,008 people accounts for 2.8% of all total jobs in the city. This includes 2,170 ICT & Digital Media professionals working in the ICT & Digital Media sector (20% of total) and approximately 3,838 non-ICT & Digital Media professionals working in the ICT & Digital Media industry (35% of total).

Of the 2,170 ICT & Digital Media professionals working in the ICT & Digital Media sector, the majority are employed within the computer systems design industry, accounting for 1,733 or 54% of all occupations. Employment in this sector is projected to grow by 13% to 2,462 jobs in 2025. Hamilton has particular opportunities to capitalize on this sector and realize growth. As evidenced in the 2018 ICT Sector Snapshot, the Canadian software and computer industries accounted for the largest share in GDP contributions, with 48% of \$86.5 billion in 2018. The sector is also a major player in R&D expenditures and export-oriented growth.

### **ICT & Digital Media Occupations**

Of the 2,170 ICT & Digital Media professionals working in the ICT & Digital Media sector, the top five occupations are information systems analysts and consultants, computer programmers and interactive media developers, graphic designers and illustrators, software engineers and designers and computer and information systems managers.

Hamilton's ICT & Digital Media sector dominates in the employment of people employed as telecommunication carriers' managers at 87% and broadcast technicians at 84%. The sector also accounts for between 40 - 47% of software engineers, designers, graphic designers and illustrators, information systems testing technicians, computer programmers and interactive media developers and computer engineers (except software engineers and designers).

### **Labour Market Requirements and Skills Supply**

Based on estimates, Hamilton's ICT & Digital Media sector would require almost 300 new workers between 2020 and 2025<sup>11</sup>. The largest need is for 76 additional information systems analysts and consultants, followed by 63 computer programmers and interactive media developers. Approximately, 33 workers will be required for each of software engineers and designers, and graphic designers and illustrators and 26 computer and information systems managers will be required.

<sup>9</sup> Ibid.

<sup>10</sup> metroeconomics' Community-Based Projection System. Adapted by MDB Insight.

<sup>11</sup> metroeconomics' Community-Based Projection System.

These five occupations collectively account for 79% of the total need for workers. It is estimated that Hamilton's ICT & Digital Media sector will need to recruit new workers (a) as their businesses grow and (b) because some portion of the workers in these occupations will retire over that span.

The occupational data shows that the ICT and Digital Media sector is characterized by a knowledge-intensive workforce, with a great need for post-secondary educated workers. Given that approximately 52% of Hamilton's population 15 years or older hold a university degree across all industries sectors, the city has the skilled talent needed to participate in the ICT & Digital Media sector. Further analysis shows that 33% of Hamilton's population have post-secondary degrees related to ICT & Digital Media. Broad fields of study associated with the sector include visual and performing arts, communications technologies, computer, and information sciences, providing evidence for the sector to meet its current and future labour force requirements.

### **ICT and Digital Media Sector Benchmark**

Placing Hamilton in the context of the Province and Canada, it can be said that ICT & Digital Media Industries at 4% is lower than the provincial rate at 6% and 5% in the country.

Hamilton's ICT & Digital Media business counts are comparable to counts in Kitchener-Waterloo, London, and Halifax. The city of Toronto with 29,531 businesses in the sector accounts for 45% of all GTHA and 33% of Ontario's ICT & Digital Media businesses. Communities such as Markham, Ottawa and Toronto have a more established ICT & Digital Media sector and a higher proportion of anchor firms. It is understood that high quality and innovative anchor/flagship firms act as incubators, enabling knowledge, innovation, and business model spillover. This, in turn, will allow small businesses to improve their overall business competitiveness, resulting in a high-value business ecosystem.

It is understood that Hamilton's share of the population with a post-secondary degree is lower than all other comparator communities. Ottawa ranks highest at 64%, followed by Calgary at 61%. The GTHA and provincial rates are at 57% and 55% respectively.

Hamilton's share of population post-secondary degrees related to the sector are comparable to Ottawa, Halifax and Toronto and is higher than Winnipeg and London. Calgary ranks highest at 37%, followed by Kitchener-Waterloo at 36%. The GTHA and provincial rates are at 32.8% and 33% respectively.

## 4. Sector Consultation & SWOT Analysis

To further inform strategy development and recommendations for Hamilton's ICT & Digital Media sector, a comprehensive consultation process was undertaken. Consultations with stakeholders included a business survey, targeted phone interviews and an in-community workshop. The focus of the consultation process was an examination of the nature and current state of Hamilton's ICT & Digital Media sector, challenges and opportunities associated with the sector and the role played by Hamilton Economic Development and Partners in advancing these opportunities. The stakeholder interviews and workshops provided responses to several core questions identified for the Strategy, including:

- What challenges do the ICT & Digital Media businesses face in Hamilton?
- What is working well in the ICT & Digital Media sector in Hamilton? What initiatives should be undertaken to make the sector competitive in Hamilton/Ontario?
- What role should Hamilton's economic development partners play in advancing these opportunities?

### 4.1 ICT and Digital Media Business Survey

A statistically valid CATI survey was administered by MDB Insight in January 2020 to ICT and Digital Media businesses in Hamilton.

The survey was designed in consultation with the City of Hamilton Economic Development Staff and further informed through stakeholder interviews with local businesses in the sector. The survey aimed to gain insight into the current business environment, business satisfaction levels and the skills needs of businesses in the sector. The full result of the business survey is provided in **Appendix IV**. The key insights that are emerged are described below.

#### 4.1.1 Respondent Profile

Approximately 80 businesses in the sector provided input to the study. Respondents included software firms, IT consulting services, website design, marketing and advertising agencies, computer services and telecommunication carriers. The majority of respondents were micro and small businesses, employing between 1 to 4 full-time employees (46%) or 5 to 9 full-time employees (25%). Majority of respondents indicate that they do not employ part-time workers; 56% of businesses do not employ any part-time workers.

When asked to identify the 'primary reason for operating your business/operation in Hamilton', 65% of respondents indicated that they are residents of the city. 18% of businesses operate their business/operation in Hamilton due to proximity to customers, while 8% identified access to business supply chain as the primary reason. 16% of businesses also indicated that they relocated their business to Hamilton from another municipality.

#### 4.1.2 Business Environment

Majority of respondents are in the early growth stage of their business; approximately 55% (44





Source: MDB Insight, CATI Survey, 2019

**Figure 29: Cross-tabulation of business growth stage by stage of international business opportunity**

Which of the following best describes your stage of business?		Which of the following best describes your interest in international business opportunities?			
Stage	%	Initial stage (We are in research and planning)	Mid-stage (We are developing strategies)	Late-stage (We are actively pursuing international business opportunities)	We are not considering international business opportunities now
Growth (Revenues & customers are increasing)	55%	7%	7%	34%	52%
Established (business has reached maturity)	25%	10%	10%	25%	55%
Expansion (exploring new markets and distribution channels)	18%	29%	21%	14%	36%
Decline (declining business opportunities and/or market share)	3%	0%	0%	50%	50%
Exit Stage (cash out or shutting down)	0%	0%	0%	0%	0%

Source: MDB Insight, CATI Survey, 2019

### 4.1.3 Skill Requirements

Only 13% of respondents indicated that the availability of skilled workers in Hamilton for their business needs as ‘excellent’ while the majority; approximately 39% indicated the rate of available skilled workers as ‘fair’.

When asked to indicate skills that are in highest demand for their business, respondents mentioned skills, personal attributes and knowledge descriptor used for the execution of tasks and activities. Skills and personal attributes mentioned include communication and interpersonal skills, customer service, marketing, and sales skills. In terms of knowledge descriptors, respondents identified the need for software programmers and developers, knowledge related to computer and information sciences and support services, including computer programming and data processing. Respondents also indicated the need for experienced graphic designers. Web and game design were other attributes that were mentioned. IT support was another major knowledge descriptor that respondents identified. Examples include technical IT skills, computer repair and telecommunication networking.

### 4.1.4 Business Satisfaction

Businesses were also asked to rate their satisfaction levels with various factors of owning and operating their ICT and Digital Media business in Hamilton. **Figure 30** shows the satisfaction levels of businesses with various business factors.

Majority of businesses indicated ‘Don't know/Not applicable’ when asked satisfaction levels with municipal property tax rates, availability of property for purchase or lease, quality of business support programming, access to capital/availability of public funding and support programs and access to Light Rail Transit (LRT). This indicates a possible gap as businesses may not be aware of the business support programming that the city provides or that businesses have not accessed any of these services for their needs. Businesses seem ‘Very Satisfied’ with the quality of broadband/hi-speed Internet; 38% indicated high satisfaction and a further 36% said they are ‘Somewhat Satisfied’. Businesses also indicated satisfaction with attracting and retaining skilled talent and attracting new customers.

**Figure 30: Business Satisfaction with various Factors**

Factors	Very Satisfied		Somewhat Satisfied		Somewhat Dissatisfied		Very Dissatisfied		Don't know/Not applicable		Total
	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage	
Municipal property tax rates	2	3%	28	35%	8	10%	10	13%	32	40%	80
Availability of property for purchase or lease	9	11%	26	33%	13	16%	4	5%	28	35%	80
Quality of business support programming	18	23%	21	26%	7	9%	5	6%	29	36%	80
Attracting and retaining skilled talent	17	21%	35	44%	11	14%	7	9%	10	13%	80
Attracting new customers	15	19%	31	39%	13	16%	6	8%	15	19%	80
Quality of broadband/hi-speed Internet	30	38%	29	36%	10	13%	10	13%	1	1%	80
Access to capital/Availability of public funding and support programs	6	8%	20	25%	12	15%	10	13%	32	40%	80
Access to Light Rail Transit (LRT)	4	5%	11	14%	4	5%	13	16%	48	60%	80

Source: MDB Insight, CATI Survey, 2019

Businesses were also asked if they have accessed any of business support funds and/or programs that the City provides or any provincial or federal funding programs. The results are illustrated in **Figure 31**. The majority of respondents indicated not being familiar with any of the funds and/or programs. These include Innovation Factory Programs & Services, Hamilton’s Soft-Landing Program, Hamilton Business Centre and the Office Tenancy Assistance Program. Businesses did indicate that they would be like to be notified of future networking or tradeshow opportunities, indicating opportunities for the City to connect with local businesses.

**Figure 31: Familiarity of businesses with Programs & Services**

Programs & Services	Have accessed		Heard of it but not accessed		Not familiar		Total
	Count	Percentage	Count	Percentage	Count	Percentage	
Innovation Factory Programs & Services	18	23%	20	25%	42	53%	80
Hamilton’s Soft-Landing Program	2	3%	6	8%	72	90%	80
Hamilton Business Centre (formerly Small Business Enterprise Centre)	8	10%	28	35%	44	55%	80
One-Stop for Business	1	1%	8	10%	71	89%	80
Business Improvement Area Commercial Property Improvement Grant Program	5	6%	17	21%	58	73%	80
Office Tenancy Assistance Program	0	0%	6	8%	74	93%	80
Provincial funding programs	11	14%	16	20%	53	66%	80
Federal funding programs	11	14%	19	24%	50	63%	80

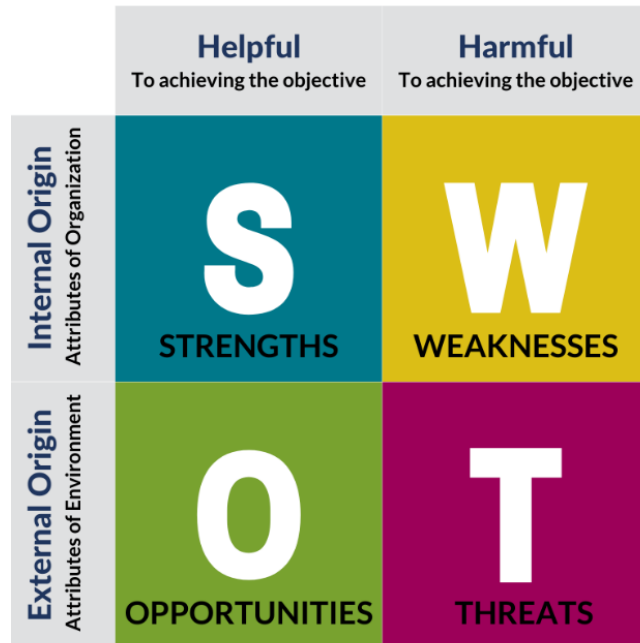
Source: MDB Insight, CATI Survey, 2019

## 4.2 SWOT Analysis

The insights that emerged from the consultation were pivoted to frame a SWOT (strengths, weaknesses, opportunities, and threats) assessment of the ICT & Digital Media sector. The SWOT, in turn, articulates a value proposition that is unique and compelling for Hamilton’s ICT & Digital Media sector and aims to enhance the competitive advantage within Hamilton and the region. A well-defined value proposition will result in a focused set of recommendations that form the basis for future sector development activities.

Complete results from the sector consultation are provided as *Appendix II: Consultation Summary*. The results of the SWOT assessment are summarized below.





### 4.2.1 Strengths

- **Location Advantage:** Hamilton’s central location as part of the Greater Toronto and Hamilton Area (GTHA) and Canada’s Innovation Corridor<sup>12</sup>, ensures a strong economic zone with strengths in manufacturing and technology and provides easy access to a network of highways, international airport, and ability to reach internal markets.
- **Affordable City:** As per the 2018 Manifold data, Hamilton’s median dwellings values at \$415,623 is on average \$150,000 – \$415,000 less than comparator communities including Ottawa, Calgary, Toronto, and Markham. Rental rates in Hamilton are also lower compared to Toronto, Markham, and Ottawa and comparable to the Kitchener - Cambridge – Waterloo region. These estimates show that Hamilton is still considered an affordable alternative to comparator communities.
- **Talent & Innovation Cluster:** The presence of key post-secondary institutions, including McMaster University and Mohawk College, Hamilton Technology Centre, McMaster Innovation Park, and Innovation Factory (iF), among others has ensured that the city has a network of strategic business resources to help ICT companies in Hamilton.
- **Responsive Educational Institutions and Programs:** Hamilton’s post-secondary institutions are effective in responding to industry needs. The Joint McMaster University & Mohawk College Bachelor of Technology Program, Mohawk College’s Graphic Design Advanced Diploma and Master of Technology Entrepreneurship and Innovation are key examples of universities enabling talent with technology and digital skills.
- **Skilled Labour Force:** 33% (81,355 people) of Hamilton’s population have post-secondary degrees related to ICT & Digital Media. Broad fields of study associated with the sector include visual and

<sup>12</sup> Canada's Innovation Corridor is the Toronto-Waterloo Region Corridor. <https://thecorridor.ca/>

performing arts, communications technologies, computer, and information sciences, providing evidence for the sector to meet its current and future labour force requirements.

- **Favourable Business Size:** Stakeholders mentioned that Hamilton is large enough to realize a critical mass but small enough to support community networks and communication. Relatedly, start-ups and small businesses feel that they are included and considered an integral part of the business environment.
- **Strong Business Environment:** As per the Canadian Business Counts, a total of 1,808 businesses were classified as ICT & Digital Media Industries. Businesses in the sector are also witnessing an increase in counts; the sector saw a net increase of 321 firms or a 22% growth from 2016 to 2019. Hamilton's ICT and Digital Media sector have grown at a far higher pace than all other industry sectors in the City, which showed a growth rate of 16% for the same time period.
- **Economic Contribution of the Sector:** GDP associated with this sector will reach almost \$1.3 billion<sup>13</sup>. The city's GDP in 2020 economy-wide will reach almost \$24 billion measured in constant 2012 dollars; thus, the ICT & Digital Media sector directly accounts for 3.5% of its GDP.
- **Software and Computer Services:** The software and computer services which include software publishers, computer systems design, and data processing is a major growth driver for the City. This sector is an integral part of the Canadian ICT sector and thus provides investment synergies for City.
- **Innovation in Healthcare:** Hamilton has an increased focus on IT integration, innovation, and commercialization in the health care sector. The presence of Hamilton Health Sciences (HHS) and the CREATE (CentRE for dAta science and digiTal hEalth) and Mohawk College eHealth & mHealth Development and Innovation Centre (MEDIC) along with healthcare IT firms are critical in this regard.
- **Hamilton Economic Development:** Majority of businesses consulted through stakeholder interviews identified that they have a strong relationship with Hamilton Economic Development. Businesses feel they can approach the Economic Development team for their business needs.

#### 4.2.2 Weakness

- **Gaps in Transportation Infrastructure:** Stakeholders identified that gaps in public transportation are affecting the ability of employees to commute to work, and businesses to attract young, knowledge workers to the downtown core. They pointed to a need for increased frequency of GO and LRT at high-density transit hubs.
- **Downtown Revitalization Gaps:** Perspectives shared by stakeholders identified that Hamilton's downtown does not provide a stimulating and appealing environment for investment. Furthermore, the downtown is disconnected, and businesses find it difficult to access downtown spaces and services, including restaurants, cultural and recreation opportunities.
- **Gaps in Talent Retention and Attraction:** Stakeholders identified that hiring and retaining skilled talent is a major challenge affecting business growth and expansion. While there is a robust talent pool of new graduates, businesses are finding it difficult to hire and retain experienced talent.

<sup>13</sup> metroeconomics' Community-Based Projection System

Businesses do offer internships and training programs to train new graduates. However, it is hard to find local talent with the right technical skills, for example, software developers & IT sales.

- **Labour Outflow:** Hamilton shows an outflow of its ICT & Digital Media labour force to surrounding communities, including Burlington, Toronto, Mississauga, and Oakville. The greatest outflow is in the professional, scientific, and technical services. This suggests that the local sector does not have enough job opportunities to employ the local labour force.
- **Businesses Unable to Reach Critical Mass:** Stakeholders suggested that small businesses in the sector are unable to self-sustain and scale-up. Challenges identified by businesses related to this include lack of investment, employee turnover and lack of brand identity.
- **A Dearth of Anchor Firms:** Stakeholders suggested that Hamilton is witnessing momentum in the growth of the ICT & Digital Media sector. However, the sector is dominated by small businesses and start-ups. The lack of anchor or flagship firms is affecting the viability of the sector, the ability to attract top talent and foster new business investment.
- **Gaps in C-level, or C-suite Leadership:** Related to the previous gap, Hamilton suffers from a gap in management expertise. It is understood that high-level executives demonstrate leadership skills and business expertise, as well as team-building abilities and decision-making skills. This is of significance for small and midsize businesses (SMEs) as they can learn from and access the benefits of such a formal structure.
- **Good News Business Strengths are not Communicated:** A theme frequently repeated in consultation with the sector is that businesses in the sector are not marketed effectively, hampering profitability and sustainability.
- **Ineffectual Branding of the City to Attract Business Investment:** Hamilton needs a brand that is attractive to businesses and positions them for investing in the community. There is a need to move away from the 'quality of life' messaging to a more 'what we offer businesses' message. Stakeholders also mentioned that Hamilton is still perceived as 'Blue Collar'. The City's strengths in the knowledge-based and creative economy sectors and cultural life are not recognized.
- **Partnerships are not Leveraged:** The City has several local assets, including educational institutions and incubators. However, a common theme highlighted in consultation efforts was that these partnerships were not fully leveraged. Opportunities exist to research and improve awareness and support to take full advantages of local assets.
- **OTAP not Recognized/Marketed Effectively:** The Office Tenancy Assistance Program (OTAP) is an interest-free loan program that allows business owners to improve their properties through loans worth up to \$450,000 with repayment terms up to five years. However, of the 80 businesses consulted through the business survey, 93% are not familiar with the Program.
- **Gaps in finding appropriate Physical Space:** Businesses indicated difficulties in finding appropriate space for their needs. While the Economic Development team is helpful in site selection, red tape and difficulties dealing with building and planning departments affect the development approvals process.
- **Poor Profile of Business Support Funds and/or Programs:** The business survey results suggest that Hamilton's businesses are not aware/familiar with Programs & Services provided by Hamilton

Business Centre, Innovation Factory, Hamilton's Soft-Landing Program, and the Business Improvement Area Commercial Property Improvement Grant Program. Stakeholder interviews further indicated that Hamilton economic development needs to effectively communicate the support services that they offer.

### 4.2.3 Opportunities

- **Focus on Success Stories:** Feedback from the business stakeholders identified the need for the city to focus on success stories to create awareness and improve recognition of the sector both within the community and externally.
- **Collaboration among Key Sectors:** Hamilton's focus on digital technology and advanced information technology provides opportunities for targeted growth and development strategies and actions in the creative and FIRE industry sectors.
- **Leverage the Post-Secondary Institutions:** As indicated in the strengths, McMaster University and Mohawk College are effective in responding to industry needs and creating programs. The City should foster more partnerships between industry and educators to create training and support programs that adapt to the new economy.
- **Reshoring Talent:** The commuting patterns data suggest a significant amount of the ICT & Digital Media talent that lives in Hamilton is commuting to other communities to work. Stakeholders identified that there was an appetite to reshore these talents by promoting telework or co-working stations in Hamilton.
- **Dedicated Directory of Businesses:** There is a desire among local businesses to be able to access the City's website or business directory and understand the universe of businesses/support activities within the sector.
- **Increased Awareness for McMaster Innovation Park and Innovation Factory (iF):** Businesses are not fully aware of the differences in McMaster Innovation Park & Innovation Factory and the programs and services offered; they are often viewed through the same lens.
- **City-Owned Incubator:** Appetite among businesses to see a business incubator that is owned and operated by the City. The idea stems from difficulties faced by software start-ups in accessing management training or office space. Businesses also suggested that a business incubator would improve their eligibility to access government funding. It should be noted that Hamilton is home to the Forge and the Hamilton Business Centre. This indicates a lack of awareness among businesses regarding the support systems available in the city.
- **Meet-ups, Mentorships and Networking Events:** Opportunities exist for Hamilton to invest in hosting events and networking to increase collaboration between technology companies, university partners, the city and new talent. The city should provide support to meet-ups (e.g., financing).
- **Changing Mindset:** Hamilton should move away from a competing mindset to a collaboration mindset. Instead of viewing Toronto and Kitchener as competitors, the City should gain a regional mindset, whereby it can leverage the flagship firms and associated opportunities provided by these communities in this sector. The growth of Hamilton's manufacturing sector is viewed as an organic process. The emerging health technology, digital media and creative industries are strengths for the City that should be leveraged by taking a regional approach to development.

#### 4.2.4 Threats

- **'Build to Flip' Mind-Set:** A common theme among Canadian technology-based entrepreneurs is they often start-up with a 'build to flip mindset and opt to exit via acquisition. Thus, a high proportion of start-ups never reach large-scale commercialization in Canada.
- **Unsustainable Start-Up Business Models:** Businesses are factoring the provincial tax credits in their business models, especially in the animation sector, which is highly subsidized. This business model is unsustainable as the wait for the provincial tax credit is too long (takes up to 2 years). Businesses are unable to bridge financing and struggle to stay afloat.
- **Gaps in Commercialization:** Hamilton's university and innovation partners are focussed on research and not commercialization. Late-stage start-ups face difficulties in scaling up and acceleration.
- **Intellectual Property Violations:** Intellectual property threats include threats from unauthorized copying over the internet, threats from hackers, and threats from employees.
- **Gaps in Funding/Venture Capital:** Businesses in the sector lack the funding supply and opportunities that Toronto and Kitchener can access. While firms in Hamilton have access to angel capital, the lack of a deeper venture capital network means that Hamilton firms are unable to participate in the commercialization and scaling up phase which may require financing of at least \$10 million.
- **Sector-based FDI:** Recent research published by EY<sup>14</sup> identified that while there was a dramatic surge in the overall number of FDI projects in the Hamilton region, FDI within the high-tech sector is comparatively low when compared to investments by firms in the mineral industry (energy and metallic minerals sector).
- **Lack of Progressive Regulation:** Within the tech sector, business models are regularly evolving. Governments need to be progressive to respond to these changes and develop and enforce regulations that protect businesses and the community and ensures that investment and innovation continues.
- **Lack of Progressive City Leadership:** Businesses felt that Hamilton's leadership needs to have a more progressive mindset and aggressively engage in opportunities that enhance infrastructure and investment in innovation.
- **Coronavirus (COVID-19) Crisis:** The economic challenges associated with COVID-19 are unprecedented. In addition to the serious implications for people's health and healthcare services, COVID-19 is having a significant impact on businesses and the economy. Businesses are navigating a broad range of interrelated issues that span from keeping their employees and customers safe, ensuring operations and supply chain are viable, shoring-up cash and liquidity, reorienting operations and navigating complicated government support programs.

<sup>14</sup> Toronto Global & Waterloo EDC – Technology & Innovation FDI Strategy Project – December 2019

## 5. Advancing Hamilton's ICT & Digital Media Ecosystem

### 5.1 Key Opportunity Areas & Considerations

This section highlights the key opportunities and considerations for Hamilton as it advances its ICT & Digital Media sector.

#### 5.1.1 Niche Sub-sectors

As identified through the SWOT analysis, Hamilton has unique opportunities to capitalize on several niche sectors, including Interactive Digital Media (IDM) and Health based Technologies.

Interactive Digital Media refers to the industry of user engaged digital platforms. As per the Measuring Success report<sup>15</sup>, IDM includes games developers and publishers, eLearning software developers, VR/AR/MR developers, VR arcades, mobile app developers, digital advertising firms, interactive site web developers and software developers servicing the above companies.

Hamilton has a number of successful businesses in the digital media space including Q4, Pipeline Studios, Clearcable, Nix Color Sensor, Fluidmedia and Calibre Communications. Supporting these businesses is a network of innovation and education partners. Some key examples include start-up programming provided by Innovation Factory, the Forge accelerator<sup>16</sup>, iDeaWORKS and Mohawk College's Graphic Design Advanced Diploma. Also, the AVR Development Lab at Mohawk College functions as a training and research hub for AR/VR (augmented and virtual reality).

As identified in the 2021 ICTC Outlook<sup>17</sup>, Virtual and Augmented Reality will be one of the five key technologies driving innovation in Canada. Moreover, as per the Measuring Success report<sup>18</sup>, Ontario's IDM companies are expected to see substantial growth over the coming years due to the advancements of businesses in this space. In 2017, the sector generated \$1.66 billion of revenue in 2017 with an implied profit margin of 31%.

Hamilton's technology strengths are also visible in the health sector, specifically in digital health. Opportunities include system integration, interoperability to prototype novel technologies and educating the next generation of digital health entrepreneurs.

The mHealth & eHealth Development and Innovation Centre (MEDIC) at Mohawk College with a focus on digital health serves to bridge the gap between innovative industries and the mobile health and ehealth needs of the healthcare system. In addition to MEDIC, McMaster University offers Canada's only masters in e-Health, designed to build capacity around digital health informatics. Further, the Institute for Applied Health Sciences, a joint collaboration between Mohawk and McMaster, enables real-world

<sup>15</sup> Measuring Success: The Impact of the Interactive Digital Media Sector in Ontario – 2nd edition. 2019

<sup>16</sup> Innovation Factory and McMaster University launched The Forge accelerator, a collaborative workspace in 2014.

<sup>17</sup> The Next Talent Wave: Navigating the Digital Shift – ICTC's Labour Market Outlook Report 2017-2021.

<sup>18</sup> Measuring Success: The Impact of the Interactive Digital Media Sector in Ontario – 2nd edition. 2019



experiences for more than 2,000 students a year.

### 5.1.2 Collaboration among Key Industry Sectors

As identified in Hamilton's 2016-2020 Economic Development Action Plan, key industry sectors identified for the city include advanced manufacturing, goods movement, agriculture and food processing, ICT & digital media, creative industries, life sciences, finance, insurance, and real estate (FIRE) and tourism.

Given that the permeation of technology across all industries is broadening, the city is well-positioned to leverage industry strengths and cross over opportunities in advanced manufacturing, creative industries, life sciences and the FIRE sector.

Digital media is one of the fastest-growing parts of the creative cultural industries, both as a sector onto itself, tied closely to gaming, and as a force transforming the creation and distribution of a wide range of cultural content. The recent investment of a production hub in the City-owned Barton-Tiffany lands will enable crossover opportunities in post-production, animation, visual effects, and game development.

ICT and the digital economy have given FIRE sector businesses access to big data and analytics, realise operational efficiency and improve customer experience. New technologies such as blockchain could make the financial services industry's infrastructure much less expensive and create seamless financial transactions and automated contractual agreements. Recent trends show that hyper-connectivity<sup>19</sup> will also pave the way for greater product customisation in the health sector. IoT technology has also enabled financial institutions to implement big data analytics to monitor for covert threats.

### 5.1.3 Leveraging Digital Transformation During COVID-19

As per the 2020 HSBC review of mid- to long-term implications, COVID-19 is significantly impacting on the technology sector, affecting raw materials supply, disrupting the electronics value chain, and causing an inflationary risk on products. However, the impact on the sector is not as significant as some of the hardest-hit sectors such as Commercial Aerospace, Recreation & Culture, Hospitality and Oil & Gas. More positively, disruption in the sector has caused an acceleration of remote working, and a rapid focus on evaluating and de-risking the end-to-end value chain. The report further predicts that in the mid to long-term, the sector will witness a digital transformation and 'servicisation' trend. Remote working, distance learning, online media content, telemedicine, eCommerce, and Real Estate "Servicisation" are among the key industries driving this transformation.

Hamilton is in a unique position to capitalize on their digital businesses and pave the way for digital transformation. A strong digital strategy is critical in this regard. In addition, the following insights can serve as key learnings for the city<sup>20</sup>:

- Creating a design thinking approach that focuses on end-users or businesses and provides real-time data that shows how suppliers, channel partners, and competitors are responding to the crisis, and how the ecosystem is evolving

<sup>19</sup> Referred to as the 'Internet of Things', big data analytics, sensor technology and the communicating will allow life and health insurers to anticipate risks and customer demands with far greater precision than ever before.

<sup>20</sup> <https://knowledge.insead.edu/blog/insead-blog/how-corporates-can-leverage-start-ups-against-covid-19-13756>

- Focus on highly practical challenges – e.g. transforming processes to allow for all-digital or remote working
- Leverage start-ups for problem-solving as they could directly support governments with innovative and fast solutions
- Improve access/visibility to funding for start-ups and public-sector partnerships to close the funding gap created as investors withdraw due to the economic downturn.

#### 5.1.4 ICT & Digital Media FDI Opportunity

As part of the strategy development for the ICT & Digital sector, a potential company targets exercise was completed for the City of Hamilton. The complete results are provided as an excel sheet to the City and form *Appendix III: Hamilton FDI Target List*. Key insights are provided here:

##### High Priority

- Eighteen potential targets that are larger and medium-sized high growth companies, primarily in ICT and out of California. The rationale for the IDM companies included the rapid expansion of these companies with offices across North America, Europe, and the Asia Pacific. Three of the targets are in IDM while four are in cloud solutions and one Gaming, AR/VR, autonomous vehicles, AI HQ. Cloud applications, Data science/analytics and Video conferencing are identified as sectors that will benefit from the COVID-19 pandemic.
- EdTech is an important sector given the impact of COVID-19. Companies are likely to be experiencing a growth spike due to the surge in remote learning in education. Target companies serving schools as opposed to adults. Sixteen potential targets were identified, the majority of which were HQ leads from the United States.
- Gaming is a strong fit for Hamilton, especially as some companies are beginning to deploy manufacturing applications. Eight potential targets were identified in this sector, the majority of which were cities in the United States, including San Francisco and Santa Monica. The targets include leading Game developers with a global footprint and largest game company in the Americas in terms of revenue and market capitalization. The sector is also identified to be less impacted by COVID-19.

##### Medium Priority

- Eleven potential targets in sports, the majority of which were sports analytics. It should be noted that a key action of Hamilton's 2016-2020 Economic Development Action Plan is to establish a Sports Analytics Cluster. This sector, while small, is rapidly evolving. Notably, this sub-sector has little or no presence in Canada, so Hamilton could have a first-mover advantage here. This sector is identified to be one of the sectors adversely affected by COVID-19.
- Nine potential targets in motion capture. They show long term prospect and are a great fit for Hamilton as a) it combines sports and manufacturing applications and b) is at the intersection of AR/VR and artificial intelligence. This sector is identified to be one of the sectors adversely affected by COVID-19.

##### Low Priority



- Twenty-three potential targets that are Toronto's small and high growth companies. These include IDM and software development. A small number of data centres are included. The results of the FDI analysis complements the sector analysis results that identified niche opportunities for Hamilton in IDM. However, it should be noted that Ontario is at a significant competitive disadvantage as compared to Quebec on account of electricity costs. Cloud computing companies are included as a better option.

While these potential targets provide a significant opportunity for Hamilton, it should be noted that the companies have not been qualified and need to be developed through conversations with the company.

### 5.1.5 City of Hamilton Role

A key insight that emerged from the consultation process was the need for clarity surrounding for Hamilton Economic Development's role in enabling further growth in the ICT & Digital Media sector. Stakeholders also identified a disconnect between the economic development, building and planning departments. Hamilton is home to many innovations and research partners. However, businesses are unaware of the various support and innovation systems available. Relatedly, there is a perception that innovation partners and firms work in silos and opportunities exist to better leverage these to ensure there is no duplication of services.

Considering this, there is a need to shift from a traditional "planner-provider-deliverer" model to an increasingly collaborative "enabler-convener-catalyst-broker" model. The collaboration includes those between and within municipal departments, community partners, business organizations and industries. This will allow the City to pool talent and resources and address growth opportunities in a collaborative and cohesive manner.

The enabler-convener-catalyst-broker model is essential to the health of Hamilton's ICT & Digital Media sector. In a planning and investment role, investing in placemaking initiatives through collaboration between various City departments including Planning, Economic Development and Parks and Recreation, among others, is essential. In a partnership role, Economic Development should continue to establish and sustain relationships with external partners, including education institutions, innovation partners, local businesses, and community partners. In a convener role, the City should build knowledge and strengthen collaboration through regular meet-ups and coordinated programming. Establishing digital platforms for continued communication is also essential.

## 5.2 Value Proposition

The value proposition for Hamilton's ICT & Digital Media sector has been assembled based on the results of the sector analysis, consultations, and key trends. It goes beyond the traditional messages and focuses on those assets and attributes that can enable the City to realize success in sector-based investment attraction and marketing. In preparing the value proposition for Hamilton's ICT & Digital Media sector, the value proposition for Interactive Digital Media in Ontario and the Toronto-Waterloo Region Corridor was considered.

Though the messaging targeted at the sector is consistent with that of the broader region (i.e. GTHA), it also identifies key factors that differentiate Hamilton from its closest competitors. The value proposition places the highest emphasis on several factors characteristic of most technology-based industries,

including labour force, education and training, local industry and incentives and business support programs. Some of the key differentiating points that should be highlighted to identify Hamilton's position in the ICT & Digital Media sector is described below.

### **5.2.1 A Strong and Highly Qualified Labour Force**

Hamilton is home to a strong and highly qualified labour force of 300,719 as of 2018. Most of this labour force is concentrated in industry sectors, including health care and social assistance, accounting for 13% of the total labour force. Manufacturing and retail trade accounts for 11% of the total labour force, each followed by educational services at 9% and professional, scientific, and technical services at 6%. Hamilton's labour force has grown by 8% within the past two years, an additional 22,074 people. The city is also home to a growing immigrant and multilingual population, at 25% of the total population. Hamilton's immigrant population base is higher than national rates at 22%.

In addition to the strong labour force, Hamilton enjoys a strong employment base in the ICT & Digital Media sector. As per current-year estimates, approximately 10,993 people are employed within Hamilton's ICT & Digital Media ecosystem. The majority of ICT & Digital Media professionals are employed within the computer systems design industry, accounting for 1,733 or 54% of all occupations. Employment in this sector is projected to grow by 13% to 2,462 jobs by 2025.

ICT & Digital Media professionals perform core occupations including information systems analysts and consultants, computer programmers and interactive media developers, graphic designers and illustrators, software engineers and designers and computer and information systems managers.

Hamilton's manufacturing strengths are evident in the digital technology sector, with labour force growth in a number of key IT equipment manufacturing industries (e.g. computers and peripheral equipment, communications equipment, and audio and video equipment manufacturing). Hamilton's ICT & Digital Media sector dominates in the employment of people employed as telecommunication carriers' managers at 87% and broadcast technicians at 84%.

Hamilton's strong employment in a range of ICT & Digital Media industries and occupations provides it with the potential to support the growth of core digital technology industries and peripheral digital technology sector in Hamilton and across the rest of the GTHA.

### **5.2.2 World-Class Education and Innovation with Unique Digital Technology Focus**

As of 2018, over 51% of Hamilton's population 15 years or older have a post-secondary degree. Hamilton's share of the population with post-secondary degrees related to the ICT & Digital Media sector is comparable to Ottawa, Halifax and Toronto and is higher than Winnipeg and London. Broad fields of study associated with the sector include visual and performing arts, and communications technologies, mathematics, computer and information sciences, physical and life sciences and technologies and engineering, and related technologies.

McMaster University and Mohawk College offer relevant programs at the diploma and degree (undergraduate and graduate) level, with unique sector-specific programming in areas that integrate digital technology into other sectors (e.g. health informatics, game development/entrepreneurship, adult education, and digital technology). In addition, the W Booth School of Engineering Practice provides interdisciplinary graduate education through the Master of Technology Entrepreneurship and

Innovation.

Hamilton's unique value proposition focuses on enabling IT integration, innovation, and commercialization in the health care sector. Key innovation partners include Mohawk eHealth & mHealth Development and Innovation Centre (MEDIC). MEDIC works with companies to help them launch and commercialize innovative new healthcare IT products and services, as well as provide a centre of excellence for organizations undertaking interconnected healthcare projects<sup>21</sup>.

McMaster Innovation Park (MIP) offers research opportunities in Hamilton in key industrial areas, including advanced manufacturing and materials, nanotechnology, and biotechnology. Current buildings include the Atrium@MIP, the McMaster Automotive Resource Centre, and the CanmetMATERIALS Laboratory.

Another key value proposition for Hamilton is the focus on Interactive Digital Media and the integration with the creative industries. The Joint McMaster University & Mohawk College Bachelor of Technology Program and Mohawk College's Graphic Design Advanced Diploma provide graduates with the skills to participate in the digital economy. Mohawk College's iDeaWORKS is a key partner, specifically in technologies including augmented & Virtual Reality, IoT and Big data.

The 2019 investment of a production hub in the City-owned Barton-Tiffany lands by Aeon Studio Group (ASG) is expected to create high-value, high-paying jobs in the film sector. Moreover, it will revitalize the brownfield, creating an accessible community that is conveniently located next to the West Harbour GO station and near our future LRT. This investment is of critical importance to the ICT & Digital Media sector as it enables crossover opportunities in post-production, animation, visual effects, and game development.

### **5.2.3 A Growing Digital Economy Industry Base**

Hamilton has an emerging technology cluster where firms drive innovation, growth, and productivity. The city is home to 1,808 firms, including core digital technology companies in professional and information technology services and support firms in ICT manufacturing, ICT wholesale, education and maintenance and repair to support the sector.

Hamilton's industry base is slightly more characteristic of entrepreneurs and small businesses, with a slightly higher profile of self-employed than across the rest of the GTA. The strong economic performance of Hamilton's ICT & Digital Media sector has been driven by the Professional and Technical Services. Computer systems design and graphic design are some of the services driving growth within the sub-sector.

Other major growth drivers are the motion picture and video production firms and businesses involved in the publishing of software. Digital media is an important aspect of these industries for the production and delivery of content including motion pictures, videos, television programs or commercials.

Educational support services are comparatively higher in Hamilton than across the GTHA, providing the city with unique strengths, specifically in digital health and interactive digital media. Hamilton's ICT manufacturing industries are comparable to communities across the GTHA and represent a consistent market for new digital technology product and service integration and innovation.

<sup>21</sup> <https://investinhamilton.ca/wp-content/uploads/2019/06/EcDev-0916-ICT-Knowledge-Brochure-NEW.pdf>

## 5.2.4 Hamilton is a Strong Base for ICT & Digital Media Growth and Investment

The operating cost environment in a jurisdiction is an important factor for each of the targeted sectors. From a business perspective, locating in Hamilton allows firms to run leaner operations compared to the well-known industry locations such as Toronto and Markham. From a talent perspective, Hamilton provides highly skilled workers with a much lower cost of living compared to most other locations in the GTA. Considering the demand for office market across the GTA, Hamilton's market is well-positioned to offer downtown office space with lower lease rates.

Hamilton offers a range of office and commercial spaces that have the potential to support these targeted industry activities on a temporary and permanent basis, which is further enhanced by a comparative lack of traffic congestion and parking issues that are often experienced in other larger municipalities. Recent investments made by co-working space providers have also introduced teleworking options and short-term rental-based spaces.

The Office Tenancy Assistance Program<sup>22</sup> also provides financial assistance to either building owners or tenants for eligible leasehold improvements to office buildings located within Downtown Hamilton, Community Downtowns, the Mount Hope / Airport Gateway, Business Improvement Areas (BIAs) and the commercial corridors along Barton Street, east of the Barton Village BIA and along Kenilworth Avenue North as identified in the Downtown and Community Renewal Community Improvement Project Area By-law. The intent of the Program is to facilitate the increased attractiveness and marketability of the office stock and reduce the office vacancy rate by attracting new office tenants, and owner-occupied office uses from outside the City, and to assist existing businesses to expand. Acting as a lender, the City provides financial support for the Program in the form of a zero-interest loan.

The ICT & Digital Media sector benefits from a supportive government at the local, provincial, and federal levels. As identified in the Hamilton Economic Development Strategy, the sector is a priority sector. The Provincial government is a key ally in helping to promote the industry across Ontario and around the world. Specific to the sector, the provincial and federal government offers incentives aimed at digital media, production, and animation companies.

<sup>22</sup> Ibid.

## 6. ICT and Digital Media Sector Action Plan

The primary focus of the City of Hamilton ICT & Digital Media Sector FDI Strategy was to build a strong body of knowledge to inform subsequent, research, consultation, and strategy formulation.

The recommendations and associated actions for Hamilton’s ICT and Digital Media Sector build on Canada's Economic Strategy Tables: Digital Industries. The Economic Strategy Tables—a new model for industry-government collaboration—were announced as part of the Government of Canada's Innovation and Skills Plan to support economic growth in six key sectors, including digital industries.

The recommendations that follow help position and prepare the City for future sector investment and strategic planning.

Recommendation #1: Foster an ICT & Digital Media Growth Environment	
Why is this important?	<p>Firms in Hamilton’s ICT &amp; Digital Media sector have mentioned barriers to productivity and commercialization, communication, and collaboration.</p> <p>Hamilton has the unique opportunity to foster higher levels of productivity and innovation in the ICT &amp; Digital Media sector by understanding the needs of local businesses, having access to up to date market research and responding to market signals.</p>
Outcome	A cohesive sector with the data, support services and networks to enable business growth, innovation, and investment.
Actions	<ul style="list-style-type: none"> <li>▪ Use statistically valid survey tools to better understand the issues faced by firms in the sector, including barriers to commercializing and bringing new technologies to market. A bi-annual Triage BR+E survey will effectively measure the health of local businesses.</li> <li>▪ Explore the feasibility of creating an online asset map tool which showcases Hamilton’s ICT &amp; Digital Media businesses and support systems (e.g. Waterloo EDC Market data<sup>23</sup>). This will ensure that existing firms are aware of key service providers and local/regional supply chain linkages and also act as a marketing tool.</li> <li>▪ Create and host signature events that allow businesses to engage with resources and partners that strengthen and grow the sector.</li> <li>▪ In partnership with the creative sector, existing co-working spaces and innovation partners, work toward co-locating independent artists, arts and culture non-profit groups, and small digital and interactive technology firms.</li> </ul>

<sup>23</sup> <https://www.waterlooodc.ca/en/market-data/market-data.aspx>

	<ul style="list-style-type: none"> <li>▪ Explore the feasibility of collaborating with Hamilton’s Creative Exchange, to examine crossover benefits between Hamilton’s creative industries and Digital Media.</li> <li>▪ Support the development of an industry-driven peer organization to enable professionals to share challenges and best practices. (e.g. Toronto’s TechConnex or Communitech Peer2Peer Network).</li> <li>▪ Consider the development of an ICT &amp; Digital Media Sector Council comprising of industry partners (similar to Mississauga’s Industry Sector Councils). The Council should also include representation from post-secondary and innovation partners, City department and the Mayor’s Office.</li> </ul>
<b>Recommendation #2: Support Skills Development, Talent Attraction and Retention</b>	
<p>Why is this important?</p>	<p>Hamilton is one of the 25 up-and-coming global tech talent markets<sup>24</sup>. As home to McMaster University and Mohawk College, the city is a significant source of a skilled tech talent pipeline. However, firms in the sector mention challenges with attracting and retaining talent and difficulties in hiring skilled talent with the technical skills to perform tasks. Hamilton also has management expertise.</p> <p>There is a significant opportunity to further leverage the post-secondary institutions and innovation partners to provide a talent pipeline enables sector growth.</p>
<p>Outcome</p>	<p>A world-class quality talent pipeline committed to mutual success ensures local firm growth and serves as a global marketing tool for the city.</p>
<p>Actions</p>	<ul style="list-style-type: none"> <li>▪ Leverage Workforce Planning Hamilton to develop projects that will provide accurate and current information on the evolving Tech-based labour market.</li> <li>▪ Continuously engage with local businesses to understand their evolving skill needs. A dedicated resource such as university students could be engaged to reach out to local businesses.</li> <li>▪ In understanding the skill needs of local firms, engage with academic partners to develop training and retraining programs to ensure that the talent has the right skills to participate in the labour force.</li> <li>▪ As a facilitator, convene a quarterly forum, inviting CEO’s and technology leaders of firms in Hamilton and the GTHA to share insights with Hamilton firms to grow their management expertise (similar model to Platform Calgary CEO roundtable).</li> <li>▪ In conjunction with firms in the sector, examine opportunities to encourage continuous workplace learning for students whereby students receive on the job experience or training.</li> <li>▪ Leverage the flexible Joint Intellectual Property Policy of McMaster University to drive research into commercialization and entrepreneurship.</li> </ul>

<sup>24</sup> 2019 CBRE scoring tech talent report. The study reviewed cities based on their ability to attract and grow tech talent.

<b>Recommendation #3: Targeted Investment Attraction in Niche Sectors</b>	
<b>Why is this important?</b>	<p>While FDI increased significantly, there is room for growth in the ICT/digital media sector, which accounts for only 4% of all industries in the City.</p> <p>Hamilton has the unique opportunity to identify medium and large companies in niche sectors to improve its competitive positioning and long-term growth prospects. This will also enable the city to reverse the labour leakage that it is currently witnessing.</p>
<b>Outcome</b>	A growth sector with ongoing investment in niche industries, enhanced competitiveness, and job creation.
<b>Actions</b>	<ul style="list-style-type: none"> <li>▪ Regularly monitor foreign direct investment (FDI) opportunities in niche sectors, including Interactive Digital Media and Digital Health.</li> <li>▪ Explore the possibility of designating an ICT &amp; Digital Media Industry expert who can advise Hamilton’s Economic Development team on niche sector opportunities.</li> <li>▪ Develop high-quality marketing materials that highlight Hamilton’s unique sector-based value proposition.</li> <li>▪ Assess the opportunity for targeted financial incentives for attracting businesses to the sector. Develop targeted incentives can enable the attraction of firms and ensure that Hamilton is able to foster growth in HQ and flagship firms.</li> </ul>
<b>Recommendation #4: Showcase Hamilton’s ICT &amp; Digital Media Sector through Marketing and Branding</b>	
<b>Why is this important?</b>	<p>Hamilton is still perceived as ‘Blue Collar’ by potential investors looking to locate in the GTHA.</p> <p>There is a unique opportunity for Hamilton to highlight its value proposition, including niche sectors, industry sector collaboration, FDI opportunity, and ability to leverage digital transformation during COVID-19.</p>
<b>Outcome</b>	A global Hamilton brand with a unique value proposition that is effectively marketed to local, regional, and international markets.
<b>Actions</b>	<ul style="list-style-type: none"> <li>▪ Continue to raise the profile of both start-ups and established digital and interactive enterprises both within the community and externally to better support accelerated innovation and firm growth.</li> <li>▪ Create a central hub of information on the labour force profile, events and networking sessions, funding opportunities, partner information, existing business profiles, business support services and research and development opportunities.</li> <li>▪ In addressing the need for businesses support and services, promote existing supports, including Hamilton Business Centre and Innovation Factory.</li> </ul>

	<ul style="list-style-type: none"><li>▪ Create a local ICT &amp; Digital Media Sector campaign that highlights business retention and attraction efforts. Develop targeted marketing materials or industry profiles that highlight success stories and current and emerging opportunities in the sector.</li><li>▪ Seek out local champions that can promote the City's ICT &amp; Digital Media sector. An industry-led initiative will better enable the municipality to attract investment, post-secondary support while strengthening the capabilities of local businesses.</li></ul>
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## Appendices

Appendix I – Background Review

Appendix II - Industry Subsectors and Value Chain

Appendix III – metroeconomics' Community-Based Projection System

Appendix IV – Description of Location Quotient (LQ)

Appendix V – Results of the ICT and Digital Media Business Survey

## Appendix I – Background Review

The City of Hamilton in recognising the importance of a diversified economy identified key industry sectors as part of the *2016-2020 Economic Development Action Plan*. The ICT and Digital Media Sector was identified as one of the 8 key industry sectors, enabling the City to leverage finite resources to engage in sector-specific business development and attraction initiatives. Initiatives included the assignment of a staff lead for the sector, enabling targeted business attraction and retention and building knowledge and expertise that can provide value to associated local businesses. Major actions identified in the Plan that relate to the sector are:

- Develop and implement an ICT & Digital Media Sector Strategy
- Create and implement a Digital Strategy for the City of Hamilton that identifies strategies to improve the ICT infrastructure (broadband/internet) in the city
- Complete a comprehensive asset mapping exercise of all ICT sector companies and infrastructure
- Establish a Sports Analytics Cluster to pursue a nationally recognized area of expertise

Key themes that emerged from the review are explored below:

### Small Business Development and Entrepreneurship Support

A key focus area for Hamilton is to *provide assistance to new and growing businesses through programs and services to foster and grow Hamilton's entrepreneurial eco-system*. This is of critical importance to the ICT and Digital Media sector, given that the sector is largely comprised of start-ups, single operator firms and small businesses.

The Hamilton Business Centre, operating as an arm of the Economic Development Division of the City of Hamilton, is a major opportunity for small business growth. The Centre is a one-stop source for business information, providing core programming for mid and late-career entrepreneurs and sector-specific entrepreneurial programming.

### Enabling Environment for Business Growth

Hamilton's strategic location as part of the Greater Toronto and Hamilton Area (GTHA) provides an enabling environment for new businesses investment and growth in the ICT and Digital Media sector. Hamilton's affordable office market when compared to surrounding regions, acts as another key growth enabler. As per the 2019 CBRE report<sup>25</sup>, Hamilton's metro office gross rental space was only \$23.80 per square foot compared to over \$55 in downtown Toronto.

Business incubators, accelerators and innovation support including The Forge, McMaster Innovation Park, ideaWORKS, mHealth & eHealth Development and Innovation Centre (MEDIC), Surge, Hamilton Health Sciences (HHS) and the CREATE (CentRE for dAta science and digiTal hEalth) team act as important support systems for ICT & Digital Media Sector growth. Software Hamilton is a key newsletter, providing news coverage for the Hamilton, Ontario technology and start-up community.

The Hamilton Technology Centre previously operated by the City's Economic Development Department is a private innovation hub owned and operated by Clearcable Networks. The Centre is a modern 40,000 square foot, fibre optic equipped incubator providing investment and leadership for emerging

<sup>25</sup> 2019 Scoring Canadian Tech Talent CBRE

technology companies and connects with other community initiatives such as the McMaster Innovation Park, Innovation Factory and Hamilton Hive.

In addition to local support, the Innovation Factory (iF), a Regional Innovation Centre (RIC) based in Hamilton provides start-up resources, programming, and mentorship to early-stage companies. Innovation Factory has strong expertise within the Information Technology sector.

### Enabling Environment for Talent Growth

The City is home to key post-secondary institutions including McMaster University and Mohawk College, focused on developing and retaining quality tech talent. This is of particular relevance, given that workforce development is a key focus area of the *2016-2020 Economic Development Action Plan*. Specific actions identified include increased support for youth through mentorship, entrepreneurship, and peer programs, to allow for greater opportunities to identify career pathways.

Hamilton has become a key up-and-coming tech market due to significant growth across the tech talent pool. A report published by CBRE<sup>26</sup> which measured 20 Canadian cities by their competitive advantages and appeal for tech workers and employers, found that Hamilton experienced the fastest pace of growth amongst mid and small markets in terms of talent availability, growing by 52.9% to 18,200 over a five-year period (2013-2018). This has resulted in tech talent representing 5.1% of Hamilton's total labour force, only slightly below the Ontario average of 5.3%.

In addition to a large talent pool, the report found that Hamilton possesses an abundance of high-quality tech labour with an overall quality rating of A- (excellent). Quality labour is especially important in the tech sector due to the high cost involved in acquiring new talent and is a key consideration for firms when moving to a region. McMaster University and Mohawk College's continued focus on developing ICT centred degrees, such as their joint Bachelor of Technology program, which is the fastest-growing program at McMaster, has resulted in strong talent growth locally. Overall, the report ranked Hamilton 9th in Canada for tech degree completion (804), representing an 8.8% growth over a five-year period ending in 2012-17.

### Investment Attraction

The City of Hamilton has developed key initiatives to ensure key investment and business growth in industry sectors. Programs include the Office Tenancy Assistance Program, which provides financial assistance (up to \$450,000) to either building owners or tenants for eligible leasehold improvements to office buildings located within Downtown Hamilton and surrounding areas. The aim of the program is to reduce office tenancy rates by attracting new businesses to the area.

The City has also implemented a data collection and analysis program that assess the needs, opportunities, and trends of the business community. The data helps identify gaps and opportunities for new investment and reveal possible international parent companies and business contacts.

A key theme identified within the *2016-2020 Economic Development Action Plan* was the need to continue diversifying Hamilton's economy through increasing investment attraction activities.

As per the *2015 City of Hamilton Foreign Direct Investment Economic Development Strategy*, Hamilton's location is advantageous as Canada has the G7's lowest costs in R&D-intensive sectors (up to 15.8% lower than the U.S. average). Specific opportunity sectors include ICT manufacturing, ICT wholesaling,

<sup>26</sup> 2019 Scoring Canadian Tech Talent CBRE

software and computer services, communications services along with Interactive Digital Media (IDM) subsectors (post-production, SFX and animation, internet-online commercial information providers) and other IDM-Related subsectors. The report identifies specific geographic targets for the City, such as the GTA, California and Brazil.

Recent research published by EY<sup>27</sup>, which mapped Foreign Direct Investment Inflows across the Toronto-Waterloo Corridor, showed that average FDI inflows for Hamilton across all sectors increased dramatically, from US\$35.7M for the 2003 – 2010 period to US\$123.2M during 2011 – 2017. Hamilton's FDI share for 2011 – 2017 is 16% of total FDI inflows in the Corridor. This dramatic increase was caused by a surge in the overall number of FDI projects in the Hamilton region, increasing from 13 to 24 across the two periods, and affirms the region's attractiveness as a destination for FDI. However, FDI within the high-tech sector fell 35% across the same two time periods as large investments by firms in the mineral industry (energy and metallic minerals sector) distorted investments made by international firms within the high-tech sector.

It is important to note that these trends represent total FDI inflows across all sectors and therefore should be viewed as a general indicator on the overall health of Hamilton's economy and its competitiveness in attracting FDI.

### Improving ICT Infrastructure

Another key theme that emerged from the *2016-2020 Economic Development Action Plan* was the need to develop and implement a Digital Strategy for the city that improves ICT infrastructure in both urban and rural areas. Specifically, the report detailed a 'stretch target' of improving internet speeds to 250 megabits/second to all rural areas, 1 gigabit/second to all urban Hamilton and 10 gigabit/second to all business parks and major commercial areas. Establishing a data centre within the city to support the ICT sector was also identified as a potential action.

<sup>27</sup> Toronto Global & Waterloo EDC – Technology & Innovation FDI Strategy Project – December 2019

## Appendix II – Industry Subsectors and Value Chain

### ICT & DM Industries Sub-sector Businesses with and without Employees, 2019

NAICS	ICT & DM Industries Sub-sectors	Total		Without employees		With employees	
		Count	% of total	Count	% of total	Count	% of total
<b>ICT &amp; DM</b>		<b>1,808</b>	<b>100.0%</b>	<b>1,221</b>	<b>68%</b>	<b>587</b>	<b>32%</b>
<b>ICT &amp; DM - Manufacturing</b>		<b>24</b>	<b>1.3%</b>	<b>11</b>	<b>46%</b>	<b>13</b>	<b>54%</b>
334512	Measuring, medical and controlling devices manufacturing	7	0.4%	0	0%	7	100%
334110	Computer and peripheral equipment manufacturing	5	0.3%	4	80%	1	20%
334310	Audio and video equipment manufacturing	4	0.2%	3	75%	1	25%
334290	Other communications equipment manufacturing	3	0.2%	1	33%	2	67%
334410	Semiconductor and another electronic component manufacturing	2	0.1%	1	50%	1	50%
334610	Manufacturing and reproducing magnetic and optical media	2	0.1%	1	50%	1	50%
334220	Radio television broadcasting and wireless communications equipment manufacturing	1	0.1%	1	100%	0	0%
334210	Telephone apparatus manufacturing	0	0%	0		0	
334511	Navigational and guidance instruments manufacturing	0	0%	0		0	
<b>ICT &amp; DM - Wholesale</b>		<b>25</b>	<b>1.4%</b>	<b>11</b>	<b>44%</b>	<b>14</b>	<b>56%</b>
417310	Computer, computer peripheral and pre-packaged software merchant wholesalers	14	0.8%	5	36%	9	64%
417320	Electronic components, navigational & comm. equip. & supplies merchant wholesalers	11	0.6%	6	55%	5	45%
<b>ICT &amp; DM - Information and Cultural</b>		<b>547</b>	<b>30.3%</b>	<b>370</b>	<b>68%</b>	<b>177</b>	<b>32%</b>
512110	Motion picture and video production	202	11.2%	167	83%	35	17%
517911	Telecommunications resellers	42	2.3%	0	0%	42	100%
519190	All other information services	41	2.3%	40	98%	1	2%
519130	Internet broadcasting and web search portals	38	2.1%	32	84%	6	16%
518210	Data processing, hosting, and related services	37	2.0%	28	76%	9	24%
511211	Software publishers (except video game publishers)	30	1.7%	16	53%	14	47%
517919	All other telecommunications	26	1.4%	19	73%	7	27%
517310	Wired and wireless telecommunications carriers (except satellite	22	1.2%	2	9%	20	91%
512190	Post-production and other motion picture and video industries	15	0.8%	11	73%	4	27%
515110	Radio broadcasting	13	0.7%	5	38%	8	62%
519121	Libraries	13	0.7%	0	0%	13	100%
512290	Other sound recording industries	11	0.6%	10	91%	1	9%

NAICS	ICT & DM Industries Sub-sectors	Total		Without employees		With employees	
		Count	% of total	Count	% of total	Count	% of total
512240	Sound recording studios	10	0.6%	8	80%	2	20%
512130	Motion picture and video exhibition	8	0.4%	3	38%	5	63%
515120	Television broadcasting	8	0.4%	5	63%	3	38%
512250	Record production and distribution	6	0.3%	4	67%	2	33%
511212	Video game publishers	5	0.3%	4	80%	1	20%
512230	Music publishers	5	0.3%	3	60%	2	40%
517410	Satellite telecommunications	5	0.3%	5	100%	0	0%
512120	Motion picture and video distribution	4	0.2%	4	100%	0	0%
519110	News syndicates	3	0.2%	2	67%	1	33%
515210	Pay and specialty television	2	0.1%	2	100%	0	0%
519122	Archives	1	0.1%	0	0%	1	100%
<b>ICT &amp; DM - Professional and Technical Services</b>		<b>1,083</b>	<b>59.9%</b>	<b>739</b>	<b>68%</b>	<b>344</b>	<b>32%</b>
541514	Computer systems design & related services (except video game design & development	772	42.7%	491	64%	281	36%
541430	Graphic design services	134	7.4%	108	81%	26	19%
541410	Interior design services	113	6.3%	86	76%	27	24%
541490	Other specialized design services	30	1.7%	27	90%	3	10%
541420	Industrial design services	18	1.0%	13	72%	5	28%
541515	Video game design and development services	16	0.9%	14	88%	2	13%
<b>ICT &amp; DM - Educational Services</b>		<b>79</b>	<b>4.4%</b>	<b>60</b>	<b>76%</b>	<b>19</b>	<b>24%</b>
611430	Professional and management development training	61	3.4%	47	77%	14	23%
611420	Computer training	15	0.8%	11	73%	4	27%
611410	Business and secretarial schools	3	0.2%	2	67%	1	33%
<b>ICT &amp; DM - Other Services</b>		<b>50</b>	<b>2.8%</b>	<b>30</b>	<b>60%</b>	<b>20</b>	<b>40%</b>
811210	Electronic and precision equipment repair and maintenance	50	2.8%	30	60%	20	40%

Source: Canadian Business Counts, June 2019

ICT & DM Industries Sub-sector Businesses with Employees by Range, 2019

NAICS	ICT & DM Industries Sub-sectors	With employees								
		Count	% of total	1-4	5-9	10-19	20-49	50-99	100-199	200-499
<b>ICT &amp; DM</b>		<b>587</b>	<b>32%</b>	<b>415</b>	<b>93</b>	<b>46</b>	<b>21</b>	<b>9</b>	<b>1</b>	<b>2</b>
<b>ICT &amp; DM - Manufacturing</b>		<b>13</b>	<b>54%</b>	<b>7</b>	<b>1</b>	<b>4</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>
334110	Computer and peripheral equipment manufacturing	1	20%	1	0	0	0	0	0	0
334210	Telephone apparatus manufacturing	0		0	0	0	0	0	0	0
334220	Radio & television broadcasting & wireless communications equipment manufacturing	0	0%	0	0	0	0	0	0	0
334290	Other communications equipment manufacturing	2	67%	1	0	1	0	0	0	0
334310	Audio and video equipment manufacturing	1	25%	1	0	0	0	0	0	0
334410	Semiconductor and another electronic component manufacturing	1	50%	0	0	1	0	0	0	0
334511	Navigational and guidance instruments manufacturing	0		0	0	0	0	0	0	0
334512	Measuring, medical and controlling devices manufacturing	7	100%	3	1	2	1	0	0	0
334610	Manufacturing and reproducing magnetic and optical media	1	50%	1	0	0	0	0	0	0
<b>ICT &amp; DM - Wholesale</b>		<b>14</b>	<b>56%</b>	<b>7</b>	<b>6</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>
417310	Computer, computer peripheral and pre-packaged software merchant wholesalers	9	64%	4	4	0	1	0	0	0
417320	Electronic components, navigational & comm. equip. & supplies merchant wholesalers	5	45%	3	2	0	0	0	0	0
<b>ICT &amp; DM - Information and Cultural</b>		<b>177</b>	<b>32%</b>	<b>87</b>	<b>45</b>	<b>23</b>	<b>13</b>	<b>6</b>	<b>1</b>	<b>2</b>
511211	Software publishers (except video game publishers)	14	47%	6	2	5	1	0	0	0
511212	Video game publishers	1	20%	1	0	0	0	0	0	0
512110	Motion picture and video production	35	17%	31	2	0	1	1	0	0
512120	Motion picture and video distribution	0	0%	0	0	0	0	0	0	0
512130	Motion picture and video exhibition	5	63%	1	0	0	1	3	0	0
512190	Post-production and other motion picture and video industries	4	27%	3	0	0	1	0	0	0
512230	Music publishers	2	40%	2	0	0	0	0	0	0
512240	Sound recording studios	2	20%	1	1	0	0	0	0	0
512250	Record production and distribution	2	33%	1	1	0	0	0	0	0
512290	Other sound recording industries	1	9%	1	0	0	0	0	0	0
515110	Radio broadcasting	8	62%	0	3	4	1	0	0	0
515120	Television broadcasting	3	38%	2	0	0	0	1	0	0
515210	Pay and specialty television	0	0%	0	0	0	0	0	0	0
517310	Wired and wireless telecommunications carriers (except satellite)	20	91%	7	5	2	4	1	1	0
517410	Satellite telecommunications	0	0%	0	0	0	0	0	0	0
517911	Telecommunications resellers	42	100%	15	13	10	4	0	0	0

517919	All other telecommunications	7	27%	5	1	1	0	0	0	0
518210	Data processing, hosting, and related services	9	24%	5	3	1	0	0	0	0
519110	News syndicates	1	33%	0	1	0	0	0	0	0
519121	Libraries	13	100%	0	12	0	0	0	0	1
519122	Archives	1	100%	1	0	0	0	0	0	0
519130	Internet broadcasting and web search portals	6	16%	4	1	0	0	0	0	1
519190	All other information services	1	2%	1	0	0	0	0	0	0
<b>ICT &amp; DM - Professional and Technical Services</b>		<b>344</b>	<b>32%</b>	<b>283</b>	<b>36</b>	<b>18</b>	<b>5</b>	<b>2</b>	<b>0</b>	<b>0</b>
541410	Interior design services	27	24%	21	6	0	0	0	0	0
541420	Industrial design services	5	28%	3	1	0	1	0	0	0
541430	Graphic design services	26	19%	23	2	1	0	0	0	0
541490	Other specialized design services	3	10%	3	0	0	0	0	0	0
541514	Computer systems design & related services (except video game design & development)	281	36%	231	27	17	4	2	0	0
541515	Video game design and development services	2	13%	2	0	0	0	0	0	0
<b>ICT &amp; DM - Educational Services</b>		<b>19</b>	<b>24%</b>	<b>13</b>	<b>3</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>
611410	Business and secretarial schools	1	33%	0	1	0	0	0	0	0
611420	Computer training	4	27%	4	0	0	0	0	0	0
611430	Professional and management development training	14	23%	9	2	1	1	1	0	0
<b>ICT &amp; DM - Other Services</b>		<b>20</b>	<b>40%</b>	<b>18</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
811210	Electronic and precision equipment repair and maintenance	20	40%	18	2	0	0	0	0	0

Source: Canadian Business Counts, June 2019



## Appendix III – metroeconomics' Community-Based Projection System

Employment by industry in any given area can be decomposed into economic base jobs (those that drive the overall economy) and community base jobs (those that serve the local population). The population growth of an area typically depends on its potential for growth in economic base employment while an area's growth in community base employment depends on its population growth. In recognition of this interdependence between population and employment growth *metroeconomics* has developed a community-based projection system that takes account of the economic and demographic factors influencing an area's growth potential. The system takes these factors into account as follows:

- the economic base of the community is identified through the de-composition of local jobs on a place of work basis by industry into those that are *economic base* jobs and those that are *community base* jobs; this is achieved using a location quotient process
- economic base industries produce goods and services consumed primarily by businesses or people outside of the local community; these industries – also called export based industries – produce agriculture, mining or manufactured products for consumption elsewhere or provide tourism or higher-order education/health care services to visitors/temporary residents
- the potential for growth of a local community's economic base jobs is identified through assessing how many such jobs exist today and how many might exist in the future drawing on *metroeconomics'* extensive forecasts of economic base industrial job trends nation-wide and province-wide
- an assessment is also made of the potential for local residents to commute to jobs in nearby employment locations drawing on existing patterns and on *metroeconomics'* base case forecasts of such jobs by sub-provincial area across the country
- the potential for job growth within the local area and for job growth in nearby locations determines the potential for job growth among local residents
- the *metroeconomics* system ties this resident job growth potential to the demographic side of the community; if potential job growth among residents exceeds the current supply of workers (based on an age and gender assessment of the current population, age specific rates of labour force participation, the level of unemployment, and the need to replace retiring workers), in-migration occurs; thus job growth potential determines population growth potential recognizing that each new job-holding resident typically brings along one or two dependents
- the system further takes into account the fact that each new resident job-holder increases the need for workers who service the local population – the community base jobs – and that these additional community base jobs, in turn, create the need for more workers, more residents, etc.
- employed resident's growth, in other words, drives the community's net in-migration requirements which, along with standard assumptions regarding fertility and mortality rates, provide the parameters needed to develop local area population projections by age and gender
- projected economic base jobs by industry are added to projected community base jobs by industry to determine the total number of jobs by place of work that will exist in the community in the decades ahead

The Location Quotient procedure is carried out as follows:

- All jobs in agriculture and forestry, in mining and oil and gas extraction, and in manufacturing are considered to be economic base jobs as most of their production is consumed by businesses and people outside of the area.
- For all other industries the number of jobs per 1,000 residents in the Calgary CMA is compared to that ratio across all 32 CMAs in Canada as a group. Where the ratio in an industry in the CMA exceeds that of all CMAs it is assumed the excess jobs in the Calgary CMA are providing services to people or businesses outside of the CMA. These excess jobs are defined as export based service jobs and their output as exportable services.

## Appendix IV – Description of Location Quotient (LQ)

A Location Quotient (LQ) analysis provides information on the concentration of jobs or industries in a community of interest relative to an over-arching area, usually the province or nation. It can reveal what makes a particular region “unique”. LQ’s Classifications:

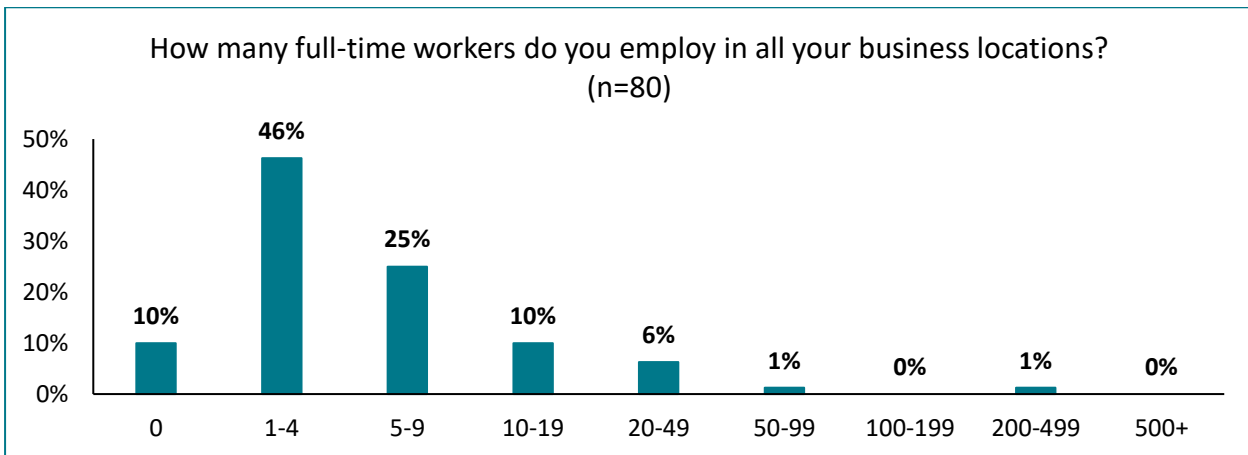
1. LQ greater than or equal to 1.25 – indicates that the community has a proportionately **‘high’** concentration of workers/industries than the larger comparison area employed in a specific industry.
2. LQ lower than 1.25 and higher than 1.0 – indicates that the community has an **‘above average’** concentration of workers/industries than the larger comparison area employed in a specific industry.
3. LQ 1.0 – indicates employment/industry concentration in the community is **‘on par’** with the larger comparison area employed in a specific industry.
4. LQ lower than 1.0 and higher than 0.75 – indicates that the community has a **‘moderate’** concentration of workers/industries than the larger comparison area employed in a specific industry.
5. LQ lower than 0.75 - indicates that the community has a **‘low’** concentration of workers/industries than the larger comparison area employed in a specific industry.

## Appendix V – Results of the ICT and Digital Media Business Survey

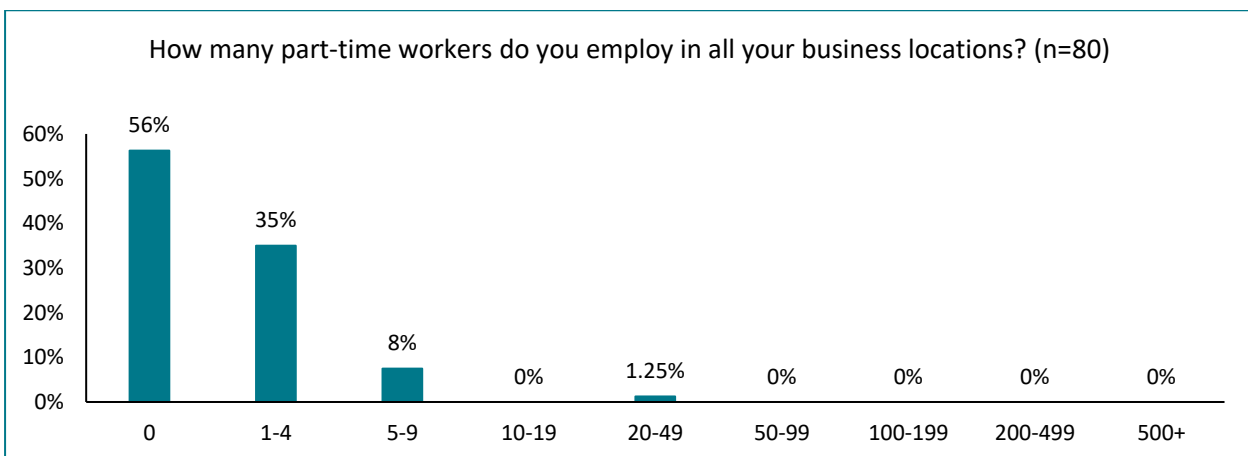
1. What type of business do you operate? *Read & Record one response*

What type of business do you operate?	n=56
Data Processing, Hosting, and Related Services	2
Software Publishers	2
Other Computer Related Services	3
All other	5
ICT	6
Telecommunications	8
Custom Computer Programming Services	15
Design & Digital Media	15

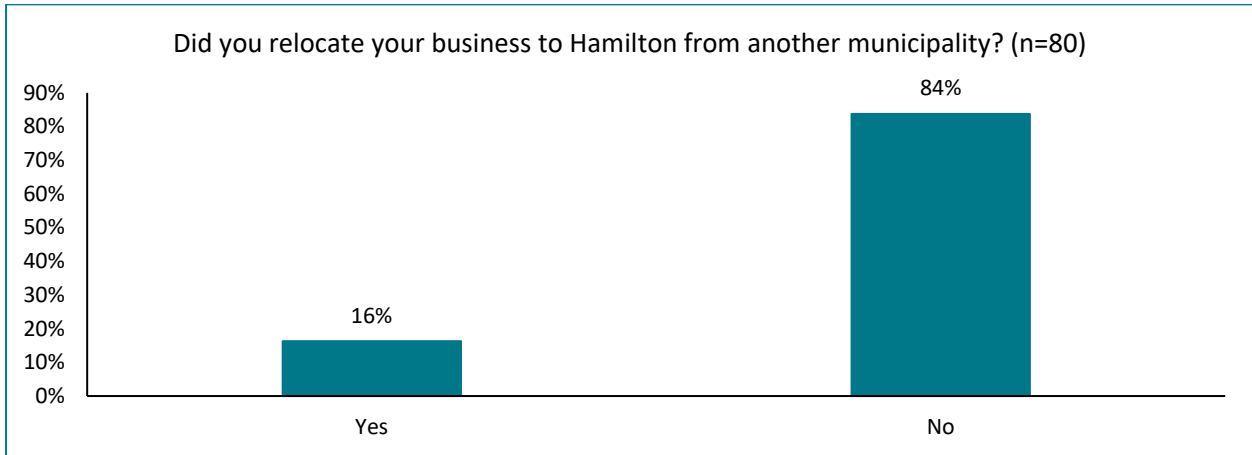
2. How many full-time workers do you employ in all your business locations?



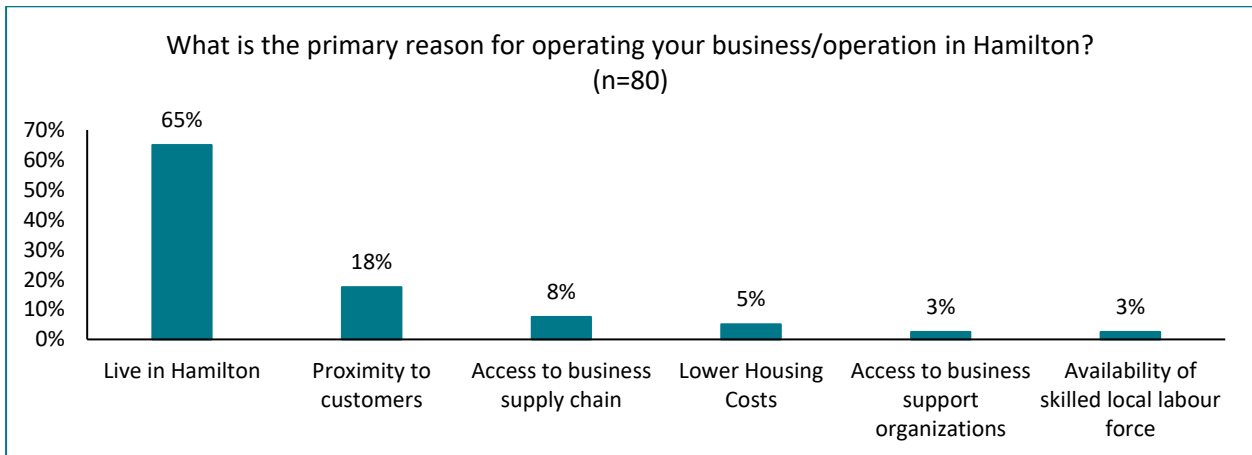
3. How many part-time workers do you employ in all your business locations?



4. Did you relocate your business to Hamilton from another municipality?

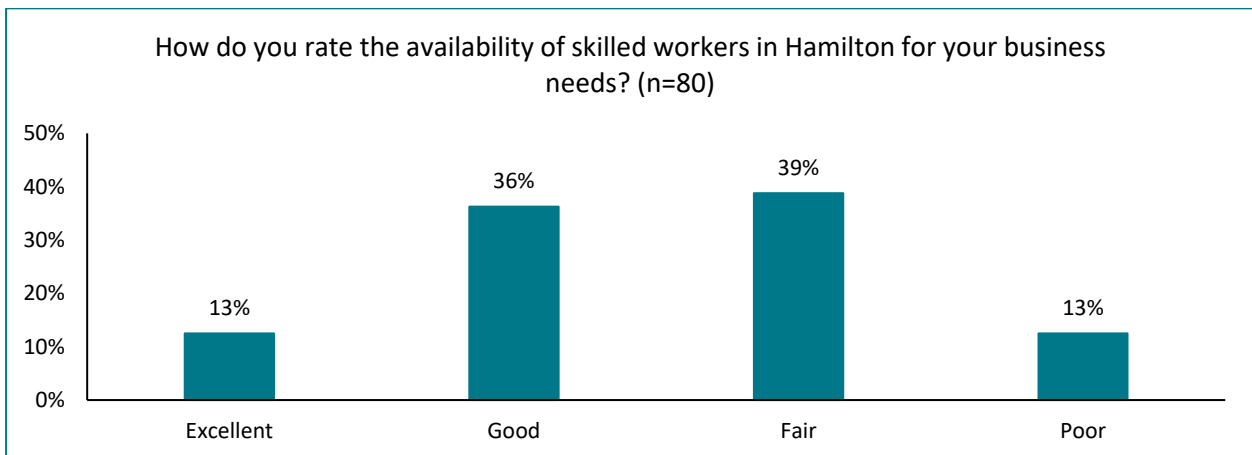


5. What is the primary reason for operating your business/operation in Hamilton?



### Skill Requirements

6. How do you rate the availability of skilled workers in Hamilton for your business needs?

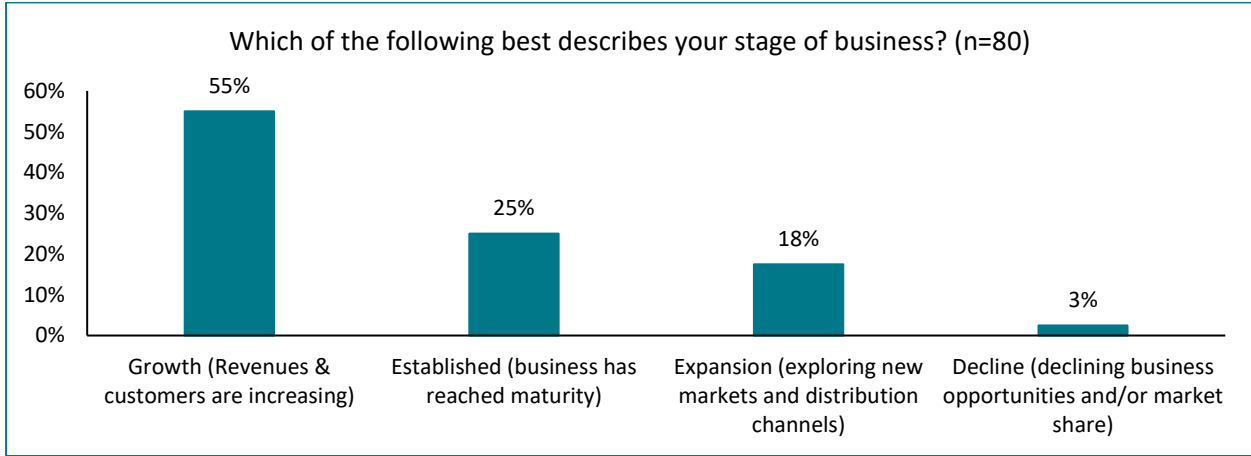


7. What skills are in highest demand for your business?

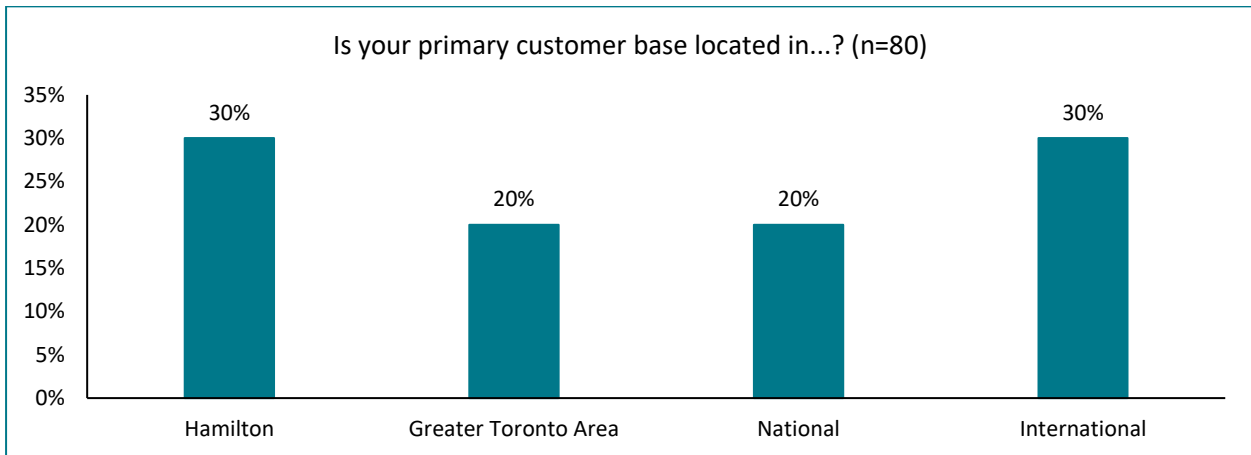
What skills are in highest demand for your business? (n=80)					
Skills	Knowledge Descriptors				
	Software engineers/developers	Computer and information sciences and support services	Graphic designers	Video game	IT support
Ability to communicate with customers.	Computer prog. & software prog.	Computer aided design and manufacturing	Graphic design	Game design	IT person
Communication skills	Computer software development	Computer programming	Graphic design		It support
Communication skills.	Experienced software developers	Computer science	Graphic design senior/intermediate		Information technology
Customer care	Software development	Computer skills.	Graphic design skills.		Tech. Skills
Customer service	Software development	C-sharp programming	Graphic designers.		Technical skills, it
Customer service	Software development	Data programming	Web design		Technology certification
Customer service	Software development skills	Coding.			Technology skills
Being conscientious and having good people skills	Software development.	Java programming.			Telecommunication networking
Bilingualism	Software knowledge	Good web development.			Voice and data tech
Flexibility	Programming				Knowing the different medias.
Good Handy Skills	Programming and development.				License To Fix Computers.
Intelligent	Programming web				Computer Repair
Interpersonal skills	Programming				
People skills	Programming.				
Sales skills.	Developers who are experienced				
Sales skills.	Development				
Salesmanship					
Marketing and sales skills.					
Outbound marketing					
Sales					

### Business Environment

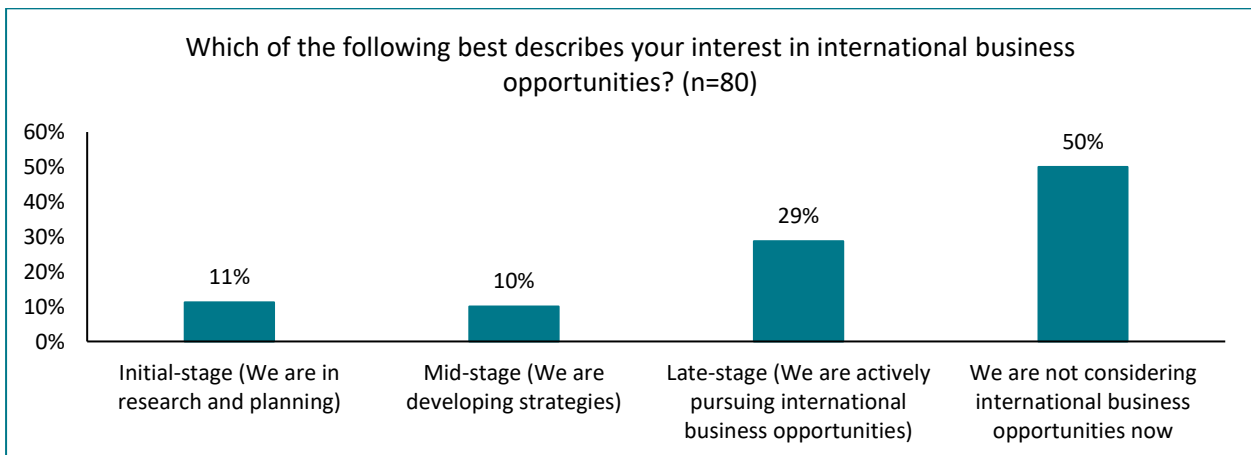
8. Which of the following best describes your stage of business?



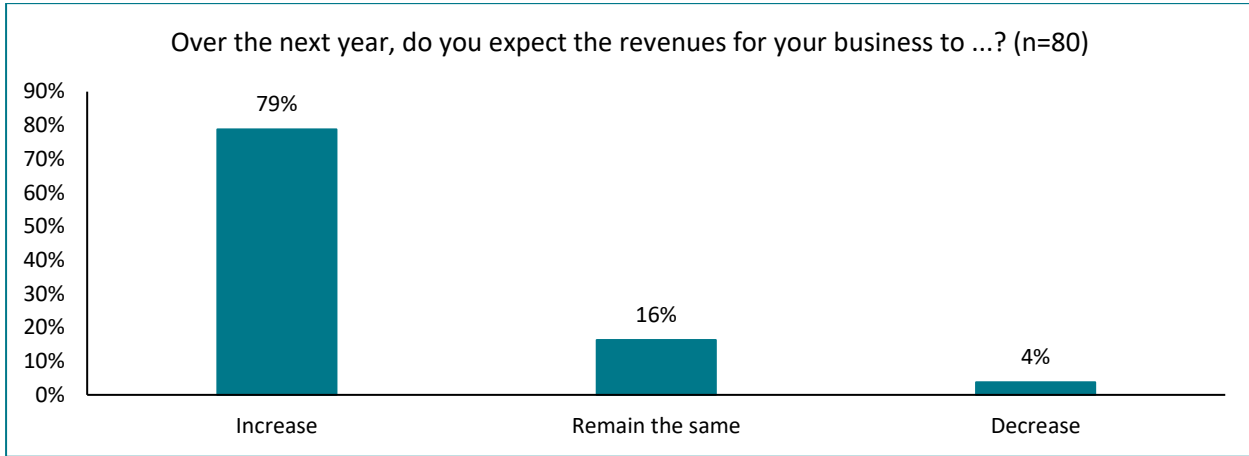
9. Is your primary customer base located in...?



10. Which of the following best describes your interest in international business opportunities?



11. Over the next year, do you expect the revenues for your business to ...?



### Business Satisfaction

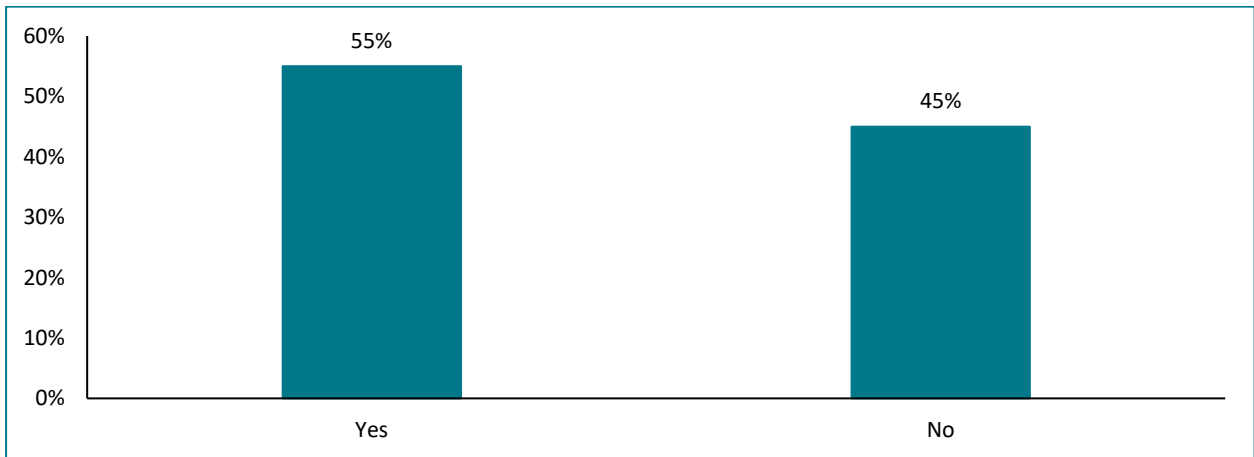
12. How satisfied are you with the following factors of owning and operating your ICT and Digital Media business in Hamilton? For each item, please tell me if you: Very Satisfied, Somewhat Satisfied, Somewhat Dissatisfied or Very Dissatisfied.

Factors	Very Satisfied		Somewhat Satisfied		Somewhat Dissatisfied		Very Dissatisfied		Don't know/Not applicable		Total
	Count	%	Count	%	Count	%	Count	%	Count	%	
Municipal property tax rates	2	3%	28	35%	8	10%	10	13%	32	40%	80
Availability of property for purchase or lease	9	11%	26	33%	13	16%	4	5%	28	35%	80
Quality of business support programming	18	23%	21	26%	7	9%	5	6%	29	36%	80
Attracting and retaining skilled talent	17	21%	35	44%	11	14%	7	9%	10	13%	80
Attracting new customers	15	19%	31	39%	13	16%	6	8%	15	19%	80
Quality of broadband/hi-speed Internet	30	38%	29	36%	10	13%	10	13%	1	1%	80
Access to capital/Availability of public funding and support programs	6	8%	20	25%	12	15%	10	13%	32	40%	80
Access to Light Rail Transit (LRT)	4	5%	11	14%	4	5%	13	16%	48	60%	80

13. Has your business accessed any of the following business support funds and/or programs? For each item, please tell me if you: have accessed, heard of it but not accessed, not familiar.

	Have accessed		Heard of it but not accessed		Not familiar		Total
Innovation Factory Programs & Services	18	23%	20	25%	42	53%	80
Hamilton's Soft-Landing Program	2	3%	6	8%	72	90%	80
Hamilton Business Centre (formerly Small Business Enterprise Centre)	8	10%	28	35%	44	55%	80
One-Stop for Business	1	1%	8	10%	71	89%	80
Business Improvement Area Commercial Property Improvement Grant Program	5	6%	17	21%	58	73%	80
Office Tenancy Assistance Program	0	0%	6	8%	74	93%	80
Provincial funding programs	11	14%	16	20%	53	66%	80
Federal funding programs	11	14%	19	24%	50	63%	80

14. Would you like to be notified of any future networking or tradeshow opportunities?







# ICT and Digital Media Sector Strategy

City of Hamilton

Presented by: Lauren Millier, EVP

Date: February 17, 2021



## Context

- ICT and Digital Media Sector FDI Strategy is a sector profile that describes the current state and value proposition for the city
- The Strategy development process started in October 2019 and included research and analysis, a comprehensive consultation process with businesses and industry partners
- The sector saw a higher rate of growth compared to all other industry sectors driven primarily by professional and technical services and the information and cultural services
- Digital media is an important aspect of these industries in the production and delivery of content including motion pictures, videos, television programs or commercials



## Context

- Central to the growth of the sector are the Hamilton Business Centre and local incubators, accelerators and innovation support
  - The Forge, McMaster Innovation Park, ideaWORKS, mHealth & eHealth Development and Innovation Centre (MEDIC), Surge, Hamilton Health Sciences (HHS) and the CREATE (CentRE for dAta science and digiTal hEalth) along with major post-secondary institutions
- New investments by the City, including the creation of a “Technology and Medical Innovation Centre” and the McMaster Innovation Park’s (MIP) Master Plan, provide for continued growth of the sector



## Strategy Development

- A review of existing strategies and initiatives of relevance to ICT and Digital Media sector development
- A statistical analysis of the performance of ICT and Digital Media sector – businesses and occupations
- An assessment of the economic impact associated with Hamilton’s ICT and Digital Media sector
- A benchmark exercise comparing Hamilton’s ICT and Digital Media sector against ten comparator communities
- A telephone survey of 80 local ICT and Digital Media businesses
- Targeted one – on – one interview with ICT & Digital Media businesses and economic development partners
- A stakeholder workshop with ICT & Digital Media businesses and economic development partners
- A Key Findings Report and FDI Sector Strategy



## Key Indicators

- 4% of all industries in the city can be classified as ICT & Digital Media
- Sector experienced a 22% rate of growth between 2016-2019
- 60% of all industries are in professional, scientific and technical services
- 68% of all businesses are small businesses or entrepreneurs
- Top occupations
  - Information systems, computer programmers and interactive media developers, graphic designers and illustrators, software engineers and designers, and computer and information systems managers



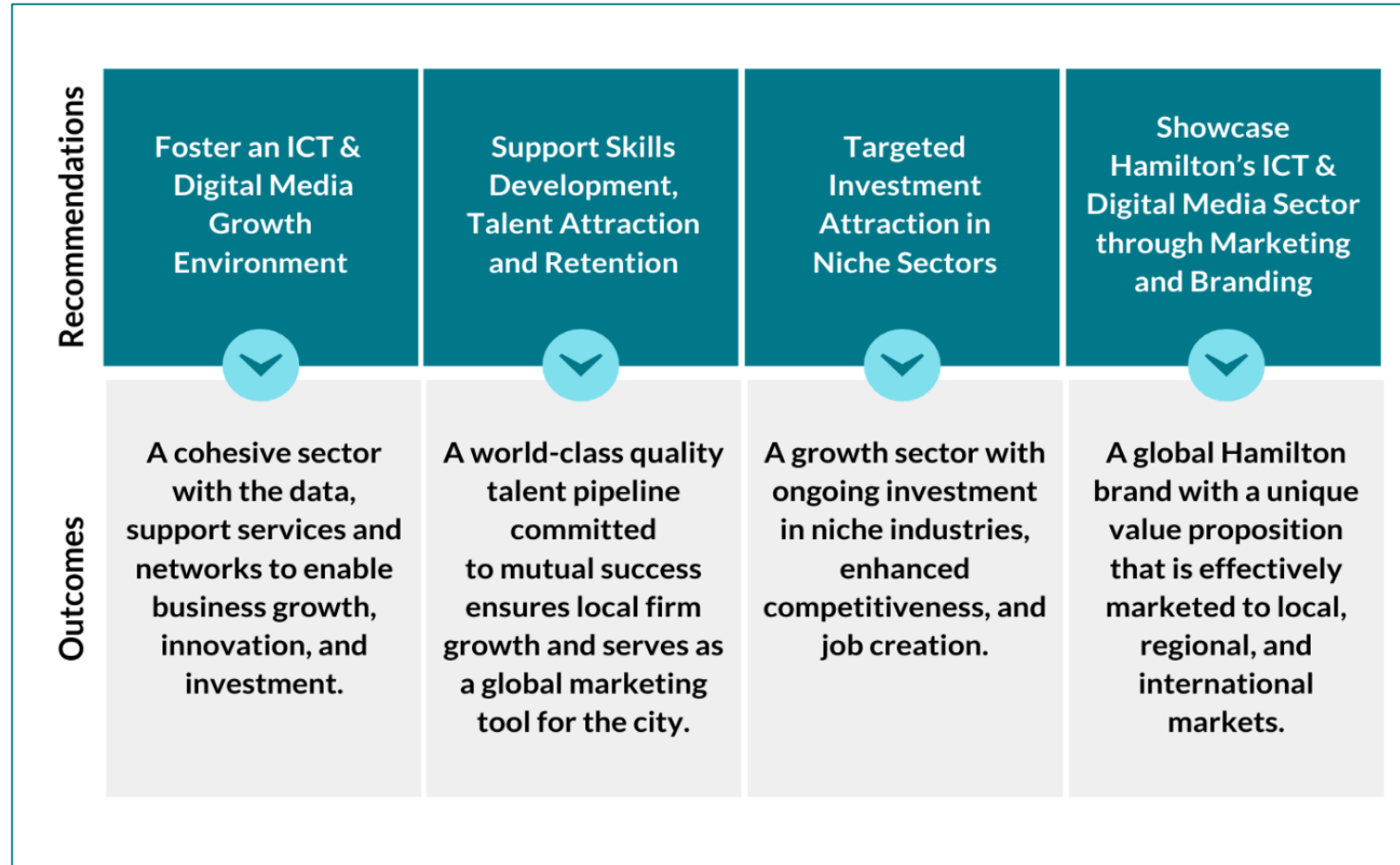


## Economic Impact

- The city's ICT & Digital Media sector makes a strong and growing contribution to the local economy
- Prior to the start of the pandemic, the sector's output (sales) was expected to reach \$1.623 billion in 2020
  - The sector will pay workers \$470 million in wages and salaries; and
  - The sector will employ just over 6,000 people
- The sector generates further economic impact through its purchases of goods and services from other industries



## Framework for Recommendations





## Key Opportunities

- Niche opportunities exist for the City, including Interactive Digital Media (IDM) and Health based Technologies:
  - Games developers and publishers, eLearning software developers, VR/AR/MR developers, VR arcades, mobile app developers, digital advertising firms, interactive site web developers and software developers
  - Digital health including system integration, interoperability to prototype novel technologies and educating the next generation of digital health entrepreneurs
- Potential FDI targets include a select number of Californian companies looking to expand across North America, Europe, and the Asia Pacific





## Key Opportunities

- Potential FDI targets include ICT companies in California looking to expand across North America, Europe, and the Asia Pacific
  - Cloud solutions, gaming, autonomous vehicles, AI HQ, data science/analytics and video conferencing
  - EdTech is an important sector given the surge in remote learning in education.
  - Gaming is also a strong fit, especially leading Game developers with a growing global footprint
  - Sports analytics and motion capture (AR/VR and AI) represent longer term considerations
- Recommendations shift Hamilton from a traditional “planner-provider-deliverer” model to an increasingly collaborative “enabler-convener-catalyst-broker” model.
- The collaboration includes those between and within municipal departments, community partners, business organizations and industries.

# Thank-you

Q+A



**CITY OF HAMILTON**  
**CORPORATE SERVICES DEPARTMENT**  
**Financial Planning, Administration and Policy Division**

<b>TO:</b>	Mayor and Members General Issues Committee
<b>COMMITTEE DATE:</b>	February 17, 2021
<b>SUBJECT/REPORT NO:</b>	City of Hamilton / Ministry of Transportation 2020-2021 Dedicated Gas Tax Funding Agreement (FCS21011) (City Wide)
<b>WARD(S) AFFECTED:</b>	City Wide
<b>PREPARED BY:</b>	Craig Webb, CPA, CMA, (905) 546-2424, Ext. 1870
<b>SUBMITTED BY:</b>	Brian McMullen Director, Financial Planning, Administration and Policy Corporate Services Department
<b>SIGNATURE:</b>	

**RECOMMENDATION(S)**

- (a) That the Mayor and the General Manager, Finance and Corporate Services, be authorized and directed to enter into an Agreement between the City of Hamilton and the Province of Ontario related to the funding commitment made by the Province of Ontario to the municipality under the Dedicated Gas Tax Funds for Hamilton's Public Transportation Program;
- (b) That the Mayor and General Manager, Finance and Corporate Services, be authorized and directed to execute the Letter of Agreement attached as Appendix "A" to Report FCS21011;
- (c) That the By-law attached as Appendix "C" to Report FCS21011 authorizing and directing the Mayor and General Manager, Finance and Corporate Services, to sign a Letter of Agreement between the City of Hamilton and the Province of Ontario with respect to funding under the Dedicated Gas Tax Funds for Public Transportation Program, be passed;
- (d) That, upon being passed, a certified copy of the By-law, together with two copies of the signed Letter of Agreement, be forwarded to the Ministry of Transportation.

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*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 of Hamilton / Ministry of Transportation 2020-2021 Dedicated Gas Tax Funding Agreement (FCS21011) (City Wide) – Page 2 of 4**

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**EXECUTIVE SUMMARY**

The City of Hamilton is eligible to receive an estimated \$11,687,199 in provincial funding as part of the 2020-2021 Dedicated Gas Tax Funds for Public Transportation Program. This represents an increase of 2.26% over the previous 12-month total allocation of \$11,428,352.

The 2020 / 2021 Provincial Program year runs from April 1, 2020 to March 31, 2021. The new allocation of funding for the Program for 109 public transit systems providing service to 144 communities will amount to approximately \$378.63 M. Allocations are based on 2019 ridership and 2019 estimated population.

The By-law, accompanying Agreement, guidelines and requirements, attached to Report FCS21011, are provided as a condition of the transfer of funds, provided by the Province of Ontario to the City of Hamilton under this Program.

Under the terms and conditions of the attached Agreement, a by-law is required to authorize the Mayor and City Treasurer to sign the “Letter of Agreement between Her Majesty the Queen in Right of the Province of Ontario, Represented by the Minister of Transportation for the Province of Ontario and the City of Hamilton related to Funding Provided by the Province of Ontario to the Municipality under the Dedicated Gas Tax Funds for Public Transportation Program”.

Municipalities receiving dedicated gas tax funds must meet the requirements set out in the “2020 / 2021 Guidelines and Requirements”, attached as Appendix “B” to Report FCS21011.

**Alternatives for Consideration – Not Applicable**

**FINANCIAL – STAFFING – LEGAL IMPLICATIONS**

**Financial:** Ratification of the Letter of Agreement is a condition of the City of Hamilton becoming eligible for an estimated \$11,687,199 in provincial funding relating to 2020-2021 as part of the 2020-2021 Dedicated Gas Tax Funding program. This represents an increase of 2.2% over the previous 12-month total allocation of \$11,428,352. The 2021 Provincial gas tax funding for eligible expenditures in the City’s operating budget is \$10,899,000 and in the capital budget is \$150,000.

**Staffing:** None.

**Legal:** The enacting of the supporting By-law per Appendix “C” to Report FCS21011 is a requirement to receive funding under the Dedicated Gas Tax Funds for Public Transportation Program.

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**SUBJECT: City of Hamilton / Ministry of Transportation 2020-2021 Dedicated Gas Tax Funding Agreement (FCS21011) (City Wide) – Page 3 of 4**

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**HISTORICAL BACKGROUND**

In 2013, the Province of Ontario moved forward with its commitment to make Gas Tax funding permanent.

Traditionally, the Province of Ontario under the above-noted program, has provided two cents of the existing provincial gas tax to municipalities to support public transportation. This year, due to the circumstances surrounding the COVID-19 emergency, no administrative changes were made from the 2019-20 program year. Further recognizing the impact that COVID-19 has had on municipal transit systems, there has not been an impact on allocations for the 2020-21 program year. In this, the seventeenth year of the program, \$378.63 M in funding to 109 public transit systems representing 144 communities has been made available.

As part of that commitment, the Province of Ontario, under the Dedicated Gas Tax Funds for the Public Transportation Program, is providing funding in the amount of \$11,687,199 to the City of Hamilton for 2020 / 21 as per the Letter of Agreement attached as Appendix “A” to Report FCS21011.

**POLICY IMPLICATIONS AND LEGISLATED REQUIREMENTS**

None.

**RELEVANT CONSULTATION**

None.

**ANALYSIS AND RATIONALE FOR RECOMMENDATION(S)**

Under the Dedicated Gas Tax Funds for the Public Transportation Program, funding allocated is based on 70% transit ridership and 30% municipal population.

The funding received is deposited into a dedicated reserve that is used to fund the expansion of public transit in terms of capital infrastructure and operating budget funding related to levels of service.

Under the terms and conditions of the attached Agreement, a by-law is required to authorize the Mayor and City Treasurer to sign the “Letter of Agreement between Her Majesty the Queen in Right of the Province of Ontario, Represented by the Minister of Transportation for the Province of Ontario and the City of Hamilton related to Funding Provided by the Province of Ontario to the Municipality under the Dedicated Gas Tax Funds for Public Transportation Program”.

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**SUBJECT: City of Hamilton / Ministry of Transportation 2020-2021 Dedicated Gas Tax Funding Agreement (FCS21011) (City Wide) – Page 4 of 4**

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**ALTERNATIVES FOR CONSIDERATION**

None.

**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.

**Healthy and Safe Communities**

Hamilton is a safe and supportive city where people are active, healthy, and have a high quality of life.

**Clean and Green**

Hamilton is environmentally sustainable with a healthy balance of natural and urban spaces.

**Built Environment and Infrastructure**

Hamilton is supported by state-of-the-art infrastructure, transportation options, buildings and public spaces that create a dynamic City.

**APPENDICES AND SCHEDULES ATTACHED**

Appendix “A” to Report FCS21011 – Letter of Agreement between the City of Hamilton and the Province of Ontario

Appendix “B” to Report FCS21011 – 2020/21 Guidelines and Requirements

Appendix “C” to Report FCS21011 – 2020 City of Hamilton / Ministry of Transportation Gas Tax Funding Agreement By-law

CW/dt

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**Ministry of  
Transportation**

Office of the Minister

777 Bay Street, 5<sup>th</sup> Floor  
Toronto ON M7A 1Z8  
416 327-9200  
www.ontario.ca/transportation

**Ministère des  
Transports**

Bureau de la ministre

777, rue Bay, 5<sup>e</sup> étage  
Toronto ON M7A 1Z8  
416 327-9200  
www.ontario.ca/transports



January 14, 2021

Mayor Fred Eisenberger  
City of Hamilton  
71 Main Street West  
Hamilton ON L8P 4Y5

Dear Mayor Eisenberger:

**RE: Dedicated Gas Tax Funds for Public Transportation Program**

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This Letter of Agreement between the **City of Hamilton** (the "Municipality") and Her Majesty the Queen in right of the Province of Ontario, as represented by the Minister of Transportation for the Province of Ontario (the "Ministry"), sets out the terms and conditions for the provision and use of dedicated gas tax funds under the Dedicated Gas Tax Funds for Public Transportation Program (the "Program"). Under the Program, the Province of Ontario provides two cents out of the provincial gas tax to municipalities to improve Ontario's transportation network and support economic development in communities for public transportation expenditures.

The Ministry intends to provide dedicated gas tax funds to the Municipality in accordance with the terms and conditions set out in this Letter of Agreement and the enclosed Dedicated Gas Tax Funds for Public Transportation Program 2020-21 Guidelines and Requirements (the "guidelines and requirements").

In consideration of the mutual covenants and agreements contained in this Letter of Agreement and the guidelines and requirements, which the Municipality has reviewed and understands and are hereby incorporated by reference, and other good and valuable consideration, the receipt and sufficiency of which are expressly acknowledged, the Ministry and the Municipality agree as follows:

1. To support local public transportation services in the Municipality, the Ministry agrees to provide funding to the Municipality under the Program to a maximum amount of up to **\$11,687,199** ("the "Maximum Funds") in accordance with, and subject to, the terms and conditions set out in this Letter of Agreement and, for greater clarity, the guidelines and requirements.
2. Subject to Section 1, the Ministry will, upon receipt of a fully signed copy of this Letter of Agreement and a copy of the authorizing municipal by-law(s) and, if applicable, resolution(s) for the Municipality to enter into this Letter of Agreement, provide the Municipality with **\$8,765,399**; and any remaining payment(s) will be provided thereafter.

-2-

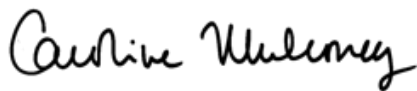
3. If another municipality authorizes the Municipality to provide local public transportation services on its behalf and authorizes the Municipality to request and receive dedicated gas tax funds for those services also on its behalf, the Municipality will in the by-law(s) and, if applicable, resolution(s) described in Section 2 confirm that the Municipality has the authority to provide those services and request and receive those funds.
4. The Municipality agrees that any amount payable under this Letter of Agreement may be subject, at the Ministry's sole discretion, to any other adjustments as set out in the guidelines and requirements.
5. The Municipality will deposit the funds received under this Letter of Agreement in a dedicated gas tax funds reserve account, and use such funds and any related interest only in accordance with the guidelines and requirements.
6. The Municipality will adhere to the reporting and accountability measures set out in the guidelines and requirements, and will provide all requested documents to the Ministry.
7. The Municipality agrees that the funding provided to the Municipality pursuant to this Letter of Agreement represents the full extent of the financial contribution from the Ministry and the Province of Ontario under the Program for the 2020-21 Program year.
8. The Ministry may terminate this Letter of Agreement at any time, without liability, penalty or costs upon giving at least thirty (30) days written notice to the Municipality. If the Ministry terminates this Letter of Agreement, the Ministry may take one or more of the following actions: (a) cancel all further payments of dedicated gas tax funds; (b) demand the payment of any dedicated gas tax funds remaining in the possession or under the control of the Municipality; and (c) determine the reasonable costs for the Municipality to terminate any binding agreement(s) for the acquisition of eligible public transportation services acquired, or to be acquired, with dedicated gas tax funds provided under this Letter of Agreement, and do either or both of the following: (i) permit the Municipality to offset such costs against the amount the Municipality owes pursuant to paragraph 8(b); and (ii) subject to Section 1, provide the Municipality with funding to cover, in whole or in part, such costs. The funding may be provided only if there is an appropriation for this purpose, and in no event will the funding result in the Maximum Funding exceeding the amount specified under Section 1.
9. Any provisions which by their nature are intended to survive the termination or expiration of this Letter of Agreement including, without limitation, those related to disposition, accountability, records, audit, inspection, reporting, communication, liability, indemnity, and rights and remedies will survive its termination or expiration.
10. This Letter of Agreement may only be amended by a written agreement duly executed by the Ministry and the Municipality.
11. The Municipality agrees that it will not assign any of its rights or obligations, or both, under this Letter of Agreement.



- 12. The invalidity or unenforceability of any provision of this Letter of Agreement will not affect the validity or enforceability of any other provision of this Letter of Agreement. Any invalid or unenforceable provision will be deemed to be severed.
- 13. The term of this Letter of Agreement will commence on the date of the last signature of this Letter of Agreement.
- 14. The Municipality hereby consents to the execution by the Ministry of this Letter of Agreement by means of an electronic signature.

If the Municipality is satisfied with and accepts the terms and conditions of this Letter of Agreement, please print and secure the required signatures, and then deliver a fully signed pdf copy to the Ministry at the email account below. Subject to the province's prior written consent, including any terms and conditions the Ministry may attach to the consent, the Municipality may execute and deliver the Letter of Agreement to the Ministry electronically. In addition, all program documents are also to be sent to the following email account:  
[MTO-PGT@ontario.ca](mailto:MTO-PGT@ontario.ca)

Sincerely,



Caroline Mulroney  
 Minister of Transportation

I have read and understand the terms and conditions of this Letter of Agreement, as set out above, and, by signing below, I am signifying the Municipality's consent to be bound by these terms and conditions.

**Municipality**

\_\_\_\_\_  
 Date

\_\_\_\_\_  
 Name (print):  
 Title (head of council or  
 authorized delegate):

I have authority to bind the Municipality.

\_\_\_\_\_  
 Date:

\_\_\_\_\_  
 Name (print):  
 Title (clerk or authorized delegate):

I have authority to bind the Municipality.



**MINISTRY OF TRANSPORTATION**

**Dedicated Gas Tax Funds For  
Public Transportation Program**

**2020-21 Guidelines and Requirements**

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## **DEDICATED GAS TAX FUNDS FOR PUBLIC TRANSPORTATION PROGRAM**

### **2020-21 GUIDELINES & REQUIREMENTS**

#### **1. DEFINITIONS**

When used in these guidelines and requirements, the words set out below that import the singular include the plural and vice versa:

“Canadian Content Policy” means the Canadian Content for Transit Vehicle Procurement Policy, attached to these guidelines and requirements as Appendix B: Canadian Content Policy, which the Ministry may amend from time to time.

“dedicated gas tax funds” means the money provided by the Ministry to a municipality to be used strictly towards eligible expenditures that are reasonable, in the opinion of the Ministry, and related directly to the provision of public transportation services, and “dedicated gas tax funding” has the same meaning.

“dedicated gas tax funds reserve account” means an interest bearing account set up by a municipality, under its name and in a Canadian financial institution, where dedicated gas tax funds are deposited and can be tracked separately from any other funds that may be in the account. This does not need to be a separate account, so long as the dedicated gas tax funds can be tracked separately.

“DFPTA” means the *Dedicated Funding for Public Transportation Act, 2013*, S.O. 2013, c. 2, Sched. 3.

“eligible expenditures” means expenditures made by a municipality in direct support of public transportation operating or capital, or both, costs in accordance with Article 3 of these guidelines and requirements.

“guidelines and requirements” means these guidelines and requirements entitled “Dedicated Gas Tax Funds for Public Transportation Program – 2020-21 Guidelines and Requirements”, including Appendices A, B and C to these guidelines and requirements, which the Ministry may amend from time to time.

“host municipality” means a host municipality as described in Section 4.2.

“indemnified parties” means Her Majesty the Queen in right of Ontario, Her ministers, agents, appointees, and employees.

“letter of agreement” means an agreement entered into between the Ministry and a municipality, including a host municipality, that sets out the terms and conditions under which the Ministry agrees to provide dedicated gas tax funds to the municipality, including those under these guidelines and requirements, and any amendments to the letter of agreement.

"losses" means any and all liability, loss, costs, damages or expenses (including legal, expert and consultant fees).

"major refurbishment" means: (a) for a subway car, light rail car, streetcar or trolley bus, the refurbishment where the life cycle is extended for a minimum of six years beyond the designed life cycle set out by the manufacturer; and (b) for a bus thirty feet in length or over, the refurbishment where, when the bus reaches a minimum age of nine years, the life cycle of the bus is extended for a minimum of six years.

"Ministry" and "Minister", respectively, means the Ministry of Transportation, which is responsible for the administration of the Program and the Minister responsible for the Ministry.

"municipal own spending on public transportation" means the funds, including those received from total operating revenue and local public donations, that a municipality contributes towards public transportation expenditures, including funds it contributes for operating and capital expenditures.

"personnel" includes the advisors, appointees, directors, officers, employees, agents, partners, affiliates, volunteers or subcontractors of a municipality.

"proceeding" means any and all causes of action, actions, claims, demands, lawsuits or other proceedings.

"Program" means the Dedicated Gas Tax Funds for Public Transportation Program set up by the Ministry to provide municipalities with dedicated gas tax funds subject to and in accordance with a letter of agreement.

"PRESTO" means the fare payment system for which Metrolinx is responsible.

"public transportation" means any service for which a fare is charged for transporting the public by vehicles operated by or on behalf of a municipality or local board as defined in the *Municipal Affairs Act*, R.S.O. 1990, c. M. 46, as amended, or under an agreement between a municipality or local board, and a person, firm or corporation, and includes special transportation facilities for transporting persons with disabilities but does not include transportation by special purpose facilities, such as marine vessels, school buses or ambulances.

"public transportation vehicle" refers to a streetcar, bus, subway car, light rail car, specialized vehicles for transporting persons with disabilities or trolley bus used for public transportation.

"reporting forms" means the following forms attached as Appendix A (Reporting Forms) to these guidelines and requirements: 1) Dedicated Gas Tax Funds for Public Transportation 2020 Reporting Form (i.e. form MT-O-16); 2) Dedicated Gas Tax Program – Transit 2020 Conventional Transit Reporting Form (i.e. form MT-O-17); and 3) Dedicated Gas Tax Program – Transit 2020 Specialized Transit Reporting Form (i.e., form MT-O-18).

"subcontractor" means any contractor of a municipality or any of its subcontractors at any tier of subcontracting.

## **2. INTRODUCTION**

The Program is an important element of the ongoing relationship between the province of Ontario and Ontario municipalities. Municipalities receiving dedicated gas tax funds must meet the requirements set out in these guidelines and requirements.

As of 2013 and pursuant to the *Dedicated Funding for Public Transportation Act, 2013*, S.O. 2013, c. 2, Sched. 3 ("DFPTA"), a portion, (2 cents per litre), of the provincial gasoline tax revenue is dedicated to the provision of grants to municipalities for public transportation, including those pursuant to the Program. The portion of the gas tax that is dedicated in each fiscal year is an amount determined using a formula set out in the DFPTA.

The 2020-21 Program year runs from April 1, 2020 to March 31, 2021. The new allocation of funding for the Program for 109 public transit systems representing 144 municipalities will amount to approximately \$378.6 million.

## **3. GENERAL ELIGIBILITY REQUIREMENTS AND CONDITIONS**

The purpose of the Program is to provide dedicated gas tax funds to Ontario municipalities to support local public transportation services, and to increase overall ridership through the expansion of public transportation capital infrastructure and levels of service. To be eligible to receive dedicated gas tax funds, a municipality must contribute financially towards its public transportation services.

For 2020-21, and unless otherwise approved in writing by the Ministry, only municipalities that have submitted their 2019 annual data survey to the Canadian Urban Transit Association (CUTA), and their 2019 Gas Tax reporting forms to the Ministry, will be eligible to receive dedicated gas tax funds.

Subject to the provision of a municipal by-law indicating its intent to provide public transportation services, a municipality that is not currently providing public transportation services, but decides to begin providing such services, may be eligible for funding. Notification of the municipality's intent to provide public transportation services and specific commitment to annually fund such public transportation services is required. Municipalities are encouraged to contact ministry staff early in their decision making process for providing services. After the new public transportation services have been implemented, and at the Ministry's sole discretion, dedicated gas tax funding may then be available.

A municipality receiving dedicated gas tax funds must ensure that all funds received and any related interest are used exclusively towards eligible expenditures and, unless otherwise approved in writing by the Ministry, disbursement of dedicated gas tax funds and any related

interest must be net of any rebate, credit or refund, for which the municipality has received, will receive, or is eligible to receive.

All public transportation services and public transportation vehicles must be fully accessible in accordance with the requirements set out under the following statutes and regulations, as may be amended from time to time: the *Accessibility for Ontarians with Disabilities Act, 2005*, S.O. 2005, c. 11 and the *Integrated Accessibility Standards*, O. Reg. 191/11 made under that *Act*; the *Highway Traffic Act*, R.S.O. 1990, c. H.8 and the *Accessible Vehicles*, R.R.O. 1990, Reg. 629 made under that *Act*; and the *Public Vehicles Act*, R.S.O 1990, c. P. 54. In addition to the above, the acquisition of public transportation vehicles must comply with the Canadian Content Policy requirements.

Unless the Ministry otherwise approves in writing, in 2020-21, gas tax revenues and any related interest can only be used to support municipal public transportation expenditures and not to reduce or replace current levels of municipal public transportation funding. External audit and financial reporting costs are not eligible expenditures which the Ministry may reimburse or to which dedicated gas tax funding can be applied.

**(a) Requirements for All Dedicated Gas Tax Funds Received in 2020-21 and Beyond**

- Dedicated gas tax funds and any related interest must be spent on one or more of the following:
  - Public transportation capital expenditures that promote increased transit ridership;
  - Public transportation operating expenditures;
  - Capital expenditures for the replacement of any public transportation vehicles;
  - Capital expenditures that provide improvements to public transportation security and passenger safety; or
  - Expenditures for major refurbishment on any fully accessible, or to be made fully accessible, public transportation vehicle, with the exception of specialized vehicles used for the transportation of persons with disabilities.
- For municipalities that provide only specialized transit for persons with disabilities, dedicated gas tax funds can be spent on public transit initiatives that may not initially result in ridership growth but will provide increased accessibility.

**(b) Additional Requirements for the following Municipalities: Regions of Durham and York, the Cities of Brampton, Burlington, Hamilton, Mississauga, Ottawa and Toronto, and the Town of Oakville.**

Prior to the release of any dedicated gas tax funds, the municipalities listed under (b) above will, in addition to any other requirements in this Article 3, be required to:

- Participate in PRESTO and, as participants, will be required to meet their financial obligations for that system.

**(c) Additional Requirements for GTA Municipalities: Regions of Durham, Halton, Peel and York, and Cities of Hamilton and Toronto.**

Prior to the release of any dedicated gas tax funds, the municipalities listed under (c) above will, in addition to any other requirements in this Article 3, be required to:

- Demonstrate that they have met their responsibility for the payment of the growth and expansion capital costs of Metrolinx pursuant to the *Amendment to Greater Toronto Services Board By-law No. 40*, O. Reg. 446/04, made under the *Metrolinx Act, 2006*, S.O. 2006, c. 16, as amended.

The eligibility requirements for dedicated gas tax funds will be determined in accordance with these guidelines and requirements. The eligibility for any dedicated gas tax funds is at the sole discretion of the Ministry. Municipalities should consider consulting with Ministry staff to determine whether a proposed expenditure is an eligible expenditure for the purpose of dedicated gas tax funds.

#### **4. GENERAL PROGRAM ALLOCATION METHODOLOGY AND PAYMENT PROCESS**

##### **4.1 General Program Allocation Methodologies**

Based on consultation with municipalities, public transportation operators and stakeholders, the Province recognizes the varying needs of public transportation in Ontario municipalities, including those related to large established public transportation systems and communities with different growth rates and levels of public transportation service. Consistent with the above, the Province has established an allocation formula based on a combination of ridership and population. This formula balances the needs of large established public transportation systems, the growth needs of rapidly growing municipalities, and the needs of smaller municipalities that provide public transportation services.

The Province is implementing an allocation based on 70% transit ridership and 30% municipal population. Fully implemented, 70% of \$378.63 million (up to \$265.04 million) may be distributed to municipalities on the basis of their public transportation ridership levels. Thirty percent (30%) of \$378.63 million (up to \$113.59 million) may be distributed on the basis of population levels. Public transportation ridership will include the totals of both conventional and specialized public transportation services.

Both ridership and population figures are updated and revised annually for use in the calculation of dedicated gas tax funds.

CUTA annually collects and reproduces, on behalf of the Ministry, transit ridership data in its Ontario Urban Transit Fact Book and its Ontario Specialized Transit Services Fact Book (the "CUTA Fact Books"). The Ministry used the 2019 ridership data from the 2019 CUTA Fact Books for the above calculation. Where a municipality's ridership data have not been collected nor reproduced in the 2019 CUTA Fact Books, the Ministry used the 2019 transit ridership data received from the municipality.



The 2020-21 gas tax allocations were calculated using 2019 population estimates derived from the 2016 census data.

Dedicated gas tax funds provided to each municipality in 2020-21 are not to exceed, based on the 2019 municipal public transportation spending data set out in the CUTA Fact Books, 75% of municipal own spending on public transportation. The Ministry may re-allocate, in support of increasing public transportation ridership, any amounts of moneys dedicated for but that remains undistributed through the Program.

The Ministry may undertake an annual review of the dedicated gas tax allocation methodology and eligibility requirements to ensure these funds support the desired outcome of increased public transportation ridership. Municipal public transportation spending will be reviewed on an annual basis to determine if the limits of the dedicated gas tax funds need to be applied where the gas tax allocation may exceed 75% of municipal own spending on public transportation.

## **4.2 Payment Process**

The Minister will advise each municipality that provides public transportation services of the amount of dedicated gas tax funds it is eligible to receive. The Minister will send a letter of agreement to each of these municipalities. The letter of agreement will set out the terms and conditions upon which the dedicated gas tax funds will be released to the municipality, and by which the municipality will have to agree to be bound.

The Ministry may, on a quarterly basis (or other basis, as the Ministry may decide from time to time), make payments of dedicated gas tax funds only after receipt of the following documents: i) the letter of agreement, provided by the Ministry to the municipality, signed in accordance with the by-law(s) and, if applicable, the resolution(s) described below; and ii) a scanned copy of the by-law(s) and, if applicable, any resolution(s) authorizing the letter of agreement and naming municipal signing officers for the letter of agreement.

In addition, the Ministry may withhold payment of dedicated gas tax funds until the reporting requirements under Section 8.4 are met.

Any amount of dedicated gas tax funds provided to the municipality under the Program will be subject to the remedies set out under Article 7.

Any dedicated gas tax funds the Ministry provides to a municipality and any related interest, including those kept by the municipality in a dedicated gas tax funds reserve account, will have to be used by the municipality exclusively towards public transportation services and in accordance with the requirements set out in these guidelines and requirements including, without limitation, those related to eligibility and related conditions, acquisition, disposition, accountability, records, audit, reporting, liability, and indemnity requirements.

If a municipality agrees to provide public transportation services (a "host municipality") for another municipality, the Ministry, at its sole discretion, may only provide the host municipality with dedicated gas tax funds. Prior to the Ministry making any payment of dedicated gas tax funds to the host municipality, the host municipality and the municipality on whose behalf the

host municipality is providing transportation services will be required to provide the Ministry with copies of their respective by-law(s) and, if applicable, resolution(s), designating the host municipality as a public transportation service provider for the municipality or authorizing the host municipality to provide public transportation services to the municipality, as applicable. The contributing municipality, on whose behalf the host municipality is providing transportation services, will be required to provide the Ministry with a copy of their by-law(s) and, if applicable, resolution(s), in the year that this arrangement is initiated, and will be required annually to confirm with the Ministry in writing that the arrangement is still in effect. The host municipality will be required to enter into a dedicated gas tax funds letter of agreement with the Ministry and be in compliance with the terms and conditions set out in these guidelines and requirements.

In addition, the host municipality must promptly advise the Ministry of any change in arrangements between the host and contributing municipalities, such as decisions to cease contributions. The Ministry may then, at its sole discretion, make any necessary adjustment to its contribution of dedicated gas tax funds to the host municipality.

## **5. DEDICATED GAS TAX FUNDS RESERVE ACCOUNT AND INTEREST**

### **5.1 Dedicated Gas Tax Funds Reserve Account**

Dedicated gas tax funds must be used only towards the eligible expenditures for public transportation listed under Article 3(a). If the Ministry provides dedicated gas tax funds to a municipality before the municipality's immediate need for the funds, the municipality will be required to keep the funds, and all interest earned on such funds, in a dedicated gas tax funds reserve account. Dedicated gas tax funds received, and any related interest earned on such funds, must be reported annually, using the reporting forms, on a cash basis. At no time should a municipality report a negative reserve account balance.

### **5.2 Interest**

Interest must accrue on funds carried over the course of the Program reporting period in a dedicated gas tax funds reserve account. A municipality must calculate interest on its average annual balance of funds. The interest must also be reported annually, using the reporting forms, and can only be applied towards eligible expenditures.

## **6. ACQUISITION OF GOODS OR SERVICES, AND DISPOSAL OF ASSETS**

If a municipality acquires goods, including supplies, materials, vehicles, equipment or services, or both, with dedicated gas tax funds, it must do so through a process that promotes the best value (with due regard for economy, efficiency and effectiveness) for the dedicated gas tax funds it spends.

The municipality must report, in writing, to the Ministry any funds accrued from the sale, lease or disposal of assets purchased with dedicated gas tax funds, and return such funds to a

dedicated gas tax funds reserve account (see Article 5), with the exception that funds accrued from the sale, lease or disposal of transit buses beyond their useful economic life (12 years for conventional and 5 years for specialized), will not be required to be returned to a dedicated reserve account.

## **7. ADJUSTMENT, WITHHOLDING AND PAYMENT OF DEDICATED GAS TAX FUNDS AND OTHER REMEDIES**

If, in the opinion of the Ministry, a municipality: i) fails to comply with any term, condition or obligation set out in a letter of agreement, including these guidelines and requirements; ii) uses any of the dedicated gas tax funds or any related interest for a purpose not authorized without the prior written consent of the Ministry; iii) provides erroneous or misleading information; iv) fails to provide information, including requested audit information and required reports, to the Ministry for any reason whatsoever; or v) is unable to provide or acquire or has discontinued the provision or acquisition of any service or asset for which dedicated gas tax funds have been provided, or it is not reasonable for the municipality to continue to provide or acquire any service or asset for which such funds have been provided ("event of default"), the Ministry may, unless the Ministry provides the municipality with written notice of an opportunity to remedy the event of default, take one or more of the following actions: i) initiate any action the Ministry considers necessary in order to facilitate the successful provision or acquisition of any service or asset provided or acquired with dedicated gas tax funds; ii) suspend the payment of dedicated gas tax funds for such period as the Ministry determines appropriate; iii) reduce the amount of the dedicated gas tax funds; (iv) cancel further payments of dedicated gas tax funds; (v) demand from the municipality the payment of any dedicated gas tax funds remaining in the possession or under the control of the municipality; (vi) demand from the municipality the payment of an amount equal to any dedicated gas tax funds the municipality used, but did not use in accordance with the letter of agreement; (vii) demand from the municipality the payment of an amount equal to any dedicated gas tax funds the Ministry provided to the municipality; and viii) terminate the letter of agreement at any time, including immediately, without liability, penalty or costs to the Ministry upon giving notice to the municipality.

Where the Ministry gives the municipality an opportunity to remedy an event of default by giving the municipality notice of the particulars of the event of default and the date by which the municipality is required to remedy it, and: i) the municipality does not remedy the event of default by the date specified in the notice; ii) it becomes apparent to the Ministry that the municipality cannot completely remedy the event of default by the date specified in the notice; or iii) the municipality is not proceeding to remedy the event of default in a way that is satisfactory to the Ministry, the Ministry may extend the date by which the municipality is required to remedy the event of default, or initiate any of the remedies for event of default available to it under this Article 7.

Upon termination of the letter of agreement pursuant to this Article 7, the Ministry may take one or more of the actions listed for in the first paragraph to this Article 7. In regards to any demand for payment, the Minister may not demand payment of an aggregate amount greater than the dedicated gas tax funds that were received by the municipality.

Upon the Minister providing a municipality a written demand for payment of dedicated gas tax funds, any related interest, or both, the amount of the demand will be deemed to be a debt due and owing to the Crown of the Province of Ontario and may be recovered as such under applicable law, including, without limitation, the *Financial Administration Act*, R.S.O. 1990, c. F.12, as amended, ("FAA"). In addition to any remedy the Crown may have under the FAA, the Ministry may decide to withhold or adjust the amount of any current or future dedicated gas tax funding, or any other funding program, that may be provided to the municipality in an amount equal to such debt or have the amount of such debt deducted from financial assistance payable on any other project(s) of the municipality under any other initiative in which the Ministry is involved (either current or future). The Ministry may charge the municipality interest on any money owing by the municipality at the then current rate charged by the Province of Ontario on accounts receivable. The municipality will pay any money owing to the Ministry by cheque payable to the "Ontario Minister of Finance" and delivered to the Ministry as the Ministry may require.

If a municipality: i) has failed to comply with any term, condition or obligation under any other agreement with Her Majesty the Queen in right of Ontario or one of Her agencies (a "failure"); ii) has been provided with notice of such failure in accordance with the requirements of such other agreement; iii) has, if applicable, failed to rectify such failure in accordance with the requirements of such other agreement; and iv) such failure is continuing, the Ministry may suspend the payment of dedicated gas tax funds for such period as the Ministry determines appropriate.

When the Ministry provides its consent pursuant to a letter of agreement, including these guidelines and requirements, it may impose any terms and conditions on such consent and the municipality will comply with such terms and conditions.

If a municipality fails to comply with any term of a letter of agreement, including these guidelines and requirements, the municipality could only rely on a waiver of the Ministry if the waiver was in writing and refers to the specific failure to comply. A waiver will not have the effect of waiving any subsequent failures to comply.

Any decision made by the Minister regarding funding under the Program is final.

## **8. ACCOUNTABILITY, RECORDS, AUDIT AND REPORTING REQUIREMENTS**

### **8.1 Accountability**

A municipality receiving dedicated gas tax funds must use such funds, and any interest earned on such funds, exclusively towards public transportation service eligible expenditures and in accordance with these guidelines and requirements. The municipality will not be allowed to use dedicated gas tax funds and related interest to offset other municipal expenditures.

The municipality will also be required to provide such further assurances as the Ministry may request from time to time with respect to any matter to which a letter of agreement, including these guidelines and requirements, pertains, and will otherwise do or cause to be done all acts

or things necessary to implement and carry into effect the terms and conditions of these documents to their full extent.

Furthermore, the municipality must ensure any information the municipality provides to the Ministry under the Program is true and complete at the time provided and will continue to be true and complete.

## **8.2 Records**

A municipality receiving dedicated gas tax funds must keep and maintain separate records and documentation related to any dedicated gas tax funds and any related interest, including invoices and any other financially-related documents relating to the provision or acquisition of public transportation services for which dedicated gas tax funds and any related interest have been used. The records and documentation must be kept and maintained in accordance with generally accepted accounting principles. Records containing confidential information must be kept in accordance with all applicable legislation. No provision of these guidelines and requirements shall be construed so as to give the Ministry any control whatsoever over the municipality's records.

## **8.3 Audit**

A municipality receiving dedicated gas tax funds may be subject to audit. The Ministry may, at its sole discretion, audit or have audited by any third party, any records and documentation of the municipality related to any public transportation services provided or acquired with dedicated gas tax funds or any related interest, and such funds. Such audit may require the Ministry, at the municipality's expense (except as provided in the Canadian Content Policy), to retain external auditors. In addition, the Auditor General may, pursuant to the *Auditor General Act*, R.S.O. 1990, c. A. 35, as amended, audit the accounts and records of the municipality relating to any expenditure of dedicated gas tax funds.

To assist in respect of the rights set out above, a municipality will be required to disclose any information requested by the Ministry, its authorized representatives or an independent auditor identified by the Ministry, and will do so in the form requested by the Ministry, its authorized representatives or an independent auditor.

In addition to any adjustments the Ministry may make to dedicated gas tax funding under these guidelines and requirements, the Ministry may, upon recommendation in an audit report, adjust future dedicated gas tax fund payments or other payments the Province may make to the municipality under any other program.

## **8.4 Reporting**

Accuracy in the calculation and reporting of municipal transit ridership and dedicated gas tax funds and any related interest is paramount. When calculating ridership, municipalities must use one of the acceptable best practices identified in the 2008 Ontario Ridership Data Collection Review Report, published jointly by CUTA and iTrans Consultants (retained by CUTA).

A municipality will be accountable to use dedicated gas tax funds and any related interest towards public transportation expenditures that meet the Program eligibility requirements. Each municipality will be required to report on how dedicated gas tax funds and any related interest are spent on an annual basis, including the provision of its Canadian Content Policy declaration form(s), in accordance with the Canadian Content Policy, for any public transportation vehicle funded with dedicated gas tax funds. The Canadian Content Policy has been amended effective September 21, 2017 to be aligned with government procurement commitments under the Comprehensive Economic Trade Agreement (CETA) between Canada and the European Union (EU). As of September 21, 2017, municipalities are to comply with the amended policy for all transit procurements.

For the purpose of the above reporting, municipalities will be required to use the reporting forms that have been developed in consultation with municipal public transportation stakeholders, and submit these reporting forms to the Ministry prior to February 26, 2021.

Municipalities are strongly advised to carefully verify all data before submitting their reporting forms, to ensure that all information provided is accurate. Municipalities are also encouraged to contact the Ministry if they require any guidance or assistance in completing these reports.

## **9. COMMUNICATIONS**

Unless the Ministry otherwise approves in writing, a municipality receiving dedicated gas tax funds will be required to acknowledge the support of the Ministry in a form and manner as directed by the Ministry.

A municipality will be required to give a minimum of thirty (30) days written notice to the Ministry regarding any planned local dedicated gas tax funding communication or recognition event, or both. The municipality will also be required to provide the Ministry with detailed information regarding such communication or event, or both.

The Ministry and a municipality receiving dedicated gas tax funds will, at all times, remain independent of each other and will not represent themselves to be the agent, joint venturer, partner or employee of the other. Neither the municipality nor the Ministry will be allowed to make representations or take actions that could establish or imply any apparent relationship of agency, joint venture, partnership or employment. In addition, neither the municipality nor the Ministry will be bound in any manner whatsoever by any agreements, warranties or representations made by any of them to any other person or entity, with respect to any other action of the other.

If the municipality publishes any material of any kind, written or oral, relating to public transportation services provided or acquired with dedicated gas tax funds, the municipality will indicate in the material that the views expressed in the material are the views of the municipality and do not necessarily reflect those of the Ministry.

A municipality receiving gas tax funding must comply with the requirements for the installation

and maintenance of visual identity signage set out in Appendix C.

## **10. CONFLICT OF INTEREST**

A municipality and its subcontractors and any of their respective personnel must use dedicated gas tax funds and provide and acquire services and assets with such funds without an actual, potential, or perceived conflict of interest.

A conflict of interest includes any circumstances where a municipality or any person who has the capacity to influence the municipality's decisions has outside commitments, relationships or financial interests that could, or could be seen to, interfere with the municipality's objective, unbiased, and impartial judgment relating to the provision or acquisition of services or assets provided or acquired with dedicated gas tax funds, the use of such funds, or both.

A municipality will disclose to the Ministry, without delay, any situation that a reasonable person would interpret as an actual, potential, or perceived conflict of interest, and comply with any terms and conditions that the Ministry may prescribe as a result of the disclosure.

## **11. FREEDOM OF INFORMATION AND PROTECTION OF PRIVACY ACT**

All applications submitted to the Ministry are subject to the *Freedom of Information and Protection of Privacy Act*, R.S.O. 1990, c. F. 31, as amended ("FIPPA"). The FIPPA provides every person with a right of access to information in the custody or under the control of the Ministry, subject to a limited set of exemptions.

Municipalities are advised that the names of municipalities receiving dedicated gas tax funds, the amount of funds provided, and the purpose for which dedicated gas tax funds are provided, is information the Ministry makes available to the public.

## **12. LIABILITIES AND INDEMNITIES**

A municipality receiving dedicated gas tax funds must agree that it is responsible for anything that may arise, directly or indirectly, in connection with the Program, including, without limitation, any activity under it such as the provision and acquisition of services and assets with dedicated gas tax funds. The Ministry's involvement under the Program is for the sole purpose of, and is limited to, the provision of dedicated gas tax funds.

Furthermore, a municipality receiving dedicated gas tax funds must agree to indemnify and hold harmless the indemnified parties from and against any and all losses or proceedings, by whomever made, sustained, incurred, brought, or prosecuted, in any way arising out of, or in connection with anything done or omitted to be done by the municipality or any municipality on behalf of which the municipality receives dedicated gas tax funds, or any of their respective personnel, the Program, any activity under it, or the letter of agreement, unless the loss or proceeding is solely caused by the negligence or willful misconduct of the indemnified parties.

A municipality receiving dedicated gas tax funds is responsible for its own insurance and must carry, at its own costs and expense, and require the same from its subcontractors and any municipality on behalf of which it receives dedicated gas tax funds, all the necessary and appropriate insurance that a prudent municipality in similar circumstances would maintain in order to protect itself and the Ministry and support the indemnification, as set out above, provided to the Ministry. For greater certainty, the municipality is not covered by the Province of Ontario's insurance program and no protection will be afforded to the municipality by the Government of Ontario for any losses or proceedings that may arise out of the Program or letter of agreement.

For greater certainty, the rights and remedies of the Ministry under a letter of agreement are cumulative and are in addition to, and not in substitution for, any of its rights and remedies provided by law or in equity.

### **13. COMPLIANCE WITH THE LAW**

A municipality receiving dedicated gas tax funds must comply with all federal and provincial laws and regulations, all municipal by-laws, and any other orders, rules and by-laws related to any aspect of the services or assets provided or acquired with the dedicated gas tax funds and the dedicated gas tax funds.

For greater clarity, by receiving dedicated gas tax funds, a municipality may become subject to legislation applicable to organizations that receive funding from the Government of Ontario, including the *Public Sector Salary Disclosure Act, 1996*, S.O. 1996, c. 1, Sched. A and the *Auditor General Act*, R.S.O. 1990, c. A.35.

### **14. WHERE TO REQUEST OR PROVIDE INFORMATION**

All forms, agreements, supporting documentation as well as any questions regarding the Program are to be directed to the Strategic Transit Investments Office of the Ministry of Transportation at [MTO-PGT@ontario.ca](mailto:MTO-PGT@ontario.ca).



## APPENDIX A: REPORTING FORMS

## **APPENDIX B: CANADIAN CONTENT POLICY**

## APPENDIX C: VISUAL IDENTITY SIGNAGE REQUIREMENTS

### 1. Purpose of Schedule

This Appendix describes the responsibilities and obligations of a municipality receiving dedicated gas tax funds for the installation and maintenance of visual identity signage under the Program.

### 2. Visual Identity Signage

The municipality will install and maintain the exterior and interior visual identity signage on each public transportation vehicles for which dedicated gas tax funds were provided.

External visual identity signage must be located immediately to the left of the front passenger entrance doors of the vehicle. Internal visual identity signage should be placed on an interior wall in a location and height that will be convenient for passengers to read.

Recognition stickers approximate size — 10" x 3.4".

**Authority:** Item , Name of Committee  
Report  
CM: Date

**Bill No.**

## CITY OF HAMILTON

**BY-LAW NO.** \_\_\_\_\_

**To Authorize the Signing of an Agreement between the City of Hamilton and the Ministry of Transportation Related to Funding Provided Under the Dedicated Gas Tax Funds for Public Transportation Program.**

**WHEREAS** the Council of the City of Hamilton deems it advisable to enter into an agreement with Her Majesty the Queen in right of Ontario, as represented by the Minister of Transportation related to funding provided by the Province of Ontario to the Municipality under the Dedicated Gas Tax Funds for Public Transportation Program;

**NOW THEREFORE** the Council of the City of Hamilton enacts as follows:

1. The Mayor and General Manager, Finance & Corporate Services are authorized and directed to sign the Letter of Agreement between the City of Hamilton and Her Majesty the Queen in right of Ontario, as represented by the Minister of Transportation which is attached Schedule A and forms part of this By-law.
2. This By-law may be cited for all purposes as the 2020 / 2021 City of Hamilton / Ministry of Transportation Gas Tax Funding Agreement Bylaw.
3. This By-law is deemed to have come into force on \_\_\_\_\_, 2021.

**PASSED** this \_\_\_\_\_ day of \_\_\_\_\_, 2021.

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Fred Eisenberger  
MAYOR

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Andrea Holland  
CLERK



**CITY OF HAMILTON**  
**CITY MANAGER'S OFFICE**  
 Digital, Innovation & Strategic Partnerships

<b>TO:</b>	Chair and Members General Issues Committee
<b>COMMITTEE DATE:</b>	February 17, 2021
<b>SUBJECT/REPORT NO:</b>	Hate Prevention and Mitigation Initiative Update (CM19006(d)) (City Wide)
<b>WARD(S) AFFECTED:</b>	City Wide
<b>PREPARED BY:</b>	John Ariyo (905) 546-2424 Ext. 1564 Pauline Kajiura (905) 546-2424 Ext. 2567
<b>SUBMITTED BY:</b>	Cyrus Tehrani Chief Digital Officer Digital, Innovation & Strategic Partnerships City Manager's Office
<b>SIGNATURE:</b>	

## RECOMMENDATIONS

That staff be directed to retain a telephone polling company, to partner with the Project Lead Consultant, to conduct city-wide telephone polling with a target of 600 respondents, respecting the Hate Prevention and Mitigation Initiative to be completed by April 2021, at an estimated cost of \$25,000 to be funded through the Tax Stabilization Reserve.

## EXECUTIVE SUMMARY

On September 23, 2020, the General Issues Committee of Council received a Consultant/Staff Recommendations Report. The report detailed key community engagement efforts already completed for the project. These included:

- **Equity-based Community and Public Conversations:** Between June 29 and August 19, 2020, six (6) individual virtual project engagement sessions were conducted and attended by **192** participants. The participants at each of the six separate sessions included - Black (40); Indigenous (15); Racialized (28); 2SLGBTQIA+ (33); Faith-based (15) and the General Public (61).
- **Community Survey:** Between June 16 and July 15, 2020, a detailed online community survey was also launched. The survey was completed by **91** participants across the city.

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*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: Hate Prevention and Mitigation Initiative Update (CM19006(d)) (City Wide)**

**Page 2 of 8**

- **Telephone and Email Exchanges:** Ten (**10**) specific telephone conversations and email exchanges took place involving the lead consultant and residents who preferred these methods.
- **Engagement with Council Members:** Between December 2019 and January 2020, six (**6**) Council members had a one-on-one conversation with the lead consultant and project Staff to share their thoughts on hate-motivated incidents in Hamilton, and what they had been hearing from constituents.
- **Mayor's Roundtable on Diversity and Inclusion:** Project consultant held two conversation sessions with the members of the Mayor's Roundtable on Diversity and Inclusion. The **13-member** table has diverse representation of community leaders and people with lived-experiences.
- **Best Practices Research:** The project consultant conducted a comprehensive review of at least **20** municipalities in Canada, United States, Australia and the United Kingdom to further complement findings from public engagement and inform key directions.

**Council Directions, Research Findings, Status Updates and Recommendations**

On September 23, 2020, Council provided key directions to Staff, including:

- Conduct further engagement with key community stakeholders and equity seeking groups to develop actions, recommendations and resource needs.
  - **Status update:** Staff are currently implementing this recommendation. The project consultant has also conducted further public engagement and received additional input on preliminary project recommendations.
- Conduct research and develop a report involving Legal Services, on what actions could be taken by Council to address public displays of flags and symbols considered by many as racist, hateful or offensive.
  - **Status update:** Staff are currently implementing this recommendation. A Staff report will be brought forward to Council when completed.
- Write a letter to the federal Minister of Justice requesting that the threshold of hate crime in the Criminal Code be consistently applied across law enforcement agencies in Canada
  - **Status update:** direction completed.

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**SUBJECT: Hate Prevention and Mitigation Initiative Update (CM19006(d)) (City Wide)**

**Page 3 of 8**

- Engage with the Association of Municipalities of Ontario (AMO) to partner and address community equity issues common across Ontario municipalities.
  - **Status update:** two virtual anti-racism/equity conferences involving AMO and about 10 Greater Toronto and Hamilton Area (GTHA) municipalities were held in October and December 2020. Staff will continue to monitor the collaboration and bring forward further advocacy opportunities to Council.
- Lastly and specific to the 91 survey respondents, Council directed Staff to “review options as to how to obtain feedback from a larger sample of the broader community, with focus given to those with lived experiences, if possible, as it relates to the Hate Prevention and Mitigation Initiative, and report back to the General Issues Committee”.
  - **Status update:** this Council direction is the basis of this staff report – (CM19006(d)) (City Wide)).

Staff engaged with the Project Lead Consultant, reviewed survey best practices and obtained larger telephone polling quotes. Staff concluded that although pursuing a larger survey sample size effort might not significantly change some of the feedback already received from project participants to date, nevertheless a larger sample size will allow for broader community voices to be heard on the project.

For this reason, Staff are recommending to Council that Staff hire a polling company and conduct a citywide telephone polling. The polling will have 600 completed phone interviews at a cost estimate of \$25,000. The polling can be initiated and completed within two months. The sample quote details are attached as Appendix “A” to Report (CM19006(d)) (City Wide).

### **FINANCIAL – STAFFING – LEGAL IMPLICATIONS**

**Financial:** Recommendation cost estimate is \$25,000. The cost covers hiring a polling company and the Project Lead Consultant (Sage Solutions) working with the polling company to incorporate polling findings into final project reports. Staff recommend that the cost estimate be funded through the Tax Stabilization Reserve.

**Staffing:** There are no staffing implications related to the recommendations of Report (CM19006(d)) (City Wide).

**Legal:** There are no legal implications related to the recommendations of Report (CM19006(d)) (City Wide).

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**SUBJECT: Hate Prevention and Mitigation Initiative Update (CM19006(d)) (City Wide)****Page 4 of 8****HISTORICAL BACKGROUND**

On December 11, 2013, Council passed a motion reinforcing the use of the City Hall Forecourt as a space for public demonstrations and protests, and that there should be no cost to do so. Council also directed that the Special Events Advisory Team (SEAT) coordinate with protest organizers, where advanced notice of a protest is given.

On March 28, 2018, Council passed a motion directing Staff to investigate and report on ways to mitigate the use of City park and public spaces by "hate groups" in consultation with various groups.

On July 12, 2019, Council approved Staff recommendations on the draft Hate Incident Prevention Policy and Procedures, draft Procedure for Notification of Assembly or Demonstration and Corporate Security Office report (LS19031/PW19068). Council also directed Staff to retain an external consultant and conduct public engagement on these policies, procedures and other related issues.

On August 12, 2019, Staff provided an information update on the Staff composition and a process to retain a public engagement consultant (CM19006).

On October 16, 2019, Council received various project updates relating to the consultant procurement process and Corporate Security. Notably, Council approved a Trespass bylaw as submitted by Legal Services (LS19031/PW19068(a)/CM19006(a)).

In December 2020, Staff issued two notices under the new Trespass by-law.

On February 20, 2020, Council received an information update on the retention of a public engagement consultant (Sage Solutions) and their proposed public engagement plan (LS19031/PW19068(b)/CM19006(b)) (City Wide).

On September 23, 2020, Council approved Staff recommendations to the General Issues Committee, along with the two reports submitted by project consultant on research and public engagement (LS19031/PW19068(c)/CM19006(c)) (City Wide). Status updates of the subsequent Council directions are detailed on page 2 of this report.

Similarly on September 23, 2020 report, Council directed Staff to review options as to how to obtain feedback from a larger sample of the broader community, with focus given to those with lived experiences, if possible, as it relates to the Hate Prevention and Mitigation Initiative, and report back to the General Issues Committee (LS19031/PW19068(c)/CM19006(c)) (City Wide). This Council direction is the basis for this Staff report.

**Additional Community Engagement Activities (October 2020 – January 2021)**

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**SUBJECT: Hate Prevention and Mitigation Initiative Update (CM19006(d)) (City Wide)**

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While Staff continued to implement previous recommendations from September 23, 2020, the consultant also continued to do parallel work by engaging various community partners and stakeholders for additional feedback and input.

Between October 2020 and January 2021, the project consultant conducted additional community engagement to obtain input on preliminary draft recommendations. About **100** community stakeholders and general public participated.

These project engagement activities included:

- LGBTQ Advisory Committee – engagement, review and input received on the consultant’s draft recommendations report (October 20, 2020).
- Mayor’s Roundtable on Diversity and Inclusion – engagement, review and input received on the consultant’s draft recommendations report (October 30, 2020).
- Community stakeholders’ Meeting – engagement, review and input received on the consultant’s draft recommendations report (November 13, 2020).
- Committee Against Racism – engagement, review and input received on the consultant’s draft recommendations report (November 24, 2020).
- LGBTQ Advisory Committee – final engagement, review and input received on the consultant’s draft recommendations report (December 15, 2020).
- Consultant’s draft recommendations report was posted on the new Engage Hamilton platform for general public feedback (survey ran from November 16, 2020 to January 8, 2021).

The collective findings from these engagement activities will be captured and used by the consultant to inform the final project recommendations report.

## **POLICY IMPLICATIONS AND LEGISLATED REQUIREMENTS**

Policy implications and legislation relating to this initiative from the beginning include Canadian Charter of Rights and Freedom, Criminal Code of Canada and the Ontario Human Rights Code. Other related policies include privacy, policing and public safety requirements. Staff will regularly review and advise Council on continued alignments with applicable policies and legislation.

## **RELEVANT CONSULTATION**

### **Internal Consultations**

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**SUBJECT: Hate Prevention and Mitigation Initiative Update (CM19006(d)) (City Wide)**

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- **Audit Division**

Staff consulted to obtain names of major polling companies that participated in the procurement process for Our City Survey, which helped with getting a better sense of polling companies in the market place and cost estimates.

- **Related Survey Results**

Staff reviewed methodology, approach and results from related City-led equity-based projects, such as the Urban Indigenous Strategy and the Hamilton Anti-Racism Resource Centre (HARRC).

### **External Consultations**

- **Project Consultant and Polling Companies**

Staff consulted with the project consultant to obtain advice on engagement methodology and polling sizes. The consultant also supported Staff in obtaining sample quote estimates from potential polling companies based on project needs and requirements. The quote options and estimates are attached as Appendix “A” to Report (CM19006(d)) (City Wide).

### **ANALYSIS AND RATIONALE FOR RECOMMENDATION**

For this report, Staff reviewed advice from the consultant, average quote estimates from polling companies, various public engagement feedback and the City-led survey results from previous equity-based community projects. Staff key findings include the following:

- The issue of hate incidents is not unique to Hamilton as it is a common problem across Canada and around the world. As initially directed by Council, the Hate Prevention & Mitigation initiative is aimed at conducting community engagement to better understand the experiences of people impacted by hate, what is driving hate incidents and helping the City come up with more effective policies, strategies and other solutions to addressing them.
- In addition to various research and public engagement conducted for this project, Police-report hate crimes in Hamilton also provide another set of useful data and evidence for consultant’s review and consideration.
- Findings show that multiple engagement approaches are the best ways of obtaining input from people with lived-experiences, equity-seeking groups and the general public on a sensitive and often traumatizing topic like hate. However, COVID-19 and its effect on in-person public engagement impacted the project ability to obtain larger community engagement input typical for this kind of equity-based initiative.

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**SUBJECT: Hate Prevention and Mitigation Initiative Update (CM19006(d)) (City Wide)**

**Page 7 of 8**

- Very useful input has been received from residents, equity-seeking groups and various community stakeholders on the project to date, even amid the pandemic. This feedback is key and remains very relevant in shaping project final recommendations.
- Lastly, Staff concluded that any additional effort by the City of Hamilton to obtain a broader community input could further be beneficial. The feedback could assist with further informing project recommendations and other policy considerations.

In view of the foregoing, Staff recommended that Council could direct Staff to conduct additional polling to increase sample size by hiring a polling company. The polling company and the lead consultant will work together to design, conduct and proceed with a citywide polling sample at a cost estimate of \$25,000.

The polling will target 600 telephone interviews, +/-5% margin of error, 19 times out of 20, with 95% confidence interval. The turnaround is typically within a couple of months, which can be launched in February 2021 and completed by mid-April 2021. The polling results will then be incorporated by the Project Lead Consultant into the project final recommendations report and submit to Council for approval by June 2021.

### **ALTERNATIVES FOR CONSIDERATION**

As alternatives, City Council could consider two options:

- A. Direct Staff to hire a polling company and conduct a ward-by-ward polling sample at a cost estimate of \$114,000. The polling will target 5,700 completed telephone interviews (380 completed interviews per ward). Margin of error is +/-5%, 19 times out of 20, with 95% confidence interval. The timeframe for this option is three months.
- B. Direct Staff to hire a consultant and organize a Virtual Town Hall. The one-hour event has features like a live moderator, polling questions, guest speakers, question screeners, live audio/video webcasts, reporting and other functionality. Invitation outreach to potential participants could be conducted through Hamilton telephone landlines, with option for a pre-registration website. The event could accommodate up to 15 questions from potential participants. Total event cost estimate is \$9,000. The timeframe for this option is four weeks, which includes preparation and event promotion to ensure better community awareness. However, with a maximum of 15 questions this option allows, Staff believe the option would not adequately yield a larger sample size that meets Council direction.

### **ALIGNMENT TO THE 2016 – 2025 STRATEGIC PLAN**

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**SUBJECT: Hate Prevention and Mitigation Initiative Update (CM19006(d)) (City Wide)****Page 8 of 8**

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**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.

**Healthy and Safe Communities**

Hamilton is a safe and supportive City where people are active, healthy, and have a high quality of life.

**Culture and Diversity**

Hamilton is a thriving, vibrant place for arts, culture, and heritage where diversity and inclusivity are embraced and celebrated.

**APPENDICES AND SCHEDULES ATTACHED**

Appendix "A" to Report (CM19006(d)) (City Wide): Telephone Polling Quotes

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## TELEPHONE POLLING QUOTES

Staff engaged with the project consultant for advice, conducted research and solicited informal quotes from a few polling companies between October and December 2020.

The two polling approaches relevant to the project in line with Council direction include either Option A – conducting a Citywide Telephone Polling or Option B – conducting a Ward-by-Ward Telephone Polling.

In the two scenarios, the work will require a polling company working directly with project lead consultant, Sage Solutions, to conduct a telephone polling across the city.

Details of each approach are highlighted below:

A	<b>Citywide Telephone Polling</b>	
1	<b>Details</b>	
	600 telephone interviews asking about 10 questions. The phone calls will be made mostly to landlines and some cell phones. The polling takes about two months to conduct and results compiled. The polling has a +/-5% margin of error, 19 times out of 20, with 95% confidence interval.	
2	<b>Cost estimates</b>	
	Polling company: (Cost includes project meetings, survey programming, hosting, fieldwork, data processing, analysis, reporting and Council/staff presentation)	\$15,000
	Sage Solutions – Project lead consultant: (Cost includes incorporating telephone polling findings into project reports, working with the polling company during polling phase and other project due diligence and Council/staff presentation)	\$10,000
	<b>TOTAL COST ESTIMATE</b>	<b>\$25,000</b>

Staff recommend Option A above if endorsed by Council.

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## Appendix "A" to Report CM19006(d)

Page 2 of 2

<b>B</b>	<b>Ward-by-Ward Telephone Polling</b>	
1	<b>Details</b> 5,700 telephone interviews ( <b>380 completed interviews per ward</b> ) asking about 10 questions. The phone calls will be made mostly to landlines and some cell phones. The polling takes about three months to conduct and results completed. The polling has a +/-5% margin of error, 19 times out of 20, with 95% confidence interval.	
2	<b>Costs</b>  Polling company: (Cost includes project meetings, survey programming, hosting, fieldwork, data processing, analysis, reporting and Council/staff presentation)	\$99,000
	Sage Solutions – Project lead consultant: (Cost includes incorporating telephone polling findings into project reports, working with the polling company during polling phase and other project due diligence and Council/staff presentation)	\$15,000
	<b>TOTAL COST ESTIMATE</b>	<b>\$114,000</b>

Staff do not recommend Option B due to cost and timing and that ward level detail will not necessarily provide new data to incorporate into recommendations above and beyond what Option A would provide.

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Hamilton

**ADVISORY COMMITTEE FOR PERSONS WITH  
DISABILITIES  
REPORT 21-001**

**4:00 p.m.**

**Tuesday, January 12, 2021**

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

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**Present:** A. Mallet (Chair), P. Kilburn (Vice-Chair), S. Aaron, J. Cardno, L. Dingman, A. Frisina, J. Kemp, T. Manzuk, C. McBride, M. McNeil, T. Murphy, K. Nolan and T. Nolan

**Absent**

**with regrets:** P. Cameron, M. Dent, S. Geffros and M. Sinclair

**Also Present:** J. Bowen, Supervisor, Diversity and Inclusion

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**THE ADVISORY COMMITTEE FOR PERSONS WITH  
DISABILITIES PRESENTS REPORT 21-001 AND  
RESPECTFULLY RECOMMENDS:**

- 1. Resignation of Shahan Aaron from the Outreach Working Group of the Advisory Committee for Persons with Disabilities (Item 6.3(a))**

That the resignation of Shahan Aaron from the Outreach Working Group of the Advisory Committee for Persons with Disabilities, be received.

**2. Update on COVID-19 and Persons with Disabilities (Item 8.3)**

WHEREAS, at the September 8, 2020 meeting of the Advisory Committee for Persons with Disabilities, Committee members Tim Nolan and Tom Manzuk were authorized to delegate at the General Issues Committee on behalf of the Committee respecting all matters related to the COVID-19 pandemic and its impact on persons with disabilities, including recommendations for improved policies and procedures;

WHEREAS, the Advisory Committee for Persons with Disabilities prepared a list of concerns and challenges faced by persons with disabilities throughout the course of the COVID-19 pandemic;

WHEREAS, it is important to ensure that pandemic plans, policies and procedures account for the needs of persons with disabilities; and,

WHEREAS, consultation with the Advisory Committee for Persons with Disabilities on pandemic plans, policies and procedures would help to mitigate unintended negative impacts and consequences for persons with disabilities;

**THEREFORE, BE IT RESOLVED:**

That the Advisory Committee for Persons with Disabilities respectfully requests that consultation occur with the Advisory Committee for Persons with Disabilities when



developing future pandemic plans, policies and procedures, with the understanding that Public Health Services and the City's Emergency Operations Centre hold the safety and well-being of the public as paramount.

**3. Advisory Committee for Persons with Disabilities Working Group Membership Review (Item 8.4)**

- (a) That the resignation of Tim Nolan from the Built Environment Working Group and the Transportation Working Group of the Advisory Committee for Persons with Disabilities, be received; and,
- (b) That Tom Manzuk be appointed to the Transportation Working Group of the Advisory Committee for Persons with Disabilities for the remainder of the 2018 – 2022 Term of Council.

**FOR INFORMATION:**

**(a) CHANGES TO THE AGENDA (Item 1)**

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

**8. DISCUSSION ITEMS**

- 8.4 Advisory Committee for Persons with Disabilities Working Group Membership Review

**CHANGES TO THE ORDER OF ITEMS:**

That Item 8.1, respecting the Hamilton Amateur Athletic Association (HAAA) Grounds Renewal Plan (Ward 1), be

moved up on the agenda to be considered immediately following the Approval of Minutes of the Previous Meeting.

The agenda for the January 12, 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) December 8, 2020 (Item 3.1)**

The minutes of the December 8, 2020 meeting of the Advisory Committee for Persons with Disabilities, were approved, as presented.

**(d) DISCUSSION ITEMS (Item 8)**

**(i) Hamilton Amateur Athletic Association (HAAA)  
Grounds Renewal Plan (Ward 1) (Item 8.1)**

Maureen Wilson, Ward 1 Councillor, addressed Committee respecting the Hamilton Amateur Athletic Association (HAAA) Grounds Renewal Plan (Ward 1). Wes Kindree, Landscape Architect, was also present and assisted in answering questions of Committee on this matter.

The discussion, respecting the Hamilton Amateur Athletic Association (HAAA) Grounds Renewal Plan (Ward 1), was received.

**(e) CONSENT ITEMS (Item 6)**

**(i) Built Environment Working Group Update (Item 6.1)**

The Built Environment Working Group did not meet in January 2021.

**(ii) Housing Issues Working Group Update (Item 6.2)**

**(a) Housing Issues Working Group Meeting Notes – November 17, 2020 (Item 6.2(a))**

The Housing Issues Working Group Meeting Notes of November 17, 2020, were received.

**(b) Housing Issues Working Group Meeting Notes – December 15, 2020 (Item 6.2(b))**

The Housing Issues Working Group Meeting Notes of December 15, 2020, were received.

**(iii) Outreach Working Group Update (Item 6.3)**

The Outreach Working Group met on December 15, 2020 and discussed the creation of brochures to facilitate outreach to the public and a calendar highlighting disability-related dates. The next meeting is scheduled on January 19, 2021.

The verbal update, respecting the Outreach Working Group, was received.

For further disposition of this matter, refer to Item 1.

**(iv) Transportation Working Group Update (Item 6.4)**

The project to have PRESTO card payments available on DARTS is underway, with a scheduled completion date of February 26, 2021. On December 8, 2020, Shahan Aaron attended a virtual demonstration, hosted by PRESTO, of how the payment app will work on DARTS vehicles. The main focus was on how the driver will interface with the app and what will be displayed when a customer's card is tapped on the card reader. The location/placement of the card reader within the DARTS vehicle has not yet been determined. Initial feedback includes that the system is slow, with an outdated appearance and little colour contrast. A detailed update will be provided at the next Transportation Working Group meeting.

The verbal update, respecting the Transportation Working Group, was received.

**(v) Strategic Planning Working Group Update (Item 6.5)**

**(a) Strategic Planning Working Group Meeting Notes – December 16, 2020 (Item 6.5(a))**

The Strategic Planning Working Group Meeting Notes of December 16, 2020, were received.

**(b) Potential Database / Data Storage Solutions (Item 6.5(b))**

The handout, respecting Potential Database / Data Storage Solutions, was received.

**(f) DISCUSSION ITEMS (Item 8) (CONTINUED)**

**(i) Hamilton Strategic Road Safety Committee Meeting Update (Item 8.2)**

The Hamilton Strategic Road Safety Committee was formed to provide guidance/direction to the Hamilton Strategic Road Safety Program (HSRSP). The mission and vision of the HSRSP is to provide a safe road network for all road users and to eliminate incidents that result in injury or fatality. The Committee is comprised of members from Roads and Traffic, Transportation Planning, Public Works Communications, Hamilton Police Services, Hamilton Public Health and the Ministry of Transportation Ontario.

The Chair of the Advisory Committee for Persons with Disabilities (or Committee Member Tom Manzuk in their stead) was authorized to represent the Committee's interests as a key stakeholder/advisor (non-voting member) on the Hamilton Strategic Road Safety Committee (see Item 3 of Advisory Committee for Persons with Disabilities Report 20-002 for reference).

Tom Manzuk attended a recent meeting of the Hamilton Strategic Road Safety Committee on the Chair's behalf and reported that many issues were discussed including, but not limited to, speed limits in school zones and the timing of traffic lights. The Advisory Committee for Persons with Disabilities' concerns around e-scooters and e-bikes were raised and the Hamilton Strategic Road Safety Committee committed to reviewing the matter further in future following

pending legislation. The next Hamilton Strategic Road Safety Committee meeting is scheduled in March 2021.

The verbal update, respecting the Hamilton Strategic Road Safety Committee Meeting, was received.

**(ii) Update on COVID-19 and Persons with Disabilities (Item 8.3)**

In preparation for their delegation to the General Issues Committee, Tim Nolan and Tom Manzuk reviewed the comprehensive list of feedback received to date from Committee members respecting all matters related to the COVID-19 pandemic and its impact on persons with disabilities, including recommendations for improved policies and procedures.

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

**(g) GENERAL INFORMATION / OTHER BUSINESS (Item 11)**

Anthony Frisina was recognized for being a 2020 Order of Hamilton recipient. The Order of Hamilton recognizes remarkable individuals who have made exceptional volunteer contributions to building our city and making it a better place to live, work and play.

**(i) Accessibility Complaints to the City of Hamilton (Item 11.1)**

Jessica Bowen, Supervisor, Diversity and Inclusion, indicated that accessibility complaints have been received in relation to keeping sidewalks clear on garbage routes.

The verbal update, respecting Accessibility Complaints to the City of Hamilton, was received.

**(ii) *Accessibility for Ontarians with Disabilities Act, 2005 (AODA) Update (Item 11.2)***

No update.

**(iii) *Presenters List for the Advisory Committee for Persons with Disabilities (Item 11.3)***

No update.

**(iv) *Review of Advisory Committee for Persons with Disabilities Outstanding Business List (deferred from the December 8, 2020 meeting) (Item 11.4)***

(a) That the following items on the Advisory Committee for Persons with Disabilities Outstanding Business List (OBL) be considered complete and be removed:

- (i) Housing Services and City of Hamilton's Barrier Free Design Guidelines  
Addressed as Item 2 on Healthy & Safe Communities Committee Report 19-001 (HSC19001)  
Item on OBL: 2016-B
- (ii) Smoke Free Policy for Social Housing  
Addressed as Item 11.4(a) on today's agenda  
Item on OBL: 2017-B
- (iii) Snow Removal Processes and Policies  
Addressed as Report PW19022(a)

Item on OBL: 2018-A

- (iv) Review of Snow and Ice By-law No. 03-296  
Addressed as Item 11.4(b) on today's agenda  
Item on OBL: 2018-B
- (v) Note-taker for ACPD meetings  
Addressed as Item 11.4 on today's agenda  
Item on OBL: 2018-C
- (vi) Automated Pre-Boarding Announcements on  
HSR Vehicles  
Addressed as Item 11.4(e) on today's agenda  
Item on OBL: 2018-D
- (vii) Draft Proposal from DARTS respecting  
Stranded Wheelchairs  
Addressed as Item 11.4(c) on today's agenda  
Item on OBL: 2018-E
- (viii) Accessibility Review of City Hall Outstanding  
Items  
Addressed as Item 11.4(d) on today's agenda  
Item on OBL: 2018-F
- (ix) Hamilton Street Railway Bus Transfers  
Addressed as Item (d)(i) on Advisory  
Committee for Persons with Disabilities  
Report 20-003  
Item on OBL: 2019-A
- (x) City's Commitment to the Lives of Persons  
with Disabilities in the City of Hamilton  
Addressed as Item 11.4 on today's agenda  
Item on OBL: 2019-B



- (xi) Feasibility of a Document Sharing Portal  
Addressed as Item 11.4(f) on today's agenda  
Item on OBL: 2019-D
  
- (xii) Installation of Urban Braille along Cannon  
Street East at the Intersections of Wellington  
Street North, Catherine Street North, and  
John Street North  
Addressed as Item 1 and Item (e)(i) (Report  
PW20049) on Advisory Committee for  
Persons with Disabilities Report 20-003  
Item on OBL: 2019-E
  
- (xiii) Rick Hansen Foundation Accessibility  
Certification Ratings  
Addressed as Item (h)(i) on Advisory  
Committee for Persons with Disabilities  
Report 20-003  
Item on OBL: 2020-A

That the following items be considered incomplete and remain on the Advisory Committee for Persons with Disabilities Outstanding Business List (OBL):

- (i) Housing Services and City of Hamilton's  
Barrier Free Design Guidelines  
Addressed as Item 2 on Healthy & Safe  
Communities Committee Report 19-001  
(HSC19001)  
Item on OBL: 2016-B
  
- (ii) Smoke Free Policy for Social Housing  
Addressed as Item 11.4(a) on today's agenda  
Item on OBL: 2017-B

- (iii) Snow Removal Processes and Policies  
Addressed as Report PW19022(a)  
Item on OBL: 2018-A
- (iv) Review of Snow and Ice By-law No. 03-296  
Addressed as Item 11.4(b) on today's agenda  
Item on OBL: 2018-B
- (vi) Automated Pre-Boarding Announcements on  
HSR Vehicles  
Addressed as Item 11.4(e) on today's agenda  
Item on OBL: 2018-D
- (vii) Draft Proposal from DARTS respecting  
Stranded Wheelchairs  
Addressed as Item 11.4(c) on today's agenda  
Item on OBL: 2018-E
- (viii) Accessibility Review of City Hall Outstanding  
Items  
Addressed as Item 11.4(d) on today's agenda  
Item on OBL: 2018-F
- (ix) Hamilton Street Railway Bus Transfers  
Addressed as Item (d)(i) on Advisory  
Committee for Persons with Disabilities  
Report 20-003  
Item on OBL: 2019-A

Main Motion, ***as Amended***, to read as follows:

- (a) That the following items on the Advisory  
Committee for Persons with Disabilities

Outstanding Business List (OBL) be considered complete and be removed:

- (v) Note-taker for ACPD meetings  
Addressed as Item 11.4 on today's agenda  
Item on OBL: 2018-C
  
- (x) City's Commitment to the Lives of Persons with Disabilities in the City of Hamilton  
Addressed as Item 11.4 on today's agenda  
Item on OBL: 2019-B
  
- (xi) Feasibility of a Document Sharing Portal  
Addressed as Item 11.4(f) on today's agenda  
Item on OBL: 2019-D
  
- (xii) Installation of Urban Braille along Cannon Street East at the Intersections of Wellington Street North, Catherine Street North, and John Street North  
Addressed as Item 1 and Item (e)(i) (Report PW20049) on Advisory Committee for Persons with Disabilities Report 20-003  
Item on OBL: 2019-E
  
- (xiii) Rick Hansen Foundation Accessibility Certification Ratings  
Addressed as Item (h)(i) on Advisory Committee for Persons with Disabilities Report 20-003  
Item on OBL: 2020-A

**(h) ADJOURNMENT (Item 13)**

There being no further business, the Advisory Committee for Persons with Disabilities was adjourned at 5:47 p.m.

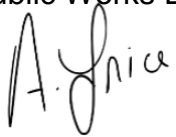
Respectfully submitted,

A. Mallet, Chair  
Advisory Committee for  
Persons with Disabilities

Alicia Davenport  
Legislative Coordinator  
Office of the City Clerk



# INFORMATION REPORT

<b>TO:</b>	Mayor and Members General Issues Committee
<b>COMMITTEE DATE:</b>	February 17, 2021
<b>SUBJECT/REPORT NO:</b>	Chedoke Creek Remediation Workplan (PW19008(j)) (City Wide)
<b>WARD(S) AFFECTED:</b>	City Wide
<b>PREPARED BY:</b>	Cari Vanderperk (905) 546-2424 Ext. 3250
<b>SUBMITTED BY:</b>	Andrew Grice Director, Hamilton Water Public Works Department
<b>SIGNATURE:</b>	

## COUNCIL DIRECTION

Not Applicable

## INFORMATION

The City of Hamilton (City) was served Director's Order No. 1-PE3L3 by the Ministry of the Environment, Conservation and Parks (MECP) on December 4, 2020, pursuant to their authority under the *Environmental Protection Act (EPA)* and the *Ontario Water Resources Act (OWRA)*, as a result of the discharge into Chedoke Creek that occurred between January 2014 and July 2018.

Part One of the Director's Order requires the City to, by February 22, 2021, submit a workplan that identifies the remedial strategy for targeted dredging in Chedoke Creek. It also requires that the remedial works identified in the workplan be completed by October 31, 2021, or such other date approved by the Director in writing.

Part Two of the Director's Order requires the City to, by March 22, 2021, submit a Cootes Paradise Report, to propose the remediation/mitigation methods to offset the

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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.

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added nutrient loading to Cootes Paradise and the Western Hamilton Harbour Area and address any other potential ongoing impacts of the Main/King Combined Sewer Overflow (CSO) discharge.

The City retained the services of Wood Environment and Infrastructure (Wood) to satisfy the requirements of the Director's Order. This report serves to update Council on the status of the ongoing work to comply with the Director's Order and summarizes the workplan (Part One of the Order) that will be submitted by February 22, 2021. The Cootes Paradise Report (Part Two of the Order) is due to be submitted to the MECP on March 22, 2021. Staff will provide Council with a separate update related to the Cootes Paradise portion prior to the March submission deadline.

The Chedoke Creek Workplan, as prepared by Wood, is attached as Appendix "A" to Report PW190008(j). The content of the workplan was, for the most part, stipulated by the MECP in the Director's Order, and is subject to MECP Director approval prior to any remedial work commencing.

The City, along with its consultant, Wood, are committed to fulfilling the requirements of the Director's Order and have been meeting regularly with representatives from the local MECP office and staff from its Species at Risk Branch. The meetings are held to ensure that all parties are in alignment with the workplan being completed by the consultant, and to address any significant challenges as they come up. One such challenge that has been discussed during these meetings is the ability for the City and Wood to meet the tight deadlines imposed by the MECP in the Director's Order.

While the MECP agrees, in principle, that the timelines it has imposed on the City are challenging, during the meetings the MECP has not been amenable to pre-emptively extending the October 31, 2021 deadline to complete construction of the remedial works (targeted dredging). However, the MECP has agreed to review the timeline that is outlined in the workplan and will consider deadline extensions during their review, which is at the discretion of the Director per the provisions in the Order.

The primary timeline challenge, currently identified by Wood, is the permit and approvals process that is necessary for conducting dredging works in a natural regulated waterway. There are several agencies at the Provincial and Federal level that must provide their approval prior to the work commencing. The workplan includes an accurate timeline that depicts the reasonable steps that must be taken to commence work and successfully complete the work, with a completion date of Q3 2022. A summary of the workplan contents is outlined below.

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## Chedoke Creek Workplan Summary

The objectives of the workplan include detailing the scope associated with the targeted dredging necessary to restore the natural environment and to identify and mitigate any potential short-term impacts that may arise from implementing the workplan. In order to successfully execute the workplan the following activities need to be completed.

### Field Work

Additional information is required for design and permitting which principally involves collecting updated information on the total soft sediment volume which was discharged over the 2014-2018 period, estimated to be 5,600 m<sup>3</sup>. This work will predominantly focus on locating and characterizing the physical and chemical properties of the sediment/contaminants. Furthermore, detailed field data is required for the four (4) identified species at risk, known to be in the area.

### Dredge Scope

In response to the timeline challenges, this scope of work will follow an adaptive management approach, where information gathered from the field work will inform the dredging design, which will be adjusted as necessary to maximize the ecological benefits of the system. This is broken down in the following phases with estimated timelines shown for context (as noted, much of the timing will be conditional on field data and external permitting requirements):

#### 30% Design - May to June 2021

This phase consists of developing project limits, using the field data to prepare preliminary concepts/drawings, initial quantities and disposal options and identifying access requirements including the Dredge Material Management Area (DMMA).

#### 60% Design – June to July 2021

The development of the preferred dredging methodology, defining trucking routes, project sequencing and schedule along with the initial Engineers Cost Estimate.

#### 90% Design – July 2021

Required for the permitting applications and incorporates environmental, cultural and erosion control measures. In addition, the finalized disposal options and updated material quantities from the field work will be included along with an updated Engineers Cost Estimate.

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Final Design – Timeline contingent on permitting

Integrates any changes following regulatory review, the final Engineers Cost Estimate and the bid specifications for the tendering process.

#### Agency Approvals

A tracking tool has been developed to monitor engagement with all agencies for Land, Waterway and Species at Risk approvals. The following is a list of the identified agencies who are anticipated to have an interest in the project, per their legislated mandate:

- 1) Hamilton Conservation Authority (HCA)
- 2) Ministry of Transportation (MTO)
- 3) Ministry of Natural Resources and Forestry (MNRF)
- 4) Transport Canada (TC)
- 5) Fisheries and Oceans Canada (DFO)
- 6) Ministry of Environment, Conservation and Parks (MECP)
- 7) Archaeology (Ministry of Heritage, Sport, Tourism and Culture Industries)
- 8) Indigenous Consultation (MECP / DFO / Local)
- 9) Environmental Assessment (MECP / Impact Assessment Agency of Canada)

A detailed timeline, including critical milestones and associated potential challenges with permitting and approvals from outside agencies, has also been included and currently assumes a completion date for dredging works of Q3 2022, provided no unforeseen challenges arise. A worst-case-scenario timeline has also been included, should the project team not succeed in expediting the permits and approvals.

#### Tendering

Various procurement processes were considered at the outset, however based on the need for concurrent data collection for permitting, and community and stakeholder sensitivities associated with the project, a conventional approach has been advocated by the City and Wood team. The following standard procurement approach represents the best-case scenario.

In order to ensure that the City secure the best qualified contractors it is suggested that the Pre-Qualification method be adopted early in the process. The Request for Pre-Qualification is expected to take two months to complete and is tentatively scheduled to occur between March and May 2021. This includes the time to issue, close, evaluate, and short-list the approved contractors for the scope provided in the workplan.



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The Request for Tender is expected to take two months to complete and is tentatively scheduled to occur between July and August 2021. Tendering on these timelines would occur well before the best estimate for permit issuance, hence there will be a risk in potentially needing to update contract drawings and specifications to meet the requirements of the regulators. Alternatively, the tender can be aligned with the permitting period and issued closer to the date of final approvals; this would reduce the risk of amending the contract and incurring potential claims and costs. Further, this latter approach is unlikely to affect overall project timing.

### Construction

Information in this section describes the general scope work required for the targeted dredging. Construction is expected to take four (4) to Six (6) months to complete. The workplan is anticipated to include the following construction details:

- 1) Mobilization,
- 2) Offshore/Onshore Pipeline Routes,
- 3) Dredging,
- 4) Sediment Handling/Dewatering,
- 5) Material Disposal,
- 6) Site Restoration,
- 7) Demobilization

### Monitoring Program

The workplan describes the proposed monitoring plan including guidance on the collection, analysis, and reporting of data related to the recovery of the natural environment. These monitoring activities are broken down as follows:

#### Construction Monitoring

Water monitoring will be used to provide data regarding resuspension and release of contaminants during removal operations. Parameters to be monitored can include field measurements, physical and chemical parameters.

#### Post-Remediation Monitoring

Post-remediation monitoring will evaluate the effectiveness of contaminated sediment removal from the remedial actions undertaken in the workplan. As noted, the scope of this monitoring will need to align with the specifics of the dredge program so that meaningful data can be collected to assess the efficacy of the overall operation, and also provide data for use in the broader remediation of Cootes Paradise.

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### Consultation Plan

The consultation process is an integral component of the workplan and is designed to meet the requirements for considering affected stakeholders as described in the Director's Order. The consultation plan consists of planned discussions, meetings and correspondence with key stakeholders, agencies and the impacted landowners. In addition, the City will engage Indigenous Nations and Peoples to determine key points of interface and opportunities for meaningful involvement. Public notification will be accomplished by media releases, technical briefs and through the updates on the project website.

### **APPENDICES AND SCHEDULES ATTACHED**

Appendix "A" to Report PW19008(j) – Chedoke Creek Workplan, Wood Environment & Infrastructure Solutions

# Remediation Work Plan for Chedoke Creek – Targeted Dredging

City of Hamilton

Prepared for:

**City of Hamilton**

2/16/2021

# Remediation Work Plan for Chedoke Creek – Targeted Dredging

Chedoke Creek Work Plan  
City of Hamilton  
Project #WW20101062

**Prepared for:**

City of Hamilton

**Prepared by:**

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**2/16/2021**

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## 1.0 Introduction

This report, referred to as the "Chedoke Creek Work Plan", has been prepared by Wood Environment & Infrastructure Solutions (Wood) on behalf of the City of Hamilton to address the requirements outlined in the MECP Director's Order: 1-PE3L3 (the "Order", December 4, 2020), specific to the Targeted Dredge Plan for the Lower Chedoke Creek. The Order has numerous components (ref. Appendix A) which are addressed in the report sections which follow. Notably, Order requirements #1 and 2, have been fulfilled by the City retaining Wood and providing the MECP with confirmation of same on January 15, 2021 (ref. Email Girt-Burt). As such, Wood is acting as the City's representative in the capacity of Qualified Person (QP). Wood has not included its experience or credentials to support this title, however the City and MECP are familiar with its capabilities through the preparation of earlier reporting to address the requirements associated with the initial Order (ref. Provincial Officer's Order, #1-J25YB), including:

- Chedoke Creek Natural Environment and Sediment Quality Assessment and Remediation Report, Wood, January 24, 2019
- Chedoke Creek – Implementation and Costing Report, Wood, January 24, 2019

The following maps out the Order requirements (in **bold italics**) and highlights the section in the reporting which follows, where the information has been provided to address the specific needs of the MECP.

- 3. By February 22, 2021, submit to the Director, for approval, a remediation workplan for Chedoke Creek that is developed by the Qualified person to undertake the targeted dredging of Chedoke Creek based on the recommendation identified in section 5.2.5 of the Wood report entitled "MECP Order # 1-J25YB Item 1b – Chedoke Creek Natural Environment and Sediment Quality Assessment and Remediation Report" dated January 24, 2019 ("Chedoke Creek Workplan"). The Chedoke Creek Workplan shall be prepared in accordance with the requirements set out in Items 4 and 5 below.***

This item constitutes the subject work plan documented herein prepared by the Wood Team with the City of Hamilton, based on consultation with MECP (ref. Appendix B). With specific reference to the recommendations identified in Section 5.2.5 of the Wood report entitled "MECP Order # 1-J25YB Item 1b – Chedoke Creek Natural Environment and Sediment Quality Assessment and Remediation Report" dated January 24, 2019, the following is the relevant excerpt from the subject report:

### *"Direct Removal*

*Physical removal of the organic sediment within Chedoke Creek will directly address the three primary sources of potential impairment including nutrient contamination, bacteriological contamination, and habitat loss. Dredging can be accomplished either through mechanical means or by use of hydraulic dredge equipment. Hydraulic dredging is recommended in Chedoke Creek over mechanical means for several reasons. Mechanical dredging would not be practicable due to the limited width of the creek, the density of riparian vegetation, and lack of continuous access. Hydraulic dredging provides nearly complete containment of the dredge slurry along the pumping route, which reduces exposure of the sediments to the atmosphere that could cause odour or other problems, if the material were to be handled by an excavator. Additionally, the dredge slurry from a hydraulic dredge can be easily routed to the wastewater system for dewatering and ultimate treatment and disposal, thus avoiding potential issues related to dredged material storage, dewatering, and handling operations, which are generally space intensive and costly. Complete removal of this material by hydraulic dredging is recommended as the primary means of remediation. The recommended hydraulic dredge concept plan is further discussed in the following sections."*

**Table 1.1. Alternatives Assessment Summary**

Alternative	Functional Effectiveness	Environmental Effectiveness	Economics	Social Benefits
<b>No Action</b>	Long-term breakdown or burying of organic sediment resulting in downstream transport and dilution	Existing contaminants may be transported downstream to Cootes Paradise and further downstream where they will be diluted but may still support excessive algal growth and other impairments	No capital cost	The City intends to restrict access to Chedoke Creek so there will be no direct social benefits from the no action alternative
<b>Physical Capping</b>	Possibly effective but depends on fluidity of soft sediments. May not remain in place.	Provides a barrier which limits contact with the water column and could provide stable substrate	Relatively expensive because this involves transportation and placement of large quantities of clean fill	The City intends to restrict access to Chedoke Creek so there will be no direct social benefits
<b>Chemical Inactivation</b>	Only effective at reducing phosphorus release	Promotes indirect water quality response as a result of decreased phosphorus load. However, 90% of phosphorus load is no longer in Chedoke Creek	Least expensive option, but does not address anything other than phosphorus load	Potential downstream water quality improvements, benefits to Chedoke Creek during low flow as long as chemical stays in place
<b>Direct Removal</b>	Removes the source of contamination	Restores the original creek bed and removes the contaminated organic layer while reducing the oxygen demand	Moderately expensive but nearby sewer mains create a significant economic advantage for disposal	The City intends to restrict access to Chedoke Creek so there will be no direct social benefits

**4. The Chedoke Creek Workplan shall, at a minimum:**

- i. Consider technical reports, Ministry comments and affected stakeholders' comments, to determine an acceptable plan to implement the recommendation in the Wood report to restore the Chedoke Creek, while mitigating impacts of implementing the plan on the natural environment, including water;**

In preparing the Work Plan, Wood has relied on the following reports:

- "Quantification of Volume and Contaminant Loadings", Hatch, September 28, 2018
- "Chedoke Creek Natural Environment and Sediment Quality Assessment and Remediation Report", Wood, January 24, 2019
- "Chedoke Creek – Implementation and Costing Report", Wood, January 24, 2019



- "Peer Review Report - Chedoke Creek Natural Environment and Sediment Quality Assessment and Remediation Report" , May 15, 2019 , SLR Consulting (Canada) Ltd
- "Ecological Risk Assessment (ERA), Chedoke Creek, Hamilton, Ontario" ,SLR Consulting (Canada) Ltd. , February 12, 2020
- "Cootes Paradise: Environmental Cootes Evaluation Hamilton, Ontario" by SLR Consulting (Canada) Ltd. , April 22, 2020
- "Response to Ministry of Environment, Conservation and Parks May 28, 2020 letter entitled Chedoke Creek Spill Response – District Comments" SLR Consulting (Canada) Ltd. , June 12, 2020
- Memo entitled "Chedoke Creek Project, Wood Commentary on SLR Peer Review Comments, City of Hamilton" dated May 23,2019 by Wood Environment & Infrastructure Solutions.
- Letter from the City entitled "Response to Director's Order 1-MRRCX" Items 1 & 2 submitted on February 14th, 2020
- Report entitled "Main-King CSO Tank Overflow Volume Estimates" by HATCH Limited dated April 14th, 2020.
- Letter from the City entitled "Response to Order No.1-MRRCX, Items 3 and 4" submitted on April 30, 2020 with the following attachments:
  - Letter from the City of Hamilton entitled "Director Order Number; Item No. 4, Surface Water Monitoring Program" dated April 30, 2020;
  - Report entitled "Cootes Paradise: Environmental Cootes Evaluation Hamilton, Ontario" by SLR Consulting (Canada) Ltd. dated April 22, 2020.
- "Chedoke Creek Water Quality Improvement Study", GM BluePlan and Wood, (Draft), February, 2021

In terms of MECP comments, the following key points have been extracted from the Provincial Officer's Report (ref. 1-OW6SS) which accompanied the Director's Order, as relevant to guide the development of this Work Plan:

- *Further work is required to assess and address the potential presence of any species at risk in Chedoke Creek that may be subject to dredging. This could include the development of mitigatable measures to protect any species at risk during dredging or avoidance of specific areas for dredging. Consideration on the impact of dredging on species at risk is also given for: if the potential impact from dredging is deemed to be a long-term negative impact; if current conditions are degraded due to historical or spill impacts and already potentially negatively impacting the species; and if there would be a long-term impact improvement despite a short-term negative impact from dredging, in order to determine what and where it is appropriate to dredge.*
- *Any on-going sources of contamination are not anticipated to re-contaminate any remediated area to the same level historically seen or to the level seen from the 24 billion litres of sewage seen in this spill and is generally minor in comparison to the loadings seen from the spill.*
- *Some of the key items from the Ministry's technical staff review of the Chedoke Creek ERA and impact assessment are as follows:*
  - *The data interpretation and aggregate data analysis used in assessing pre spill conditions, spill period conditions and post spill conditions did not look at specific year differences (2018 vs 2014-2017) but used mean data analysis over the spill period potentially masking the*

*extent of the impact of the spill seen, particularly in 2018, for some parameters and didn't determine if the pre-spill period used was representative of conditions at the time of the spill.*

- *Information supported the sediment being impacted by the sewage spill by some of the nutrients;*
- *Impacted sediment was found to be a moderate to high risk with bacteria, PAH's and copper;*
- *The contaminant loading of nutrients, cBOD and other sewage related parameters showed ongoing impact on DO levels;*
- *Elevated TAN levels in Chedoke Creek above pre-spill conditions were on-going*
- *Based on advice received from ministry technical experts, it is not as feasible, for a number of reasons, to undertake a direct restoration of the added loadings to Cootes Paradise and the western Hamilton Harbour area both from the extent and type of the dispersion of TP, and the cost, effectiveness and potential to cause more harm than good in these areas using a direct removal method like dredging. In order to address the impacts of the increased loadings caused by the spill, based on advice received from Ministry experts, other remedial options must be considered and utilized to offset and/or improve the conditions in these systems in an effort to mitigate the added loading and associated impact as a result of the spill, and thus restore the natural environment.*
- *Considering the above noted on-going impacts and continuing potential impairment, I am of the opinion, after consultation with Ministry staff and technical experts, that a "no action" recommendation by the City does not discharge its obligation to restore the natural environment nor does it address or prevent potential adverse effects, or may impair or continued impairment of the natural environment, including waters.*
- *Thus, further action is necessary to restore the natural environment in relation to Chedoke Creek and that further action is needed to offset the impacts of the spill to Cootes Paradise. Accordingly, I require the City to undertake remedial measures outlined in the accompanied Provincial Officer's Order to restore the natural environment in Chedoke Creek as a result of the spill and take steps to determine what is required in relation to Cootes Paradise and implement those steps once an appropriate course of action is determined*

In terms of affected stakeholders, Wood has considered comments provided by RBG (ref. Runciman/Theijsmeijer-RBG to Widmeyer/Yeudall-MECP, Feb 13, 2020) as follows:

- *Desire to convene a meeting to discuss concerns regarding the potential extent of the sewage sediment in the marsh, and the future remediation efforts required to address this issue RBG suggested about 2,500 tonnes of sewage material was deposited into the Chedoke Inlet of Cootes Paradise during the spill*
- *RBG expressed that it anticipates that the sewage material will be substantially located on the RBG Cootes Paradise Marsh property, as well as from the marsh to Burlington Bay. RBG suggested that there may be greater ecological damage and contamination to the bed of the marsh than initially anticipated*

Pursuant to the above, RBG has also been a stakeholder on the recent City of Hamilton study "Chedoke Creek Water Quality Improvement Study", GM BluePlan and Wood, (Draft), February, 2021. Furthermore, Wood staff has contacted RBG over the course of preparation of this plan (January 2021), for insights into local conditions, including knowledge of species at risk, as well as to secure relevant information on RBG restoration plans for Cootes Paradise.

Wood has also discussed with MECP any other stakeholders who should be consulted directly, and based on this dialogue (ref. Meeting on February 12, 2021 see Appendix B), MECP staff has suggested that the area Remedial Action Plan (RAP) be contacted for its insights. As of the time of preparation of this Plan, contact has not been made due to time constraints, however the City and Wood commit to discussing the targeted dredge program with RAP representatives over the course of the preparation of the associated plans.

**4. The Chedoke Creek Workplan shall, at a minimum:**

**ii. Contain a detailed timeline setting out critical milestones and checkpoints with the Ministry for carrying out the Chedoke Creek Workplan;**

An overall schedule has been prepared on the basis of current understanding of field work requirements, Species at Risk protocols and Regulator input associated with approvals for permits. Ref Section 5.0.

**iii. Contain a Species at Risk assessment plan and associated timelines for Chedoke Creek downstream of the spill and including potential impacted areas downstream of Chedoke Creek that may be impacted by targeted dredging;**

**iv. Undertake consultation with the Species at Risk Branch within the Ministry in respect of any identified items pursuant to 4 iii) and incorporate this feedback and outcome into the workplan for any species at risk;**

As outlined in Section 4.5.6, the Wood Team has consulted with the MECP SAR Team to determine the associated species at risk as well as associated protocols and approval requirements and timelines.

**v. Provide a description of any anticipated approvals needed to implement the Chedoke Creek Workplan, initial consultation and proposed timelines to obtain such approvals, if required, for the Workplan to be implemented;**

**vi. The consultation in iv) and v) shall include the Regional Technical Support Section of the Ministry;**

Section 4.5 and Appendix B detail the consultation undertaken by the Wood Team regarding permits and approval requirements associated with the targeted dredge operation. Further the Regional Technical Support Section of the Ministry has been consulted for input (ref. Section 4.5.6).

**vii. Contain a description of the identified areas and the extent (depth, location) of the targeted dredging with a description of how the items outlined in Item 5 below were addressed and a description of any methods for refining identified areas in Item 5 including the impacted areas identified in the Wood reports and SLR reports and timing as needed, in the Chedoke Creek Workplan;**

As discussed herein, and outlined in various recent consultation with MECP staff, the information on the amount, location and composition of contaminated material is not known at present. It has been proposed to fill this information gap with field data collection including bathymetry and sediment sampling of the Lower Chedoke Creek, Princess Point Embayment and outlet zone of Cootes Paradise. The intent of these field activities (ref. Section 4.2) is to provide insights in to the "extent (depth and location)" for the targeted

dredging. As detailed in Section 4.3, the approach to targeted dredging will be led by a decision-making process which will adapt to field conditions once these are better defined.

**viii. Contain a description of the approximate volume of material to be removed;**

The Hatch Report (ref. "Quantification of Volume and Contaminant Loadings", Hatch, September 28, 2018), indicated that 2,375 +/- tonnes of total suspended solids (TSS) were discharged during the spill event. Wood's "Chedoke Creek Natural Environment and Sediment Quality Assessment and Remediation Report" included an evaluation of a range of possible in-situ sediment volumes based on the TSS discharged during the spill event. The soft sediment volume of 5,600 m<sup>3</sup> present within Chedoke Creek in 2018 approximates the estimated volume of wastewater TSS that was discharged during the spill event if it were consolidated to 40% solids. This solids content is considerably higher than typical gravity thickening processes for wastewater sludges which produce a maximum sludge concentration of around 10% solids. Wastewater solids generally undergo thickening processes for only a few days before they are moved to a secondary dewatering process for finishing. Given the extended time wastewater solids may have been resident in Chedoke Creek following the spill, it is reasonable to assume that significant self-compaction beyond normal thickening processes may have occurred. It is also reasonable to assume that a portion of the wastewater solids may have been transported beyond Chedoke Creek and more may have decomposed naturally.

The removal of sediment mass is an important consideration for the proposed remediation efforts within Chedoke Creek and downstream. The current extent of organic sediment volume is likely to have changed since 2018 and will be reassessed as part of this work plan to determine the current volume and nutrient content of organic sediments within the creek and downstream in Cootes Paradise. Based on Wood's findings, additional sediment volume may be identified within Cootes Paradise that could present suitable remediation benefits if removed.

**ix. Identify and contain a description of proposed mitigation measures for any short-term impact(s) that may arise from implementing the Chedoke Creek Workplan for Chedoke Creek, its shoreline and connected waterways/natural environment, on any species at risk and other potentially impacted uses. Mitigation measures may include, but are not limited to: exclusion measures for local aquatic uses; limit recreational uses in the area; total suspended solids control as required for carrying out the targeted dredging; and proposed monitoring during any remediation to monitor effectiveness of mitigation measures during dredging identified in iv); and**

The overall conditions of Chedoke Creek during Wood's 2018 ecological investigations indicated no significant submerged or emergent vegetation and poor water and sediment quality which reduced the potential for significant presence of pollution tolerant species. The 2018 field effort was intended to provide a preliminary assessment of potential ecological or recreational impacts. Additional effort will be required to assess the presence of Species at Risk or other potential ecological impacts to the Chedoke Creek system and downstream in Cootes Paradise. Utilizing construction best management practices, such as fish exclusion techniques (e.g., deploying silt curtain from shore to extent of dredge area thereby excluding fish from work limits) and fish salvage and relocation protocols to remove fish from with the isolated work areas will be used. Prior to any dredging work being conducted within Chedoke Creek, fish will be removed and excluded from the work area. Additional wildlife exclusion measures and mussel relocation plans will be developed as needed to ensure local biota are avoided, excluded or removed from the dredging activities, as best possible.

Recreational use of Chedoke Creek is already restricted by the City of Hamilton. Additional restrictions may be necessary particularly during the dredge operation depending on the potential for a revised project footprint to include portions of Cootes Paradise.

While the specific type of dredging technology is still under consideration, hydraulic dredging generally provides the most effective and economic turbidity control measures in a flowing system such as Chedoke Creek. Furthermore, it is anticipated that fine organic sediments will be pumped into the City's wastewater system which will significantly reduce the potential for turbid water returning to Chedoke Creek. Furthermore, once the plan is prepared, a construction monitoring program will be detailed and implemented. Additional details are provided in Section 4.3.

**x. *Contain a proposed monitoring plan to monitor the recovery of the natural environment and effectiveness of the Chedoke Creek Workplan once dredging is complete***

The Wood Team has developed an outline of a proposed monitoring plan which focuses on key indicators related to the natural environment, which would be expected to be tied to the planned improvements associated with the dredging program and the removal of contaminated material. The monitoring program will ultimately also need to reflect any specific conditions associated with the permitting of the works. For example, the anticipated *Fisheries Act* authorization typically includes post-construction performance monitoring to ensure the site and any enhancement features are functioning as intended and meeting the target success criteria as identified in the authorization. Similarly, the SAR Overall Benefit Permit as per the *Endangered Species Act* will specify post-enhancement performance monitoring with target success criteria. These post-construction monitoring events can occur within the short-term (e.g., years 1, 2 and 3 post-construction), as well as longer term studies (e.g., years 5 and 10+ post-construction) depending on the species, offset/benefit feature and expected timeframe for use and measures of performance.

- 5. *With respect to the area from the Main/King CSO outfall to the mouth of Chedoke Creek, the Chedoke Creek Workplan shall take into consideration the scope of targeted dredging work necessary to restore the natural environment to pre-spill conditions, as to be agreed upon by the Ministry, and to mitigate any impairments or potential impairments from the spill, in relation to the following, but not limited to:***
- i. *Sediment areas identified as impacted, in consultation with the Ministry, by the sewage spill;***
  - ii. *Sediment areas identified as containing elevated organic material consistent with sewage sludge;***
  - iii. *Sediment areas identified as elevated nutrients (particularly TP, TAN, and TKN);***
  - iv. *Sediment areas identified as had, may have, or continuing to have reduced dissolved oxygen levels in the water column from historical levels;***
  - v. *Sediment areas identified as having elevated parameters as identified by the ERA carried out by SLR ("Ecological Risk Assessment (ERA), Chedoke Creek, Hamilton, Ontario" dated February 12, 2020) to have moderate or high risk for impacts, or otherwise identified by the reports or in comments by the Ministry; and***
  - vi. *Addressing any ecological flow path requirements and connectivity within the creek in any remedial action plan that may impact low flow path and connectivity.***

Wood's "Chedoke Creek Natural Environment and Sediment Quality Assessment and Remediation Report" included a preliminary evaluation of items 5.i. through 5.iv. These items and Items 5.v. and 5.vi. are reviewed in detail in Section 2 of this plan. These data will be supplemented with additional field efforts collected by Wood as part of this plan.

**6. By October 31, 2021 or such other date approved by the Director in writing, complete the approved Chedoke Creek Workplan**

Per the overall project schedule (ref. Section 5.0), as currently understood based on consultation with regulators, the process of field data collection, permitting, approvals, design, tendering and construction, will exceed the time period beyond October 31, 2021. Notwithstanding, it is the intent of the City of Hamilton to continue to work cooperatively and efficiently with MECP and other regulators to seek opportunities to reduce the procedural timeframes and thereby conduct the targeted dredge work, as soon as possible.

**7. Within one (1) month of the completion of the of the work undertaken pursuant to the approved Chedoke Creek Workplan, submit to the Director, a report prepared by the Qualified Person confirming that the natural environment has been restored to pre-spill conditions and that further impairment to the natural environment will not occur as a result of the spill to the Chedoke Creek as detailed in the attached Provincial Officer's report, and at a minimum contain the following:**

- i. The details of the work undertaken to complete the Chedoke Creek Workplan;**
- ii. Any monitoring results completed before, during and after the work undertaken in accordance with the Chedoke Creek Workplan;**
- iii. Analysis of the results in Item 7(ii) above for the purposes of the intended monitoring; and**
- iv. Determination if any requirement for on-going monitoring is required to verify the effectiveness or maintenance of the remedial actions undertaken is necessary.**

This condition of the Order is planned following the completion of the works (targeted dredging) which is currently speculated to occur Q3/Q4, 2022. Further, since some of the improvements are unlikely to be instantaneously realized, it is anticipated that the monitoring data collected immediately following the targeted dredge operation, may not fully achieve the potential benefits which will likely accrue overtime. This perspective will ultimately be outlined in the "report" cited in Condition 7 above.

## 2.0 Summary of 2014 – 2018 Spill

### 2.1 Hatch Report Summary

The Ministry of the Environment, Conservation and Parks (MECP) issued Provincial Officer’s Order #1-J25YB (Order) on August 28, 2018. Part 1(a) of the Order required the City of Hamilton to determine the volume and contaminant loading from the Chedoke Creek spill event beginning January 28, 2014 and ending July 18, 2018. Hatch, under the direction of Wood, estimated the spill event volume for wet and dry weather discharge, as a result of a partially open (4.94%) bypass maintenance gate at the Main/King combined sewer overflow influent well and a second gate failure that occurred in January 2018 outside the CSO tank influent well. The failure of this second gate increased the amount of flow diverted towards and under the first gate, increasing the volume of the discharge to the Chedoke Creek. Hatch’s report titled “Quantification of Volume and Contaminant Loadings” was submitted to the City of Hamilton on September 28, 2018.

The spill volumes estimated by Hatch are included in **Table 2.1**. The majority of the spill volume occurred during wet weather flow (WWF) with dry weather flow (DWF) occurring only after the second gate failure. Spill volume is presented in terms of gigaliters (GL).

**Table 2.1. Estimated Spill Volume for Period from January 28, 2014 to July 18, 2018**

Sample Description	TSS (mg/L)	TP (mg/L)	Ammonia (mg/L)	TKN (mg/L)	cBOD (mg/L)
DWF Data					
Average DWF Conc. From WWTP Influent	266	4.52	21.6	34.7	173
Main/King DWF Single Sample	154	3.86	22.2	45.4	135
WWF Data					
Average WWF Conc. Main/King CSO Influent	76	1.61	4.58	10.0	41.3
Average WWF Conc. Royal CSO Influent	229	0.64	0.41	2.5	15.7
Average WWF Conc. McMaster CSO Influent	73	0.99	2.00	4.9	29.2
Average WWF Conc. Bayfront CSO Influent	66	0.67	1.22	4.0	29.9
Average WWF Conc. Eastwood CSO Influent	113	2.06	5.64	11.9	78.1

Hatch then determined the event mean concentrations (EMCs) for ammonia, total Kjeldahl nitrogen (TKN), total phosphorus (TP), total suspended solids (TSS) and carbonaceous biochemical oxygen demand (cBOD) using wastewater data from the Woodward wastewater treatment plant (WWTP) to estimate DWF conditions and grab samples from the Main/King CSO to estimate WWF conditions as shown in Table 2.2. Samples from other CSOs were compared to provide an estimate of variability.

**Table 2.2. Estimated Average DWF/WWF Pollutant Concentrations**

Gate Flow Component	WWF Spill Volume 2014 - 2018 (GL)	DWF Spill Volume 2018 (GL)	Total Spill Volume 2014 - 2018 (GL)
From Equation (1) For $H_2 > 0.740$ m	11.7	0.1	11.8
From Equation (2) For $0.148 \text{ m} < H_2 < 0.740$ m	8.8	2.6	11.4
From Equation (3) For $H_2 < 0.148$ m	0.6	0.2	0.8
<b>Total Spill Volume</b>	<b>21.1</b>	<b>2.9</b>	<b>24.0</b>

Hatch then multiplied the DWF EMCs estimated from the WWTP and the WWF EMCs from Main/King CSO grab samples (shown in green in Table 2.2) by their corresponding DWF and WWF to develop the estimated total contaminant loadings shown in **Table 2.3**.

**Table 2.3. Estimated Contaminant Loadings for Period from January 28, 2014 to July 18, 2018**

Flow Component	Spill Volume (GL)	Estimated Total Contaminant Loading (Tonnes)				
		TSS	TP	Ammonia	TKN	cBOD
DWF (2018)	2.9	771	13	63	101	502
WWF (2014-2018)	21.1	1,604	34	96	211	871
<b>TOTAL (2014-2018)</b>	<b>24.0</b>	<b>2,375</b>	<b>47</b>	<b>159</b>	<b>312</b>	<b>1,373</b>

The contaminant loadings developed by Hatch have been used as the basis for developing targeted restoration strategies discussed throughout the remainder of this plan.

## 2.2 Natural Environment and Sediment Quality Assessment Remediation Report Summary

Wood assisted the City of Hamilton with the preparation of a Conceptual Remediation Plan as required by the MECP and the original Order (#1-J25YB) as detailed in "Chedoke Creek – Implementation and Costing Report", Wood, January 24, 2019 and "Chedoke Creek Natural Environment and Sediment Quality Assessment and Remediation Report", Wood, January 24, 2019. The findings of the reports as they relate to sediment quality and characterization field studies, biota sampling surveys (benthic invertebrates and aquatic habitat) and analysis of existing data (fish community and water quality) are summarized along with a comparison of estimated contaminant loadings and in-situ sediment conditions within Chedoke Creek.



## Water Quality Summary

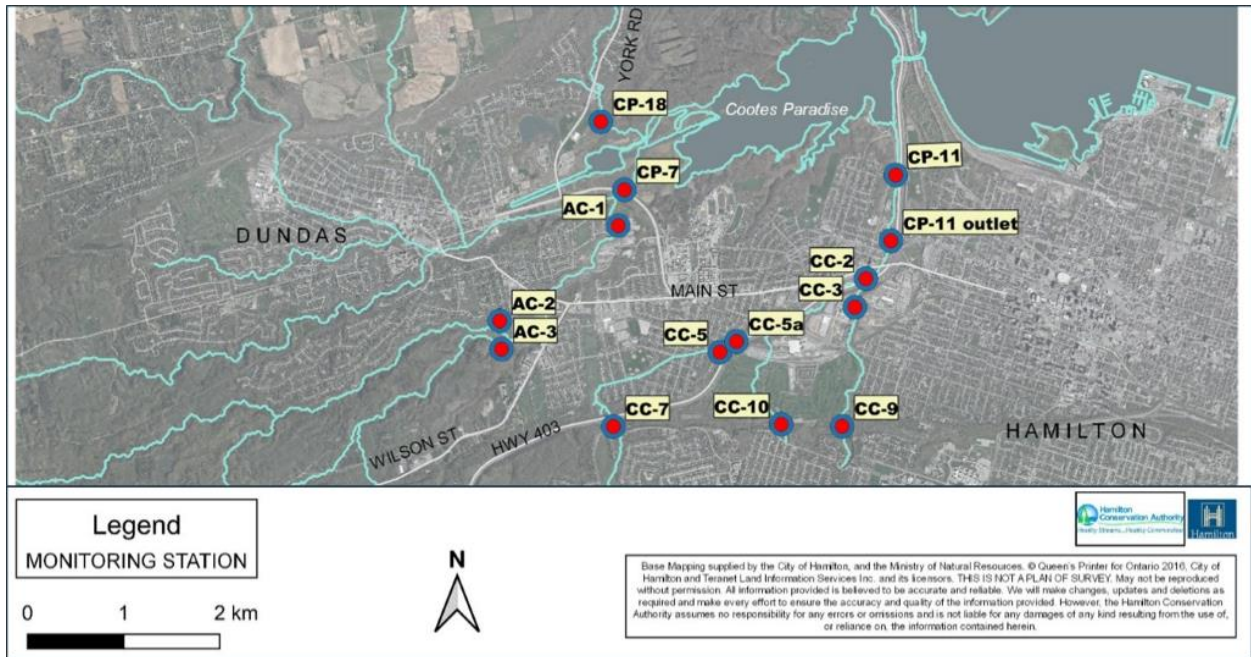
Several water quality stations were evaluated as part of the 2019 report, however water quality at the CP-11 station was considered most indicative of the water quality changes resulting from the spill event. Station CP-11 is located just upstream of the confluence of Chedoke Creek and Cootes Paradise and is the first station downstream of the Main/King CSO (Figure 2.1). Water quality data at CP-11 were compared for the pre-spill period between January 5, 2009 and January 27, 2014; the initial gate failure period between January 28, 2014 through December 31, 2017; the second gate failure between January 1, 2018 and July 18, 2018; and correction of the gates on July 18, 2018 through September 2018. Figures 2.2 through 2.4 show time series data for TP, *E. coli*, and ammonia at CP-11.

Pre-spill water quality at the CP-11 station was consistent with runoff from urbanized watersheds. TP concentration averaged 0.19 mg/L with average ammonia concentration of 0.54 mg/L. Average *E. coli* counts were not particularly elevated prior to the spill event. Dissolved oxygen concentration was near saturation and did not suggest significant presence of BOD.

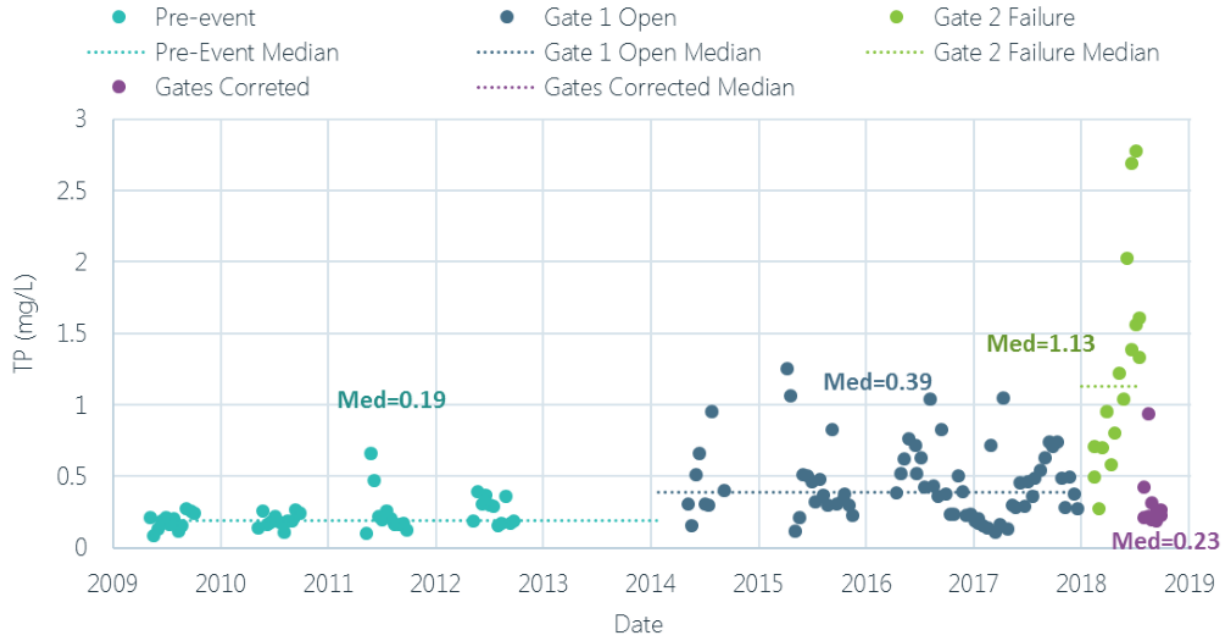
Water quality began to degrade after the initial gate failure on January 28, 2014. *E. coli* counts during the January 28, 2014 through December 31, 2017 were about an order of magnitude higher than prior to the beginning of the spill event (Figure 2.3). Median TP concentration was 2.2 times higher than the pre-spill period. Median ammonia concentrations were similar to pre-spill conditions although the maximum concentrations were higher after the start of the spill event. Dissolved oxygen concentration following the first gate failure was similar to the pre-spill condition.

Water quality decreased dramatically after the failure of the second gate on January 1, 2018. TP concentration increased steadily from less than 1 mg/L at the beginning of the second gate failure to over 2.5 mg/L through mid-summer of 2018. Median *E. coli* counts increased by three orders of magnitude following the second gate failure. Median ammonia concentration was approximately an order of magnitude higher (5.89 mg/L) than both the pre-spill period and period between the first and second gate failures.

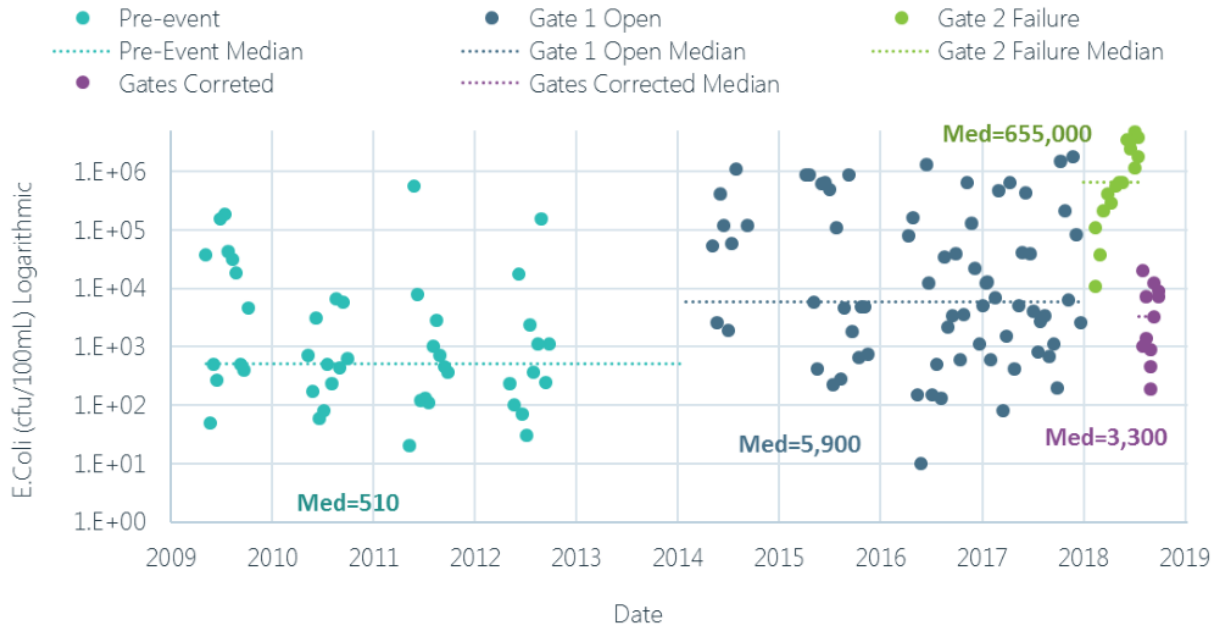
Water quality at the CP-11 station appeared to improve rapidly following correction of the first and second gates on July 18, 2018. TP concentrations at CP-11 decreased to background levels, and similar to pre CSO levels. Median ammonia concentration following gate corrections was 0.28 mg/L or about half of the median concentration during the spill event.



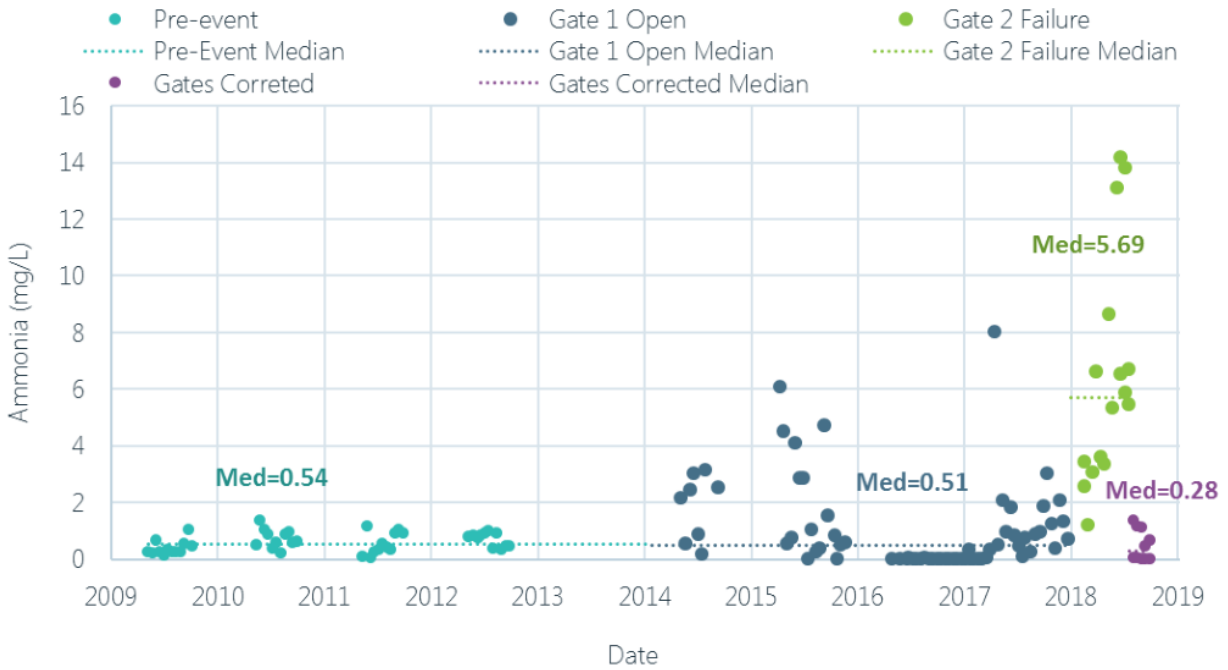
**Figure 2.1. Map of Chedoke Creek and Cootes Paradise Monitoring Stations**



**Figure 2.2. Total Phosphorus Concentrations at CP-11, and Median Values for the Four Time Periods**



**Figure 2.3. E. coli Levels at CP-11, and Median Values for the Four Time Periods**



**Figure 2.4. Ammonia Concentrations at CP-11, and Median Values for the Four Time Periods**

### Ecological and Physical Stream Conditions Summary

Wood evaluated the ecological and physical conditions of Chedoke Creek in 2018 using an upstream-to-downstream transect with various sediment samples collected at cross sections as shown in Figure 2.5.



Figure 2.5. Ecological and Physical Stream Conditions Survey Locations

The environmental findings of the Chedoke Creek Natural Environment and Sediment Quality Assessment and Remediation Report are summarized below.

### ***Stream Conditions***

The 2018 stream survey indicated no submerged aquatic vegetation, limited riparian vegetation, and an armored streambank. Some instream habitat (e.g., woody debris) was observed. An algae bloom was observed at Transect C-3/G-5. Stream sediments were generally muddy, and the soft sediment thickness layer increased from 0.1 m to about 0.7 m from upstream to downstream. Substrate within the upper half of the creek was sandy and rocky. Soft sediment fractions increased from 13 to 41% from upstream to downstream. Water velocity was observed to be highest within the shallow upstream half of the creek and gradually slowed as the water depth became deeper within the downstream half of the creek.

### ***Benthic Invertebrates***

Aquatic invertebrates were sampled in 2018 at the locations identified in Figure 2.5. Invertebrate abundances and diversity generally decreased from upstream to downstream, reflecting the reduction in habitat quality as defined by sediment condition. The overall benthic community was dominated by pollutant-tolerant organisms typically found in poor habitats. The most abundant organisms were the pollutant-tolerant taxa including chironomids and *Tubificidae* worms. The benthic invertebrate community of Chedoke Creek indicates a pollution-tolerant community which indicates poor environmental conditions typical of urban streams.

### ***Fish Community***

Fish data collected by the Royal Botanical Garden (RBG) from 2001 through August 2018 were evaluated along with fish sampling data collected by Wood in 2018 as shown in Figure 2.5. Data were normalized to catch per unit area. Fish abundance was variable over the period of record, but was, on average, highest at the station C1, located about 250 meters upstream of the outflow to Cootes Paradise. Fish abundance was also high at station M5, west of the Chedoke Creek discharge to Cootes Paradise. The greatest number of species, on average, was also found at C1. Fish abundance of 6.1 fish/ 50 m was higher at C1 in 2013 than the 0.1 fish/50 m observed in 2014. A reduction in fish abundance was also observed at station M5 during this same period. Fish abundance increased in 2015 but declined for the next three years relative to the pre-spill abundances. The number of fish species also decreased at C1 after 2014 and similar conditions were found until 2018 when the number of species increased. The number of stress-tolerant fish also appeared to increase from 2014 until 2018 when they declined. Fish sampling results appear to indicate the fish community of Chedoke Creek responded negatively during the spill event and positively following the end of the spill event.

### ***Sediment Conditions Summary***

Wood conducted preliminary sediment core and/or sediment grab sampling within Chedoke Creek at ten (10) locations between September 18<sup>th</sup> and 19<sup>th</sup> of 2018 as shown in Figure 2.5. Soft sediment thickness across the sample location transects showed greater accumulation of sediments along the west shoreline throughout the creek. Measured sediment thickness ranged from 0.10 to 0.70 m (mean thickness 0.37 m) along the west shoreline compared to 0.04 to 0.59 m (mean thickness 0.26) along the east shoreline and 0.03 to 0.66 m (mean thickness 0.32 m), near the centre of the creek. In general, the upstream sample locations including C-1, C-2, G-1 and G2 contained less soft sediment (thickness range 0.06 to 0.37 m) compared to the most downstream sample locations C-5/G-6 and C-6/G-7 (thickness range 0.44 to 0.70 m). Soft sediment thickness and bathymetry figures are provided in Figures 2.6 through 2.11.



Sediment core aliquots and grab samples were analyzed for the following parameters:

- qPCR – genetic analysis of sediment that identifies the relative abundance (%) of municipal sewage-based bacteria in the sample for comparison to natural sources of bacteria;
- Ammonia (NH<sub>3</sub>+NH<sub>4</sub>);
- Total Kjeldahl Nitrogen (TKN);
- Total Phosphorus;
- Total Metals (including: zinc, lead, copper); and
- O.Reg 153/04 Polycyclic Aromatic Hydrocarbons (PAH).

Sediment grab samples were analyzed for the following additional parameters:

- Sediment grain size analysis; and
- Pore water analysis for biochemical oxygen demand (BOD), faecal coliforms and dissolved oxygen (DO).

### **Bacteria**

The bacteroidetes and faecal coliform sample results showed that the highest concentrations were found at the C3/G-5 sample transect, downstream of the Kay Drage Park bridge (Figure 2.5). The qPCR results showed that the highest human and total bacteroidetes were present in the surface strata (0 to 15 cm) at the C-3C replicate sample located near the west shoreline. Concentrations in the mid-strata aliquot (15 to 30 cm) of C-3C were also higher than most other mid-strata samples. The bacteroidetes and faecal coliform results from the downstream sample transects show lower concentrations, with most of the lowest values at the C-6/G-7 sample location within Cootes Paradise (further from the Main/King CSO source).

### **Biological Oxygen Demand**

The highest porewater biological oxygen demand (BOD) results were found at sample transect C-5/G-6 immediately upstream of the Princess Point bridge, as shown on Figure 2.5, with the next highest BOD value observed at the G-3 sample transect located upstream of the Kay Drage Park bridge. The area of Chedoke Creek at transects G-3 and C-5/G-6 also contained the highest amount of organic material, which coincides with field observations indicating slower water velocities and increased settling of suspended solids at these locations.

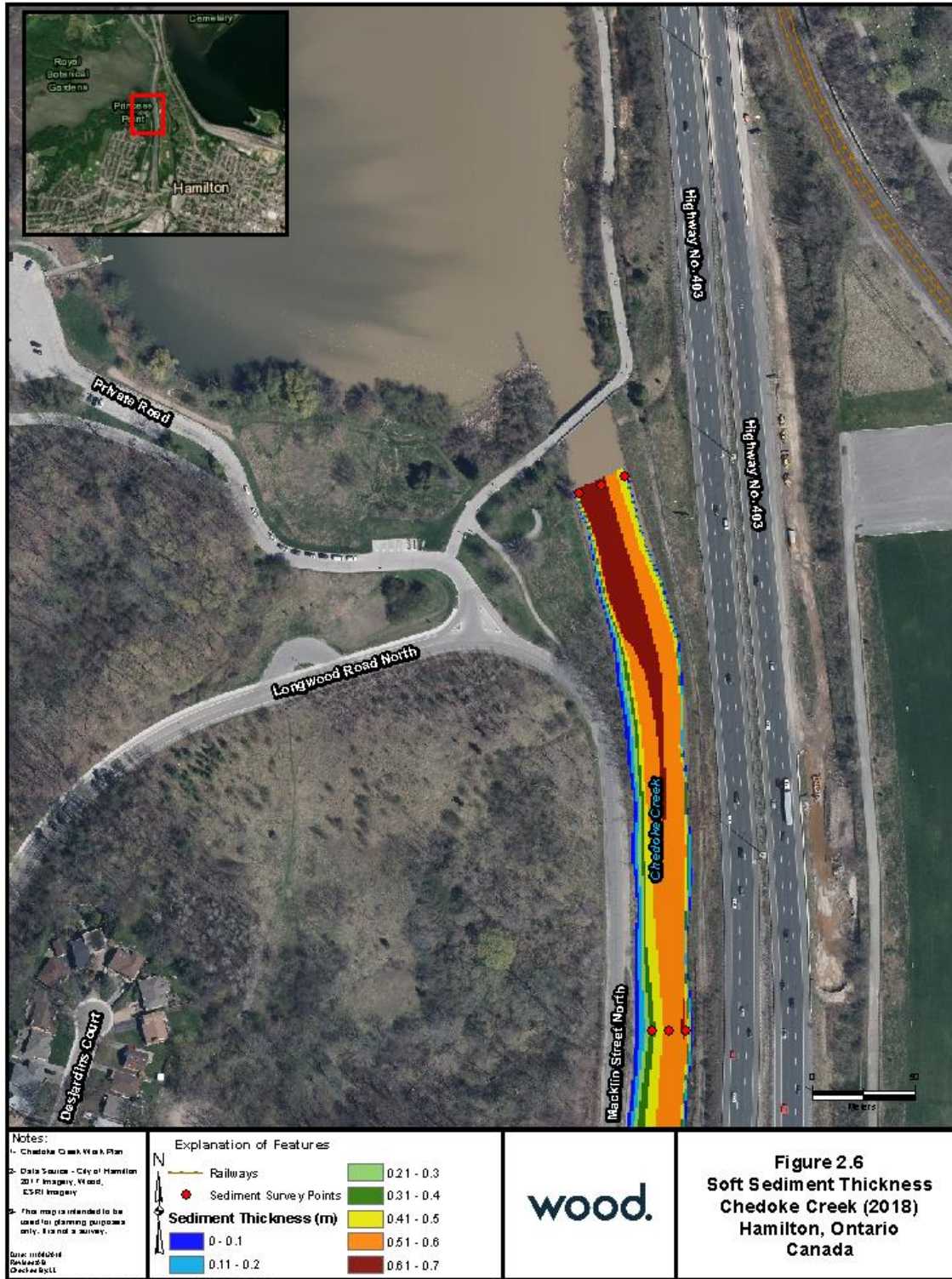


Figure 2.6. Soft Sediment Thickness, Chedoke Creek (2018), Hamilton, Ontario, Canada



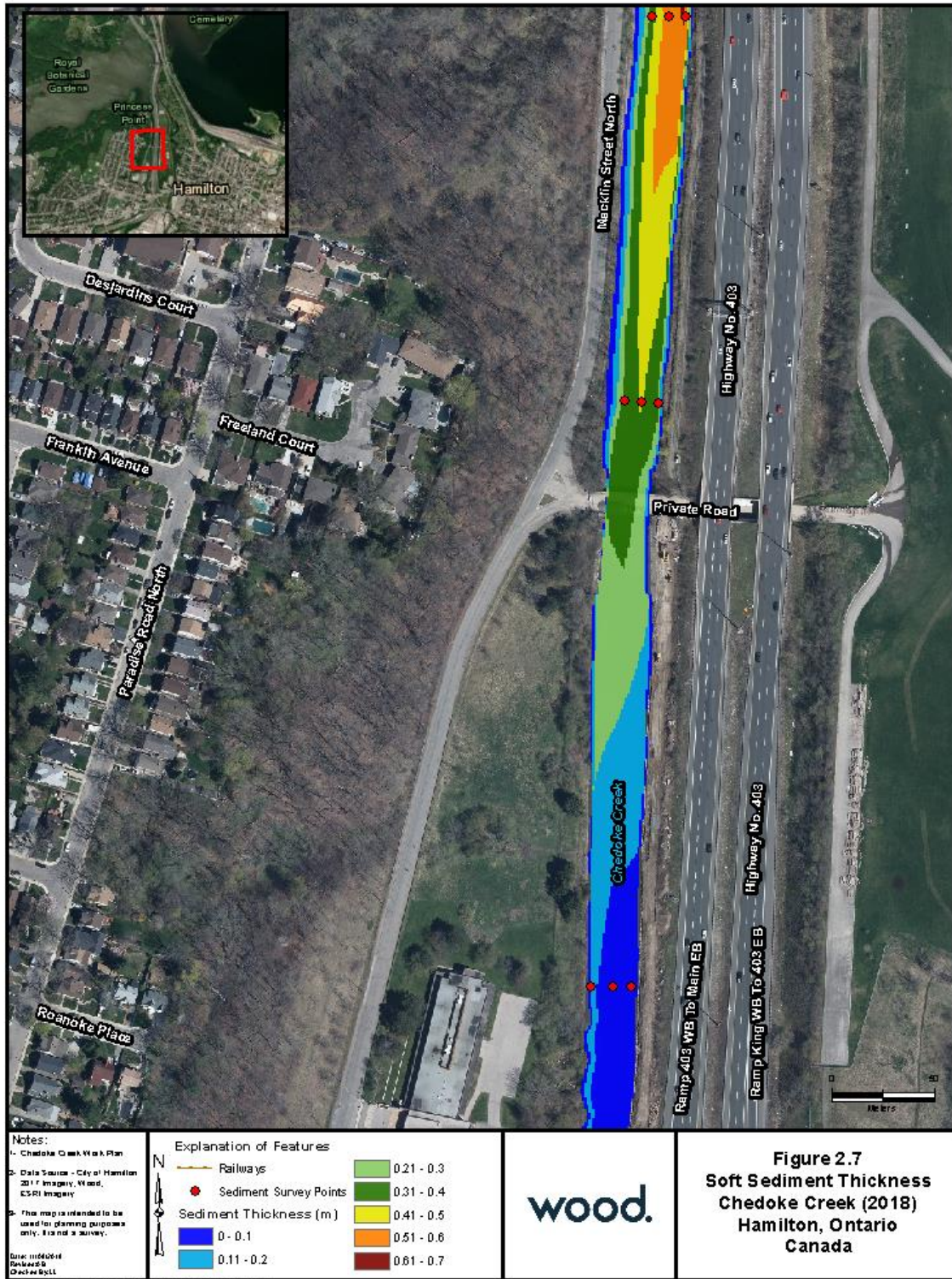


Figure 2.7. Soft Sediment Thickness, Chedoke Creek (2018), Hamilton, Ontario, Canada



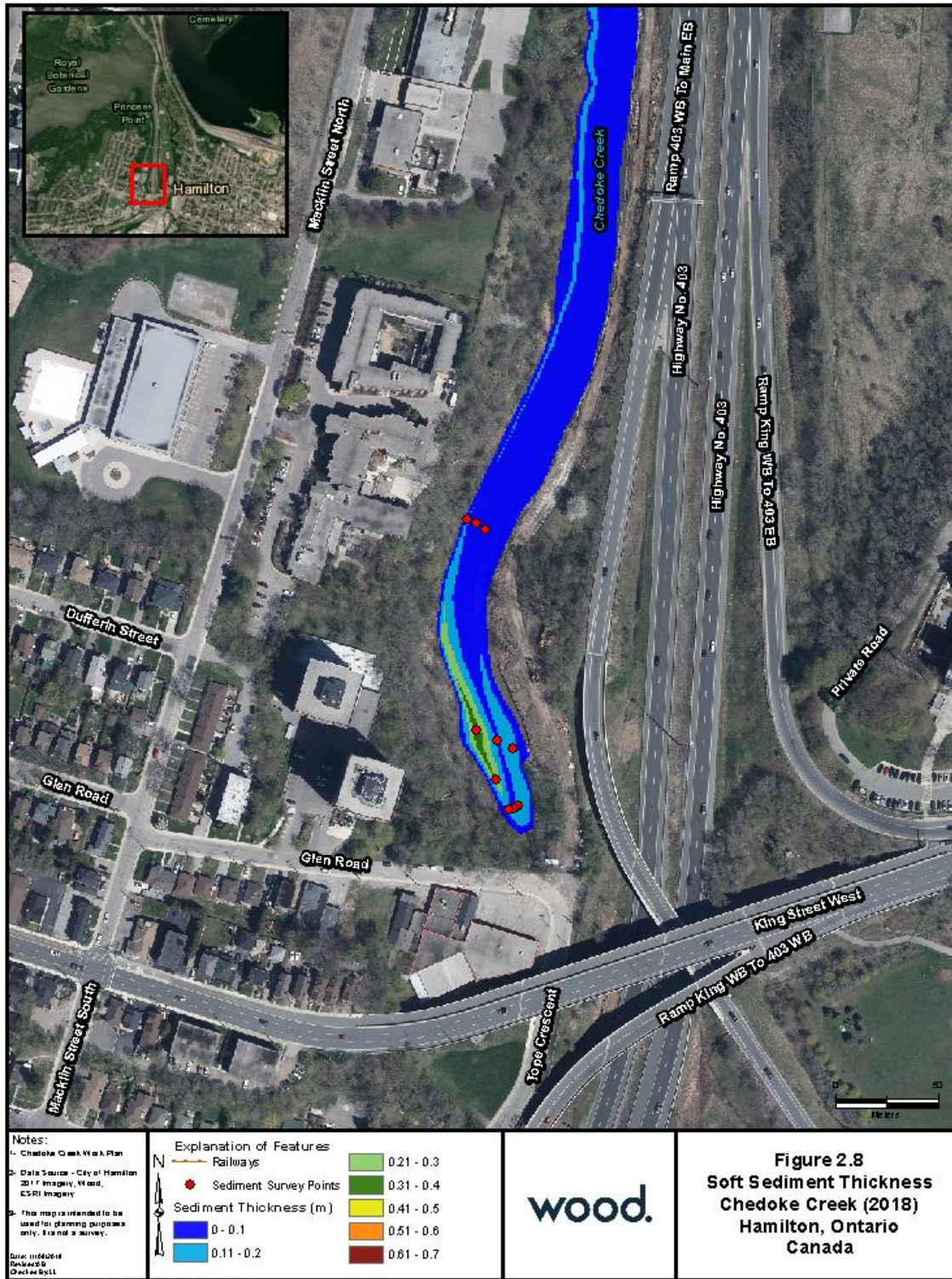


Figure 2.8. Soft Sediment Thickness, Chedoke Creek (2018), Hamilton, Ontario, Canada





Figure 2.9. Bathymetric Map, Chedoke Creek (2018), Hamilton, Ontario, Canada





Figure 2.10. Bathymetric Map, Chedoke Creek (2018), Hamilton, Ontario, Canada



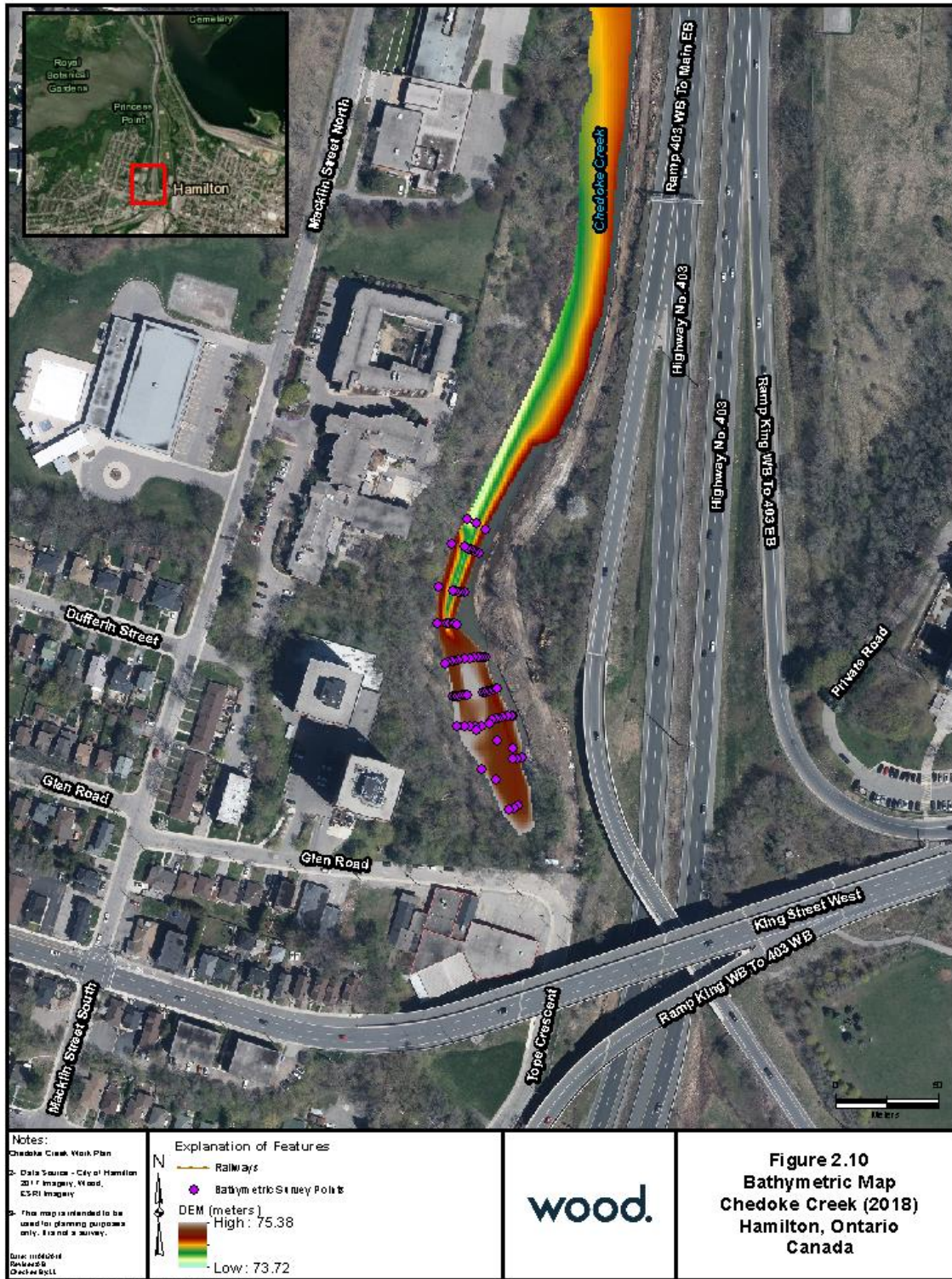


Figure 2.11. Bathymetric Map, Chedoke Creek (2018), Hamilton, Ontario, Canada

## Nutrients

Sediment quality nutrients of interest included ammonia+ammonium, total phosphorus and total Kjeldahl nitrogen (TKN), all of which were found in the highest concentration within the surface strata (0 to 15 cm) at the C-3/G-5 sample transect, specifically the C-3C sample location (Figure 2-4). The next highest surface strata nutrient concentrations were found at the C-4C sample location, and both locations were positioned near the west shoreline, in areas of soft organic sediment. These sample locations were situated between the Kay Drage Park and Princess Point bridges, showing higher nutrient concentrations were present within this reach and were mostly higher than the surface strata within the Cootes Paradise sample location (C-6/G-7). Nearly all TKN concentrations in surface strata were above the PSQG LEL (550 µg/g), suggesting these sediments contain a level of contamination that can be tolerated by the majority of sediment-dwelling organisms, but not necessarily stress-intolerance taxa as discussed above. Total phosphorus concentrations in all sediment strata samples were greater than the PSQG LEL (600 µg/g) between transects C-4 and C-6/G-7, with the highest concentrations observed at transect C-5/G-6. The phosphorus SEL (2,000 µg/g) was not exceeded by any sample concentration.

Previous sediment quality studies conducted by the RBG in 2006 and 2013 documented nutrient parameters at two locations (CC-1 and CC-2) positioned further northwest from the 2018 C-6/G-7 sample location (Figure 2.5). Pre-spill RBG data suggest that TKN enrichment had already occurred downstream in Cootes Paradise. Similarly, total phosphorus enrichment was found to have occurred downstream in Cootes Paradise prior to the event. The means and timeframe of TKN and TP enrichment remain unclear.

The mid and lower strata aliquot samples collected from Chedoke Creek showed nutrient concentrations were mostly higher than the surface strata concentrations at sample transects C-5/G-6 and C-6/G-7. These nutrient concentrations within deeper sediment strata suggested legacy nutrient enrichment had occurred where organic sediments were accumulating in the slower-flowing, lower reaches of the creek and within Cootes Paradise.

Nutrient concentrations were high in most samples collected from less than 30 cm in depth, portions of the creek that were sandy (C-1 through C-3) and deep (> 30 cm) samples had the lowest total Kjeldahl nitrogen and total phosphorus concentrations. Deeper sediment samples (> 30 cm) collected downstream of C-3 were generally nutrient-enriched which is consistent with the depth of soft sediments in these areas. Presumably, a sandy sediment stratum with lower nutrient concentrations exists downstream of C-3, but further sampling at deeper intervals is needed to identify the vertical elevation of this layer.

## Heavy Metals and Polycyclic Aromatic Hydrocarbons

The findings pertaining to metal concentrations from Chedoke Creek samples collected by Wood in 2018 are summarized compared to the PSQG and O. Reg. 153/04 values. The PSQGs are guidelines which promote the protection of aquatic life using LEL values (equal to the O. Reg. 153/04 concentrations), as well as the PSQG SEL criteria that indicate levels of sediment contamination at which pronounced disturbance of the sediment-dwelling biota community can be expected.

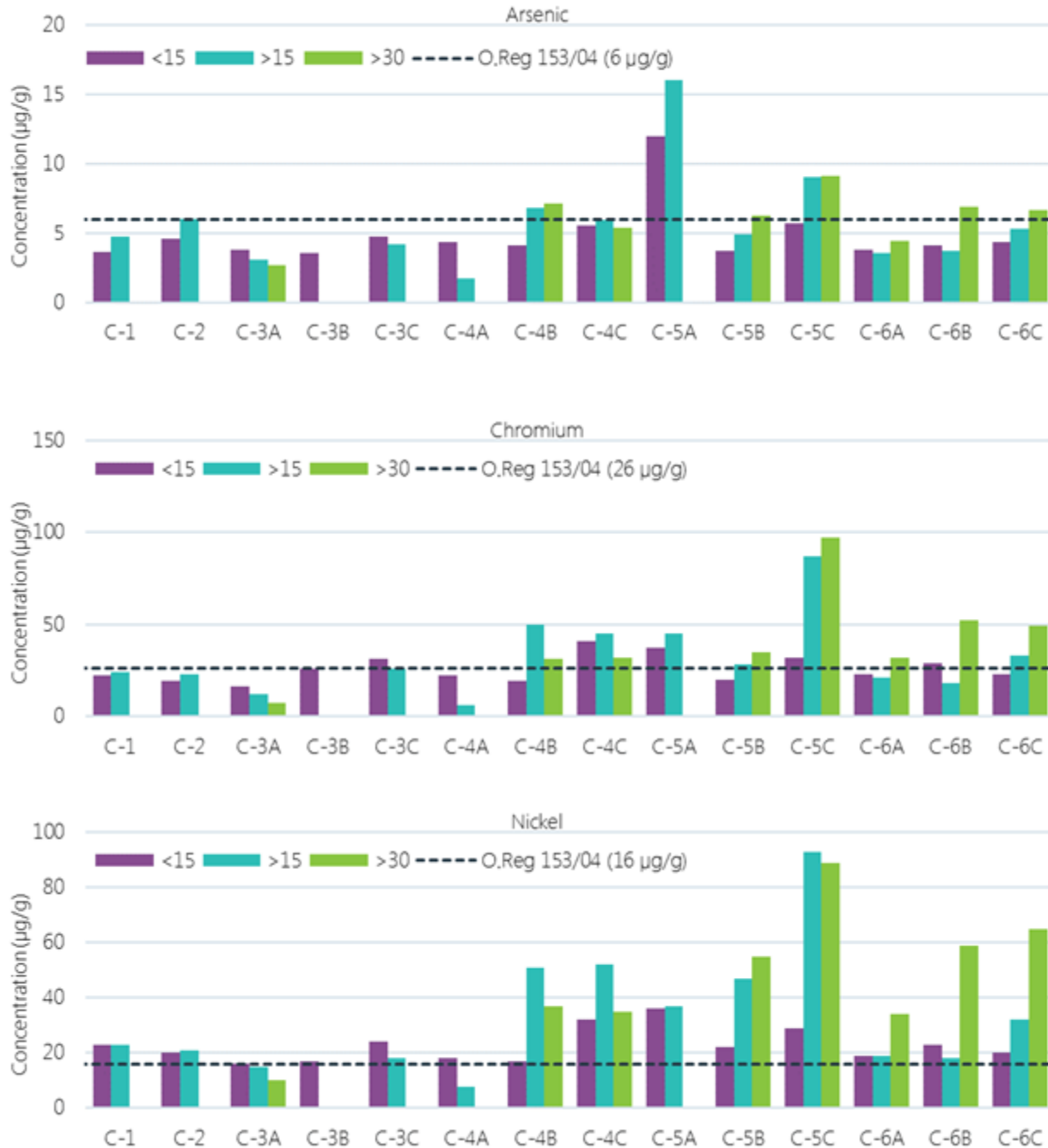
Most of the highest heavy metal concentrations of interest (Cu, Pb and Zn) within surface strata (0 to 15 cm) were found between the C-3/G-5 and C-5/G-6 sample transects which were similar to the results found for other parameters. Concentrations of copper, lead and zinc were generally greater than their respective PSQG LELs, but mostly below the SEL values. Graphs of these metals and their respective regulation values are provided in Figure 2.12. Other metals with O. Reg. 153/04 and PSQG sediment quality values include arsenic, cadmium, cobalt, chromium, nickel and silver.

The surface strata metal concentrations between the C-3/G-5 and C-5/G-6 sample transects were generally greater than the upstream or furthest downstream sample results. Overall, the deeper sediments contained higher concentrations of these metals at transect C-4 and further downstream. The C-5C sample location positioned near the west shoreline, upstream of the Princess Point bridge contained the highest mid and lower-strata metal concentrations. Unlike nutrients, metals pose a direct toxicity to living organisms and removal of soft sediment material containing these metals would likely be beneficial to the ecological conditions within Chedoke Creek and downstream.



Figure 2.12. Copper, Lead and Zinc Concentrations in Chedoke Creek Sediments

Arsenic, cadmium, chromium and silver concentrations were generally below the PSQG LEL values in the upstream locations. Arsenic, chromium and nickel concentrations are shown in Figure 2.13 for comparison to their respective O. Reg. 153/04 values. The arsenic and chromium concentrations for sample locations C-1 through C-3 were mostly below the regulation value, with concentrations greater than the regulation at sample locations C-4 through C-6. Nickel concentrations in the upper strata samples (0 to 15 cm) were all greater than the regulation value, with most of the mid and lower strata samples also greater than the regulation value. In general, most sediment quality parameter concentrations were highest in the downstream sample locations between sample transects C-4 and C-6.



**Figure 2.13. Arsenic, Chromium and Nickel Concentrations in Chedoke Creek Sediments**



Cobalt was the only metal concentration consistently below the PSQG LEL and O. Reg. 153/04 value, with the highest concentration (22 µg/g) being less than half the LEL value (50 µg/g). The cadmium and silver concentrations were mostly below their respective regulation values for sample locations C-1 through C-3 and replicate sample C-4A (near east shoreline). Cadmium and silver were above the PSQG LEL and O. Reg. 153/04 value for most of the strata sampled between transect C-4 and C-6.

Similar to the nutrient-enrichment discussion above, the observed metal concentrations were lower in the sandier portions of the creek, above the C-3 sample location. The metal concentrations evaluated in sample locations downstream of C-3 were likely representative of the organic material within Chedoke Creek. Additional sampling at deeper intervals is necessary to determine whether metal concentrations decrease below the organic layer.

Most PAH concentrations from all samples were greater than their respective O. Reg. 153/04. Results from the composite grab samples are show in Table 2.4 and are generally representative of core samples regardless of collection interval. Anthracene had the fewest regulation exceedances, and most of the mid and lower strata sample concentrations were consistently greater than the regulation values. The PAH results have been used to determine disposal options for removed (dredged) sediment. Additional sampling at deeper intervals is necessary to refine this analysis and determine whether these exceedances exist below the organic layer. As noted, the PAH concentrations of soft sediments within the creek do not solely represent impacts attributable to the spill event and include other confounding factors such as other sources of contaminants (e.g., other CSOs and urban runoff), however isolating these sources with the current data was not feasible using the limited preliminary sediment data.

**Table 2.4. Polycyclic Aromatic Hydrocarbons from Grab Samples Collected in Chedoke Creek**

Sample Transect		PSQG SEL	G-1 Comp	G-2 Comp	G-3 Comp	G-4 Comp	G-5 Comp
Nutrients and Bacteria	O.Reg 153/04 PSQG LEL †						
<b>PAHs</b>							
Acenaphthene			0.83	0	0	0	0
Acenaphthylene			0	0	0	0	0
Anthracene	0.22		<b>0.99</b>	0.12	0	0	0.16
Benzo(a)anthracene	0.32		<b>2.96</b>	<b>0.38</b>	0.18	<b>0.34</b>	<b>0.68</b>
Benzo(a)pyrene	0.37		<b>2.4</b>	0.36	0.18	0.33	<b>0.68</b>
Benzo(b)fluoranthene			3.59	0.53	0.32	0.53	1.28
Benzo(ghi)perylene	0.17		<b>1.45</b>	<b>0.22</b>	0.13	<b>0.2</b>	<b>0.38</b>
Benzo(k)fluoranthene	0.24		<b>1.37</b>	0	0	0	<b>0.29</b>
Chrysene	0.34		<b>3.24</b>	<b>0.45</b>	0.26	<b>0.42</b>	<b>0.84</b>
Dibenzo(a,h)anthracene	0.06		<b>0.37</b>	0	0	0	0
Fluoranthene	0.75		<b>9.08</b>	<b>1.11</b>	0.59	<b>0.96</b>	<b>1.91</b>
Fluorene	0.19		<b>0.84</b>	0	0	0	0
Indeno(1,2,3-cd)pyrene	0.2		<b>1.34</b>	0.19	0.11	0.18	<b>0.32</b>
1-Methylnaphthalene			0.2	0	0	0	0
2-Methylnaphthalene			0.3	0	0	0	0
Methylnaphthalene, 2			0.49	0	0	0	0
Naphthalene			0.98	0	0	0	0
Phenanthrene	0.56		<b>9.53</b>	<b>0.73</b>	0.25	0.45	<b>0.94</b>
Pyrene	0.49		<b>6.75</b>	<b>0.85</b>	0.47	<b>0.76</b>	<b>1.48</b>



### **Sediment Conditions in Cootes Paradise**

Available sediment data also includes information from sediment quality studies conducted within Cootes Paradise by the RBG in 2006 and 2013. The RBG data include metal concentrations at the two locations noted in the nutrient discussion earlier. Cadmium, copper, iron, lead and zinc concentrations were greater than the PSQG LEL concentrations for all samples (CC-1 and CC-2); however, no concentrations exceeded the respective PSQG SEL values. Arsenic concentrations in 2006 at CC-1 and CC-2 were equal to the PSQG LEL (6 µg/g) and were below the LEL in 2013, 5.6 and 5.2 µg/g, respectively. All upper strata arsenic concentrations in the 2018 study were below the PSQG LEL. The RBG 2006 studies also documented PAH concentrations at the CC-1 and CC-2 sample locations (no PAH sampling conducted in 2013). The RBG 2006 PAH results show sediment sampled at CC-1 contained PAH concentrations less than the respective O. Reg. 153/04 values. PAH concentrations at RBG location CC-2, positioned further offshore than CC-1 within Cootes Paradise, were equal to, or greater than, many of the O. Reg. 153/04 values. All 2006 PAH concentrations were less than the 2018 PAH concentrations observed at the Chedoke Creek sample locations, including location C-6 positioned immediately downstream of the creek outlet into Cootes Paradise.

The 2018 results suggest legacy metal enrichment has occurred prior to the Main/King CSO spill event and removal may be beneficial. However, it is important to note other potential sources of metal enrichment are ongoing and likely occurred prior to the discharge event. These include, but are not considered limited to, other operating CSOs (e.g. Royal CSO Tank) located upstream, the storm water drainage from the adjacent highway infrastructure and runoff from upstream urban environs (i.e., extensive roadway network) discharging to the creek, as well as other upstream sources (e.g., industrial and landfill sources). As noted earlier, establishing a clear distinction between legacy and event-based contamination is not considered feasible with the available data.

### **Comparison of In-Situ Sediment Conditions and Spill Quantities**

Wood estimated a layer of soft organic material approximately 16 m wide with a mean thickness of approximately 0.27 m (+/-) along roughly 1,275 m (+/-) of the creek bed between the Main King CSO and Cootes Paradise. The volume of organic material within Chedoke Creek was estimated in 2018 to be approximately 5,600 m<sup>3</sup> (+/-).

Soft sediment collected from Chedoke Creek indicates moisture content of approximately 40% which suggests that this material is relatively dense and consistent with settling and consolidation of suspended particulate material in the wastewater stream. This material would likely include a portion of the TSS discharged during the spill event which would have subsequently compacted over the duration of the spill event and thereafter.

As discussed in Section 1, Wood estimated that the 2,375 tonnes of TSS discharged during the spill event, per Hatch 2018, would occupy a volume of 5,260 m<sup>3</sup> at 40% solids. This is similar to the approximate in-situ soft sediment volume of 5,600 m<sup>3</sup> discussed above. However, it is unlikely that all of the solids mass discharged during the spill event was retained within the creek. The in-situ mass is more likely to be a combination of the remaining heavier organic particles discharged during the spill event and other material that may have been present prior to the spill. Pursuant to the 2019 report, Wood conducted a reassessment of the TKN present within Chedoke Creek which suggests 3 to 4 tonnes are present which is less mass than previously reported within the Chedoke Creek sediments. Total phosphorus mass within the Chedoke Creek soft sediments was estimated to be 3.3 tonnes while total loading from the event was estimated to be 47 tonnes. The balance of the TP and reassessed TKN mass may have been transported downstream as dissolved phosphorus. This is consistent with the relatively high concentrations of TP observed in the water column in Chedoke Creek and downstream in Cootes Paradise between 2014 and 2018.

As discussed in Section 1, while removal of solids mass is important, it is equally important to identify the potential for TP and TKN removal. The majority of TP and TKN mass load appears to have been solubilized or transported downstream. Additional effort is included with this work plan to determine the extent of sediment deposition from Chedoke Creek within Cootes Paradise, as well as the mass of contaminants that could be removed accordingly.

### **Current Conditions**

Wood's initial assessment of the chemical and physical sediment characteristics within Chedoke Creek was conducted more than two years ago (fall 2018). Given the time that has lapsed since the end of the spill event and the potential for downstream sediment transport, it is highly conceivable that significant changes may have occurred within Chedoke Creek that could impact the scope of the original restoration approach outlined by Wood in January 2019.

Following the work by Wood, SRL Consulting Canada performed additional sediment sample analyses in 2019 as part of the Environmental Risk Assessment. Nutrients within the same 0-15 cm sediment interval analyzed by Wood indicated decreasing concentrations of both TKN and TP which is consistent with the characteristics of wastewater decomposition.

Given the dynamic nature of Chedoke Creek sediments, additional physical and chemical characterization of sediment within the potential project footprint is considered required to accomplish the following objectives:

- 1) Provide sufficient physical and chemical information required for project design
- 2) Determine the vertical and horizontal distribution of contaminants (including TKN and TP) within the potential dredge footprint
- 3) Determine the anthropogenic sediment horizon where contaminant concentrations should equal that of background conditions
- 4) Determine an appropriate target dredge elevation which reduces the risk of exposure to contaminants that may be uncovered during the dredge process
- 5) Determine the available disposal options for the dredged material

Wood has developed a sampling plan detailed herein which will involve collection of detailed bathymetric and sediment data. This information will be used to guide an adaptive project design and management approach that will satisfy the MECP's current Order.

## **2.3 Supplemental Field Work and ERA Summary**

Following Wood's submittal of the Conceptual Remediation Plan, the City of Hamilton retained SLR Consulting Canada (SLR) to collect additional sediment data and provide an assessment of the potential environmental risks associated with a proposed dredge project. SRL performed sediment sampling within Chedoke Creek and Cootes Paradise at similar locations and intervals used by Wood and identified in **Figure 2.5**.

SLR conducted an Aquatic Ecological Risk Assessment (ERA) at the Chedoke Creek Site in 2019 in response to the spill. The study area encompassed the lower section of the Chedoke Creek paralleling Highway 403. Sediment samples from within the study area were analyzed for metals, PAHs, and nutrients. The dataset used in the ERA included 22 sediment samples from two depths (shallow=0-0.10 m or 0-0.15 m and deep >0.15 m) collected in 2018 and 2019. The ERA also assessed risk from surface water which is not included in this discussion.

Contaminants of potential concern (COPCs) were identified by comparing the maximum sediment contaminant concentrations to published ecological effect benchmarks, or toxicity reference values (TRV), listed below in order of preference:

- Sediment screening benchmarks: Provincial Sediment Quality Guidelines (PSQGs) Lowest Effect Level (LEL), the Canadian Sediment Quality Guidelines (CCME) freshwater Interim Sediment Quality Guidelines (ISQGs), or the background sediment concentrations for metals in the Great Lakes region. The MacDonald threshold effect concentration (TEC) and probable effect concentration (PEC) benchmarks were also referenced in the SLR ERA.
- In addition to the sediment screening benchmarks listed above, the PSQG Severe Effect Level (SEL) were incorporated into this discussion to assist in identifying the most contaminated areas. While the LEL "indicates a level of contamination that can be tolerated by the majority of sediment-dwelling organisms; sediments meeting the LEL are considered clean to marginally polluted," the SEL "indicates a level of contamination that is expected to be detrimental to the majority of sediment-dwelling organisms. Sediments exceeding the SEL are considered heavily contaminated."<sup>1</sup>

To identify COPCs, the maximum concentration of an analyte from within the study area was divided by the TRV to calculate a hazard quotient (HQ). Along with other lines of evidence, analytes with an HQ > 1 were identified as COPCs. Additional lines of evidence supporting the COPC identifications based on the sediment samples included: biological observations, toxicity tests, and an assessment of the benthic invertebrate community. Because the ERA identified PAHs as contributing the most risk, SLR also examined the relative degree of PAH contamination of sediment samples and calculated a mean HQ quotient (HQ-Q).

In addition, the SLR ERA considered both listed and non-listed wildlife species.

### **ERA Results**

The Chedoke Creek sediment contaminants of potential concern (COPCs) based on maximum concentrations from the study area are identified in Table 2.5 - COPCs for Chedoke Creek.

<sup>1</sup> <https://www.ontario.ca/document/guidelines-identifying-assessing-and-managing-contaminated-sediments-ontario/identification-and-assessment>

**Table 2.5. Sediment COPCs for Chedoke Creek**

COPC Group	COPCs	
	Shallow (0-0.15 m) Sediment [a]	Deep (>0.15 m) Sediment
Metals <a href="https://www.ontario.ca/document/guidelines-identifying-assessing-and-managing-contaminated-sediments-ontario/identification-and-assessment">https://www.ontario.ca/document/guidelines-identifying-assessing-and-managing-contaminated-sediments-ontario/identification-and-assessment</a>	Arsenic, cadmium, chromium, copper, lead, <b>manganese, mercury</b> and zinc	Arsenic, cadmium, chromium, copper, lead and zinc
PAHs	<b>Acenaphthylene</b> , acenaphthene, anthracene, benz(a)anthracene, benzo(g,h,i)perylene, benzo(k)fluoranthene, benzo(a)pyrene, chrysene, dibenz(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, 2- methyl naphthalene, naphthalene, phenanthrene, pyrene and total PAHs	Acenaphthene, anthracene, benz(a)anthracene, benzo(g,h,i)perylene, benzo(k)fluoranthene, benzo(a)pyrene, chrysene, dibenz(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, 2- methyl naphthalene, naphthalene, phenanthrene, pyrene and total PAHs
Nutrients	Total Kjeldahl nitrogen (TKN) and total phosphorus (TP)	TKN and TP

Source: SLR, 2020

[a] Bold text indicates analyte identified as COPC in only shallow sediment. Manganese and mercury were not analyzed in deep sediment and can only be assessed in shallow sediment. Acenaphthylene was undetected in deep sediment, although the detection limit exceeded the sediment screening benchmark.

**Vertical Distribution of COPCs in Sediment**

The SLR Chedoke ERA relied primarily on the shallow samples to assess risk, according to MECP Guidance (MOE 2008). However, deeper sediment samples data were also considered. The COPCs identified in shallow (0.15 cm) and deep (>0.15 cm) sediments based on maximum concentrations were similar (ref. Table 2.5 - COPCs for Chedoke Creek). Although there were more contaminants identified as COPCs in the shallow sediment, this was primarily a result of study design and analytical limitations. To better understand the differences between the contaminant concentrations by depth, SLR calculated 95% UCL concentrations for both the shallow and deep sediment datasets:

- PAHs: UCL 95% concentration were generally higher in the shallow sediment (14 of 17 individual PAHS). Total PAHs was also higher in the shallow sediment. SLR concluded that shallow sediments present a higher PAH risk to aquatic receptors.

- Metals: Of the metal COPCs analyzed from both depth datasets, 95% UCLs of arsenic, cadmium, chromium, and lead were higher in the deep dataset compared to the shallow dataset. 95% UCLs for the remaining COPCs, copper and zinc, were lower in the deep dataset compared to the shallow dataset.
- Nutrients: TKN and TP 95% UCLs were higher in the deep dataset compared to the shallow dataset. Deep concentrations were generally similar to historical ranges.

### **Spatial Distribution of COPCs in Sediment**

According to the SLR Chedoke ERA, the spatial distribution of sediment contaminants within the creek varied by contaminant type, as summarized below:

- Metals:
  - Shallow sediment (0-0.10 m or 0-0.15 m): metals concentrations in shallow sediment generally increased from upstream to downstream. Shallow sample metal concentrations of cadmium, copper, lead, manganese, nickel, and zinc exceeded LELs throughout the study area. Arsenic, total chromium, and mercury concentrations also exceeded LELs, though less frequently. Overall, the highest metals concentrations were typically observed at locations C5-East and C3-West. Only copper exceeded the SEL, at locations C3 West, C4 West and C5 east.
  - Deep sediment (0.15-0.30 m, >0.3 m): metals concentrations in deep sediment also generally increased from upstream to downstream. Deep sample metal concentrations exceeded LELs throughout the study area. Cadmium and copper exceeded the SELs in the samples from the C-4 and C-5 area; nickel and zinc exceeded the SELs in the C-5 area.
  - Samples from >0.3 m were limited, and no overall trends were observed that differentiated the samples from 0.15-0.30 m versus >0.3 m. SEL exceedances were observed in samples from both 0.15-0.30 m and >0.3 m
  - The majority of SEL metal exceedances in both shallow and deep sediment occurred in the C-4 and C5 areas, though SEL metal exceedances were more frequent in deep sediments.
- PAHs:
  - Shallow sediment (0-0.10 m or 0-0.15 m): Shallow sample PAH concentrations exceeded the PAH LELs throughout the study area. The SELs were exceeded for two analytes (fluorene and pyrene), both upstream at C-1 West. Total PAHs in shallow samples were generally highest at the location downstream of the King/Main CSO (which is in the area of location C1), decreased at locations G3 and G4, and increased downstream of Macklin Street Bridge. Between Macklin Street Bridge and Princess Point, total PAH concentrations were similar.
  - Deep sediment (0.15-0.30 m, >0.3 m): deep sediment samples were also variable among stations. Deep PAH concentrations exceeded the PAH LELs throughout the study area. The PAH SELs were not exceeded. The highest total PAH concentrations in deep samples of 47.46 ug/g and 21.11 ug/g were from C3 and C2, respectively. The total PAH concentration at C5 was similar to C2.
  - Samples from >0.3 m were limited, and no overall trends were observed that differentiated the samples from 0.15-0.30 m versus >0.3 m. However, at location C-5 Centre, the samples from >0.3 m had fewer LEL exceedances than samples from 0.15-30m and 0-0.15 m.
  - PAH concentrations in shallow and deep sediment exceeded LELs throughout the study area. Only shallow sediment had SEL exceedances (fluoranthene and pyrene at C1).

- Nutrients:
  - Shallow sediment (0-0.10 m or 0-0.15 m): In shallow sediment, TKN and TP exceeded LELs throughout the study area; no SELs were exceeded.
  - Deep sediment (0.15-0.30 m, >0.3 m): In shallow sediment, TKN and TP exceeded LELs throughout the study area; no SELs were exceeded.
  - Note that samples from >0.3 m were limited, and no overall trends were observed that differentiated the samples from 0.15-0.30 m versus >0.3 m. However, only one sample from these deep (0.15-0.30 m, >0.3 m) locations had no TKN or RP exceedances; this was at C-3 East from >0.3 m.

### ***Uncertainty***

SLR reported that uncertainty in the results reported in the ERA can result from the following:

- Lack of screening levels for some analytes mean that risk cannot be assessed.
- Availability of background concentrations can limit assessments.
- Using the maximum detected concentration overestimates concentrations to which a population of receptors would be exposed over time and across the site.
- In interpreting screening level HQs, it is customary to assume that all COPCs are 100 percent bioavailable. Bioavailability is the extent to which a substance can be absorbed or otherwise ingested by a living organism, potentially causing an adverse response. The bioavailability of chemical parameters is related to the extent to which it can desorb, dissolve, or otherwise disassociate from the environmental medium in which it occurs. Factors such as organic carbon and pH may affect the bioavailability of chemical parameters in soil.
- Risk calculations assume that the most sensitive receptors and receptor life stages are present at the Site. Risk may be overestimated where it is calculated using screening benchmarks that are based on toxicity to receptors or receptor life stages that are not present.

### ***ERA Summary and Recommendations***

SLR's Chedoke Creek ERA concluded that (ref. SLR 2019):

- "The hazard quotients calculated as part of the risk characterization indicated that potential risks to aquatic life and amphibians exposed to surface sediment were negligible for nutrients and negligible to low for metals. This however does not preclude potential risks from exposure to nutrients for which TRVs are not available. Based on the hazard quotients for COPCs with available TRVs, potential risks were identified for aquatic life and amphibians exposed to PAHs in surface sediment. The potential risks were qualified as low, moderate or high depending on location. PAHs were identified as the risk drivers among the COPCs for which TRVs were available."
- "The results of the ERA indicate that the PAHs, metals and bacteria in the study area sediment, as well as the sediment oxygen demand resulting from the degradation of natural organic detritus and/or organic waste, likely restricts the benthic invertebrate community makeup to stress tolerant organisms."

While SLR characterized the ecological risk associated with surficial sediment from within the Chedoke Creek study area, there was limited information on deeper sediments. A limited number of samples were collected from >0.3 m and the maximum sample depth was unclear. Contamination was evident in the samples from >0.3 m (LEL and SEL exceedances) and additional sediment sampling will be performed as part of this work plan to capture the vertical extent of contamination at Chedoke Creek.

## 3.0 Goals and Objectives of Targeted Dredge

### 3.1 Restoration

The goal of the Chedoke Creek targeted dredge project is to restore the creek system in response to the spill event and to provide reasonable complementary offsetting remediation projects to account for additional environmental impacts that may not be addressed by dredging alone. Based on Wood's 2018 observations, the spill impacts to Chedoke Creek appear to be primarily related to the accumulation of organic sediments that resulted in increased nutrient export, bacteriological contamination, low dissolved oxygen concentrations, and physical smothering within the creek, as well as habitat loss for those species dependent on sandy substrates. In addition to sediment removal, removal of nutrients including TP and TKN are of primary importance because they tend to flux from organic sediments and can have continuing impacts to water quality which lead to algal blooms, low dissolved oxygen, reduced light penetration and other water quality problems.

Chedoke Creek serves as a major drainage conveyance for a densely populated portion of the City of Hamilton. The creek received urban stormwater runoff and CSO discharges for decades prior to the beginning of the 2014 spill event. Wood's 2019 report included a review of aerial photography indicating that Chedoke Creek had no identifiable emergent or submerged aquatic vegetation between the Main King CSO discharge structure and Cootes Paradise prior to the spill event. Similar conditions indicating lack of aquatic vegetation were evident in 2017. Wood's review of all available chemical, physical and biological data before, during and after the Chedoke Creek spill suggests that there were obvious water quality impacts during the spill event, but sediment impacts are difficult to quantify other than the estimated TSS generated during the spill event. Pre-spill sediment conditions within Chedoke Creek were likely impacted by the accumulation of organic sediments discharged during the spill event which settled within the deeper downstream sections and potentially within Cootes Paradise. Water quality impacts generated during the spill event appear to have dissipated since the Main/King CSO structures were corrected but sediments likely continue to have at least some impacts to water quality through release of nutrients and consumption of dissolved oxygen, as the wastewater solids continue to decompose.

#### **Summary of Wood's 2019 Conceptual Remediation Plan and New Targeted Dredging Plan**

Wood's 2019 targeted dredging plan outlined within the "Chedoke Creek Natural Environment and Sediment Quality Assessment and Remediation Report" evaluated several options and recommended hydraulic dredging as the preferred means of removing approximately 5,600 m<sup>3</sup> of organic sediments within Chedoke Creek. The majority of the organic sediments per 2018 data, were located within the second half of the creek run between the two pedestrian bridges. In addition, over-dredging of 15-20 cm was recommended to remove the portion of sandy sediments that may have interacted with the organic contaminants above. It was noted that additional bathymetric and sediment chemistry data would be needed to determine the final dredge target elevation that would result in the maximum ecological restoration benefits, while reducing potential contaminant exposure risks from underlying sediment layers.

Wood will develop a new targeted dredging plan which involves collection of new sediment data to determine the most effective removal strategies for material with Chedoke Creek as well as additional material within Cootes Paradise. Targeted sediment removal will focus on organic sediments, as well as areas that may have higher concentrations of TKN and TP. In addition to the potential for pollutant mass removal, targeted dredging may have beneficial impacts to the ecological conditions within Cootes Paradise, particularly if loose organic sediments are identified and can be removed to firmer substrate and higher dissolved oxygen conditions, that may be more conducive to supporting better ecological diversity.

As discussed in Section 1, Wood evaluated several options as part of its initial assessment, for remediation of Chedoke Creek. Hydraulic dredging was recommended for the following reasons:

- a. Mechanical dredging may not be practicable due to the limited width of the creek, density of riparian vegetation, and lack of continuous access.
- b. Hydraulic dredging provides nearly complete containment of the dredge slurry along the pumping route, which reduces exposure of the sediments to the atmosphere that could cause odour or other problems.
- c. Dredge slurry from a hydraulic dredge can be easily routed to a nearby wastewater system for dewatering and ultimate treatment and disposal, thus avoiding potential issues related to dredged material storage, dewatering, and handling operations, which are generally space intensive and costly.
- d. Hydraulic dredging reduces the potential for downstream turbidity problems because the majority of sediments disturbed by the cutter head are captured by the suction force used to transport the sediment slurry to the dredge material management area.

### 3.2 Offsetting Works

The City of Hamilton is proposing to incorporate additional offsetting remediation projects to augment and complement the benefits of the targeted dredging project. The objectives in this regard, as discussed with MECP staff, relates to the "no regrets" principle associated with certain works which are known to improve the uptake of various contaminants, known or understood to be resident in the study area. Several water quality management technologies are commonly used as complements to dredging to improve water quality conditions by increasing dissolved oxygen and reducing nutrient concentrations. Some of the technologies which will be assessed over the course of the plan execution include, but will not be limited to:

- 1) Floating vegetated mats
- 2) Small scale Aeration systems
- 3) Shoreline plantings
- 4) Beneficial sediment reuse and sediment stabilization

Floating vegetated mats are relatively simple structures designed to promote growth of aquatic vegetation and nutrient absorption. Plantings are placed within net pots held together by a floating platform which can vary in size based on the available space or removal requirements. The platform is anchored to the shoreline or substrate and plants are harvested periodically resulting in direct removal of the nutrients they have assimilated from the water column.

Unconfined aeration systems are often used in lake and water quality management to increase the oxygen transfer rate, improve mixing of stagnant water and limit the potential for stratification. Aeration systems consist of a compressor, an air distribution system, and a diffuser assembly. The type of compressor depends on the water depth and required air volume. Shallow water aeration systems generally require only a diaphragm compressor which is capable of producing a relatively large air volume at low pressure. The low energy requirements of diaphragm compressors often allow them to be solar powered which increases the potential deployment locations and simplifies setup. Diffuser assemblies are typically placed on the bottom and include an anti-scour plate to limit sediment disturbance.



Shoreline plantings are effective at providing habitat, enhancing nutrient uptake and stabilizing sediments. Plantings are commonly recommended in areas where natural littoral vegetation has been impacted for a variety of reasons and water quality or sediment conditions prevent natural recruitment from occurring. Identification of the appropriate species and a suitable nursery or donor site is important to the success of a planting project. Planting success can be improved by a variety of planting techniques that are specific to the species, substrate and depth.

Dredged solids may have a beneficial reuse application depending on the type of material identified for removal and its chemical composition. In some cases, sandy material may be utilized to stabilize areas where lake sediments may not have suitable structure to promote growth of emergent vegetation. There may be several locations within Cootes Paradise that could benefit from application of sandy material to promote development of marsh that is currently not supported, likely as a result of poor substrate conditions. If enough sandy material is present of sufficient quality, it may be possible to use the material to formalize an earthen berm to direct discharge from Chedoke Creek away from Princess Point at the location of the current Christmas tree berm at the mouth to Cootes Paradise.

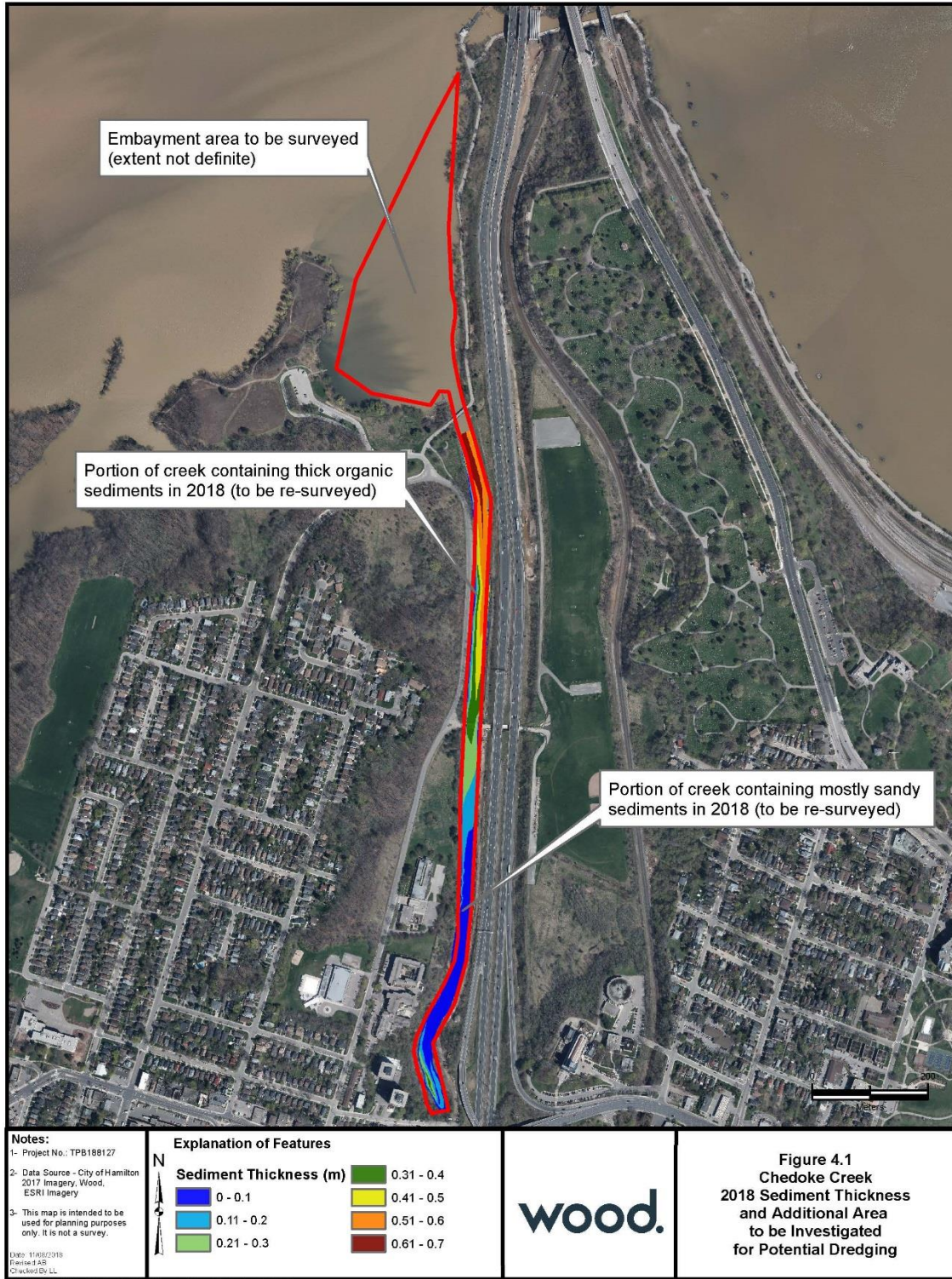
## 4.0 Scope of Work

### 4.1 High-Level Overview

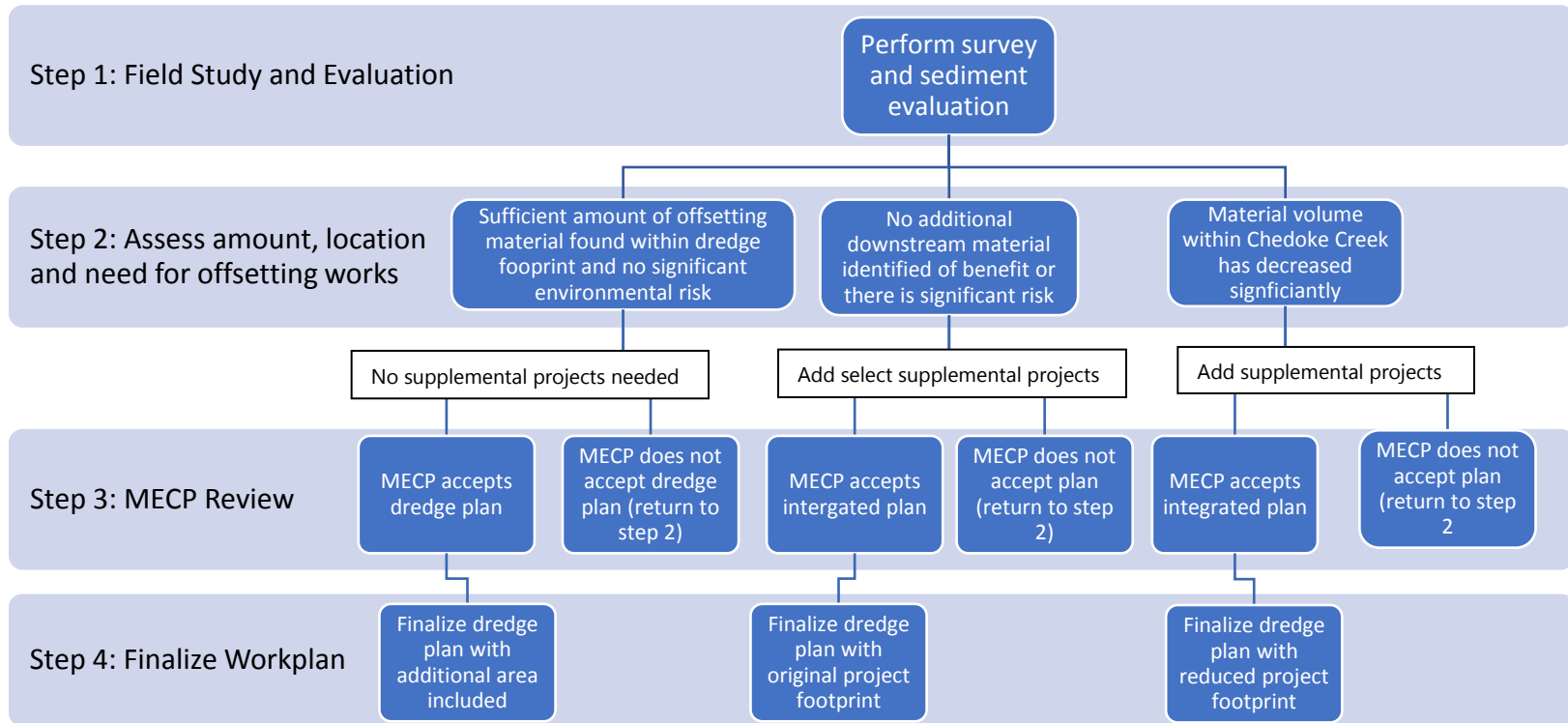
Wood has prepared a potential dredge template shown in **Figure 4.1** which is inclusive of the estimated 5,600 m<sup>3</sup> of organic material documented in 2018 and additional area within Cootes Paradise downstream of the mouth of Chedoke Creek. The amount of material removed, depends on the findings from planned bathymetric and sediment surveys as well as the sediment composition and chemistry.

Bathymetry of Cootes Paradise will be evaluated to determine the extent of what is anticipated to be a sediment delta which has been deposited over time through Chedoke Creek. While it is not likely that all of the sediment delta would have been the result of the Main/King CSO spill, the organic material within the expected sediment delta is likely contributing to ongoing dissolved oxygen depletion, as well as nutrient flux and recycling which degrades water quality within Cootes Paradise. Removing a portion of the organic sediments within the delta should provide additional offsetting benefits within Cootes Paradise and downstream.

Wood will collect bathymetric, sediment thickness, and sediment core data that will be used in the adaptive management decision tree shown in **Figure 4.2** to determine the extent of dredging and potential nutrient load removal resulting from the project.



**Figure 4.1. Chedoke Creek 2018 Sediment Thickness and Additional Area to be Investigated for Potential Dredging**



**Figure 4.2. Dredge Design Decision Tree**

## 4.2 Field Work

The proposed 2021 field studies include several components required to support the dredge design, as well as anticipated permitting requirements. These studies will confirm existing conditions within Chedoke Creek and areas within the Princess Point embayment of Cootes Paradise and downstream. The proposed components and anticipated schedule include:

- i. Bathymetry and LiDAR surveys;
- ii. Sediment characterization (thickness and quality); and
- iii. Species at Risk (SAR)

### 4.2.1 Bathymetry and LiDAR Surveys

Bathymetric surveys of the existing channel and areas of the Princess Point embayment and downstream are proposed to confirm total water depth to top of sediment and support detailed design for dredging activities. The bathymetric survey area will include the non-wadable reach of Chedoke Creek from the upstream extent where the habitat transitions from a faster flowing erosional environment to slower velocity, depositions areas where soft sediment dredging will occur. A Lowrance Elite 5 GPS enabled depth sounder with side scan sonar will be utilized from a boat to measure total water depth. The survey will be performed by travelling multiple transects (e.g., centre line, several off-center) parallel with shore and crisscrossing these transects to provide suitable aerial coverage within the channel. A topographic survey of the nearshore water elevation at various locations within the creek and embayment will be completed concurrently with the bathymetric surveys, thereby allowing the bathymetric data to be shown as metres above sea level (masl) for design, and appropriately registered to a common datum. Manual total depth measurements will also be taken to provide additional quality control (QC) infield. It is also important to measure total water depth at the historic sediment sampling locations (ref. Figures 2.6 through 2.11) which can be shown as masl to better understand and quantify changes in sediment deposition or mobilization since the previous studies. It is also proposed to survey an area of the Princess Point embayment and downstream, as shown on Figure 4.3 that has not been previously sampled for sediment quality by the City (e.g., Wood or SLR). These survey data will include total water depth measurements from the onboard instrumentation, as well as infield manual depth measurements for QC and sediment quality sample collection as described herein.

Furthermore, it is proposed to conduct a LiDAR survey in order to gather detailed topographic information on the shorelines along the study area. The approximate limits of the proposed LiDAR survey are shown in Figure 4.4. The LiDAR survey typically uses a camera fixed to a wing of a plane and generates data in the form of a point cloud, which is then translated into a three-dimensional drawing. Some advantages of using LiDAR is that it is more efficient for capturing the data and coverage, when compared to a land-based (walking) topographic survey, and the LiDAR can gather more points with more relative vertical accuracy.

The current City topographic survey information is a digital elevation model (DEM) from 2015, which is only accurate to 0.5 m, and hence a more accurate survey of the study area is considered required for the dredge plan. The LiDAR survey is proposed to capture approximately 20 m of the shoreline along both sides of the entire study area. This includes Chedoke Creek from the concrete box culvert at Main Street to the pedestrian bridge at Princess Point, the embayment by Princess Point, and the eastern shoreline of Cootes Paradise from the creek to the canal. The topography will also be tied into the bathymetric survey which will be carried out during the sediment sampling program. This will provide the basis for an accurate estimation of the sediment volumes for the targeted dredge plan.

In addition to being used with the bathymetric survey information, the topography of the shore and riparian zone, which is captured in the LiDAR survey points, may be used by the City in the potential design of proposed restoration and/or plantings as part of the potential compensation and offsetting work related to the Fisheries Act Authorization and SAR Overall Benefit Permit.





**Figure 4.3. Proposed Limits of LiDAR Survey Remediation Work Plan, Chedoke Creek**

#### 4.2.2 Sediment Characterization

The proposed sediment characterization work is needed to improve the understanding related to the resolution of soft sediment contamination data regarding vertical chemical composition within the sediment profile (e.g., cores), as well as geographically within the creek and Princess Point embayment and beyond within the boundary shown on Figure 4.1. Specific sample locations within the erosional upper reaches of Chedoke, within the depositional area of the creek and within the Princess Point embayment and beyond will be identified in the field sampling plan. Sediment cores will be collected using a manually-driven core sampler for discrete interval sediment sampling down to the parent material (and/or refusal) where possible. A total of four (4) sediment aliquots will be extruded from the cores at each of these locations in incremental strata (0 to 15 centimeters [cm], 15 to 30, 30 to 60 and >60 cm), where sufficient total soft sediment depth is present. This includes the bioactive sediment strata (upper 10 cm) representing the most recently deposited soft sediment, as well as deeper strata that contain historic deposition and as shown during the previous studies, legacy contamination from confounding sources of pollutants (Wood 2019a, SLR 2020). Photographs of complete cores and subsampled aliquots will be taken and catalogued for further visual interpretation as necessary.

A total of three (3) core samples will be collected at each sample location. These core samples will be extruded infield and aliquots will be combined and homogenized to produce one (1) composite aliquot sample from each increment strata specified above (e.g., four samples per location, as possible). Blind split sample field duplicates will be collected representing 10% of the total samples submitted (e.g., one duplicate for every ten samples) as per industry quality assurance and control (QA/QC) protocol. These duplicate sample results will be assessed for relative percent difference in concentrations between the original (native) sample and the blind split duplicate to evaluate data quality objectives, including acceptance of the reported results.

The homogenized sediment core aliquots will be placed into individual pre-labelled containers (laboratory provided glass jars) including sample ID, date and time of sampling for analysis to provide depth related assessment of parameters of interest. A laboratory provided chain of custody will be submitted with each sample shipment thereby ensuring all samples have been tracked and logged per laboratory QA/QC practices.

The proposed parameters of interest for each sediment core aliquot include:

- Moisture content (as per ASTM D2216)
- Percent fines (as per D1140)
- Organic matter (as per D2974)
- Ammonia (NH<sub>3</sub>+NH<sub>4</sub>);
- Total Kjeldahl Nitrogen (TKN);
- Total Phosphorus;
- Total Metals (including: zinc, lead, copper);
- O.Reg 153/04 Polycyclic Aromatic Hydrocarbons (PAH); and
- Carbonaceous biological oxygen demand (cBOD) analysis will be conducted on the near-surface aliquot (0 to 15 cm).



### 4.2.3 Species at Risk

The proposed project may interact with several Species at Risk (SAR) within Chedoke Creek, as well as the Princess Point embayment of Cootes Paradise. The *Endangered Species Act* has options regarding permitting required for work within SAR habitat including an A-permit (risk to human health and safety) or C-permit (conventional overall benefit permit). However, both options would require supporting assessment of desktop and field survey data. A preliminary desktop review and consultation with ecological knowledge holders (e.g., RBG) suggest the presence of the following species and their respective conservation status:

- Blanding's Turtle (*Emydoidea blandingii*) – Provincially **THREATENED**, Federally **ENDANGERED**
- Bat species – Provincially and Federally **ENDANGERED** including;
  - Little Brown Myotis (*Myotis lucifugus*);
  - Northern Myotis (*Myotis septentrionalis*); and
  - Tri-Colored Bat (*Perimyotis subflavus*)
- Lilliput mussel (*Toxolasma parvum*)– Provincially **THREATENED**, Federally **ENDANGERED**
- American eel (*Anguilla rostrata*) – Provincially **ENDANGERED**, Federally **THREATENED**

A thorough review of available secondary source data, including confirmed species occurrence mapping, and habitat suitability assessment will support a-priori likelihood assessment of species presence or reliance on habitat within the project area. Species-specific surveys are proposed as per the existing protocols (as available) described below.

#### 4.2.3.1 Blanding's Turtle

Blanding's Turtles occur throughout Southern and Central Ontario and are known to occur within Cootes Paradise in very low abundance (e.g., <5 individuals; RBG 2014). In fact, an article published by a local newspaper (Hamilton Spectator) in May 2018 indicated RBG scientists believe there was only one sexually mature female remaining in Cootes Paradise at that time. As such, potential impacts to these turtles and their habitat during the dredging activities will be assessed and turtle surveys within the project area are required.

The proposed field surveys will follow the Peterborough District Ministry of Natural Resources and Forestry (MNRF) survey protocol for Blanding's Turtle (MNRF 2015). The protocol's survey technique is based on the cumulative knowledge of several Ontario Blanding's Turtle experts, survey guidelines developed by the United States Geological Survey (USGS) and Northeast Blanding's Turtle Working Group (2012), as well as guidelines for turtle basking surveys developed by Casper and Hecnar (2011). As such, data collected as per this protocol can be compared to other standard surveys and will provide defensible data to support the selected permitting approach.

These surveys are proposed to begin after ice-off (open water conditions) typically in April (no later than June 15<sup>th</sup>) when turtles are basking. The protocol specifies basking surveys are carried out between 8 am and 5 pm, during sunny periods when air temperature is warmer than water temperature and is greater than 5°C. The detectability of Blanding's Turtles varies with the type and quality of the habitat, the abundance of the population and the experience of the surveyor. At sites where this species has not been previously detected, five (5) surveys spread over at least three (3) weeks are recommended to be able to determine with reasonable confidence that Blanding's Turtles are absent from the area that has been surveyed. A significant number of surveys have been required to detect the presence of some populations in Ontario, especially those that occur at low density, consequently, up to 10 surveys have been needed to avoid false absence when carrying out basking surveys for turtles (MNRF 2015). Additional detail about environmental considerations and rationale for the survey conditions are provided in the protocol (MNRF 2015).

#### 4.2.3.2 SAR Bats

The potential for SAR bats within the project area is dependent on the availability and presence of hibernacula and maternity roost sites. These sites are generally treed areas, meaning the riparian and upland vegetation zone of Chedoke Creek and the Princess Point embayment. Interaction with these species may occur due to site clearing and access for the dredging activities; however, the Guelph District MNR survey protocol for SAR bats within treed habitat will be used to determine likelihood of these species presence and habitat use (MNR 2017).

The protocol utilizes a phased assessment approach, first utilizing desktop and aerial survey data to assess habitat suitability. These bat species require trees with at least 10 cm diameter-at-breast-height (dbh) for suitable maternity roost habitat and ecological land classification mapping of the study area can support this assessment. Additionally, secondary source data review will be conducted to confirm if bat surveys have been conducted within the project area and if additional information to support field surveys and permitting are available.

Phase II of the survey protocol includes identification of suitable maternity roost trees, which are specified to occur during the leaf-off period (for Little Brown Myotis and Northern Myotis) and during the leaf-on period for Tricolored bat. The protocol specifies the preferred tree species (e.g., maple and oak) and snag/cavity trees for these species.

If the Phase I assessment determined suitable maternity roost habitat is available, acoustic surveys are recommended to confirm the presence/absence of the three SAR bat species. Acoustic detectors are deployed in the best locations possible to maximize the probability of detecting all three species and the data collected during Phase II should be used to inform detector placement.

#### 4.2.3.3 Lilliput Mussel

Freshwater mussels occur throughout creeks, rivers, ponds and lakes within Ontario; however, most of the Ontario SAR mussel species occur within southwestern Ontario. The Hamilton area has several of these mussel SAR including the Lilliput. Shells of the Lilliput have historically been collected within the Cootes Paradise area (Sunfish Pond; COSEWIC 2013), and more recently, live Lilliput mussels were detected at seven sample locations within Cootes Paradise (Morris et al 2015) including two locations within the Princess Point embayment. Two other mussel SAR were detected during the 2015 surveys; Eastern Pondmussel (*Ligumia nasuta*) and Mapleleaf (*Quadrula quadrula*); however, these occurrences were located near Bull's Point, approximately 1.2 kilometres northwest of the Chedoke Creek outlet on the north (opposite) shore of Cootes Paradise. To our knowledge, Chedoke Creek has not been sampled for mussels; however, the dredging activities within the creek and embayment have the potential for direct interaction with mussel species. Consequently, surveys as per the MNR survey protocol (2018) for SAR unionid mussels in wetlands are proposed to assess potential presence at the targeted dredge locations to support mussel relocation plans and permitting as required.

Survey timing should be completed between June 1<sup>st</sup> and September 30<sup>th</sup>, when water temperatures are greater than 16°C to allow for re-anchoring or burrowing of the retrieved mussels prior to arrival of colder temperatures. Due to the non-wadable conditions within Chedoke Creek and offshore areas of the Princess Point embayment, it is suggested scooping techniques are utilized for a timed search method as per the protocol. The search locations will include the targeted dredge locations (when determined) and may include downstream areas, as well as surrounding habitat that may be subject to project activities.

A mussel relocation protocol will be developed, including identification of all mussels to species, measuring the mussels (all individuals or a representative subsample pending abundance) and marking for post-dredge relocation performance monitoring as/if needed. Once the permitting and regulatory obligations are better understood, a formal plan will be drafted with MECP, including input from other stakeholders (e.g., MNRF, RBG, DFO).

#### **4.2.3.4 American Eel**

The MECP noted American Eel have been periodically detected in low abundance at the fishway to Princess Point located at the mouth of the Desjardins Canal where Cootes Paradise flows into Hamilton Harbour (MECP 2021). The fishway is designed to keep Common Carp out of Cootes Paradise but allow native fish to move between the waterbodies. The RBG fish community sampling utilizing electrofishing within Cootes Paradise (including Chedoke Creek) have not historically detected American Eel (RBG data 2001-2018).

Provincial American Eel survey protocols are not available; therefore, a desktop habitat suitability assessment of Chedoke Creek and the Princess Point embayment will be conducted. Eel occurrence data show low abundance within Cootes Paradise, as such, field sampling/surveys are not anticipated and the desktop data review should support the assessment of potential project interactions with this species.

### **4.3 Dredge Design and Impact Mitigation Measures**

#### **Work Objective**

Building from the collection of data related to the amount, location and composition of sediment, Wood will develop dredge design plans using information obtained from the updated bathymetric and sediment physical and chemical characterization discussed in Sections 4.2 and 4.3 above. The plan will consider Wood's original conceptual elements discussed the 2019 report and as shown in **Figure 4.4**. Wood will review the potential risks associated with public contact and need for special handling and disposal of the sediment to be removed. Depending on the final dredge template and material consistency, Wood will evaluate safe, convenient, and economic means of handling the dredge slurry from Chedoke Creek.





Figure 4.4  
 Conceptual Project Sketch  
 Chedoke Creek  
 Hamilton, Ontario  
 Canada

Figure 4.4. Conceptual Project Sketch, Chedoke Creek, Hamilton, Ontario, Canada

As with most dredge projects, dredged material transportation, dewatering, and final placement of the dredged material are generally the most challenging and costly elements. Areas with potential pipeline access to Chedoke Creek project area and direct access to a sanitary sewer line or sewer force main, which lay adjacent to Chedoke Creek, will be reviewed as possible material handling locations. The following task outline includes the services considered required to develop engineering design plans, acquire permits, and develop final tender and construction documents (plans and specifications) for the dredging and the dewatering sites.

### **Data Collection**

Wood will review available data and use the bathymetric and topographic data collected through this plan for the Chedoke Creek and surrounding upland. The bathymetric survey will be carried out as discussed in Section 4.2 by sonar and ground-truthing via physically sounding and probing the sediment thickness on an approximate 5 m x 50 m grid along the Creek using a 5 cm diameter PVC sounding pole with foot (as feasible). The sounding pole will be vertically lowered at the selected location until it comes in contact with the top of the sediment interface. The elevation at the bottom of the pole will be recorded. The sounding pole will then be pushed down until it makes apparent contact with the creek bottom at which point another elevation will be recorded. The difference in the elevations will be the approximate sediment thickness at that particular location. This system will be coupled with a real-time GPS navigation and positioning system, as well as the electronically recorded depth file for survey accuracy of the sediment locations, elevations, and depths.

The topographic survey will obtain spot elevations within proposed dredged material management area (DMMA) as depicted in Figure 4.5 to corroborate new LiDAR being collected within the area. The survey will also identify accessible stormwater infrastructure that discharges into the Chedoke Creek. Accessible stormwater structure invert elevations and approximate structure sizes will be measured and mapped.

Upon completion of the survey, Wood will process the data and produce final deliverable products that consist of topographic maps depicting the creek bottom elevations and contours, the sediment interface elevations and contours and resultant approximate quantity of existing sediment. Horizontal datum will be NAD83/2011 and vertical datum will be NAVD88. All topographic mapping will be in accordance with City of Hamilton engineering standards (2009).

Wood proposes to include the collection of 24 sediment cores (e.g., 8 sample transects) within the depositional habitat of Chedoke Creek for physical and chemical tests to determine sediment characteristics and disposal options. Additionally, four sample transects within the upper reaches of Chedoke Creek between the culvert outlet and depositional habitat will be sampled, as well as a proposed density of one core sample location per 1,000 m<sup>2</sup> within the Princess Point embayment and downstream. Objectives of the testing will be to determine the volume of sediments for potential removal, texture of these materials that affect dredged material management/dewatering; nutrient content which indicates the benefits of sediment removal on receiving waters; and contaminants that may affect disposal and beneficial re-use options. Intact soil cores will be taken to the depth of the underlying clay layer. Chemical and physical analysis will be conducted as specified in Section 4.2.2.

In order to select the appropriate polymer for dewatering, if required, Wood will collect 20 liters of sediment and 20 liters of creek water for bench scale testing, with the bench scale testing to be completed by two separate polymer manufacturers.

The bench scale testing will select the most appropriate polymer using a jar test, followed by simulation of dewatering rates and final percent solids for a mechanical and passive dewatering application.

## **Design**

Wood will complete 30% design plans for sediment removal, processing and hauling. Sediment processing and handling methods will be outlined, as will anticipated disposal facility locations and details. Wood will complete site visits with City of Hamilton staff to review the potential pump locations, containment areas, piping, sediment processing equipment and staging areas. An option for the sediment disposal site includes the Kay Drage park and a previous landfill area. Wood will inspect multiple proposed locations; identify any problems and evaluate special design concerns for all potential alternative locations. Wood will also discuss potential use of the City's Woodward Wastewater Treatment facility to accept a portion of the dredged material and develop initial pumping routes and daily pumping volume estimates.

Wood will address comments and obtain approval of 30% design plans from the City of Hamilton. The 30% design plans will be used as necessary to facilitate any potential pre-application permit discussions, which are on-going.

Upon the City's approval of 30% design plans, Wood will prepare 60% design plans and provide an opinion of probable project construction costs, as well as a summary outline of anticipated plans and sheets required for the final design. The 60% plans will include location of utilities if any are located within the project area, such as overhead electric lines, underground sewer and water, and communication lines. The 60% design will also include an evaluation of the dredging (hydraulic / mechanical) and dewatering (passive / mechanical) techniques. The evaluation will require analysis of the bathymetry, sediment cores, and analytical data for the sediment to be removed. The 60% design will summarize the results from the polymer test to determine the appropriate mix ratio and application into the dewatering process, if necessary. Modification of the current Chedoke Creek flow path to permit dredging will also require a hydraulic/hydrologic model which will be determined once the preferred alternative is selected by the City, to assess flood and erosion risks within the flowing portion of the waterway.

Wood will collect any necessary geotechnical information that may be required for the DMMA and any staging areas which may require geotechnical evaluations. Wood will review the various best management practices (BMPs) for any necessary erosion and sediment control.

Upon submittal of 60% design plans to the City, Wood will incorporate any comments and advance the plans to 90% for use in preparing the required permit submittals. The 90% plans will provide a summary of the final material quantities and a preferred disposal option with allowances for additional options provided they meet the engineering and regulatory requirements and are in the City's best interest. The 90% plans will also include, to the best of Wood's ability, identification of avoidance areas as determined during ecological and cultural surveys. Any required mitigation measures for turbidity control, fish salvage, public access or recreation or relocation of benthic organisms will also be identified.

## **Permitting**

Permitting requirements for the proposed targeted dredging activities include various provincial and federal agencies, as well as consultation and engagement with stakeholders, and Indigenous Nations and Peoples. The following agencies have been contacted and permitting requirements under existing legislation are currently understood or pending regulatory response:

- Hamilton Conservation Authority – *Conservation Authorities Act*
- Ministry of Transportation – *Public Transportation Act* and *Highways Improvement Act*
- Ministry of Natural Resources and Forestry – *Lakes and Rivers Improvement Act*
- Transport Canada – *Canadian Navigable Waters Act*
- Fisheries and Oceans Canada – *Fisheries Act*
- Ministry of the Environment, Conservation and Parks – *Endangered Species Act*
- Ministry of Heritage, Sport, Tourism, and Culture Industries – *Archaeology Assessment*
- Impact Assessment Agency of Canada – *Impact Assessment Act*



Some of the above listed permitting and approvals may require consultation with Indigenous groups and the public. Further details regarding each regulatory agency and associated permitting are provided in Section 4.5.

#### ***Final Bid Package and Construction Bid Documents***

Upon approval by the City and receipt of comments from regulatory agencies on 90% design plans, Wood will incorporate comments and produce the complete 100% (final) design plans, technical specifications and engineer's probable cost estimates for construction. Wood will submit the final design plans to the City for final approval.

The tendering process is described in additional detail in Section 4.6, however Wood will prepare a complete outline of required bid documents and obtain approval of the outline from the City following submittal of 100% plans. Wood will prepare complete construction and dredging technical specifications, general bid requirements, figures, and location maps needed to successfully bid the project. Wood will complete a final bid response form in the City's format needed for bidding the project. Wood will support City staff by addressing bidders' questions during the procurement process and will provide a letter of recommendation for the selected contractor.

#### **4.4 Other Remediation Works**

The need for implementation of additional remediation works beyond targeted dredging will depend on Wood's findings during the field investigations of Chedoke Creek and Cootes Paradise. If adequate sediment and associated nutrient mass load is found within Cootes Paradise and is economically feasible to remove to offset the loading generated during the spill event, additional remediation works may not be necessary, or at most be limited. However, given the uncertainty of the level of contaminants, the cost of expanding the dredge project into Cootes Paradise and the extent and composition of organic sediments resident within Cootes Paradise, it may be effective to implement the additional remediation projects discussed in Section 3, and others.

Once Wood has assessed the sediment conditions within Chedoke Creek and Cootes Paradise, the information will be provided to the City and the MECP along with recommendations on proceeding with a dredge-only project; a primarily dredge-based project supplemented by other remediation projects; or a limited dredging project with significant implementation of additional remediation efforts. The number and location of potential remediation sites will be determined once the existing sediment conditions and the feasibility of various dredging options have been established.

#### **4.5 Permitting**

As noted in Task 3 of Section 4.3, the following regulatory agencies and associated permitting and approval requirements are anticipated or have been acknowledged through pre-consultation and engagement for the targeted dredging project. Anticipated review and approval timelines are provided based on Wood's current understanding of the processes and are subject to change pending agency review and response (ref. Appendix B for current summary status of regulator consultation).

##### **4.5.1 Hamilton Conservation Authority**

As per the Conservation Authorities Act regulation 161/06 under Ontario Regulation 97/04, a Hamilton Conservation Authority (HCA) Work Permit is required for the proposed dredging project. The permit application will be submitted in July 2021 once the detailed design is available and other supporting information have been collected and compiled. These may include project staging, an erosion and sediment control plan, flood risk assessment, discharge and material management plan, landscape/restoration plan,

fisheries assessment, vegetation inventory, landowner permission (e.g., RBG – Cootes Paradise), as well as a description of the ecological components including potential SAR. Recent correspondence with the HCA indicates a maximum review period of 64-days; however, the early engagement and pre-consultation activities are expected to shorten this period.

#### 4.5.2 Ministry of Transportation

An Encroachment Permit and Building and Land Use Permit are expected to be required as per the *Public Transportation Act* and *Highways Improvement Act*. The Ministry of Transportation (MTO) Corridor Management Officer has been contacted to confirm expected review and approval timelines; however, these approvals are commonly processed for construction activities near-to and within the Provincial infrastructure right of ways and the proposed project does not require access from the highway. Currently, the City assumes a 3 to 9 month review period, and are anticipating clarification from the MTO shortly.

#### 4.5.3 Ministry of Natural Resources and Forestry

The Guelph District MNRF have confirmed approval under the *Lakes and Rivers Improvement Act* (LRIA) will not be required for this project since the HCA Work Permit will address the dredging review and approval requirements. As such, no further permitting schedule is required for the LRIA.

#### 4.5.4 Transport Canada

The Navigation Protection Program (NPP) within Transport Canada (TC) reviews permit applications under the *Canadian Navigable Waters Act* (CNWA). Historically Chedoke Creek was deemed navigable by TC and Chedoke Creek is not found on the Schedule to the Act. Additionally, the proposed works may include suction dredging (does not meet requirements of Minor Works under the act), meaning an application for the approval of the project under the CNWA will be required. Early engagement with TC have provided some information via email correspondence; however, further dialogue with a TC Inspection Officer are anticipated to provide additional guidance on the potential permitting options (including Emergency authorization). Timelines for the potential review and approval process are not well known; however, a 3 to 4 month period is anticipated with submission of the application in July 2021. There are mandatory components of the conventional approval process that include a 30-day notice for public comment and a 45-day response and resolution period, followed by a 15-day decision period. These timelines will be discussed with TC to update the anticipated permitting schedule.

#### 4.5.5 Fisheries and Oceans Canada

The Fisheries Protection Program (FPP) evaluates projects via the Request for Project Review (RFR) form submission that assesses whether projects are likely to cause death of fish or harmful alteration, disruption or destruction (HADD) of fish habitat, which would be in contravention of the *Fisheries Act* (FA) and require authorization to proceed. Early consultation with DFO indicates an RFR will be required to initiate further dialogue with a DFO biologist and the City plans to submit this by 19 February 2021. The conventional FA Authorization process is shown below:

- Submit RFR – 45-day review period (maximum, can be as short as 2-weeks)
- Early consultation with DFO for FA Authorization – begin once RFR response received
- Ongoing consultation with DFO to support Draft FA Authorization application
  - Indigenous engagement likely required – to be conducted concurrently with other engagement activities.
- Draft FA Authorization application submitted July 2021 (60-day review period)
- Minister FA Authorization application decision (90-day review/approval period)



The conventional review and approval timeline above indicates approval may be available by February 2022; however, the City plans to engage DFO as soon as possible following the RFR response to expedite pre-submission review and updates as much as feasible. During this early consultation, the City will also explore an Emergency Authorization option and associated timelines for review and approval, which are site-specific and require dialogue with DFO to confirm.

#### **4.5.6 Ministry of the Environment, Conservation and Parks**

As noted earlier, there are a number of potential SAR within the project area, some of which may have direct interactions with the proposed dredging project. As such, early consultation with MECP (currently ongoing) and field survey data will inform the permitting process under the *Endangered Species Act* (ESA). The ESA presents two primary options for permitting; 1) Section 17(2)(c) Overall Benefit Permit (OBP) process and 2) Section 17(2)(a) Permit regarding risk to human health and safety. The City will evaluate these options concurrently and continue to engage MECP SAR staff to support decision making and to confirm timelines. It is assumed permitting through the ESA will satisfy requirements of the Federal *Species at Risk Act* (SARA) and a separate SARA approval will not be required.

##### **Section 17(2)(c) Overall Benefit Permit**

The C-permit option involves two sub-options; the conventional OBP timeframe includes ongoing MECP consultation with submission of the Information Gathering Form (IGF) and species-specific surveys as per standard protocols, followed by submission of the Alternatives Avoidance Form (AAF) and finally submission of the C-Permit Application Form (CPAF), permit drafting and permit submission. This option can include 10 to 13-months to received final approval, meaning final approval will be received May/August 2022.

Alternatively, MECP have offered an expedited C-Permit process whereby the AAF and CPAF are submitted concurrently, thereby reducing the overall schedule by some weeks (est. 2 to 3). This option assumes presence of the SAR and requires pre-consultation with MECP to ensure the submitted AAF and CPAF align with the desktop data review findings, assumptions and may be subject to change once field studies are conducted; therefore, requiring permit amendments.

##### **Section 17(2)(a) Human Health and Safety**

The A-Permit option requires the City to demonstrate the proposed dredging activities are in response to a risk to human health and safety. The MECP have identified this option; however, an A-Permit is typically used for immediate work tasks to mitigate imminent threats to human health and safety (e.g., bridge failure due to vehicle accident damage that comprised structural integrity). The proposed dredge project is not an imminent risk but can be assessed as a response to a risk to human health. A comprehensive report with a description of the site conditions, SAR present or likely to be present, as well as potential impacts associated with the proposed works would be provided to MECP. No public consultation or OBP are required for an A-permit; however, acceptance via the local MECP office that the proposed project meets the A-permit criteria is required and the ultimate approval relies on the Ministers' judgment to assign relevant conditions of the permit. The A-permit option will likely reduce ESA permitting timelines by approximately two months; however, the assessment of applicability to Section 17(2)(a) and possibility a Section 17(2)(c) permit is ultimately required poses more uncertainty than the C-permit option.

The City will evaluate both these options and continue dialogue with MECP to progress the SAR permitting component.

#### **4.5.7 Ministry of Heritage, Sport, Tourism, and Culture Industries**

The 2006 Erosion and Slope Stability Improvements project at Chedoke Creek required an archaeological assessment of the creek which produced a clearance letter and ultimate conclusion of low potential presence of intact archaeological sites within the creek and upland area (Varley 2006). As such, no additional archaeological assessments are anticipated for the dredging work within Chedoke Creek. Potential dredging within the Princess Point embayment may require archaeological assessment of the nearshore areas; however, this will be determined once the design and targeted dredge areas are better defined. The Ministry of Heritage, Sport, Tourism, and Culture Industries will be contacted to confirm further assessment requirements; however, this scope of work and review timelines are not anticipated to be a critical path item for the permitting schedule.

#### **4.5.8 Impact Assessment Agency of Canada**

The MECP have indicated a Provincial Environmental Assessment will not be required. The Impact Assessment Agency of Canada (IAAC) have been contacted to confirm if the proposed project will require a Federal assessment under the *Impact Assessment Act* (IAA). Timelines for review and approval will be determined following consultation with IAAC, and are unknown at this time due to recent changes to the act and revised data requirements under the IAA.

### **4.6 Tendering and Construction**

#### **Prequalification Process**

The City intends to proceed with a prequalification process for the targeted dredge. The prequalification process is separate from the tender process and is undertaken in advance. Only prequalified bidders will be invited to the tender stage.

The objective of prequalifying is such that the City can screen the potential bidders to a short list of the most qualified bidders. The prequalification process will require that the bidders furnish proof of their competency, responsibility and prior experience with dredging projects of a similar size and scope. The City will provide a scoring/weighting to the prequalification criteria, and list minimum requirements, and the methodology for ranking the submissions, to ensure that the process is transparent and defensible.

Prequalification criteria typically include: corporate experience, staffing information and experience, project manager experience, site supervisor experience, quality controls, demonstration of project understanding, and other technical and financial criteria. Technical criteria would be proposed to include specific examples of similar dredging projects which used the same equipment as will be proposed for this construction. Financial requirements include proof of the ability of the bidder to finance the project and to provide proper insurance and bonding.

#### **Tendering**

Tendering for the construction will follow the completion of the prequalification process and will be only open to the prequalified bidders. There typically will not need to be any further technical requirements, however the City may add new criteria if considered required.

## **Staging**

Staging areas will likely be required for assembly and placement of dredge barges. Generally, a crane is required to lift a barge off of a flat-bed truck and into the adjacent waterbody. Ample space appears to exist in the Princess Point park area. Staging areas are generally roughly specified in the plans but the contractor determines the specific needs based on the required equipment.

In addition to mobilization of the dredge barge, hydraulic pumping requires an area for pipe fusing which is generally conducted adjacent to the waterbody. It is likely that a pipe fusing station can be identified within the Princess Point park area as well.

The DMMA typically provides the necessary staging area for dewatering equipment and stockpiling of material. The rate of production of dewatered material will dictate the number of trucks required to move the material to the final receiving location.

Any required booster pumps will either need to be mounted on floating barges (typical) or can alternatively be placed on land if ample space is available.

## **Construction**

Construction is estimated to be approximately four (4) to six (6) months in duration; this estimate is conditional on time of year, as well as the scope and need for additional offsetting projects.

## **4.7 Monitoring Plan**

### **4.7.1 Construction Monitoring**

Monitoring construction activities will include best management practices and conventional auditing principles used for landscape and construction sites, as well as in-water work considerations as defined by the pathways of effects decision matrix used by DFO for mitigating interactions between project activities and the environment. Some typical examples of these practices include but are not limited to the following (subject to change pending final design and permitting approval conditions):

#### ***Fish and SAR Protection***

- In-water construction timing windows will be adhered to.
- In-water work areas will be isolated prior to in-water work occurring.
- Temporary isolation measures will be removed slowly to minimize sediment and/or other material being disturbed and distributed within the watercourse.
- Fish will be relocated by qualified personnel from the isolated work areas, under a fish collection permit from the MNRF (if isolation measures cannot initially exclude fish upon deployment such as shore-based installation).
- All pumping for the purposes of dewatering where fish are likely to be present will have fish screens on the intake and outlet pipes.
- Fish screens will be located a minimum of 300mm above the bottom of the watercourse, where possible, and will be inspected and clean and/or repaired/replaced as required.
- The flow of the watercourse outside of the work area shall be maintained without interruption at all times.

- Turbidity monitoring will be conducted outside of the silt curtain to ensure areas surrounding the targeted dredge locations are not impaired as per Ontario turbidity monitoring thresholds (e.g., 25 NTU greater than background).

#### ***Riparian Vegetation***

- Clearing and grubbing will only be completed in areas where immediate work will take place.
- No excavation/grading shall take place outside the disturbance limits as shown on the approved drawings.
- All access to the work shall be from the access paths shown on the contract drawings.
- Tree protection will be installed prior to construction (as/if required).

#### ***Sediment and Erosion Control (ESC)***

- In-water work areas will be isolated with temporary impermeable barriers or other means as determined through detailed design.
- The contractor shall design the flow barriers to a minimum 2-year storm event water level or as specified in the contract documents.
- Contractor shall inspect flow barriers daily to ensure functioning as intended. All leaks, holes and repairs shall be completed as soon as reasonable.
- The entire construction site to be monitored daily for ESC issues daily for the duration of the contract. All deficiencies and/or breaches of ESC measures must be rectified immediately.
- Under no circumstances shall runoff from unvegetated soil or excavated pits be discharged off site or directly into active or temporarily inactive watercourses.
- All dewatering discharge is to be done away from the watercourse using sediment traps, filter bags, settling ponds, check dams, etc. to prevent silt sediment from entering watercourses, ditches, adjoining properties, etc. unless noted otherwise on drawings, discharge location shall be placed a minimum 30m from any watercourse.
- ESC measures must be maintained throughout the duration of construction and fully removed once all disturbed areas have stabilized in order to prevent any entry of sediment or deleterious substances from entering the environment and nearby watercourse. These measures need to be inspected daily, prior to and following any rain/snow event by the contractor to ensure their functionality. All damaged ESC measures must be repaired and/or replaced as soon as reasonable.
- All stockpiles and storage areas are to be located outside of the regional flood plains and are to be surrounded by sediment control fencing or equivalent.
- Vehicle and equipment refueling and maintenance must be completed a minimum of 30 m away from the watercourse and the contractor must control and prevent the entry of petroleum products, debris, rubble, concrete, asphalt and/or deleterious substances into the watercourse.
- All equipment entering the watercourse/work area must be cleaned prior to entering and after works.
- All materials and equipment used for the purpose of site preparation and project completion shall be operated and stored in a manner that prevents any deleterious substance (i.e. petroleum products, debris) from entering the creek.

- Contractor shall continually monitor the weather forecasts and evacuate all personnel and remove all materials and equipment from the work area prior to any severe flooding. The contractor must prepare for storm events, floating debris and ice, etc.
- All access to the work shall be from the access locations shown on the contract drawings. No equipment or vehicle shall be permitted to cross through the watercourse, unless otherwise approved.

#### **4.7.2 Post-Construction Monitoring**

Post-construction monitoring will ultimately reflect any specific conditions associated with the permitting of the works. For example, the anticipated *Fisheries Act* authorization typically includes post-construction performance monitoring to ensure the site and any enhancement features are functioning as intended and meeting the target success criteria as identified in the authorization. Success criteria usually include the following for dredging and potential placement/construction of habitat enhancement features:

- Physical construction of the measures/features;
- Physical function of the measures/features;
- Stability of structures/features; and
- Habitat use and species presence.

Similarly, the SAR OBP under the *Endangered Species Act* will also specify post-enhancement performance monitoring with target success criteria. These post-construction monitoring events can occur within the short-term (e.g., years 1, 2 and 3 post-construction), as well as longer term studies (e.g., year 5 and 10 year + post-construction) depending on the species, offset/benefit feature and expected timeframe for use and measures of performance.

Furthermore, it is anticipated that the monitoring (post-construction) will focus on determination of the benefits of the targeted dredge operation and any complementary offsetting works to adequately document the restoration of the creek system in response to the spill. The parameters of interest and associated protocols for collection and assessment will be discussed with MECP and others in developing the monitoring scope.

## 5.0 Schedule

### 5.1 Project Schedule

The proposed project schedule assumes conventional permitting processes but includes early engagement with MECP and other regulatory agencies and stakeholders. The following list provides a high-level overview of the project schedule components with anticipated timing as currently understood:

- Field data collection
  - Sediment characterization, LiDAR and Bathymetry (March-April 2021)
  - SAR field surveys (April-August 2021)
- Design (March-July 2021)
- Consultation, including permitting related engagement (February-December 2021)
- Permitting including early engagement (February 2021 to August 2022)
- Tendering, pre-approval process (May to August, 2022)
- Construction (September to December 2022)
- Post-construction Monitoring (To be determined as per regulatory approvals)

Table 5.1 shows a detailed project schedule with annotated critical path and mandatory review periods as specified by regulation. The City will continue to engage all agencies and stakeholders to expedite the permitting review and approvals process as able. Consequently, the proposed schedule herein is subject to change and expected to undergo updates throughout the early and mid-term life of project.



## 5.2 MECP Critical Milestones and Checkpoints

Through the provision of the Order, MECP has outlined a series of dates and timelines which require action by the City of Hamilton to address the two (2) core components as related to the Targeted Dredge ("Chedoke Creek Work Plan") and the remediation plan for Cootes Paradise and the West Hamilton Harbour ("Cootes Paradise Report"). This section outlines critical milestones and dates as currently understood, specific to the "Chedoke Creek Work Plan" and the associated development and execution of the targeted dredge work plan.

**Table 5.2. Critical Milestones from Order**

Submit Chedoke Creek Work Plan	February 22, 2021
Complete Work Plan/Targeted Dredge	October 31, 2021
Submit report by QP detailing Targeted Dredge Operation	Within 1 month after completion
Notice to affected landowners	Within 7 days of submission of work plan
Notice to affected landowners	Within 7 days of Approval of work plan by Director
Notice to affected landowners	7 days before the implementation of any part of the work plan
Written Notice to Director	Within 7 days of commencement of work
Notification to Director	Within 2 days of any change to work plan
Written description of change to Director	Within 2 weeks of any change to work plan
Monthly Progress Update	Prior to the 1 <sup>st</sup> of each month
Meet with MECP	Within 7 days of submission of the Monthly reporting



## 6.0 Consultation

### 6.1 MECP

Since release of the Director's Order December 4, 2020 (ref. Appx A), the City Team and Wood have had three (3) formal meetings as part of a broader group on the following dates:

- January 15, 2021
- January 29, 2021
- February 12, 2021

Details and meeting minutes are provided in Appendix B. The primary objective of these sessions related to the following:

- Confirming/clarifying the requirements in the Order
- Providing an overview of the City's Chedoke Creek Watershed Water Quality Study
- Reviewing the scope of work associated with the Targeted Dredge operation
- Consultation regarding agency permitting requirements
- Discussing scheduling

In addition to the core team meetings, Wood has also had direct dialogue with the Species at Risk Team as outlined in Section 4.5. Those meetings have specifically focused on the species at risk, data collection protocols and timing for permitting.

Further consultation is planned with MECP formally as per the conditions of the Order, to keep Ministry staff up-to-date on progress associated with the various conditions, including:

- Prior to the first of each month, the City will provide to the Director written, monthly progress updates on the progress made to comply with the order.
- In conjunction with the written monthly progress updates, the City shall meet with the Director within 7 days of the submission of the monthly report to discuss the progress reports

### 6.2 Stakeholders

As noted in the Introduction, the City has consulted with RBG, as part of the effort associated with the preparation of this Work Plan (ref. personal communication, Scheckenberger- Theijsmeijer, January 29, 2021 and Klodnicki-Theijsmeijer, February 13, 2021). The objective of the consultation was to gain further insights into:

- Issues of concern
- Available data/information to support dredge project
- Insights related to Species at Risk
- Background to currently planned projects in RBG's Master Plan

Some of the key outcomes from this dialogue included:

- History of Cootes Paradise and area infrastructure (Hwy 403, Landfill)
- Enhancement work conducted by RBG prior to the spill including carp barrier, plantings and other wetland restoration plans and projects in the area

- Thoughts on sediment dispersion/location/characterization
- Species at risk – Lilliput mussel, Maple Leaf mussel, Blanding turtles
- Outline of other species – spiny soft shell turtles, Swifts, Barn swallows, beavers
- Christmas Tree Berm – plans to make permanent
- Master plan components – restoration of delta at Princess Point, restoration of Lower Chedoke Creek, aerator system in upper Chedoke Creek
- Request for outline of permits to be considered in the targeted dredge operation

### **6.3 Public**

While formal public engagement is not required as part of the implementation of the plan for the targeted dredge in response to the Order, as it would be through Class or Full Environmental Assessment projects, the City is advocating for a process to keep the general public informed including the local users of potentially affected spaces, during and after the dredge operation. The approach to public engagement will include: media releases, technical briefs and through the updates on the City's project website. The process of informing the Public is a Council priority and key objective.

### **6.4 Indigenous Nations**

Given that the City's response to the Order through the Chedoke Creek Plan (Targeted Dredge) is not a formal Class Environmental Assessment, it does not formally attract the requirement for Indigenous Nations and Peoples engagement. That said, it is the City's intent through all of its actions to keep its Indigenous partners involved and informed, and seek opportunities for fulsome and meaningful engagement. To this end, as part of the preparation of this Plan, the City has recently met with its Senior Project Manager for Urban Indigenous Strategy (Shelly Hill), to discuss approaches for engagement for this project, as well as others which are anticipated to arise through the Cootes Paradise Report and Work Plan, around future Master Plans and direct restoration efforts.

City staff has committed to working with its Indigenous Strategy lead in developing the most effective approach for engagement for the near-term Targeted Dredge project, as well as the future projects arising from the Cootes Paradise Work Plan execution. The various groups having interest will be identified and then, through direct contact, opportunities will be discussed. The City will build upon its current strategy recently submitted to Council for endorsement.

# **Appendix A: Director's Order**

Ministry of the Environment,  
Conservation and Parks

Ministère de l'Environnement,  
de la Protection de la nature et des Parcs



## Director's Order

Section 157.3 Environmental Protection Act, R.S.O. 1990  
Section 16.4 Ontario Water Resources Act, R.S.O. 1990  
Section 26.3 Pesticides Act, R.S.O. 1990  
Section 107 Safe Drinking Water Act, S.O. 2002, c.32 (SDWA)  
Section 32 Nutrient Management Act, 2002, S.O. 2002

*Order Number*  
1-PE3L3

**To:**

HAMILTON, CITY OF  
700 WOODWARD Ave N  
HAMILTON ON L8H 6P4  
Canada

HAMILTON, CITY OF  
71 MAIN STREET WEST, 1st Floor  
HAMILTON, ONTARIO L8P 4Y5  
Canada

**Site:** Chedoke Creek, downstream of the Main/King Combined Sewer Overflow discharge pipe, the eastern end of Cootes Paradise and western end of Hamilton Harbour, and as further described in the Provincial Officer Report # 1-OW6SS under section entitled "Description of the Site and the Orderees".

### Response to Request

Attention: City Clerk

I have reviewed Provincial Officer Order 1-OW6SS ("Order") dated 20/11/2020 (dd/mm/yyyy) in response to your request for the review dated November 27, 2020, submitted by your lawyer, Ms. Rosalind Cooper on behalf of the City of Hamilton. I have considered your submissions and met with the issuing Provincial Officer, Shelley Yeudall and technical support staff in the Ministry of the Environment Conservation and Parks (Ministry) to discuss the Order and the above noted request. I have also considered the submissions made at a meeting held on December 3, 2020 between City officials Andrew Grice, Cari Vanderperk and Mark Bainbridge and Ministry officials including myself, Shelley Yeudall, Lindsey Burzese, Zafar Bhatti and Sarah Day.

Pursuant to my authority under s. 157.3 of the Environmental Protection Act, R.S.O. 1990, c. E.19 (EPA) and s. 16.4 of the Ontario Water Resources Act, R.S.O. 1990, c. O.40 (OWRA) I hereby confirm and alter portions of the Order as set out below.

Item No. 1 of the Order was altered to extend the compliance date as specified below.

Item No. 2, No. 3, No. 8 and No. 10 of the Order were altered to extend the compliance dates as specified below, and to refer to the Director as opposed to Provincial Officer for the submission of required documents.

Item No. 6, No. 7, No. 12, No. 13, No. 15, No. 17, No. 18, No. 19 and No. 20 of the Order were altered to refer to the Director as opposed to the Provincial Officer.

Item No. 16 of the Order was revoked.

Item No. 4, No. 5, No. 9, No. 11 and No. 14 of the Order are confirmed.

For ease of reference this order uses the definitions used in the Provincial Officer's Report.

Also, for ease of reference, the Director's Order now reads as follows:

1. By January 15, 2021, retain the services of a Qualified Person that has the experience and qualifications to carry out the work specified in this order.
2. By January 15, 2021, submit to the Director written confirmation that the Qualified Person has been retained to carry out the work specified in this order, that a copy of the order has been given to the Qualified Person; and that the Qualified Person has the experience and qualifications to carry out the work.

#### Chedoke Creek Downstream of the Main/King CSO Discharge Pipe

3. By February 22, 2021, submit to the Director, for approval, a remediation workplan for Chedoke Creek that is developed by the Qualified person to undertake the targeted dredging of Chedoke Creek based on the recommendation identified in section 5.2.5 of the Wood report entitled "MECP Order # 1-J25YB Item 1b – Chedoke Creek Natural Environment and Sediment Quality Assessment and Remediation Report" dated January 24, 2019 ("Chedoke Creek Workplan"). The Chedoke Creek Workplan shall be prepared in accordance with the requirements set out in Items 4 and 5 below.
4. The Chedoke Creek Workplan shall, at a minimum:
  - i. Consider technical reports, Ministry comments and affected stakeholders' comments, to determine an acceptable plan to implement the recommendation in the Wood report to restore the Chedoke Creek, while mitigating impacts of implementing the plan on the natural environment, including water;
  - ii. Contain a detailed timeline setting out critical milestones and checkpoints with the Ministry for carrying out the Chedoke Creek Workplan;
  - iii. Contain a Species at Risk assessment plan and associated timelines for Chedoke Creek downstream of the spill and including potential impacted areas downstream of Chedoke Creek that may be impacted by targeted dredging;
  - iv. Undertake consultation with the Species at Risk Branch within the Ministry in respect of any identified items pursuant to 4 iii) and incorporate this feedback and outcome into the workplan for any species at risk;
  - v. Provide a description of any anticipated approvals needed to implement the Chedoke Creek Workplan, initial consultation and proposed timelines to obtain such approvals, if required, for the Workplan to be implemented;
  - vi. The consultation in iv) and v) shall include the Regional Technical Support Section of the Ministry;
  - vii. Contain a description of the identified areas and the extent (depth, location) of the targeted dredging with a description of how the items outlined in Item 5 below were addressed and a description of any methods for refining identified areas in Item 5 including the impacted areas identified in the Wood reports and SLR reports and timing as needed, in the Chedoke Creek Workplan;
  - viii. Contain a description of the approximate volume of material to be removed;
  - ix. Identify and contain a description of proposed mitigation measures for any short-term impact(s) that may arise from implementing the Chedoke Creek Workplan for Chedoke Creek, its shoreline and connected waterways/natural environment, on any species at risk and other potentially impacted uses. Mitigation measures may include, but are not limited to: exclusion measures for local aquatic uses; limit recreational uses in the area; total suspended solids control as required for carrying out the targeted dredging; and proposed monitoring during any remediation to monitor effectiveness of mitigation measures during dredging identified in iv); and
  - x. Contain a proposed monitoring plan to monitor the recovery of the natural environment and effectiveness of the Chedoke Creek Workplan once dredging is complete.

5. With respect to the area from the Main/King CSO outfall to the mouth of Chedoke Creek, the Chedoke Creek Workplan shall take into consideration the scope of targeted dredging work necessary to restore the natural environment to pre-spill conditions, as to be agreed upon by the Ministry, and to mitigate any impairments or potential impairments from the spill, in relation to the following, but not limited to:

- i. Sediment areas identified as impacted, in consultation with the Ministry, by the sewage spill;
- ii. Sediment areas identified as containing elevated organic material consistent with sewage sludge;
- iii. Sediment areas identified as elevated nutrients (particularly TP, TAN, and TKN);
- iv. Sediment areas identified as had, may have, or continuing to have reduced dissolved oxygen levels in the water column from historical levels;
- v. Sediment areas identified as having elevated parameters as identified by the ERA carried out by SLR ("Ecological Risk Assessment (ERA), Chedoke Creek, Hamilton, Ontario" dated February 12, 2020) to have moderate or high risk for impacts, or otherwise identified by the reports or in comments by the Ministry; and
- vi. Addressing any ecological flow path requirements and connectivity within the creek in any remedial action plan that may impact low flow path and connectivity.

6. By October 31, 2021 or such other date approved by the Director in writing, complete the approved Chedoke Creek Workplan.

7. Within one (1) month of the completion of the of the work undertaken pursuant to the approved Chedoke Creek Workplan, submit to the Director, a report prepared by the Qualified Person confirming that the natural environment has been restored to pre-spill conditions and that further impairment to the natural environment will not occur as a result of the spill to the Chedoke Creek as detailed in the attached Provincial Officer's report, and at a minimum contain the following:

- i. The details of the work undertaken to complete the Chedoke Creek Workplan;
- ii. Any monitoring results completed before, during and after the work undertaken in accordance with the Chedoke Creek Workplan;
- iii. Analysis of the results in Item 7(ii) above for the purposes of the intended monitoring; and
- iv. Determination if any requirement for on-going monitoring is required to verify the effectiveness or maintenance of the remedial actions undertaken is necessary.

#### Cootes Paradise/Western Hamilton Harbour Area

8. By March 22, 2021, submit to the Director for approval, a proposed remediation/mitigation report that is prepared by a Qualified Person(s) for the Cootes Paradise/Western Hamilton Harbor Area to offset the added nutrient loading, principally TP, identified in the Wood reports, the SLR reports and particularly the Hatch reports, and address any other potential on- going impacts (dissolved oxygen, algal blooms) as a result from the sewage spill to this area ("Cootes Paradise Report").

9. The report in Item 8 shall, at a minimum:

- i. Identify and review all potential remediation or mitigation measures, whether direct, indirect, or a combination of measures with consideration for short and long-term measures to address the remediation goal to offset added nutrient loading particularly for TP and any potential on-going impacts (dissolved oxygen, algal blooms) from the sewage spill to the Cootes Paradise/Western Hamilton Harbor Area as identified in the Wood reports, the SLR reports and the Hatch reports;
- ii. Undertake consultation with and provide a summary of comments received from the Royal Botanical Gardens, Hamilton Conservation Authority, the Ministry, and any other relevant affected stakeholders for potential remediation and mitigation options as per item i. above;
- iii. Contain a cost/benefit analysis of all options to assess efficiency and effectiveness of any remediation or mitigation options;
- iv. Identify the recommended options for remediation and mitigation;

v. Identify the proposed offset goal to achieve remediation and/or mitigation with respect to the approximate equivalent loadings from the sewage spill;

vi. Propose a methodology for quantification with respect to the offset of the loadings for any remediation and/or mitigation measures to meet the intended goal for overall remediation and/or mitigation to address the added TP loading from the spill; and

vii. Identify and propose timelines to implement the recommended remediation or mitigation measures to offset loadings from TP, impacts to dissolved oxygen from nutrients or other measures that may improve existing or potential impairments with identification of options that can be implemented as soon as possible to start to reduce the on-going or potential impacts.

10. Within six (6) weeks of approval of Item 8 above or such other date approved by the Director in writing, submit to the Director for approval, a proposed workplan for the approved remediation/mitigation measures for Cootes Paradise/Western Hamilton Harbour Area ("Cootes Paradise Workplan"). The workplan shall consider and address, as necessary, Work Ordered in Item 8 and 9 above and any ministry comments upon approval of Item 8, and shall include, but not be limited to, the following:

i. A detailed workplan and timeline for carrying out the approved remediation/mitigation options within the Cootes Paradise/Western Hamilton Harbour Area;

ii. Calculations referred to in Item 9 iv) and v) or as otherwise approved; and

iii. Proposed follow-up monitoring required to ensure the recovery and effectiveness of the remediation plan.

11. Within two (2) weeks of the approval obtained pursuant to item 10 above, commence implementation of the approved Cootes Paradise Workplan within the timelines set out in the approval.

12. Submit a report prepared by the Qualified Person within one (1) month of the completion of the work undertaken pursuant to the approved Cootes Paradise Workplan to the Director confirming that the natural environment has been restored and outlining the completed items and the work undertaken to restore the natural environment, including, but not limited to, the following:

i. Any monitoring results completed before, during and after the work undertaken in accordance with Cootes Paradise Workplan;

ii. Analysis of the results in Item 12 (i) above for the purpose of the intended monitoring; and

iii. Determination if any requirement for on-going monitoring is needed to verify the effectiveness or maintenance of the remedial actions undertaken as necessary.

13. Provide notice to any impacted landowner(s) of the following items:

i. within 7 days of submission of any proposed workplan(s) submitted to the Director for approval; and

ii. within 7 days of the approval of any workplan(s) by the Director.

14. Provide notice to any impacted landowner(s) at least seven (7) days before the implementation of any work on the approved Chedoke Creek Workplan or the approved Cootes Paradise Workplan;

15. Within seven (7) days of any work on the Chedoke Creek Workplan and the Cootes Paradise Workplan, provide written confirmation to Director, that implementation of the approved workplan(s) has commenced.

16. Within (2) days of any limitations or changes being identified to the approved workplans, notify the Director and within two (2) weeks, submit, in writing for review and acceptance, any proposed changes to an approved workplan with the relevant information to support any proposed changes. Written acceptance by the Director of the proposed changes is required prior to implementation of any proposed changes.

17. Prior to the first of each month, provide to the Director written, monthly progress updates on the progress made to comply with this order.

18. In conjunction with the written monthly progress updates, the City shall meet with the Director within 7 days of the submission of the monthly report to discuss the progress reports.

19. Post this order on the web site of the City for public viewing within 24 hours of it being served and it shall remain posted unless otherwise directed by the Director.

A. While this order is in effect, a copy or copies of this order shall be posted in a conspicuous place.

B. While the order is in effect, report in writing, to the District or Area Office, any significant changes of operation, emission, ownership, tenancy or other legal status of the facility or operation.

### **Request for Hearing**

You may require a hearing before the Environmental Review Tribunal if, within 15 days of service of this order, you serve written notice of your appeal on the Environmental Review Tribunal and the Director. Your notice must state the portions of the order for which a hearing is required and the grounds on which you intend to rely at the hearing. Except by leave of the Environmental Review Tribunal, you are not entitled to appeal a portion of the order or to rely on grounds of appeal that are not stated in the notice requiring the hearing. Unless stayed by the Environmental Review Tribunal, the order is effective from the date of service.

Written notice requiring a hearing must be served personally or by mail upon:

The Secretary	and	Director
Environmental Review Tribunal		Ministry of the Environment, Conservation and Parks
655 Bay Street, 15th Floor		119 King St. W., 9th floor Hamilton, ON, L8P 4Y7
Toronto, ON M5G 1E5		Fax: (905) 521-7806

Where service is made by mail, the service shall be deemed to be made on the fifth day after the date of mailing and the time for requiring a hearing is not extended by choosing service by mail.

### **For your Information**

The procedures to request a hearing and other information provided above are intended as a guide. The legislation should be consulted for additional details and accurate references.

### **Reasons for Response**

I altered work ordered item Items No. 1, No. 2, No. 3 and No.8 of the Order allow the City of Hamilton more time to follow their internal procurement and funding process to retain the Qualified Person within a reasonable period of time. Additional time was granted, at the City's request, to allow the City more time to work with the Qualified Person to complete the Chedoke Creek Workplan and the Cootes Paradise Report.

I altered work ordered Item No. 10 of the Order to allow at least six (6) weeks, or such other date approved by the Director, for the submission of the Cootes Paradise Workplan in relation to the approved remediation/mitigation measures for Cootes Paradise/Western Hamilton Harbour Area. The additional time will allow the City more time to develop the Cootes Paradise Workplan in consultation with the Qualified person and accommodate their internal approval processes.

Item No. 16 of the order was revoked as I agree with the City that the requirements were duplicative, and that the monthly update meetings required by Item No. 17 (formerly No. 18 of the Order) will provide the necessary updates to me and the Ministry on the City's progress in complying with the order. Item No. 17, No. 18, No. 19 and No. 20 of the Order were renumbered accordingly.

I am confirming work ordered Items No. 4, No. 5, No. 6, No. 7, No. 9, No. 11, No. 12, No. 13, No. 14, No. 15, No. 17, No. 18, No. 19 and No. 20 of the Order.

A meeting was held on December 3, 2020 between City officials Andrew Grice, Cari Vanderperk and Mark Bainbridge, and me along with Ministry staff, in response to the request for review of the Order. I discussed the requirements of the Order in detail, including in relation to the clarifications sought by the City in its request for review, with support from Ministry officials in attendance. The City was given opportunity to ask questions of me and Ministry officials regarding the work ordered, and I discussed expectations of the Order moving forward. I am of the view that given the nature of the discussions, and the City's understanding of the work that is required of them, I did not see a need to alter any other terms of the order.

I note that Item No. 2, No. 3, No. 6, No. 7, No.8, No. 10, No. 12, No. 13, No. 15, No. 17, No. 18, No. 19 and No. 20 were altered to refer to the Director, as opposed to the Provincial Officer, for the purposes of administering the requirements of the order, and so I am apprised of progress made to comply with the Order.



Issued at City of Hamilton this 04/12/2020 (dd/mm/yyyy).



---

Stephen Burt

Badge # 1504

Hamilton District

## Provincial Officer's Report

Order Number  
1-OW6SS

**To:**

HAMILTON, CITY OF  
700 WOODWARD Ave N  
HAMILTON ON L8H 6P4  
Canada

HAMILTON, CITY OF  
71 MAIN STREET WEST, 1st Floor  
HAMILTON, ONTARIO L8P 4Y5  
Canada

**Site:**

Chedoke Creek, downstream of the Main/King Combined Sewer Overflow discharge pipe, the eastern end of Cootes Paradise and western end of Hamilton Harbour, and as further described in the Provincial Officer Report under section entitled "Description of the Site and the Orderes".

**Observations**

1. Authority to Issue Order

This Order is being issued pursuant to my authority under sections 157, 157.1 and 196 of the Environmental Protection Act and under sections 16, 16.1, and 104 of the Ontario Water Resources Act.

2. Definitions

For the purpose of this Order, the following terms shall have the meanings described below:

"adverse effect" means one or more of:

- (a) impairment of the quality of the natural environment for any use that can be made of it,
- (b) injury or damage to property or to plant or animal life,
- (c) harm or material discomfort to any person,
- (d) an adverse effect on the health of any person,
- (e) impairment of the safety of any person,
- (f) rendering any property or plant or animal life unfit for human use,
- (g) loss of enjoyment of normal use of property, and
- (h) interference with the normal conduct of business.

"cBOD" means Carbonaceous Biochemical Oxygen Demand

"City" means the City of Hamilton.

"Combined Sewers" means pipes that collect and convey both wastewater from residential, commercial, institutional and industrial buildings and facilities (including infiltration and inflow) and stormwater runoff through a single-pipe system;

"Combined Sewer Overflow (CSO)" means a discharge to the environment from a Combined Sewer system that usually occurs as a result of precipitation when the capacity of the combined sewer is exceeded.

"combined sewer system" is a wastewater collection system which conveys sanitary wastewaters (domestic, commercial and industrial wastewaters) and stormwater runoff through a single pipe system to a Sewage Treatment Plant (STP) or treatment works. Combined sewer systems which have been partially separated and in which roof leaders or foundation drains contribute stormwater inflow to the sewer system conveying sanitary flows are still defined as combined sewer systems in Procedure F-5-5.

"discharge", when used as a verb, includes add, deposit, emit or leak and, when used as a noun, includes addition, deposit, emission or leak; ("rejet", "rejeter")

"DO" means Dissolved Oxygen

"Dry weather flow" is sewage flow resulting from both: 1) Sanitary wastewater (combined input of industrial, domestic and commercial flows); and 2) Infiltration and inflows from foundation drains or other drains occurring during periods with an absence of rainfall or snowmelt.

"EPA" means the Environmental Protection Act, R.S.O. 1990, c. E.19.

"ERA" means Ecological Risk Assessment.

"HATCH" means HATCH Limited.

"HATCH reports" means the following reports:

- Report entitled "Quantification of Volume and Contaminant Loadings" dated September 28, 2018 by HATCH Limited;
- Report entitled "Main-King CSO Tank Overflow Volume Estimates" by HATCH Limited dated April 14th, 2020.

Ministry" or "MECP" means the Ontario Ministry of Environment, Conservation and Parks.

"municipality" means the City of Hamilton

"operator" means a person who adjusts, inspects or evaluates a process that controls the effectiveness or efficiency of a facility, and includes a person who adjusts or directs the flow, pressure or quality of the wastewater within a wastewater collection facility;

"Order" means this Provincial Officer's Order 1-OW6SS, as it may be amended.

"overflow event" occurs when there is one or more CSOs from a combined sewer system, resulting from a precipitation event. An intervening time of twelve hours or greater separating a CSO from the last prior CSO at the same location is considered to separate one overflow event from another.

"owner" means a municipality or person having authority to construct, maintain, operate, repair, improve or extend water works or sewage works; ("propriétaire")

"owner of the pollutant" means the owner of the pollutant immediately before the first discharge of the pollutant, whether into the natural environment or not, in a quantity or with a quality abnormal at the location where the discharge occurs, and "owner of a pollutant" has a corresponding meaning; ("propriétaire du polluant", "propriétaire d'un polluant")

"OWRA" means the Ontario Water Resources Act, R.S.O. 1990, c. O.40.

"Partially Separated Sewer Systems" means wastewater collection systems that originally had Combined Sewers and where either only a portion of a system was retrofitted to separate sewers, or in which roof leaders or foundation drains still contribute stormwater inflow to the separated sewer conveying sanitary sewage, and/or a new development area served by separate sewers was added to an area served by Combined Sewers;

"person having control of a pollutant" means the person and the person's employee or agent, if any, having the charge, management or control of a pollutant immediately before the first discharge of the pollutant, whether into the natural environment or not, in a quantity or with a quality abnormal at the location where the discharge occurs, and "person having control of the pollutant" has a corresponding meaning;

"pollutant" means a contaminant other than heat, sound, vibration or radiation, and includes any substance from which a pollutant is derived;

"practicable" means capable of being effected or accomplished;

"Provincial Officer" means the undersigned provincial officer or, in the event that the undersigned is unable to act, any other provincial officer authorized to act pursuant to the EPA and OWRA.

"Provincial Officer's Report" means this 18-page report which comprises part of the Order.

"restore the natural environment", when used with reference to a spill of a pollutant, means restore all forms of life, physical conditions, the natural environment and things existing immediately before the spill of the pollutant that are affected or that may reasonably be expected to be affected by the pollutant, and "restoration of the natural environment", when used with reference to a spill of a pollutant, has a corresponding meaning;

"Sanitary Sewers" means pipes that collect and convey wastewater from residential, commercial, institutional and industrial buildings, and some infiltration and inflow from extraneous sources such as groundwater and surface runoff through means other than stormwater catch basins;

"Separate Sewer Systems" means wastewater collection systems that comprised of Sanitary Sewers while runoff from precipitation and snowmelt are separately collected in Storm Sewers;

"sewage" includes drainage, storm water, commercial wastes and industrial wastes and such other matter or substance as is specified by the regulations; ("eaux d'égout")

"sewage works" means any works for the collection, transmission, treatment and disposal of sewage or any part of such works, but does not include plumbing to which the Building Code Act, 1992 applies; ("station d'épuration des eaux d'égout")

"Site" means the site described as: Chedoke Creek, downstream of the Main/King Combined Sewer Overflow discharge pipe, the eastern end of Cootes Paradise and western end of Hamilton Harbour and as further described in the Provincial Officer Report under section entitled

"Description of the Site and the Orderees".

"SLR" means SLR Consulting (Canada) Ltd.

"SLR reports" means the following reports:

- Letter report entitled "Peer Review Report - Chedoke Creek Natural Environment and Sediment Quality Assessment and Remediation Report" dated May 15, 2019 by SLR Consulting (Canada) Ltd.;
- Report entitled "Ecological Risk Assessment (ERA), Chedoke Creek, Hamilton, Ontario" by SLR Consulting (Canada) Ltd. dated February 12, 2020 (including "APPENDIX A Previous Environmental Investigations Sampling Locations");
- Report entitled "Cootes Paradise: Environmental Cootes Evaluation Hamilton, Ontario" by SLR Consulting (Canada) Ltd. dated April 22, 2020; and
- Letter report entitled "Response to Ministry of Environment, Conservation and Parks May 28, 2020 letter entitled Chedoke Creek Spill Response – District Comments" by SLR Consulting (Canada) Ltd. dated June 12, 2020.

"spill", when used with reference to a pollutant, means a discharge,  
(a) into the natural environment,  
(b) from or out of a structure, vehicle or other container, and  
(c) that is abnormal in quality or quantity in light of all the circumstances of the discharge,  
and when used as a verb has a corresponding meaning; ("déversement", "déverser")

"Storm Sewers" means pipes that collect and convey runoff resulting from precipitation and snowmelt (including infiltration and inflow);

"substance" means any solid, liquid or gas, or any combination of any of them.

"TAN" means Total Ammonia Nitrogen

"TKN" means Total Kjeldahl Nitrogen

"TP" means Total Phosphorous

"Tribunal" means the Environmental Review Tribunal

"TSS" means Total Suspended Solids

"Wet weather flow" is the combined sewage flow resulting from:

1. Sanitary wastewater; and
2. Infiltration and inflows from foundation drains or other drains resulting from rainfall or snowmelt; and
3. Stormwater runoff generated by either rainfall or snowmelt that enters the combined sewer system.

"Wood" means Wood Environmental & Infrastructure Solutions a division of Wood Canada Limited.

"Wood reports" means the following reports:

- Report entitled "MECP Order # 1-J25YB Item 1b – Chedoke Creek Natural Environment and Sediment Quality Assessment and Remediation Report" dated January 24, 2019 by Wood Environmental & Infrastructure Solutions;
- Report entitled "MECP Order # 1-J25YB Item 1c – Implementation and Costing Report" dated January 24, 2019 by Wood Environmental & Infrastructure Solutions; and
- Memo entitled "Chedoke Creek Project, Wood Commentary on SLR Peer Review Comments, City of Hamilton" dated May 23, 2019 by Wood Environmental & Infrastructure Solutions.

### 3. Description of the Site and the Orderees

The City of Hamilton is the owner and operator of two (2) wastewater treatment plants (WWTP) called Dundas WWTP and Woodward WWTP located at 135 King Street West and 700 Woodward Avenue, respectively. Sewage is collected via the wastewater collection system made up of both Separate Sewer Systems and Combined Sewer Systems and Partially Separated Sewer Systems serving the former towns of Stoney Creek, Hamilton, Dundas, Ancaster and Waterdown and other hamlets surrounding the City.

The City of Hamilton is also the owner and operator of the wastewater collection system which includes approximately nine (9) Combined Sewer Overflow (CSO) tanks. CSO tanks are engineered structures designed to hold a portion of combined sewage (sewage and stormwater) during rain events that is in excess of the WWTP capacity. The purpose of providing storage capacity at the CSO tanks is to prevent untreated sewage from discharging to the natural environment. When the rain stops, the sewage is gradually pumped to the WWTP for treatment. Under heavy rain conditions, a CSO tank storage capacity may be exceeded, which may result in combined sewer overflow into the receiving water although at a more diluted concentration than raw sewage. The Main/King CSO Tank and Pumping Station (HCS04) located at 707 King Street West, Hamilton has a combined sewage storage capacity of 75,000 m<sup>3</sup>.

As detailed later in this Provincial Officer's Report, from January 28, 2014 until July 18, 2018, sewage from the Main/King CSO pumping station was discharged to Chedoke Creek on multiple occasions in the absence of rain and when the capacity of the CSO tank was not exceeded. The sewage flowed from the pumping station into the overflow chamber and out via a 2400 mm discharge pipe traveling west/northwest discharging into Chedoke Creek just north of Glen Road, Hamilton. The spill flowed north in Chedoke Creek discharging into the south-eastern portion of Cootes Paradise with the usual currents going out the Desjardins Canal into the western end of Hamilton Harbour.

The Site is described as: Chedoke Creek, downstream of the Main/King Combined Sewer Overflow discharge pipe, the eastern end of Cootes Paradise and western end of Hamilton Harbour, and as detailed in Appendix A.

Appendix A shows a map of the Site entitled "Chedoke Creek, downstream of the Main/King Combined Sewer Overflow discharge pipe, the eastern end of Cootes Paradise and western end of Hamilton Harbour".

The following are property uses of land surrounding Chedoke Creek:

Neighbouring land uses to the east include Hwy 403 with park land further east (Kay Drage Park/former Landfill); To the south and west is a mix of residential homes and apartments, institutional properties (long term care facility and former school), and Royal Botanical Garden's park land extending north to Princess Point; and To the north of Chedoke Creek is Cootes Paradise and additional Royal Botanical Garden (RBG) park land.

#### 4. Events Leading to the Provincial Officer's Order

An estimated volume of 24 billion litres of sewage spilled from the Main/King CSO Tank and associated Pumping Station into Chedoke Creek during the period of January 28, 2014 until July 18, 2018 as a result of the incorrect operation of a valve, and the malfunction of a second gate valve without detection. The purpose of a CSO tank is to collect and retain sewage and storm flows during rain events that would otherwise overwhelm a waste water collection system and thereby prevent untreated sewage from discharging to the natural environment. The associated pumping station then pumps the sewage to the pant when the rain stops, and capacities allow for more flow. Discharges from a CSO tank should not occur during dry weather conditions or during rain events for which the tank capacity has been designed. Because the discharge was abnormal in quality and quantity and unapproved under the OWRA it was determined a spill.

The following chronology is a description of this Provincial Officer's dealings with this spill event since first being assigned to it on July 6, 2018:

Prior to July 6, 2018 the District Office received Annual Reports from the City about the Main/King CSO tank which reported no recent combined sewer overflows. The City also did not report any operating problems encountered and corrective actions taken with respect to the CSO tank as required under condition 4 (c) of the Certificate of Approval (CofA)/Environmental Compliance Approval (ECA) # 3-1455-94-956.

On July 6, 2018, the Spills Action Centre received a public complaint regarding the City discharging sewage into Chedoke Creek and Cootes Paradise. The complaint was forwarded to the Hamilton District Office. The caller reported the presence of sewage odours, worse than he had ever experienced, and raw sewage related plastic debris within Chedoke Creek. Caller reported that the problem had been ongoing since the City installed the CSO tank. The caller indicated that they had also reported the same observations to the City.

On July 9, 2018, Hamilton District Manager, Paul Widmeyer received an email from the Hamilton Health Unit, regarding the health hazard of extremely high E. coli results meeting the criteria of "suspected sewage contamination" in Chedoke Creek with results reported of 3.4 million CFU/100 mL and a trend of historical high results from approximately the end of May 2018.

On July 10, 2018 the Hamilton Health Unit required the City of Hamilton to post warning signs for the public at potential water access points along Chedoke Creek, Princess Point Park, Cootes Paradise Waterfront Trail, Desjardin Canal (which allows flow between Cootes Paradise and Hamilton Harbour) and to remove the canoe/kayak dock at Princess Point Park.

On July 11, 2018 the Hamilton Conservation Authority took samples in the Chedoke Creek watershed at several locations for E. coli and human/bovine bacteria markers in order to isolate the section of Chedoke Creek where the discharge was occurring and determine the source of contamination. Sample results showed high concentrations of E. coli and bacteria readings consistent with human source. Resampling was conducted on July 18, 2018 by the Hamilton Conservation Authority with results also showing high concentrations of E. coli and bacteria readings consistent with human source.

On July 13, 2018, I received a presentation from the Hamilton Harbour Remedial Action Program (HHRAP) committee where the Royal Botanical Gardens (RBG) presented photos of the Chedoke Creek on July 4, 2018 showing a significant amount of sewage solids floating on the surface.

On July 16, 2018, I visited the site at Kay Drage Park bridge with Water Compliance Supervisor, Zafar Bhatti and detected sewage odours and observed sewage debris in Chedoke Creek.

On July 17, 2018, the undersigned Provincial Officer met with City staff at Chedoke Creek outfall and detected strong sewage odours downwind of the outfall and observed significant sewage debris in the creek. City staff identified the sewage as algae. At the Kay Drage Park bridge a slight increase in sewage debris was observed in the creek.

The City had been checking their system and providing update reports from staff suggesting natural organics, algae or sediment reflux all-natural sources and not sewage coming from the sewage system up to July 18th, 2018 but my inspections were on-going to determine the source.

On the morning of July 18, 2018, I visited the upstream portion of the Chedoke Creek outfall at the MTO work site on the east side of the 403 and observed that the water was running clear with no odour.

On July 18, 2018, Calder Engineering Ltd conducted a confined space inspection and sampling of the twin box culvert and connecting and storm sewer pipe from overflow chamber of Main/King CSO tank and Pumping Station located at 707 King Street West. The twin box culvert channels Chedoke Creek under Main Street West to where Chedoke Creek emerges north of Glen Road and receives flow from several different areas. It was this inspection that found sewage flowing into the box sewer from King/Main

CSO tank at an estimated rate of 150 L/sec, while clear water was coming from Chedoke Creek. Further investigation at the Main /King Pump Station found sewage in the CSO tank overflow chamber discharging to a 2400 mm storm discharge culvert. Sewage was entering the overflow chamber through a reported 4.7% open 3000 mm x 3000 mm maintenance gate valve between the overflow chamber and the influent 1950 mm combined sewer entering the pumping station wet well. Once identified the City closed the gate and reported the spill to the Spills Action Centre due to the discharge being of abnormal quality and quantity.

Water Compliance Supervisor Zafar Bhatti and I attended the King/Main CSO tank location on July 18, 2018 to confirm that the discharge had stopped and to conduct a visual inspection of the Chedoke Creek outfall which showed no flow from the east side of the box culvert which had been observed the previous day by the undersigned Provincial Officer. Sewage debris was still observed with sewage odours. Preliminary reports from the City indicated that the gate valve had been open since January 29, 2014. The initial estimated volume of sewage discharged to the creek from January 29, 2014 until the gate valve was fully closed was initially reported as 15.9 billion litres (and more accurately determined to be 24 billion litres later).

The undersigned Provincial Officer also conducted a site visit on July 20, 2018 and found strong sewage odours on Glen Road, downwind of the creek and observed a boom installed by City contractors between Kay Drage Park bridge and the Chedoke Creek Outfall to collect floating materials.

On July 27, 2018, the City confirmed that a gate valve between the sewage pumping station wet well and overflow chamber had been open since January 28, 2014 allowing dry weather flow out of the station. In January 2018 a second gate valve malfunctioned which directed added (wet and dry weather) flow from a large combined sewer into the wet well where the first gate valve was open which allowed the added flow to spill into the overflow chamber and discharging to Chedoke Creek.

A Provincial Officer Order (POO) Number 1-J25YB was issued on August 2, 2018 requiring the City, among other things, to evaluate impacts of the sewage spill to Chedoke Creek from the Main/King CSO tank facility between January 28, 2014 and July 18, 2018. This evaluation required evaluation of impacts to Chedoke Creek from the spill and anticipation/risk of on-going impacts, recommendations for remediation and/or mitigation, if necessary, and regarding the most effective way to complete the remediation and/or mitigation; and associated implementation timeline for any necessary remedial and/or mitigation work by November 30, 2018.

In October 2018, the City submitted a report entitled "Quantification of Volume and Contaminate Loadings" by HATCH dated September 28, 2018 which stated that an estimated 24 billion litres (24 million cubic metres) of raw sanitary sewage and combined sewage was discharged to Chedoke Creek from January 28, 2014 to July 18, 2018. The Total Contaminant Loadings (in Tonnes) for the period from January 28, 2014 to July 18, 2018 were estimated to be 2375 Tonnes of TSS, 47 Tonnes of TP, 159 Tonnes of TAN, 312 Tonnes of TKN and 1373 Tonnes of cBOD.

On January 31, 2019, the City submitted a consultant's (Wood) report (report entitled "MECP Order # 1-J25YB Item 1b – Chedoke Creek Natural Environment and Sediment Quality Assessment and Remediation Report" dated January 24, 2019 by Wood Environmental & Infrastructure Solutions) as a fulfilment of the above Order #1-J25YB, which recommended Direct Removal (section 5.2.5) of settled material by hydraulic dredging. The report stated, "Physical removal of the organic sediment will directly address the three primary sources of potential impairment including nutrient contamination, bacteriological contamination and habitat loss". Options considered in the order of most to least effective were: Direct Removal, Chemical Inactivation, Physical Capping and No Action.

On March 20, 2019, the City reported that a peer review of the original reports was being conducted. On May 30, 2019 I received both: a Peer Review Report by SLR, dated May 15th, 2019; and a memo from Wood, dated May 23, 2019.

On September 19, 2019 as part of the review of the above reports, the Surface Water Specialist of the Technical Support Section and I requested clarification from the City on the identification of a clear conclusion or recommendation for remediation and/or mitigation option the City was proposing. The City had submitted both the Wood report with one recommendation for dredging and the peer review, which recommended no action. No clear indication was provided by the City on which recommendation it was proposing. With no response from the City by September 30th, 2019 I requested a response by October 4th. The City reported on October 1, 2019 that additional sampling work was completed at the site during the last week of September 2019 as a result of the peer review to identify the need for any remedial work.

On October 10, 2019 in a meeting the City informed the Director, me and other Ministry staff that an ERA had been started. I requested a final report and recommendations by November 15th, 2019. The City then informed us that an ERA final report could not be provided until the end of January 2020 as lab analysis and data interpretation/report would take additional time. The Surface Water Specialist of the Technical Support Section in consultation with the Director and I, informed the City that the contaminated sites environmental risk assessment process cannot be used for the determination of spill clean-up requirements as this process does not have the same requirements as a spill to undertake practicable clean-up to restore the natural environment under Section 93 of the EPA. The legal duty to restore the natural environment in section 93 of the EPA helps to prevent a spill site from becoming a

contaminated site and to ensure the owner deals with the spill and its impacts. Some of the analyses undertaken in an ERA can be used to identify areas and extent of impact of a spill, which may be incorporated into the full evaluation of impact and remediation/mitigation options for the spill, but it does not identify level of clean-up required for spills or the practicable measures available to address the impacts of the spill.

In order to ensure appropriate timelines were followed, a Provincial Officer Order (POO) was issued and the City submitted a Request for Review resulting in the Directors decision to issue Director's Order #1-MRRCX on November 28th, 2019 clarifying the work to be conducted with revised time lines of submission of the ERA in Chedoke Creek by February 14, 2020 and Cootes Paradise Environmental Impact Evaluation (EIE) report by May 1, 2020. Work required was:

1. A Chedoke Creek ERA and evaluation of the environmental impact, an identification and evaluation of sewage remaining in the creek, identification of any anticipated on-going environmental impacts to the creek, and a review of options designed to remediate the creek and monitor the environmental condition of the creek, written proposed actions with justification in respect to the remediation and the monitoring of the creek including selected option(s) for environmental remediation and monitoring with supporting documentation/justification and an implementation timeline including significant milestones and any approvals required; and
2. An environmental impact evaluation to Cootes Paradise from the sewage discharged including a written assessment of any anticipated on-going environmental impacts with identification of contaminants related to the sewage spill, any known environmental impacts and an assessment of anticipated on-going environmental impacts from the identified contaminants including a spatial and environmental evaluation of the contaminants remaining (floatables and non floatables) in Cootes Paradise, and any proposed remedial actions and recommendations with justification including timelines with surface water monitoring program.

On February 14, 2020 the City submitted its Chedoke Creek ERA report and letter of position recommending that no further actions or additional remedial work was required to address the effects from the sewage spill or previous effects from the sewage discharge because of the alleged likelihood of recontamination, presence of historical contamination, and potential presence of a species at risk.

On May 28, 2020, the Director provided preliminary comments from the Ministry technical experts to the City and asked the City to provide additional information and clarification in order to complete its review of the Chedoke Creek ERA and better understand the City's methodology used to conclude that no further action or remediation was needed in Chedoke Creek. The request included, but was not limited to:

- o Clarification on the assessment of the creek sediment;
- o Additional work to verify the presence of a species at risk (Lilliput mussel);
- o Additional evidence to support the no-dredging conclusion to address organic material related to the spill; and
- o an assessment of any other remedial options considered.

The City and its consultant provided additional information to the Director, me and Ministry staff on June 15, 2020 and maintained that no further action was required.

In a letter dated February 13th, 2020 and in a meeting on March 13, 2020 the Royal Botanical Gardens (RBG), expressed concerns regarding ecological damage, potential extent of contamination to the bed of the marsh, which is owned by RBG, and requested a robust analysis of the spill impact and future remediation efforts. RBG plays a critical role in administering marsh restoration programs, ecological remediation plans and are responsible for the health and safety of visitors, program participants and staff of Cootes Paradise.

On April 30, 2020, the City submitted the required Cootes Paradise EIE and letter of position. It did not recommend any action or additional remedial work to address the effects from the sewage spill because the City believed either impact was short-lived or no adverse impact was sustained on water quality, sediment, aquatic vegetation or fish in Cootes Paradise.

I provided the materials for technical review by Technical Support Section, and as a result of their review comments they advised me that more work is needed to address the impacts of the spill on Chedoke Creek and Cootes Paradise as outlined in section entitled 4.2 Workplan below.

#### 4.1 Environmental Site Investigations and Related Information

To date, the following reports detailing environmental site investigations and related information regarding the Site have been received, reviewed by Ministry Staff, provided for technical review and are listed below:

Documents submitted under Order No. 1-J25YB, dated August 2, 2018

- Report entitled "Quantification of Volume and Contaminant Loadings" dated September 28, 2018 by HATCH Limited;



- Report entitled "MECP Order # 1-J25YB Item 1b – Chedoke Creek Natural Environment and Sediment Quality Assessment and Remediation Report" dated January 24, 2019 by Wood Environmental & Infrastructure Solutions;
- Report entitled "MECP Order # 1-J25YB Item 1c – Implementation and Costing Report" dated January 24, 2019 by Wood Environmental & Infrastructure Solutions;

#### Additional Letter Reports/Peer Review submitted

- Letter report entitled "Peer Review Report - Chedoke Creek Natural Environment and Sediment Quality Assessment and Remediation Report" dated May 15, 2019 by SLR Consulting (Canada) Ltd.;
- Memo entitled "Chedoke Creek Project, Wood Commentary on SLR Peer Review Comments, City of Hamilton" dated May 23, 2019 by Wood Environmental & Infrastructure Solutions.

#### Documents submitted under Directors Order No. 1-MRRCX dated November 28, 2019

- Letter from the City entitled "Response to Director's Order 1-MRRCX" Items 1 & 2 submitted on February 14th, 2020 with the following report attachment:
  - "Ecological Risk Assessment (ERA), Chedoke Creek, Hamilton, Ontario" by SLR Consulting (Canada) Ltd. dated February 12, 2020 (including "APPENDIX A Previous Environmental Investigations Sampling Locations").
- Report entitled "Main-King CSO Tank Overflow Volume Estimates" by HATCH Limited dated April 14th, 2020.
- Letter from the City entitled "Response to Order No.1-MRRCX, Items 3 and 4" submitted on April 30, 2020 with the following attachments:
  - Letter from the City of Hamilton entitled "Director Order Number; Item No. 4, Surface Water Monitoring Program" dated April 30, 2020; and
  - Report entitled "Cootes Paradise: Environmental Cootes Evaluation Hamilton, Ontario" by SLR Consulting (Canada) Ltd. dated April 22, 2020.

#### Confirmation of Position and Methodology Clarification

- Letter from the Ministry to the City entitled "Chedoke Creek Spill Response – District Comments" dated May 28, 2020
- Letter of response from the City entitled "Response to District Comments – Chedoke Creek Spill Response" dated June 15, 2020 with the following attachment:
  - Letter entitled "Response to Ministry of Environment, Conservation and Parks May 28, 2020 letter entitled Chedoke Creek Spill Response – District Comments" by SLR Consulting (Canada) Ltd. dated June 12, 2020.

#### 4.2 Work Plan

As previously discussed, I provided the materials for technical review by Technical Support Section, and as a result of their review comments they advised me that more work is needed to address the impacts of the spill on Chedoke Creek and Cootes Paradise as outlined in this section.

#### Chedoke Creek

The City and its consultants (Wood and SLR) have identified dredging in Chedoke Creek as the only effective option, of the options assessed, to address the increased sewage parameter concentrations in the sediment from the spill. SLR reported that hydraulic dredging could improve sediment quality but identified several items potentially limiting the effectiveness or feasibility of hydraulic dredging and therefore did not recommend dredging, namely: 1) a potential species at risk presence in Chedoke Creek due to its identification in nearby Cootes Paradise; 2) an inability to differentiate sediment contaminated by the spill versus historical contamination; and 3) the likelihood of recontamination from other on-going sources of contamination to the creek.

I asked Ministry technical experts to assess the above potential limitations and was advised that the limitations noted can be addressed with the refinement of targeted dredging locations and mitigation measures or limitations and were not supported as outlined below and based on the information provided. They advised further work is required to assess and address the potential presence of any species at risk in Chedoke Creek that may be subject to dredging. This could include the development of mitigatable measures to protect any species at risk during dredging or avoidance of specific areas for dredging. Consideration on the impact of dredging on species at risk is also given for: if the potential impact from dredging is deemed to be a long-term negative impact; if current conditions are degraded due to historical or spill impacts and already potentially negatively impacting the species; and if there would be a long-term impact improvement despite a short-term negative impact from dredging, in order to determine what and where it is appropriate to dredge. The City is required to address the impacts of the spill and restore the natural environment even if historical contamination (even similar contamination) is present and does not absolve the owner of cleaning up a spill. It is also felt that any recontamination from on-going sources, such as: the closed landfill, combined sewer overflows; potential sanitary sewer cross-connections; and stormwater, are within the City's range of scope and responsibility. Significant improvements have been made to most of these sources (in quantity and quality) in the last 10-15 years, as shown by the improved conditions in the creek and sediment

before the spill. Any on-going sources of contamination are not anticipated to re-contaminate any remediated area to the same level historically seen or to the level seen from the 24 billion litres of sewage seen in this spill and is generally minor in comparison to the loadings seen from the spill.

Some of the key items from the Ministry's technical staff review of the Chedoke Creek ERA and impact assessment are as follows:

- The data interpretation and aggregate data analysis used in assessing pre spill conditions, spill period conditions and post spill conditions did not look at specific year differences (2018 vs 2014-2017) but used mean data analysis over the spill period potentially masking the extent of the impact of the spill seen, particularly in 2018, for some parameters and didn't determine if the pre-spill period used was representative of conditions at the time of the spill.
- Information supported the sediment being impacted by the sewage spill by some of the nutrients;
- Impacted sediment was found to be a moderate to high risk with bacteria, PAH's and copper;
- The contaminant loading of nutrients, cBOD and other sewage related parameters showed ongoing impact on DO levels;
- Elevated TAN levels in Chedoke Creek above pre-spill conditions were on-going.

#### Cootes Paradise

The consultant's report (SLR) concluded that no further action was required based on some limited monitoring data indicating that Cootes Paradise had returned to pre-spill conditions. Despite a request from the Director, myself and ministry technical staff the report did not consider, a loadings assessment from the spill to understand the magnitude of the loadings added to the system and to have a long-term impact on the system e.g. algal blooms. The additional loadings will undo and delay the improvements from several projects that are being/have been undertaken to improve the conditions in Cootes Paradise to meet HHRAP goals, such as improvements to TP treatment at the Dundas sewage treatment plant. The added loadings may also increase the likelihood and extent of algal blooms for several years. Based on advice received from ministry technical experts, it is not as feasible, for a number of reasons, to undertake a direct restoration of the added loadings to Cootes Paradise and the western Hamilton Harbour area both from the extent and type of the dispersion of TP, and the cost, effectiveness and potential to cause more harm than good in these areas using a direct removal method like dredging. In order to address the impacts of the increased loadings caused by the spill, based on advice received from Ministry experts, other remedial options must be considered and utilized to offset and/or improve the conditions in these systems in an effort to mitigate the added loading and associated impact as a result of the spill, and thus restore the natural environment.

I have considered some of the key items from the Ministry's technical staff review of the Cootes Paradise EIE and are as follows:

- As previously discussed, the data interpretation and aggregate data analysis used in assessing pre spill conditions, spill period conditions and post spill conditions did not look at specific year differences (2018 vs 2014-2017) but used mean data analysis over the spill period potentially masking the extent of the impact of the spill seen.
- Total Phosphorous (TP) and E. coli also showed similar patterns during the spill with TP double the concentration seen during pre and post spill periods for the east end of Cootes Paradise (CP11, CP11.2 and CP1).
- Rough loadings analysis for Total Phosphorous to Cootes Paradise from the spill in the:
  - o The last 6 months of the spill (January-July 2018) added about 94 kg/d of TP which is approximately double the average annual daily TP loadings (39 kg/day) on top of the normal TP loadings to the system during that time, which may be retained in various forms and recirculated within providing an additional source of nutrients.
  - o The previous four years of the spill (2014-2017) added approximately half, at about 21 kg/d, of the annual average daily TP loading of 39 kg/d on top of the normal TP loadings to the system during that time; and
  - o The total spill loading of 47,750 kg, compared to the annual average modelled loading of 14,100 kg/yr, indicated that the loadings from the spill over 4.5 years were equivalent to approximately three (3) years of additional loadings to Cootes Paradise from the point sources (e.g. Dundas sewage treatment plant, combined sewer overflows and the non-point sources (urban and rural stormwater runoff in the tributaries) combined.
- The report did not assess total ammonia nitrogen (TAN) as a contaminant of potential concern for Cootes Paradise. TAN can have other impacts including eutrophication, elevated nutrients supporting greater algal blooms, and can also cause a nitrogenous oxygen demand impacting dissolved oxygen. Data showed levels at CP11 much higher during the spill, e.g. 13.1 mg/L TAN compared to 1.95 mg/L of TAN during pre and post spill with similar trends at CP11.2 and CP1, although to a lesser extent.
- TKN, Ammonia and cBOD would show high input levels to the systems compared to average annual loadings
- The report did not assess the potential for added loadings to the system to impact algal blooms.
- Although diluted throughout a larger area (Chedoke Creek, the eastern portion of Cootes and into Hamilton Harbour to some extent), potential long-term impacts from the additional loadings, particularly for Total Phosphorous were not evaluated.
- The assessment on Chedoke Creek identified that the bulk of the loadings of some parameters, particularly TP, moved beyond Chedoke Creek into Cootes Paradise. Understanding of the currents and water exchange between Cootes Paradise and Hamilton

Harbour indicates that some of the loading also would have moved into Hamilton Harbour.

Considering the above, I am of the view that more work is needed. The work ordered under section 157, in respect of section 93 and section 14 of the EPA, is needed to restore the natural environment as a result of the spill, and to prevent further impairment to the natural environment, and to prevent adverse effects.

The EPA imposes a duty to mitigate and restore the natural environment on the owner of a pollutant and the person having control of a pollutant that is spilled as per section 93 of the EPA which states:

93 (1) The owner of a pollutant and the person having control of a pollutant that is spilled and that causes or is likely to cause an adverse effect shall forthwith do everything practicable to prevent, eliminate and ameliorate the adverse effect and to restore the natural environment.

When duty effective

(2) The duty imposed by subsection (1) comes into force in respect of each of the owner of the pollutant and the person having control of the pollutant immediately when the owner or person, as the case may be, knows or ought to know that the pollutant is spilled and is causing or is likely to cause an adverse effect.

The City is owner of the pollutant and the City's employees and operators were the person(s) having control of the pollutants, namely raw sewage contaminants (including TSS, TP, TAN, TKN and cBOD), that were discharged into the natural environment over approximately 4.5 years (January 28, 2014 and July 18, 2018) from its sewage works. The discharge of 24 billion litres of sewage was not authorized under the OWRA. As previously discussed, the discharges were occurring at all times, during both dry weather and wet weather conditions regardless of the CSO tank's operating level. The discharged volume of the dry weather flow alone, raw sanitary sewage, was 2.9 billion litres which is abnormal to be discharged to the natural environment considering this volume under normal operating conditions would have received full treatment at the wastewater treatment plant. The estimated normal CSO operation volume during the spill period (2014-2018), for the Main-King CSO if it was operating properly, was modelled by HATCH to be about 0.321 billion litres in total for those five years. Sanitary sewage flow of approximately 2.9 billion litres alone added approximately a loading of 771 tonnes of TSS, 502 tonnes of cBOD, 13 tonnes of TP, and 101 tonnes of TKN into Chedoke Creek. This discharge was further augmented by wet weather flow making a total volume of the spill 24 billion litres with total loadings of 2375 tonnes of TSS, 1373 tonnes of cBOD, 47 tonnes of TP, and 312 tonnes of TKN with no treatment by the WWTP or CSO tank. I consider these volumes and loadings excessive and abnormal in quality and quantity. As a result of the discharge, sewage was spilled into the Chedoke Creek causing adverse effects, including impairment to the quality of the natural environment, including waters (e.g. Chedoke Creek and Cootes Paradise), for any use that can be made of it, impairment to the safety of any person, and loss of enjoyment of normal use of property. Examples include odour complaints from RBG and the public due to raw sewage debris floating in the water and on the shore. As a result of the discharge, technical review by ministry experts have determined an adverse effect was observed as a result of the spill and if the natural environment is not restored the remaining spilled contaminants may cause further adverse effect.

As previously discussed, in July 2018, the City began remediation efforts along the surface of Chedoke Creek which included the installation of booms and removal of floating sewage by boat and hydrovac trucks. A seasonal boom was put in place to capture any further associated sewage floatables discharged. The operator station inspection program has been revised and assessments on critical valves have been completed in the system and maintenance prioritized. I am advised by the Ministry's technical experts that these efforts have not restored the natural environment to the pre-spill conditions as required under Section 93 of the EPA due to ongoing evidence of sewage parameter concentrations present above pre-spill conditions for some parameters and on-going low DO conditions.

Accordingly, the City was requested on several occasions, in writing and during meetings to assess and make recommendations to remediate the impacts of the spill (Order No. 1-J25YB dated August 2, 2018, Order No. 1-J3XAY dated November 21, 2019, Directors Order No. 1-MRRCX dated November 28, 2019 and letter dated May 28, 2020 entitled "Chedoke Creek Spill Response – District Comments".)

In addition, the City was in contravention of s.14 of the EPA in relation to the spill, which has caused and may cause an adverse effect as discussed above.

Pursuant to section 30(1) of the OWRA every person that discharges or causes or permits the discharge of any material of any kind into or in any waters or on any shore or bank thereof or into or in any place that may impair the quality of the water of any waters is guilty of an offence.

The discharge of sewage from the Main/King CSO described above constituted a contravention of section 30 of the OWRA. The City as the owner and operator discharged or caused or permitted the discharge of a material/sewage into or in any waters, Chedoke

Creek and Cootes Paradise/Hamilton Harbour, has impaired and may continue to impair the quality of the water further if work is not done.

For the purposes of the OWRA, the quality of water is deemed impaired by the discharge of material, where certain conditions are met as set out in section 1(3) of the OWRA. In the circumstances of this spill, the quality of water is deemed impaired for Chedoke Creek and its connected waterways/natural environment for the following: there was a degradation in the appearance and odour of the water; and the quality of the water was impaired by the discharge of 24 billion litres of sewage that entered the water directly and caused or may cause injury to or interference with any living organism that lives in or comes in contact with or as a result of it using or consuming the water or sediment that is in contact with the water.

For the purposes of section 30 of the OWRA, I am of the view, after having consulted with ministry experts, that the spill caused or may cause impairment to the system and therefore the items identified in the Order are required and more work is needed. Some of the identified impairments or potential impairments also include: 1) The sediment has been identified as having moderate to high risk for effects to some organisms from PAHs. Elevated levels of bacteria have or may have impacted uses or continue to do so; 2) Elevated TAN and nitrite levels in the water and added TKN levels in the sediment will continue to have an added nutrient source, impact DO levels, and add to the eutrophication of the system, all of which may continue to impact organisms in the water and sediment; and 3) the added nutrient loadings, particularly TP, at the significance of the loading to the entire system, will continue to increase the risk in the frequency and size of algal blooms which may impair the water for its use or cause injury as a result of algal blooms.

Considering the above noted on-going impacts and continuing potential impairment, I am of the opinion, after consultation with Ministry staff and technical experts, that a "no action" recommendation by the City does not discharge its obligation to restore the natural environment nor does it address or prevent potential adverse effects, or may impair or continued impairment of the natural environment, including waters.

Thus, further action is necessary to restore the natural environment in relation to Chedoke Creek and that further action is needed to offset the impacts of the spill to Cootes Paradise. Accordingly, I require the City to undertake remedial measures outlined in the accompanied Provincial Officer's Order to restore the natural environment in Chedoke Creek as a result of the spill and take steps to determine what is required in relation to Cootes Paradise and implement those steps once an appropriate course of action is determined.

Based on previous significant public interest, and the need to keep the public informed, the Order also requires posting on the City's website with progress reports, as needed. Progress reports and meetings with the Ministry are outlined to improve collaborative communication and information sharing during spill response workplan development, remediation and ensure timely progress towards restoring the natural environment. Landowner notifications are also required to improve communications with stakeholders.

#### 5. Legal Basis for the Order and Provincial Officer's Opinion

I reasonably believe that the City of Hamilton has contravened or is contravening those provisions of the EPA as outlined in the Offences, Suspected Violation(s)/Offences section of this report.

And

I further reasonably believe that the City of Hamilton has contravened or is contravening those provisions of the OWRA as outlined in the Offences, Suspected Violation(s)/Offences section of this report.

And

I further reasonably believe that the requirements in this Order are in the public interest in order to prevent any further discharge of material into Chedoke Creek, Cootes Paradise and Hamilton Harbour, that may impair the quality of any water;

And

I further reasonably believe the requirements specified in this Order are necessary:

- i) to prevent, or reduce the risk of any adverse effect on the natural environment from contaminated sediment which sediment was the direct result of the spill or spills to the Chedoke Creek from the Main/King CSO and which will continue to discharge compounds into the natural environment from the Site; and/or
- ii) to prevent, decrease or eliminate an adverse effect that may result from the presence of such contaminants in, on or under the Site.

#### 6.0 Attachments

The attachments listed below form part of the Order:

Appendix A – Site Map "Chedoke Creek, downstream of the Main/King Combined Sewer Overflow discharge pipe, the eastern end of Cootes Paradise and western end of Hamilton Harbour"

**Offence(s)**

**Suspected Violation(s)/Offence(s)**

**Act – Regulation – Section**


**Description**

Environmental Protection Act, 93 (1) The owner of a pollutant and the person having control of a pollutant that is spilled and that causes or is likely to cause an adverse effect shall forthwith do everything practicable to prevent, eliminate and ameliorate the adverse effect and to restore the natural environment.

(2) The duty imposed by subsection (1) comes into force in respect of each of the owner of the pollutant and the person having control of the pollutant immediately when the owner or person, as the case may be, knows or ought to know that the pollutant is spilled and is causing or is likely to cause an adverse effect. R.S.O. 1990, c. E.19, s. 93.

Environmental Protection Act, Section 14 (1) Subject to subsection (2) but despite any other provision of this Act or the regulations, a person shall not discharge a contaminant or cause or permit the discharge of a contaminant into the natural environment, if the discharge causes or may cause an adverse effect. 2005, c. 12, s. 1 (5).

Ontario Water Resources Act, Section 30 (1) Every person that discharges or causes or permits the discharge of any material of any kind into or in any waters or on any shore or bank thereof or into or in any place that may impair the quality of the water of any waters is guilty of an offence. R.S.O. 1990, c. O.40, s. 30 (1).



**Shelley Yeudall**  
**Provincial Officer**  
**Badge Number: 881**

## Provincial Officer's Order

Order Number  
1-OW6SS

Environmental Protection Act, R.S.O. 1990, c.E 19 (EPA)  
Nutrient Management Act, R.S.O. 2002, c.4 (NMA)  
Ontario Water Resources Act, R.S.O. 1990, c.O. 40 (OWRA)  
Pesticides Act, R.S.O. 1990, c. P11 (PA)  
Safe Drinking Water Act, S.O. 2002, c.32 (SDWA)

**To:** HAMILTON, CITY OF  
700 WOODWARD Ave N  
HAMILTON ON L8H 6P4  
Canada

HAMILTON, CITY OF  
71 MAIN STREET WEST, 1st Floor HAMILTON, ONTARIO L8P 4Y5  
Canada

**Site:** Chedoke Creek, downstream of the Main/King Combined Sewer Overflow discharge pipe, the eastern end of Cootes Paradise and western end of Hamilton Harbour, and as further described in the Provincial Officer Report under section entitled "Description of the Site and the Ordeees".

### Work Ordered

Pursuant to my authority under sections 157, 157.1, 196 of the Environmental Protection Act and under sections 16, 16.1, and 104 of the Ontario Water Resources Act I hereby order you, the City of Hamilton, to do the following:

1. By December 11, 2020, retain the services of a Qualified Person that has the experience and qualifications to carry out the work specified in this Order.
2. By December 11, 2020, submit to the undersigned Provincial Officer written confirmation that the Qualified Person has been retained to carry out the work specified in this Order, that a copy of the Order has been given to the Qualified Person; and that the Qualified Person has the experience and qualifications to carry out the work.

Chedoke Creek Downstream of the Main/King CSO Discharge Pipe

3. By January 22, 2021, submit to the undersigned Provincial Officer, for approval, a remediation workplan for Chedoke Creek that is developed by the Qualified person to undertake the targeted dredging of Chedoke Creek based on the recommendation identified in section 5.2.5 of the Wood report entitled "MECP Order # 1-J25YB Item 1b – Chedoke Creek Natural Environment and Sediment Quality Assessment and Remediation Report" dated January 24, 2019 ("Chedoke Creek Workplan"). The Chedoke Creek Workplan shall be prepared in accordance with the requirements set out in Items 4 and 5 below.
4. The Chedoke Creek Workplan shall, at a minimum:
  - i) Consider technical reports, Ministry comments and affected stakeholders' comments, to determine an acceptable plan to implement the recommendation in the Wood report to restore the Chedoke Creek, while mitigating impacts of implementing the plan on the natural environment, including water;
  - ii) Contain a detailed timeline setting out critical milestones and checkpoints with the Ministry for carrying out the Chedoke Creek Workplan;
  - iii) Contain a Species at Risk assessment plan and associated timelines for Chedoke Creek downstream of the spill and including potential impacted areas downstream of Chedoke Creek that may be impacted by targeted dredging;

- iv) Undertake consultation with the Species at Risk Branch within the Ministry in respect of any identified items pursuant to 4 iii) and incorporate this feedback and outcome into the workplan for any species at risk;
- v) Provide a description of any anticipated approvals needed to implement the Chedoke Creek Workplan, initial consultation and proposed timelines to obtain such approvals, if required, for the Workplan to be implemented;
- vi) The consultation in iv) and v) shall include the Regional Technical Support Section of the Ministry;
- vii) Contain a description of the identified areas and the extent (depth, location) of the targeted dredging with a description of how the items outlined in Item 5 below were addressed and a description of any methods for refining identified areas in Item 5 including the impacted areas identified in the Wood reports and SLR reports and timing as needed, in the Chedoke Creek Workplan;
- viii) Contain a description of the approximate volume of material to be removed;
- ix) Identify and contain a description of proposed mitigation measures for any short-term impact(s) that may arise from implementing the Chedoke Creek Workplan for Chedoke Creek, its shoreline and connected waterways/natural environment, on any species at risk and other potentially impacted uses. Mitigation measures may include, but are not limited to: exclusion measures for local aquatic uses; limit recreational uses in the area; total suspended solids control as required for carrying out the targeted dredging; and proposed monitoring during any remediation to monitor effectiveness of mitigation measures during dredging identified in iv); and
- x) Contain a proposed monitoring plan to monitor the recovery of the natural environment and effectiveness of the Chedoke Creek Workplan once dredging is complete.

5. With respect to the area from the Main/King CSO outfall to the mouth of Chedoke Creek, the Chedoke Creek Workplan shall take into consideration the scope of targeted dredging work necessary to restore the natural environment to pre-spill conditions, as to be agreed upon by the Ministry, and to mitigate any impairments or potential impairments from the spill, in relation to the following, but not limited to:

- i) Sediment areas identified as impacted, in consultation with the Ministry, by the sewage spill;
- ii) Sediment areas identified as containing elevated organic material consistent with sewage sludge;
- iii) Sediment areas identified as elevated nutrients (particularly TP, TAN, and TKN);
- iv) Sediment areas identified as had, may have, or continuing to have reduced dissolved oxygen levels in the water column from historical levels;
- v) Sediment areas identified as having elevated parameters as identified by the ERA carried out by SLR ("Ecological Risk Assessment (ERA), Chedoke Creek, Hamilton, Ontario" dated February 12, 2020) to have moderate or high risk for impacts, or otherwise identified by the reports or in comments by the Ministry; and
- vi) Addressing any ecological flow path requirements and connectivity within the creek in any remedial action plan that may impact low flow path and connectivity.

6. By October 31, 2021, or such other date approved by the Provincial Officer in writing, complete the approved Chedoke Creek Workplan.

7. Within one (1) month of the completion of the of the work undertaken pursuant to the approved Chedoke Creek Workplan, submit to the undersigned Provincial Officer, a report prepared by the Qualified Person confirming that the natural environment has been restored to pre-spill conditions and that further impairment to the natural environment will not occur as a result of the spill to the Chedoke Creek as detailed in the attached provincial officer's report, and at a minimum contain the following:

- i) The details of the work undertaken to complete the Chedoke Creek Workplan;
- ii) Any monitoring results completed before, during and after the work undertaken in accordance with the Chedoke Creek Workplan;
- iii) Analysis of the results in Item 7(ii) above for the purposes of the intended monitoring; and
- iv) Determination if any requirement for on-going monitoring is required to verify the effectiveness or maintenance of the remedial actions undertaken is necessary.

Cootes Paradise/Western Hamilton Harbour Area

8. By January 22, 2021, submit to the undersigned Provincial Officer for approval, a proposed remediation/mitigation report that is prepared by a Qualified Person(s) for the Cootes Paradise/Western Hamilton Harbor Area to offset the added nutrient loading, principally TP, identified in the Wood reports, the SLR reports and particularly the Hatch reports, and address any other potential on-going impacts (dissolved oxygen, algal blooms) as a result from the sewage spill to this area ("Cootes Paradise Report").

9. The report in Item 8 shall, at a minimum:

- i. Identify and review all potential remediation or mitigation measures, whether direct, indirect, or a combination of measures with consideration for short and long-term measures to address the remediation goal to offset added nutrient loading particularly for TP and any potential on-going impacts (dissolved oxygen, algal blooms) from the sewage spill to the Cootes Paradise/Western Hamilton Harbor Area as identified in the Wood reports, the SLR reports and the Hatch reports;
- ii. Undertake consultation with and provide a summary of comments received from the Royal Botanical Gardens, Hamilton Conservation Authority, the Ministry, and any other relevant affected stakeholders for potential remediation and mitigation options as per item i. above;
- iii. Contain a cost/benefit analysis of all options to assess efficiency and effectiveness of any remediation or mitigation options;
- iv. Identify the recommended options for remediation and mitigation;
- v. Identify the proposed offset goal to achieve remediation and/or mitigation with respect to the approximate equivalent loadings from the sewage spill;
- vi. Propose a methodology for quantification with respect to the offset of the loadings for any remediation and/or mitigation measures to meet the intended goal for overall remediation and/or mitigation to address the added TP loading from the spill; and
- vii. Identify and propose timelines to implement the recommended remediation or mitigation measures to offset loadings from TP, impacts to dissolved oxygen from nutrients or other measures that may improve existing or potential impairments with identification of options that can be implemented as soon as possible to start to reduce the on-going or potential impacts.

10. Within three (3) weeks of approval of Item 8 above, submit to the undersigned Provincial Officer for approval, a proposed workplan for the approved remediation/mitigation measures for Cootes Paradise/Western Hamilton Harbour Area ("Cootes Paradise Workplan"). The workplan shall consider and address, as necessary, Work Ordered in Item 8 and 9 above and any ministry comments upon approval of Item 8, and shall include, but not be limited to, the following:

- i) A detailed workplan and timeline for carrying out the approved remediation/mitigation options within the Cootes Paradise/Western Hamilton Harbour Area;
- ii) Calculations referred to in Item 9 iv) and v) or as otherwise approved; and
- iii) Proposed follow-up monitoring required to ensure the recovery and effectiveness of the remediation plan.

11. Within two (2) weeks of the approval obtained pursuant to item 10 above, commence implementation of the approved Cootes Paradise Workplan within the timelines set out in the approval.

12. Submit a report prepared by the Qualified Person within one (1) month of the completion of the work undertaken pursuant to the approved Cootes Paradise Workplan to the undersigned Provincial Officer confirming that the natural environment has been restored and outlining the completed items and the work undertaken to restore the natural environment, including, but not limited to, the following:

- i) Any monitoring results completed before, during and after the work undertaken in accordance with Cootes Paradise Workplan;
- ii) Analysis of the results in Item 12 (i) above for the purpose of the intended monitoring; and
- iii) Determination if any requirement for on-going monitoring is needed to verify the effectiveness or maintenance of the remedial actions undertaken as necessary.



Communication

13. Provide notice to any impacted landowner(s) of the following items:

- i) within 7 days of submission of any proposed workplan(s) submitted to the undersigned Provincial Officer for approval; and
- ii) within 7 days of the approval of any workplan(s) by the undersigned Provincial Officer.

14. Provide notice to any impacted landowner(s) at least seven (7) days before the implementation of any work on the approved Chedoke Creek Workplan or the approved Cootes Paradise Workplan;

15. Within seven (7) days of any work on the Chedoke Creek Workplan and the Cootes Paradise Workplan, provide written confirmation to undersigned Provincial Officer, that implementation of the approved workplan(s) has commenced.

16. Commencing March 1, 2021 and on the first day of the month, until the completion report for each workplan is submitted, submit a three (3) month summary report, prepared by the Qualified Person(s), to the undersigned Provincial Officer, detailing all of the actions taken in implementing the approved workplan in the preceding three months.

17. Within (2) days of any limitations or changes being identified to the approved workplans, notify the undersigned Provincial Officer and within two (2) weeks, submit, in writing for review and acceptance, any proposed changes to an approved workplan with the relevant information to support any proposed changes. Written acceptance by the undersigned Provincial Officer of the proposed changes is required prior to implementation of any proposed changes.

18. Prior to the first of each month, provide to the undersigned Provincial Officer written, monthly progress updates on the progress made to comply with this Order.

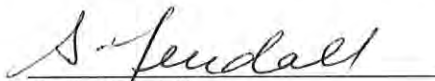
19. In conjunction with the written monthly progress updates, the City shall meet with the undersigned Provincial Officer within 7 days of the submission of the monthly report to discuss the progress reports.

20. Post this Order on the web site of the City for public viewing within 24 hours of it being served and it shall remain posted unless otherwise directed by the undersigned Provincial Officer.

- A. While this Order is in effect, a copy or copies of this order shall be posted in a conspicuous place.
- B. While the Order is in effect, report in writing, to the District or Area Office, any significant changes of operation, emission, ownership, tenancy or other legal status of the facility or operation.

This Order is being issued for the reasons set out in the annexed Provincial Officer's Report which forms part of the Order.

Issued at City of Hamilton this 20/11/2020 (dd/mm/yyyy)



Shelley Yeudall  
Badge Number: 881  
Hamilton District

## APPEAL/REVIEW INFORMATION

### REQUEST FOR REVIEW

You may request that this order be reviewed by the Director. Your request must be made in writing (or orally with written confirmation) within seven days of service of this order and sent by mail or fax to the Director at the address below. In the written request or written confirmation you must,

- specify the portions of this order that you wish to be reviewed;
- include any submissions to be considered by the Director with respect to issuance of the order to you or any other person and within respect to the contents of the order;
- apply for a stay of this order, if necessary; and provide an address for service by one of the following means:
  1. Mail
  2. Fax

The Director may confirm, alter or revoke this order. If this order is revoked by the Director, you will be notified in writing. If this order is confirmed or amended by order of the Director, the Director's order will be served upon you. The Director's order will include instructions for requiring a hearing before the Environmental Review Tribunal.

### DEEMED CONFIRMATION OF THIS ORDER

If you do not receive oral or written notice of the Director's decision within seven days of receipt of your request, this order is deemed to be confirmed by order of the Director and deemed to be served upon you.

You may require a hearing before the Environmental Review Tribunal if, within 15 days of service of the confirming order deemed to have been made by the Director, you serve written notice of your appeal on the Environmental Review Tribunal and the Director. Your notice must state the portions of the order for which a hearing is required and the grounds on which you intend to rely at the hearing. Except by leave of the Environmental Review Tribunal, you are not entitled to appeal a portion of the order or to rely on grounds of appeal that are not stated in the notice requiring the hearing. Unless stayed by the Environmental Review Tribunal, the order is effective from the date of service.

Written notice requiring a hearing must be served personally or by mail upon:

The Secretary  
Environmental Review Tribunal  
655 Bay Street, 15th Floor  
Toronto, ON M5G 1E5

and

Director (Provincial Officer Orders)  
Ministry of the Environment, Conservation and Parks  
119 King St. W., 9th floor Hamilton, ON, L8P 4Y7  
Fax: (905) 521-7806

Where service is made by mail, it is deemed to be made on the fifth day after the date of mailing and the time for requiring a hearing is not extended by choosing service by mail.

Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal by

Tel: (416) 212-6349

Fax: (416) 326-5370

[www.ert.gov.on.ca](http://www.ert.gov.on.ca)

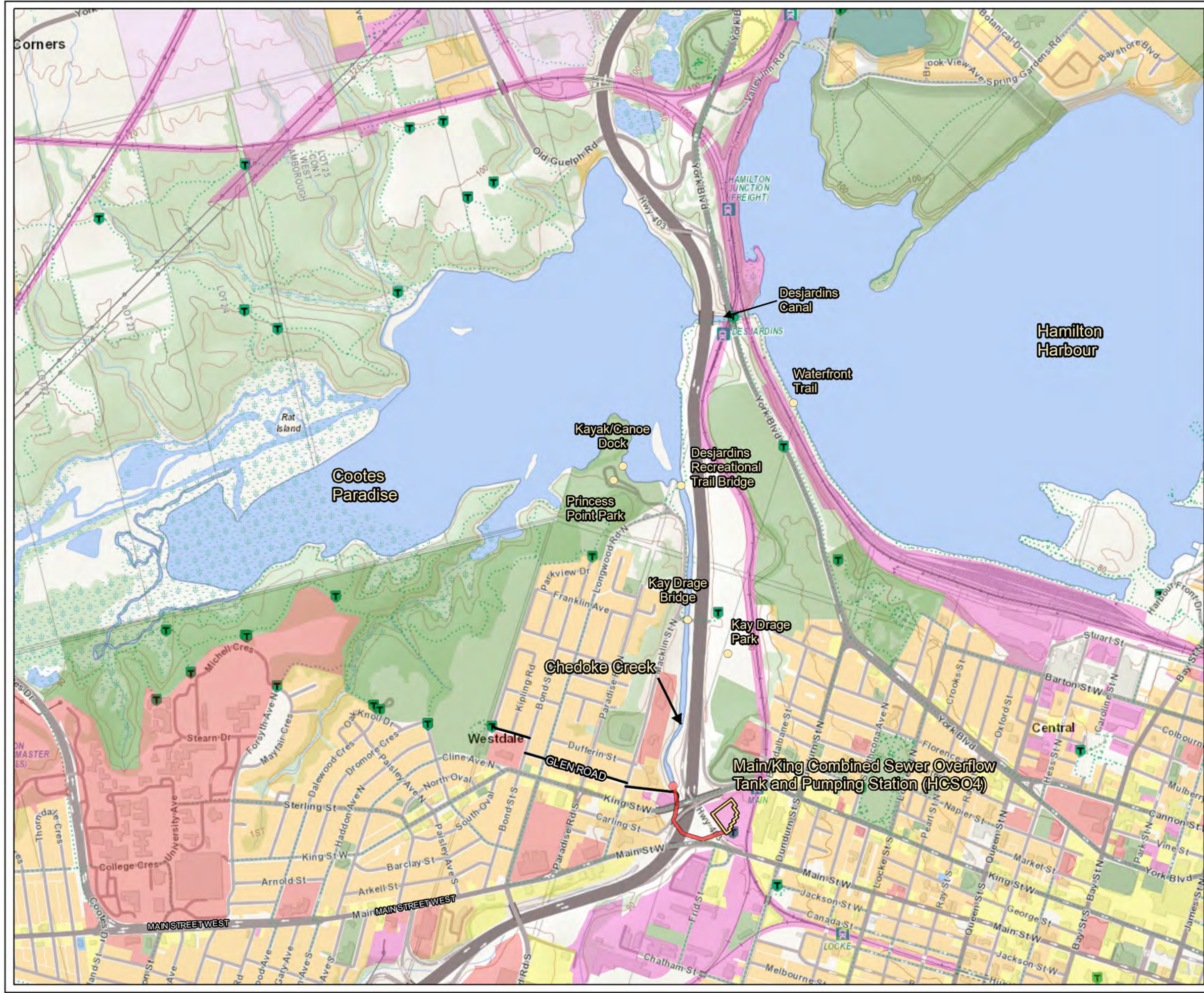
### FOR YOUR INFORMATION

- Unless stayed by the Director of the Environmental Review Tribunal, this order is effective from the date of service. Non-compliance with the requirements of this order constitutes an offence.
- The requirements of this order are minimum requirements only and do not relieve you from complying with the following:
  - Any applicable federal legislation;
  - Any applicable provincial requirements that are not addressed in the order; and
  - Any applicable municipal law.
- The requirements of this order are severable. If any requirement of this order or the application of any requirement to any circumstances is held invalid, the application of such requirement to other circumstances and the remainder of the order are not affected.
- Further orders may be issued in accordance with the legislation as circumstances require.
- The procedures to request a review by the Director and other information provided above are intended as a guide. The legislation should be consulted for additional details and accurate reference.



Appendix A -Site Map Chedoke Creek, downstream of the Main/King Combined Sewer Overflow discharge pipe, the eastern end of Cootes Paradise and western end of Hamilton

Drinking Water and Environmental Compliance Division Central Region Technical Support Section



Legend

- Chedoke Creek Outfall
Point of Interest
Main/King Combined Sewer Overflow Tank and Pumping Station (HCSO4)
Combined Sewer Overflow Tank Overflow Pipe
Glen Road, Hamilton
Land Use: Vacant, Agricultural, Residential, Commercial, Industrial, Institutional, Special/Exempt, Government



Data Sources, Uses and Constraints

- 1. Parcel boundary and basemap provided by the Ministry of Natural Resources and Forestry
2. Land Use information provided by the Municipal Property Assessment Corporation

Disclaimer

The map shown here is for illustration purposes only. Ministry of the Environment, Conservation and Parks provides this information with the understanding that it is not guaranteed to be accurate, correct or complete and conclusions drawn from such information are the responsibility of the user.





## **Appendix B: Record of Consultation**

Date	Event Type	Regulatory Agency / Stakeholder Organization	Agency Acronym	Stakeholder Participants	Team Participants	Event Summary	Questions	Response	Actions / Commitments	File Reference
YYYY-MM-DD	Call / Email / In-person Meeting	Agency / Company / Organization Name	Acronym	Name; email address	Company: Name	Brief summary of engagement, items discussed	Specific questions asked	Response(s) if provided	Action item(s) or post-engagement task(s)	Please save record of engagement as PDF in following format: YYYYMMDD_StakeholderName_CommType.pdf (emails, meeting minutes, etc.)
2021/01/15	Email	Ministry of Heritage, Sport, Tourism and Culture Industries	MHSTCI	Malcolm Horne, Archaeology Review Officer; Malcolm.Horne@ontario.ca	Wood: Peter P.	Confirming archaeology survey requirements.	Will the City need to conduct a new archaeology assessment	<b>No new assessment required</b> for Chedoke Creek area - see file.	None	20210115_MHSTCI_MHorne_Archaeology.pdf
2021/01/15	Email	Ministry of the Environment, Conservation and Parks	MECP	Stephen Burt	COH: Susan G.	Written submission confirming the City has retained a QP as per Items 1 & 2 of the Order.	Confirmation request	Confirmation received: Items 1 & 2 – City of Hamilton has met the requirements of this item. (see file)	N/A	20210115_MECP-COH_email_Response to Directors Order No.1-PE3L3 Items 1 and 2.pdf
2021/01/29	Call	Royal Botanical Gardens	RBG	Tys Theysmeyer, Head of Natural Areas ttheysmeyer@rbg.ca	Wood: Ron S.	Access request to RBG information relevant to enhancing Chedoke Creek and Cootes Paradise.	N/A	N/A	Confirm if HHRAP update from 2012 is available. Tys to provide RBG reports/data.	20210129_RBG_TTheysmeyer_EcologicalData.pdf
2021/02/02	Call	Hamilton Conservation Authority	HCA	Scott Peck and Jonathan Bastien, Hamilton Conservation Authority; scott.peck@conservationhamilton.ca	Wood: Ron S.	Discuss - Information Availability; permitting needs and timing	What information does HCA have for the Chedoke and Cootes study areas? What information is required for a permit application and how long will it take to secure a permit?	Information: 2014-2019 sampling; no H&H modelling; flow monitor set up in 2020; regulation mapping covers all of Chedoke and Cootes - based on flood and erosion hazard; 1992 report on physical modelling of lower Chedoke is available; Permitting: will need to provide Staging, E&S, Flood risk assessment, Discharge and material management plan; land owner permission (RBG); SAR and ecological information	JB to provide 1992 report on physical modelling of outlet; <b>HCA can provide permit within 63 days</b>	
2021/02/02	Email	Transport Canada	TC	Navigation Protection Program NPPONT-PPNONT@tc.gc.ca	Wood: Dale K.	Provided summary of POO and requested meeting to discuss targeted dredging and to confirm if the project can be considered an emergency situation under the Canadian Navigable Waters Act.	N/A	N/A	Schedule a teleconference/ meeting	20210203_TC_NPP_MtgRequest.pdf 20210203_TC_NPP_MtgRequest-Response.pdf
2021/02/02	Email	Ministry of the Environment, Conservation and Parks	MECP	Brianne Brothers, Management Biologist (A) brianne.brothers@ontario.ca 905-321-5736 Paul Heeney, Manager Permissions and Compliance 613-202-1889	Wood: Dale K.	Request meeting with MECP SAR group to discuss timelines on permits, assessments and any processes that can be streamlined.	N/A	N/A	Schedule a teleconference/ meeting	20210202_MECP_SARgroup_MtgRequest.pdf 20210202_MECP_SARgroup_MtgRequest-Response.pdf
2021/02/02	Call & Email	Ministry of Natural Resources and Forestry	MNRF	Jennifer Harvard, Lands & Waters Technical Specialist jennifer.harvard@ontario.ca	Wood: Dale K.	Brief discussion and requested review of email summary and subsequent meeting to discuss targeted dredging and to confirm if the project will require an LRIA application and if so, whether this can be considered an emergency situation under the Act.	N/A	N/A	DK - sent email summary to JH DK - follow-up call 20210203w/ JH JH - email received confirming the project is considered channelization and is located within the jurisdiction of HCA. As a result, it falls under the LRIA O.Reg 454/96, and an <b>approval is not required through MNRF.</b> (see email to file)	20210202_MNRF_JHarvard_LRIA.pdf 20210203_MNRF_JHarvard_LRIA-Response.pdf
2021/02/04	Email	Fisheries and Oceans Canada	DFO	Andrea Doherty, SARA/Science Coordinator - Fisheries Protection Program andrea.doherty@dfo-mnp.gc.ca Central Region Downsview Highway Corridor Management 416-235-5385	Wood: Mark R., Dale K.	Requested meeting to discuss targeted dredging and to confirm if the project can be considered an emergency situation under the Fisheries Act	N/A	N/A	Schedule a teleconference/ meeting	20210204_DFO_Adoherty_MtgRequest.pdf
2021/02/08	Call	Ministry of Transportation	MTO	Kevin Kelly, Corridor Management Officer; kevin.kelly@ontario.ca 437-833-9479	Wood: Dale K.	Contact for pre-consultation	Requested contact name for pre-consultation	Kevin Kelly, Corridor Management Officer kevin.kelly@ontario.ca 437-833-9479	send email K.Kelly	N/A
2021/02/08	Email	Ministry of Transportation	MTO	Kevin Kelly, Corridor Management Officer; kevin.kelly@ontario.ca 437-833-9479	Wood: Dale K.	Request pre-consultation meeting.	N/A	N/A	DK - email K.Kelly KK - reply cc internal MTO staff	20210208_MTO_KKelly_PreConsultationRequest.pdf 20210208_MTO_KKelly_PreConsultationRequest-Response.pdf
2021/02/10	Email	Royal Botanical Gardens	RBG	Tys Theysmeyer, Head of Natural Areas ttheysmeyer@rbg.ca	Wood: Dale K.	Request meeting	N/A	N/A	Schedule a teleconference/ meeting	20210210_RBG_TTheysmeyer_MtgRequest.pdf
2021/02/11	Conf. Call	Ministry of the Environment, Conservation and Parks	MECP	Paul Heeney, Branne Brothers	Wood: Dale K. CoH: Tim C.	SAR discussion	Asked MECP for their input on permitting and potential options/guidance for consideration	Three permitting options exist; 1) conventional OBP, 2) expedited OBP, and 3) Human Health & Safety under the ESA. Brianne provided a slide deck regarding pros/cons of these options and additional guidance for consideration.	Continue to review data and assess options.	

# Minutes

**Date:** January 26, 2021  
**File #:** WW20101062  
**Meeting Date & Time:** January 15, 2021 - 1:00 p.m.  
**Meeting at:** Teams Call  
**Subject:** Chedoke Creek Remediation –  
MECP Consultation Meeting

## Attendees:

Cari Vanderperk (CV), City of Hamilton	Brianne Brothers (BB), MECP
Mark Bainbridge (MB), City of Hamilton	Paul Heeney (PH), MECP
Susan Girt (SG), City of Hamilton	Shelley Yeudall (SY), MECP
Stephen Burt (SB), MECP	Lindsey Burzese (LB), MECP
Sarah Day (SD), MECP	Dale Klodnicki (DK), Wood
Zafar Bhatti (ZB), MECP	Lance Lumbard (LL), Wood
	Ron Scheckenberger (RS), Wood

## MATTERS DISCUSSED

## ACTION BY:

### 1. Introductions

CV introduced the meeting outlining its purpose to continue the dialogue between the City, its consultant (Wood) and MECP, in regards to the requirements to address the recent Provincial Officer's Order and the actions related to Plan development. Communications between the City and MECP with regard to the order will follow the one window process via S. Girt.

RS noted that the City and Wood are seeking feedback from the MECP Team on the two parts of the presentation related to content and scope for the two plans (Part 1 – Targeted Dredge Plan and Part 2 – Cootes Paradise and Harbour Remediation Plan) which are in preparation for Order fulfilment by February 22, 2021.

**MATTERS DISCUSSED**

**ACTION BY:**

**2. Chedoke Creek Water Quality Improvement Framework**

- A. RS provided a presentation of the on-going development of the Chedoke Creek Water Quality Improvement Framework. RS noted the following key points in his presentation:
- i. Study is led by GM Blue Plan, supported by Wood
  - ii. Study has short duration (August 2020 to February 2021)
  - iii. Scope is limited to a desktop review of information – no new field data and no comprehensive analyses
  - iv. Consultation has been limited to Stakeholders – no involvement of the general public
  - v. Based on legacy studies and data, the GM BluePlan/Wood Team conducted a screening, short-listing, review and prioritization of numerous options for improving the water quality and habitat conditions in the Chedoke Creek and Cootes Paradise/Harbour
  - vi. Options have been categorized by type focused on:
    - a. Landfill
    - b. Wastewater
    - c. Stormwater
    - d. Lower Chedoke Creek
    - e. Upper Chedoke Creek
    - f. Engagement
    - g. Monitoring
  - vii. Options have been prioritized and identified per the following:
    - a. Short term Capital – no studies required
    - b. Long term Capital – Studies required
    - c. Short term O&M/Programs
    - d. Long term O&M/Programs
    - e. Policies
    - f. Engagement
- B. Questions and comments arising included:
- i. LB indicated that this represents a good start at addressing the second part of the Order, and recognizing that this was underway before the issuance of the Order, there will be a need to work towards a complete plan. She encouraged that the various options be reviewed for full life-cycle costs with due consideration of co-benefits (e.g. sewer separation)

**MATTERS DISCUSSED**

**ACTION BY:**

- ii. ZB questioned which stakeholders were involved in the Stakeholder consultation; during the meeting MB advised that the following stakeholders have been invited but not all participated actively on the Committee:
- Bay Area Restoration Council (BARC)
  - Conservation Halton (CH)
  - Environment Hamilton (EH)
  - Hamilton Conservation Authority (HCA)
  - Hamilton Harbour Remedial Action Plan (HHRAP)
  - Indigenous Water Walkers
  - MT Planners – involved in the RBG 25-Year Master Plan
  - Ontario Ministry of Transportation (MTO)
  - Royal Botanical Gardens (RBG)
- iii. PH questioned if Indigenous Nations and Peoples or MNRF were part of the consultation; CV advised that the Indigenous Water Walkers were invited but did not participate; no other Indigenous Nations or Peoples were requested to participate, nor was MNRF.
- iv. ZB questioned the approach to implementation of the recommendations; CV noted that in approving her new position as Director of Watersheds, Council has recognized the importance of the plan. Long term recommendations will require Council approval through the municipal process. Some projects are already included in the City's current Master Plan. Council is well aware of the Order and the study and there are strong signals that Council is invested
- v. SY questioned the timing of the reporting; RS noted it will be provided to the City the end of January 2021, following which it will be released in "draft" to the stakeholders for review (February, 2021). Once comments have been received the report will be updated and finalized (February/March, 2021).
- vi. LB advised that MECP will be interested in reviewing this document and then considering the recommendations in terms of its requirements specific to the Order. She noted that several projects and O&M activities would be considered part of "normal" operations however others are new and considered "above and beyond". CV noted that the Chedoke Watershed Remediation Plan was started and scoped before the Order issued. It is hoped that it will satisfy some of the requirements in the Order and the City would hence appreciate receiving comments from the MECP.



**MATTERS DISCUSSED**

**ACTION BY:**

**3. Part 1 of Order: Review of Targeted Dredge Plan Considerations**

- A. RS provided an introduction to Wood's "working" Plan for the targeted dredge work in the Lower Chedoke Creek. He indicated that Wood has reviewed past work and used its in-house knowledge to provide an outline of:
  - i. Field Work for Design and Permitting
  - ii. Dredge Engineering Scope
  - iii. Permitting Requirements and Timing
- B. LL outlined the current "working" basis for the targeting dredge quoting the quantities cited in the 2019 Wood reporting. He noted that due to the passage of time, including 2 spring freshets, that information will need to be collected on the physical and chemical properties of the spill deposits/resident contaminated sediment in the Lower Chedoke Creek.
- C. DK outlined the required field work currently considered necessary to support the design and permitting, including:
  - i. Bathymetry/LiDAR mapping
  - ii. Sediment (physical and chemical)
  - iii. Species At Risk (SAR)
    - a. Lilliput Mussels
    - b. Blanding Turtles
    - c. Bats
- D. LL outlined the scope of planning and engineering involved in the development of engineering plans and specifications to support a dredge operation. LL worked through the respective 30%, 60%, 90% (permitting) and 100% stages of design.
- E. DK provided an overview of the various permits, their information needs, protocols and estimated schedule/timing, including a GANTT chart for the timing for review and approvals; these included:
  - i. Hamilton Conservation Authority (HCA)
  - ii. Ministry of Transportation (MTO)
  - iii. Ministry of Natural Resources and Forestry (MNRF)
  - iv. Transport Canada (TC)
  - v. Fisheries and Oceans Canada (DFO)
  - vi. Ministry of Environment, Conservation and Parks (MECP)
  - vii. Archeology (HSTCI)
  - viii. Indigenous Consultation (MECP / DFO / Others)
  - ix. Environmental Assessment (MECP / IAA)

**MATTERS DISCUSSED**

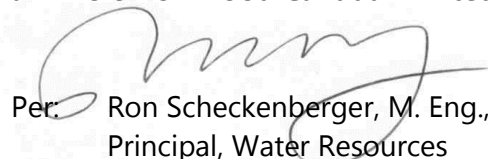
**ACTION BY:**

**4. Comments Arising from the Presentation**

- A. LB indicated that the presentation was most helpful to lay out the currently understood process and related timing; she also acknowledged the difficulties with some parties during CV19 in terms of timely responses; she suggested that it may be advisable to start the agency consultation process sooner (February rather than April); RS noted that the April date was set as this would be roughly when the City would expect MECP to approve its plan, however subject to feedback on the information provided Wood and the City would be willing (and would support) engaging in earlier agency consultation.
- B. SY questioned who would be pursuing the permitting Wood or the City; RS and CV advised that this will be a joint effort; RS also noted that based on the experience the team and City gained for the Red Hill Valley project that there may be benefits in using a consolidated Permitting Compliance reporting approach, whereby a single report is prepared to respond to all permits. Further discussion is required
- C. ZB questioned the approach used to estimate the volumes of contamination; LL advised that the assumptions were common to those used in the original Hatch and Wood reporting (2019) and that the intent is to corroborate these estimates with future field work.
- D. SB indicated that MECP will consider the information provided to look for ways to streamline the permitting process both within its own organization and also outside agencies where it may have a role.
- E. SB thanked the Wood/City Team for the information and he re-iterated that the Order does allow for modification of the delivery date of the project "as approved by the Director". He suggested that Wood/City forward the package to the MECP Team, including the SAR group and that another meeting be held in 2 weeks (+/-) to discuss the path forward on the two parts of the order. CV advised that she will forward the package and arrange for the next meeting date and time.

Meeting Minutes prepared by:

**Wood Environment & Infrastructure Solutions  
a Division of Wood Canada Limited**

  
Per: Ron Scheckenberger, M. Eng., P. Eng.  
Principal, Water Resources

RS/kf

c.c. To all present, plus regrets

# Minutes

**Date:** February 4, 2021  
**File #:** WW20101062  
**Meeting Date & Time:** January 29, 2021 - 2:00 p.m.  
**Meeting at:** Teams Call  
**Subject:** Chedoke Creek Remediation –  
MECP Consultation Meeting #2

## Attendees:

Cari Vanderperk (CV), City of Hamilton	Brianne Brothers (BBr), MECP
Andrew Grice (AG), City of Hamilton	Paul Heeney (PH), MECP
Mark Bainbridge (MB), City of Hamilton	Shelley Yeudall (SY), MECP
Susan Girt (SG), City of Hamilton	Brian Bishop (BBi), Wood
Tim Crowley (TC), City of Hamilton	Dale Klodnicki (DK), Wood
Stephen Burt (SB), MECP	Lance Lumbard (LL), Wood
Lindsey Burzese (LB), MECP	Ron Scheckenberger (RS), Wood
Zafar Bhatti (ZB), MECP	

## MATTERS DISCUSSED

## ACTION BY:

### 1. Introductions

CV introduced the meeting, outlining that its purpose is to continue the dialogue between the City, its consultant (Wood) and MECP, in regards to the requirements to address the recent Provincial Officer's Order and the actions related to Plan development. CV introduced Tim Crowley from the City who will be assisting in responding to the Order and associated efforts.

RS reviewed the agenda which focused on discussing MECP feedback on the Wood/City presentation of January 15, 2021 related to the two parts of the Order and the associated Plans, (Part 1 – Targeted Dredge Plan and Part 2 – Cootes Paradise and Harbour Remediation Plan) which are in preparation for Order fulfilment by February 22, 2021 and March 22, 2021 respectively.

**MATTERS DISCUSSED**

**ACTION BY:**

**2. Part 1 of Order: Review of Targeted Dredge Plan Considerations**

- i. SB stated that the process/content overview provided by Wood was good and "on the right track". He indicated MECP support for the approach which considers the full view of the watershed and Cootes Paradise remediation. He noted that it is acknowledged that there are projects underway (infrastructure, etc.) which are part of the City's day-to-day business, and that there will need to be further dialogue to establish projects considered as off-sets to address the spill. He noted that MECP will follow-up shortly in writing with its comments.
- ii. LB echoed SB's comments noting the previous presentation provides a good overall picture. She acknowledged the approach to laying out the timing based on "typical" expectations and requirements, and further the likely issues with CV19 related to agency responsiveness. Notwithstanding, she encouraged the City to engage the regulators/agencies asap, and discuss means of accelerating their processes, and not wait until the submission. RS noted that the City and Wood Team intend to reach out to all regulators next week (week of February 1, 2021) and that a tracking process will be used and documented in the plan to be submitted to MECP on February 22, 2021 which highlights who has been contacted, when, and status/update on feedback provided accordingly. All present supported this approach.
- iii. LB requested that the Plan should clearly state the goals for the targeted dredge work – including principles; specifically, what are we aiming for? She encouraged the City Team to consider sediment characterization and establish a benefit-based understanding of its removal focused on ecology – clearly stating what is guiding the decision-making. RS noted that there is inherent uncertainty until the data have been collected (i.e. how much? how contaminated? where located?) on the extent of removal of sediment, hence any plan will need to be adaptable to observed conditions, as the intent will not be to remove sediment purely for removal sake – it needs to make ecological sense. All parties agreed that it would be necessary to have an adaptive management approach.

**MECP**

**Wood**

**MATTERS DISCUSSED**

**ACTION BY:**

**3. Part 2 of the Order: Cootes Paradise and West Harbour Restoration**

- i. LB indicated that it will be important to clearly state the goals and how the relationship of Chedoke Creek discharge is being considered in the broader Cootes Paradise setting.
- ii. As noted by SB earlier, LB indicated that establishing the true off-set of works to benefit Cootes Paradise will be key.
- iii. LB questioned if the HH RAP and Cootes RAP were involved in the current Chedoke Creek Water Quality Framework Study; MB advised that Kristen O'Connor was part of the Stakeholder group and the City can discuss a wider circulation of the current draft document.
- iv. LB had some questions on how the loading of TP was established based on conventional values; she indicated that the reporting will need to discuss what is appropriate and how the data are being used.
- v. In terms of the options screening conducted to-date, LB questioned the process used to screen out various options and also how to establish the off-setting works. RS noted that the current draft reporting has fulsome content on the screening methodology.
- vi. LB stated that in addressing the Order, the Plan needs to be clear on what combination of overall works makes the most sense in terms of representing the true offset of spill impacts to Cootes Paradise. She appreciated the on-going work of the City related to what is currently planned/underway versus what is not yet planned. RS stated again with the uncertainty of sediment characterization, absolute valuation of mitigation works at this stage will be difficult. LB noted that there is no "hard and fast" rule, and often the MECP looks for a 2 to 3 times benefit in mitigation works, that said it needs to make sense overall.
- vii. LB questioned why aeration has not been advanced as a short-term work, as she expected this could be quick and relatively low cost. RS and MB advised that the aeration project which was contemplated in the presentation is substantial, whereby the upper third (+/-) of the Lower Chedoke Creek would be dammed and a major aeration treatment system installed; RS noted this has been tabled in RBG's Master Plan. LB appreciated the perspective but noted smaller scale, shorter duration aeration could be considered as well.

**City**

**MATTERS DISCUSSED**

**ACTION BY:**

- viii. LB discussed various other possible works in the Lower Chedoke Creek which may be considered as true off-setting undertakings, not all of which need to be large, long-term or permanent including:
  - Vegetation mats/harvesting mats
  - Formalizing the Christmas tree berm
  - Floating wetlands
  - Smaller scale aeration
  - Strategic plantings
- ix. AG indicated that while RBG is a major stakeholder and a notable owner of land, there are other stakeholders to this area whose input must be considered in a balanced and transparent manner. LB agreed indicating that the MECP will support the City in this consultation, noting that others, like the HH RAP and Cootes RAP Team need to be consulted for their input.
- x. PH provided a high-level perspective on the Species at Risk considerations put forth by Wood at the last session. He stated that preliminary screening of presence / absence should build on available databases from MNRF and others. He acknowledged the need for properly coordinated seasonal surveys, but indicated there may be an ability to adjust some timing protocols working with MECP staff. He agreed with the overall timelines as stated by Wood (12 months in the normal sense) as being accurate.
- xi. BBr noted that I-Naturalist should be consulted; she advised that American Eel is also known to be in the area having been observed at the RBG fishway.
- xii. SY questioned the timing of the release of the Chedoke Creek Water Quality Framework Study; CV advised that it was presented to City staff January 28, 2021 and is planned to be released to the broader stakeholder group the week of February 1, 2021.

**City**

**4. Other Business/Process**

- i. CV questioned whether the monthly reporting/meeting cited in the Order could begin in March 2021 given the recent sessions with MECP? SB agreed; CV will arrange for recurring meetings the 1<sup>st</sup> week of each month.
- ii. RS suggested that there may be some benefit in a placeholder for another meeting with MECP in two weeks time to discuss plan finalization; all agreed – City will arrange.

**City**

**City**

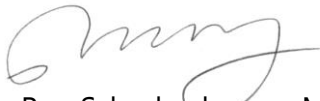
**MATTERS DISCUSSED**

**ACTION BY:**

- iii. MB reiterated the City's intent to move quickly on the works to address the Order, and reaffirmed the City's commitment to projects that make a difference.

Meeting Minutes prepared by:

**Wood Environment & Infrastructure Solutions  
a Division of Wood Canada Limited**



Per: Ron Scheckenberger, M. Eng., P. Eng.  
Principal, Water Resources

RS/kf

c.c. To all present

# Minutes

**Date:** February 16, 2021  
**File #:** WW20101062  
**Meeting Date & Time:** February 12, 2021 - 3:00 p.m.  
**Meeting at:** Teams Call  
**Subject:** Chedoke Creek Remediation –  
MECP Consultation Meeting #3

## Attendees:

Cari Vanderperk (CV), City of Hamilton	Brianne Brothers (BBr), MECP
Mark Bainbridge (MB), City of Hamilton	Paul Heeney (PH), MECP
Tim Crowley (TC), City of Hamilton	Shelley Yeudall (SY), MECP
Stephen Burt (SB), MECP	Brian Bishop (BBi), Wood
Lindsey Burzese (LB), MECP	Dale Klodnicki (DK), Wood
Zafar Bhatti (ZB), MECP	Lance Lumbard (LL), Wood
	Ron Scheckenberger (RS), Wood

## Regrets:

Andrew Grice (AG), City of Hamilton  
Susan Girt (SG), City of Hamilton

## MATTERS DISCUSSED

## ACTION BY:

### 1. Introductions

CV introduced the meeting outlining its purpose to continue the dialogue between the City, its consultant (Wood) and MECP, in regards to the requirements to address the recent Director's Order and the actions related to Plan development.

RS reviewed the agenda focused on providing an update on permitting consultation efforts since the last meeting January 29, 2021, as well as to seek clarification on various matters outlined in the Order.



**MATTERS DISCUSSED**

**ACTION BY:**

**2. Update on Consultation related to Permitting Requirements**

DK provided an update on the various permits which are anticipated to be required including associated timing. DK advised that all parties had been contacted since the last meeting, however not all agencies have responded. The following were some of the key outcomes/updates to-date:

- i. Wood will need to submit a Request for Review (RFR) to DFO in order to initiate Federal review.
- ii. MECP - SAR group has advised of various options with varying timelines associated with permitting. Further dialogue is required including a determination as to whether the spill constitutes a human health impact.
- iii. HCA has stated its requirements and timing – 64 days.
- iv. MTO remains in review but it is anticipated to be 64 days.
- v. MNRF will not require a permit as its role is deferred to HCA.
- vi. Archaeological permitting is not required if the work is limited to Chedoke Creek; however, if it moves into the Princess Point embayment or beyond, it may trigger the need.
- vii. Federal Impact Assessment requirements remain under review.
- viii. Indigenous engagement scope remains under review.

**Wood**

**3. Stakeholders Input Consideration**

RS questioned which stakeholders MECP sees as needing to be engaged per Condition 4i and whether MECP has correspondence beyond the February, 2020 letter from RBG which should be considered. LB stated that RBG is the main stakeholder, but that the RAP Group should also be consulted given that group's broader perspective and role in restoration.

**City/Wood**

**4. Cootes Paradise Report vs. Work Plan**

RS noted that Condition 8 in the Order requires a Cootes Paradise Report while Condition 10 requires a Cootes Paradise Work Plan; he requested clarification on content from MECP. RS stated that based on the perspective of Wood and the City, the recently released GM BluePlan/Wood report would largely fill the requirement for a Cootes Paradise Report, with some possible gap filling. He added that the Work Plan could then focus on addressing the scope of work required to address the offset to the impacts from the spill. LB and SB indicated that to-date they have not reviewed the GMBP/Wood report however, based on initial understanding of content, it appears to be on the right track. SB indicated that MECP would review the GMBP/Wood report and provide clarity on possible supplemental needs to fulfill the Order requirements for the Cootes Paradise Report.

**MECP**

**MATTERS DISCUSSED**

**ACTION BY:**

**5. Preliminary Comments on Chedoke Creek Water Quality Framework**

Per above, MECP staff has yet to formalize its review of this document however it commits to doing so by the February 26, 2021 timeline noted in the distribution of the document.

**MECP**

**6. Indigenous Nations and Peoples Engagement**

RS noted that contact has been made with the City's Project Manager in charge of the City's Indigenous Engagement strategy. He indicated that explicit actions are yet to be formalized however expects that the City will consult the requisite groups on both Parts of the Order (Chedoke Creek Dredge and Cootes Paradise Plan). LB indicated that this approach is supportable to MECP.

**7. Public Engagement**

RS advised that given that the first part of the Order (Targeted Dredge) was not a formal Environmental Assessment, public engagement was deemed to be more voluntary and less prescriptive. Notwithstanding, the City is committed to keeping the public informed and CV also advised that this is a priority for Council. Per the presentation, the City is looking to release media bulletins, public reports and also maintain a project website. SB and LB expressed support for this form of engagement.

SY indicated that MECP was contacted by a Spectator reporter about a report to Council. CV indicated that the report was just released on Feb 12, 2021 for a presentation to Council February 17, 2021. CV indicated that City staff will keep MECP apprised of any emerging public reporting.

**City**

**8. Council Report**

CV per above, noted that a draft report has been submitted for a presentation to Council February 17, 2021. It was indicated in the report that meeting the October 31, 2021 completion timeline for the targeted dredge would be challenging however the City will continue to work with MECP on completing the work as expeditiously as possible.

**MATTERS DISCUSSED**

**ACTION BY:**

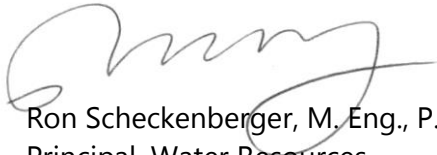
**9. Other Business**

RS suggested following the submission of the Chedoke Creek Work Plan on February 22, 2021, that the City, Wood and MECP meet to discuss the second part of the Order specific to the Cootes Paradise Report and Plan; the City will coordinate setting this meeting up with all parties.

**City**

Meeting Minutes prepared by:

**Wood Environment & Infrastructure Solutions  
a Division of Wood Canada Limited**



Per: Ron Scheckenberger, M. Eng., P. Eng.  
Principal, Water Resources

RS/kf

c.c. To all present, plus regrets

# CITY OF HAMILTON MOTION

General Issues Committee: February 17, 2021

**MOVED BY MAYOR FRED EISENBERGER .....**

**SECONDED BY COUNCILLOR .....**

## **Establishing Fair Wages for Musicians: Guidelines and/or Policy for City-Run or City-Funded Events Utilizing Musicians**

WHEREAS, the Mayor’s Task Force on Economic Recovery recommends the creation of a “minimum wage” pay scale for musicians hired by the City and at City related/sanctioned events, to ensure musicians are fairly compensated as COVID-19 related re-openings occur and to establish a best practice for the future;

WHEREAS, one of the City of Hamilton’s Music Strategy key goals is to cultivate music creation and talent;

WHEREAS, the City’s Creative Industries Sector Profile identifies music as one of the top industries for growth and development; identifies Hamilton as the number one/top destination for music related occupations in Canada; and identifies talent retention and attraction as essential in maintaining and developing the music industry in Hamilton;

WHEREAS, Hamilton is recognised as 7th in the world for the number of independent musicians per capita; and musicians and singers are the top core creative music sector occupations, representing 14% of all music sector occupations; and with 22% of all music industry workers identified as self employed;

WHEREAS, recognizing that the single most important source of income for a musician is generated through live performances in venues and spaces in cities across Canada, and that many musicians are unable to perform in venues and festivals due to COVID-19;

WHEREAS, the current Canadian Federation of Musicians and the Hamilton Musician Guild rates range from \$150 to \$590 for performances of approximately one hour in length (rates dependent on the number of musicians performing);

**THEREFORE, BE IT RESOLVED:**

That staff be directed to report back to the General Issues Committee on the establishment of City guidelines and/or a policy establishing a practice of payment for musicians, based on the most current fees recommended by the Canadian Federation for Musicians, represented locally by the Hamilton Musicians Guild Local 293 for City-hosted and City-funded events.