City of Hamilton
PUBLIC WORKS COMMITTEE REVISED

Meeting #: 22-105
Date: November 28, 2022
Time: 1:30 p.m.
Location: Council Chambers
Hamilton City Hall
71 Main Street West

Carrie McIntosh, Legislative Coordinator (905) 546-2424 ext. 2729

Pages

1. APPOINTMENT OF CHAIR AND VICE-CHAIR

2. APPROVAL OF AGENDA

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

3. DECLARATIONS OF INTEREST

4. APPROVAL OF MINUTES OF PREVIOUS MEETING

   4.1 September 26, 2022 — *5*

5. COMMUNICATIONS

6. DELEGATION REQUESTS

   *6.1 Samuel Jennings respecting Waterway-Sewage Challenges and Mountain-Level Air Quality Surveys (for today's meeting) - WITHDRAWN — *15*

7. DELEGATIONS

8. STAFF PRESENTATIONS

   *8.1 Burlington Street Sewage Spill Update (PW22088) (City Wide) — *16*

9. CONSENT ITEMS

b. Provincial Funding to Improve Wastewater and Stormwater in Ontario

Addressed as Item 8.1 on today's agenda - Report PW22010(a)
Item on OBL: ACM

c. HDR01 Kenilworth Reservoir Soil Removal and East Cell Upgrades

Addressed as Item 8.2 on today's agenda - Report PW22085

Item on OBL: ACL

b. Items Requiring a New Due Date:

a. Accessible Transportation Services and the Disabled and Aged Regional Transportation Service Policy

Item on OBL: ACT
Current Due Date: September 19, 2022
Proposed New Due Date: January 26, 2023

b. Accessible Transportation Services Quarterly Performance Report

Item on OBL: ACU
Current Due Date: November 28, 2022
Proposed New Due Date: January 16, 2023

c. Protected Bike Lane Curbs (Hamilton Cycling Committee - Citizen Committee Report)

Item on OBL: ACA
Current Due Date: November 28, 2022
Proposed New Due Date: January 16, 2023

d. Management of the Aviary at 85 Oak Knoll Drive

Item on OBL: AAY
Current Due Date: September 9, 2022
Proposed New Due Date: Q1 2023

e. HSR / ATS / DARTS Passenger Policies for Persons with Disabilities

Item on OBL: ABR
Current Due Date: November 28, 2022
Proposed New Due Date: February 13, 2023

f. Antonio Gallo, Gallo Ice Cream Retail, respecting Ice Cream Vendor Operation at Confederation Park

Item on OBL: ACN
Current Due Date: September 9, 2022
Proposed New Due Date: Q1 2023

g. Main Street East and King Street East (Delta) In-Service Road Safety Review

Item on OBL: ACR
Current Due Date: November 28 2022
Proposed New Due Date: May 29, 2023

h. Main Street West at Dundurn Street South and King Street West at Dundurn Street South Intersection Road Safety Plan

Item on OBL: ACS
Current Due Date: November 28 2022
Proposed New Due Date: May 29, 2023

15. PRIVATE AND CONFIDENTIAL

16. ADJOURNMENT

PUBLIC WORKS COMMITTEE
MINUTES 22-014
1:30 p.m.
Monday, September 26, 2022
Council Chambers
Hamilton City Hall
71 Main Street West

Present: Councillors N. Nann (Chair), R. Powers (Vice-Chair), J.P. Danko, L. Ferguson, E. Pauls, M. Pearson and A. VanderBeek

Absent with Regrets: Councillor J. Farr – Personal
Councillor T. Jackson – Personal
Councillor S. Merulla – Personal
Councillor T. Whitehead – Personal

THE FOLLOWING ITEMS WERE REFERRED TO COUNCIL FOR CONSIDERATION:

1. Truck Route Sub-Committee Report 22-002 (Item 7.1)

(i) Truck Route Network Monitoring and Evaluation Framework (PED19073(d)) (City Wide) (Outstanding Business List Item) (Item 8.1)

(Pearson/Pauls)

(a) That the framework and associated criteria for the evaluation of approved truck route network described in this Report PED19073(d) be received and approved;

(b) That staff be directed to operationalize the truck route network evaluation framework including all required data collection, public and stakeholder engagement and analysis commencing in early 2023 and through 2023/2024 and report back to the Truck Route Sub-Committee by no later than Q4 2024;

(c) That the estimated upset limit cost of $20,000 associated with implementing and promoting a public opinion survey be funded from Project ID 4032155744 Transportation Master Plan (TMP) Modelling and Monitoring;

(d) That the estimated upset limit cost of $30,000 to conduct targeted data collection including truck volume and routing surveys, be funded from Project ID 4662115820 Traffic Count Program;

(e) That Outstanding Business List Item ACP, respecting Public Works Report 22-005, Item 5 (PED19073(c)), staff to develop a framework and associated criteria that can be used to evaluate changes to the approved Truck Route Network in order to inform future revisions to the truck route network and that the criteria be presented to the Truck Route Sub-Committee by Q3, 2022 with the results of the evaluation being completed no later than 2024, be identified as completed and removed from the Public Works Committee Outstanding Business List.

Result: **Motion CARRIED by a vote of 7 to 0, as follows:**

NOT PRESENT – Ward 2 Councillor Jason Farr
YES – Chair – Ward 3 Councillor Nrinder Nann
NOT PRESENT – Ward 4 Councillor Sam Merulla
YES – Vice Chair – Ward 5 Councillor Russ Powers
NOT PRESENT – Ward 6 Councillor Tom Jackson
YES – Ward 7 Councillor Esther Pauls
YES – Ward 8 Councillor John-Paul Danko
YES – Ward 10 Councillor Maria Pearson
YES – Ward 12 Councillor Lloyd Ferguson
YES – Ward 13 Councillor Arlene VanderBeek
NOT PRESENT – Ward 14 Councillor Terry Whitehead

2. Woodward Water Treatment Plant – Phase 2 Process Upgrades (PW22078) (City Wide) (Item 7.2)

(Pearson/Pauls)
That Report PW22078, respecting Woodward Water Treatment Plant – Phase 2 Process, be received.

Result: **Motion CARRIED by a vote of 7 to 0, as follows:**

NOT PRESENT – Ward 2 Councillor Jason Farr
YES – Chair – Ward 3 Councillor Nrinder Nann
NOT PRESENT – Ward 4 Councillor Sam Merulla
YES – Vice Chair – Ward 5 Councillor Russ Powers
NOT PRESENT – Ward 6 Councillor Tom Jackson
YES – Ward 7 Councillor Esther Pauls
YES – Ward 8 Councillor John-Paul Danko
YES – Ward 10 Councillor Maria Pearson

YES – Ward 12 Councillor Lloyd Ferguson
YES – Ward 13 Councillor Arlene VanderBeek
NOT PRESENT – Ward 14 Councillor Terry Whitehead

3. Accessible Transportation Services Performance Report (PW22079) (City Wide) (Outstanding Business List Item) (Item 7.3)

(VanderBeek/Pauls)
That Report PW22079, respecting Accessible Transportation Services Performance Report, be received.

Result: Motion CARRIED by a vote of 7 to 0, as follows:

NOT PRESENT – Ward 2 Councillor Jason Farr
YES – Chair – Ward 3 Councillor Nrinder Nann
NOT PRESENT – Ward 4 Councillor Sam Merulla
YES – Vice Chair – Ward 5 Councillor Russ Powers
NOT PRESENT – Ward 6 Councillor Tom Jackson
YES – Ward 7 Councillor Esther Pauls
YES – Ward 8 Councillor John-Paul Danko
YES – Ward 10 Councillor Maria Pearson
YES – Ward 12 Councillor Lloyd Ferguson
YES – Ward 13 Councillor Arlene VanderBeek
NOT PRESENT – Ward 14 Councillor Terry Whitehead

4. Proposed Permanent Closure and Sale of a Portion of Road Allowance Abutting 400 McCrae Station Road, Flamborough (PW22077) (Ward 15) (Item 9.2)

(Powers/VanderBeek)
(a) That the application of the owner of 400 McCrae Station Road, Flamborough, to permanently close and purchase a portion of road allowance abutting 400 McCrae Station Road, Flamborough (“Subject Lands”), as shown on Appendix "A", attached to Report PW22077, be approved, subject to the following conditions:

(i) That the City Solicitor be authorized and directed to prepare all necessary by-laws to permanently close and sell the highway, for enactment by Council;

(ii) The Corporate Real Estate Office of the Planning and Economic Development Department be authorized and directed to enter into any requisite easement agreements, right of way agreements, and/or other agreements deemed necessary to affect the orderly disposition of the Subject Lands and to proceed to sell the Subject

Lands to the owners of 400 McCrae Station Road, Flamborough, as described in Report PW22077, in accordance with the City of Hamilton Sale of Land Policy By-law 14-204;

(iii) The City Solicitor be authorized to complete the transfer of the Subject Lands to 400 McCrae Station Road, Flamborough pursuant to an Agreement of Purchase and Sale or Offer to Purchase as negotiated by the Corporate Real Estate Office of the Planning and Economic Development Department;

(iv) That the City Solicitor be authorized and directed to register a certified copy of the by-law(s) permanently closing and selling the highway in the proper land registry office;

(v) That the City Solicitor be authorized to amend and waive such terms as they consider reasonable to give effect to this authorization and direction;

(vi) That the Public Works Department publish any required notice of the City's intention to pass the by-laws and/or permanently sell the closed highway pursuant to the City of Hamilton Sale of Land Policy By-law 14-204;

(vii) That the applicant be fully responsible for the deposit of a reference plan in the proper land registry office, and that said plan be prepared by an Ontario Land Surveyor to the satisfaction of the Manager, Geomatics and Corridor Management Section, and that the applicant also deposit a reproducible copy of said plan with the Manager, Geomatics and Corridor Management Section.

Result: **Motion CARRIED by a vote of 7 to 0, as follows:**

NOT PRESENT – Ward 2 Councillor Jason Farr
YES – Chair – Ward 3 Councillor Nrinder Nann
NOT PRESENT – Ward 4 Councillor Sam Merulla
YES – Vice Chair – Ward 5 Councillor Russ Powers
NOT PRESENT – Ward 6 Councillor Tom Jackson
YES – Ward 7 Councillor Esther Pauls
YES – Ward 8 Councillor John-Paul Danko
YES – Ward 10 Councillor Maria Pearson
YES – Ward 12 Councillor Lloyd Ferguson
YES – Ward 13 Councillor Arlene VanderBeek
NOT PRESENT – Ward 14 Councillor Terry Whitehead

5. Request for By-law Amendments Respecting 386 Wilcox Street (PW22083/LS22033) (City Wide) (Item 10.1)

(Nann/Danko)
That staff be directed to prepare the by-laws amending the City's Sewers and Drains By-law No. 06-026 and the City's Waterworks By-law R84-026 on a site-specific basis for existing services for the lands at 386 Wilcox Street on a temporary basis, until such time as the required Concept Plan and Master Servicing Strategy are implemented as required by the Holding Provision, for Council's consideration on September 28, 2022.

Result: Motion CARRIED by a vote of 7 to 0, as follows:

NOT PRESENT – Ward 2 Councillor Jason Farr
YES – Chair – Ward 3 Councillor Nrinder Nann
NOT PRESENT – Ward 4 Councillor Sam Merulla
YES – Vice Chair – Ward 5 Councillor Russ Powers
NOT PRESENT – Ward 6 Councillor Tom Jackson
YES – Ward 7 Councillor Esther Pauls
YES – Ward 8 Councillor John-Paul Danko
YES – Ward 10 Councillor Maria Pearson
YES – Ward 12 Councillor Lloyd Ferguson
YES – Ward 13 Councillor Arlene VanderBeek
NOT PRESENT – Ward 14 Councillor Terry Whitehead

FOR INFORMATION:

(a) APPROVAL OF AGENDA (Item 2)

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

6. DELEGATION REQUESTS

6.1 Daniel Artenosi, Overland LLP, and Steven Dejonckheere, Slate Asset Management respecting the Request for By-law Amendments Respecting 386 Wilcox Street (PW22083/LS22033) (Item 10.1) (for today's meeting)

10. DISCUSSION ITEMS

10.1 Request for By-law Amendments Respecting 386 Wilcox Street (PW22083/LS22033) (City Wide)

(Pearson/VanderBeek)
That the agenda for the September 26, 2022 Public Works Committee meeting be approved, as amended.

Result: **Motion CARRIED by a vote of 6 to 0, as follows:**

NOT PRESENT – Ward 2 Councillor Jason Farr
YES – Chair – Ward 3 Councillor Nrinder Nann
NOT PRESENT – Ward 4 Councillor Sam Merulla
YES – Vice Chair – Ward 5 Councillor Russ Powers
NOT PRESENT – Ward 6 Councillor Tom Jackson
YES – Ward 7 Councillor Esther Pauls
YES – Ward 8 Councillor John-Paul Danko
YES – Ward 10 Councillor Maria Pearson
NOT PRESENT – Ward 12 Councillor Lloyd Ferguson
YES – Ward 13 Councillor Arlene VanderBeek
NOT PRESENT – Ward 14 Councillor Terry Whitehead

(b) DECLARATIONS OF INTEREST (Item 3)

There were no declarations of interest.

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

(i) September 9, 2022 (Item 4.1)

(Powers/Danko)
That the Minutes of the September 9, 2022 meeting of the Public Works Committee be approved, as presented.

Result: **Motion CARRIED by a vote of 6 to 0, as follows:**

NOT PRESENT – Ward 2 Councillor Jason Farr
YES – Chair – Ward 3 Councillor Nrinder Nann
NOT PRESENT – Ward 4 Councillor Sam Merulla
YES – Vice Chair – Ward 5 Councillor Russ Powers
NOT PRESENT – Ward 6 Councillor Tom Jackson
YES – Ward 7 Councillor Esther Pauls
YES – Ward 8 Councillor John-Paul Danko
YES – Ward 10 Councillor Maria Pearson
NOT PRESENT – Ward 12 Councillor Lloyd Ferguson
YES – Ward 13 Councillor Arlene VanderBeek
NOT PRESENT – Ward 14 Councillor Terry Whitehead

(d) DELEGATION REQUESTS (Item 6)

(i) Daniel Artenosi, Overland LLP, and Steven Dejonckheere, Slate Asset Management respecting the Request for By-law Amendments Respecting 386 Wilcox Street (PW22083/LS22033) (Item 10.1) (for today's meeting) (Item 6.1)

(Pauls/Pearson)
That the delegation request by Daniel Artenosi, Overland LLP, and Steven Dejonckheere, Slate Asset Management respecting the Request for By-law Amendments Respecting 386 Wilcox Street (PW22083/LS22033), be approved for today's meeting.

Result: Motion CARRIED by a vote of 6 to 0, as follows:

NOT PRESENT – Ward 2 Councillor Jason Farr
YES – Chair – Ward 3 Councillor Nrinder Nann
NOT PRESENT – Ward 4 Councillor Sam Merulla
YES – Vice Chair – Ward 5 Councillor Russ Powers
NOT PRESENT – Ward 6 Councillor Tom Jackson
YES – Ward 7 Councillor Esther Pauls
YES – Ward 8 Councillor John-Paul Danko
YES – Ward 10 Councillor Maria Pearson
NOT PRESENT – Ward 12 Councillor Lloyd Ferguson
YES – Ward 13 Councillor Arlene VanderBeek
NOT PRESENT – Ward 14 Councillor Terry Whitehead

(e) PUBLIC HEARINGS / DELEGATIONS (Item 9)

(i) Kristeen Sprague respecting Safety on HSR Buses (approved September 9, 2022) (Item 9.1)

Kristeen Sprague was not present when called upon.

(ii) Proposed Permanent Closure and Sale of a Portion of Road Allowance Abutting 400 McCrae Station Road, Flamborough (PW22077) (Ward 15) (Item 9.2)

Councillor Nann advised that the notice of the Proposed Permanent Closure of a Portion of Road Allowance Abutting 400 McCrae Station Road, Flamborough was provided as required under the City's By-law No. 14-204 – the Sale of Land Policy By-law.

The Committee Clerk advised that there were no registered speakers.

The Chair asked three times if there were any members of the public in attendance who wished to come forward to speak to the matter. No individuals came forward.

(Ferguson/Powers)
That the public meeting be closed.

Result: **Motion CARRIED by a vote of 7 to 0, as follows:**

NOT PRESENT – Ward 2 Councillor Jason Farr
YES – Chair – Ward 3 Councillor Nrinder Nann
NOT PRESENT – Ward 4 Councillor Sam Merulla
YES – Vice Chair – Ward 5 Councillor Russ Powers
NOT PRESENT – Ward 6 Councillor Tom Jackson
YES – Ward 7 Councillor Esther Pauls
YES – Ward 8 Councillor John-Paul Danko
YES – Ward 10 Councillor Maria Pearson
YES – Ward 12 Councillor Lloyd Ferguson
YES – Ward 13 Councillor Arlene VanderBeek
NOT PRESENT – Ward 14 Councillor Terry Whitehead

For further disposition of this matter, refer to Item 4.

(iii) Daniel Artenosi, Overland LLP, and Steven Dejonckheere, Slate Asset Management respecting the Request for By-law Amendments Respecting 386 Wilcox Street (PW22083/LS22033) (Item 10.1) (for today's meeting) (Item 9.3)

Daniel Artenosi, Overland LLP, and Steven Dejonckheere, Slate Asset Management provided a verbal overview respecting the request for By-law Amendments Respecting 386 Wilcox Street.

(Ferguson/Danko)
That the verbal presentation from Daniel Artenosi, Overland LLP, and Steven Dejonckheere, Slate Asset Management respecting the request for By-law Amendments Respecting 386 Wilcox Street, be received.

Result: **Motion CARRIED by a vote of 7 to 0, as follows:**

NOT PRESENT – Ward 2 Councillor Jason Farr
YES – Chair – Ward 3 Councillor Nrinder Nann
NOT PRESENT – Ward 4 Councillor Sam Merulla
YES – Vice Chair – Ward 5 Councillor Russ Powers

NOT PRESENT – Ward 6 Councillor Tom Jackson
YES – Ward 7 Councillor Esther Pauls
YES – Ward 8 Councillor John-Paul Danko
YES – Ward 10 Councillor Maria Pearson
YES – Ward 12 Councillor Lloyd Ferguson
YES – Ward 13 Councillor Arlene VanderBeek
NOT PRESENT – Ward 14 Councillor Terry Whitehead

(f) DISCUSSION ITEMS (Item 10)

(i) Request for By-law Amendments Respecting 386 Wilcox Street (PW22083/LS22033) (City Wide) (Item 10.1)

(Powers/Danko)
That Slate HWF L.P.'s request for an exemption to the City of Hamilton's (City) Sewers and Drains By-law No.06-026 and the City's Waterworks By-law R84-026 for 386 Wilcox Street, be refused.

Result: Motion DEFEATED by a vote of 1 to 6, as follows:

NOT PRESENT – Ward 2 Councillor Jason Farr
NO – Chair – Ward 3 Councillor Nrinder Nann
NOT PRESENT – Ward 4 Councillor Sam Merulla
NO – Vice Chair – Ward 5 Councillor Russ Powers
NOT PRESENT – Ward 6 Councillor Tom Jackson
YES – Ward 7 Councillor Esther Pauls
NO – Ward 8 Councillor John-Paul Danko
NO – Ward 10 Councillor Maria Pearson
NO – Ward 12 Councillor Lloyd Ferguson
NO – Ward 13 Councillor Arlene VanderBeek
NOT PRESENT – Ward 14 Councillor Terry Whitehead

For further disposition of this matter, refer to Item 5.

(g) ADJOURNMENT (Item 15)

(Pearson/Pauls)
That there being no further business, the meeting adjourned at 2:05 p.m.

Result: Motion CARRIED by a vote of 7 to 0, as follows:

NOT PRESENT – Ward 2 Councillor Jason Farr
YES – Chair – Ward 3 Councillor Nrinder Nann
NOT PRESENT – Ward 4 Councillor Sam Merulla
YES – Vice Chair – Ward 5 Councillor Russ Powers

NOT PRESENT – Ward 6 Councillor Tom Jackson
YES – Ward 7 Councillor Esther Pauls
YES – Ward 8 Councillor John-Paul Danko
YES – Ward 10 Councillor Maria Pearson
YES – Ward 12 Councillor Lloyd Ferguson
YES – Ward 13 Councillor Arlene VanderBeek
NOT PRESENT – Ward 14 Councillor Terry Whitehead

Respectfully submitted,

Councillor N. Nann, Chair,
Public Works Committee

Carrie McIntosh
Legislative Coordinator
Office of the City Clerk

6.1

Request to Speak to Committee of Council

Submitted on Tue, 11/22/2022 - 18:29

==Committee Requested==

Committee: Public Works Committee

Will you be delegating in person or virtually? In person

Will you be delegating via a pre-recorded video? No

==Requestor Information==

Name of Individual: Samuel Jennings

Name of Organization:

Contact Number: [redacted]

Email Address: [redacted]

Mailing Address:
[redacted]

Reason(s) for delegation request: To comment on waterway-sewage challenges as well as mountain-level air quality surveys.

Will you be requesting funds from the City? No

Will you be submitting a formal presentation? Yes

INFORMATION REPORT

TO:	Mayor and Members City Council
COMMITTEE DATE:	November 28, 2022
SUBJECT/REPORT NO:	Burlington Street Sewage Spill Update (PW22088) (City Wide)
WARD(S) AFFECTED:	City Wide
PREPARED BY:	Shane McCauley (905) 546-2424 Ext. 1020 Susan Girt (905) 546-2424 Ext. 2671
SUBMITTED BY: **SIGNATURE:**	Nick Winters Director, Hamilton Water Public Works Department 

COUNCIL DIRECTION

N/A

INFORMATION

On Tuesday, November 22, 2022 Hamilton Water staff identified an improper connection between a combined sewer and a storm sewer in the vicinity of Wentworth Street North and Burlington Street East, Hamilton. Appendix “A” to Report PW22088 shows the location of the improper connection and the outfall that discharges to the Hamilton Harbour. This improper connection allowed combined sewage (made up of sanitary discharges in the sewer shed and storm water connections) to enter the storm sewer that outlets directly into the Hamilton Harbour at the Hamilton Oshawa Port Authority (HOPA) Pier 14. The combined sewage that entered the storm sewer is considered a spill under the Provincial Environmental Protection Act. Historical records indicate that the connection causing the spill likely occurred sometime in the later half of 1996 during a City of Hamilton capital construction project on Burlington Street East.

Upon field confirmation that there was an ongoing discharge of sanitary sewage to the storm sewer, Hamilton Water staff notified the Ministry of Environment, Conservation and Parks (MECP) Spills Action Centre (SAC) of the spill. This notification took place on

Tuesday November 22, 2022, at approximately 12:12 p.m., followed by a call to the City of Hamilton Spills Line at 12:20 p.m.

Hamilton Water staff took immediate action to protect the environment and contain the spill. This included bringing in vacuum trucks to capture and prevent the sanitary sewage from continuing to enter the storm sewer and developing plans to reconfigure the sewer to correct the improper connection. In consultation with Engineering Services, Hamilton Water were able to quickly identify a solution which would connect the combined sewer directly to the Western Sanitary Interceptor, which is a large sewer that flows to the Woodward Wastewater Treatment Plant. Construction crews were on site on Wednesday November 23, 2022 by 7 a.m. and the reconfiguration work was completed at 9:32 p.m. that same evening. The MECP was also notified on November 23, 2022 at 9:32 p.m. that the improper connection was reconfigured and there was no possibility for the spill to reoccur in the future.

As of Monday November 28, 2022, the estimated volume of sanitary sewage that was discharged to the storm sewer over approximately 26 years, is estimated to be 337 million litres (equating to, approximately 13 million litres per year).

Background Information

In 2019, some routine investigative work was conducted for the subsurface infrastructure (sewers and watermains) in the area of Burlington Street East and Wentworth Street North, including the adjacent neighbourhoods. This work was part of the scope development by Engineering Services for a project that was focused on renewal of the road surface for the neighbourhood streets. The capital project ended-up being reprioritized until 2029, however, during the investigative work as part of the road resurfacing project, some non-urgent structural concerns unrelated to the spill, were identified with a sanitary sewer lateral at 517 Burlington Street East. In 2022, Engineering Services reached out to Hamilton Water and requested that they review this sewer lateral and undertake any necessary repairs under the City's Sewer Lateral Management Program.

Hamilton Water staff, as part of their investigation, undertook a review of archived sewer records in the vicinity of 517 Burlington Street East. During this review, staff located and reviewed a 2013 video of a maintenance access hole just west of the lateral they were asked to investigate. The Hamilton Water staff member reviewing the video recognized, based on their experience, that something did not "look right" and arranged for a field investigation. Both the video review and the field investigation took place the morning of Tuesday, November 22, 2022. The field investigation confirmed the existence of an improper connection between a combined sewer and a storm sewer in the vicinity of Wentworth Street North and Burlington Street East, Hamilton. It was further identified

that there was an ongoing discharge of combined sewage to the storm sewer which is considered a Spill under the Provincial Environmental Protection Act. The spill was promptly reported to the Ministry of Environment, Conservation and Parks (MECP) Spills Action Centre (SAC) on Tuesday November 22, 2022, at approximately 12:20 p.m.

Hamilton Water staff immediately took action to protect the environment and contain the spill. This included bringing in vacuum trucks to capture and prevent the combined sewage from continuing to enter the storm sewer and developing plans to reconfigure the sewers and prevent further discharge to the storm sewer. At the same time, Hamilton Water began investigating the history of the improper connection from the combined sewer to the storm sewer.

Sewer Repair/Reconfiguration

On November 22 and 23, 2022, Hamilton Water and Engineering Services worked together to determine an appropriate method to repair/reconfigure the improper combined sewer connection to the receiving storm sewer to eliminate this flow. Staff determined that it was possible to connect the combined sewer (that was spilling into the storm sewer) to the large Western Sanitary Interceptor sewer that flows directly to the Woodward Wastewater Treatment Plant. The reconfiguration included installing a new section of sewage pipe approximately 4.5 metres in length. Once this connection was made, the connection between the combined sewer and the storm sewer was eliminated by capping the ends of the abandoned pipe with concrete.

The new connection was completed on Wednesday, November 22, 2022 at 9:32 p.m. Temporary road surface restoration was completed, and construction crews left the site at 12:30 a.m. on Thursday November 23, 2022. Hamilton Water staff completed repairs as urgently as possible, repairing the sewer within 31 hours of discovery. Hamilton Water returned to the site first thing in the morning on Thursday, November 23, 2022 and completed a camera inspection of the reconfiguration and verified that the new connection was functioning properly, and the abandoned pipe was properly capped. City records were updated to reflect the new sewer configuration. Final restoration of the road surface will be completed by Engineering Services once Hamilton Water have completed their analysis verifying that the repairs are the most appropriate long-term solution.

Investigation of the Improper Connection

Hamilton Water conducted a review of historical construction records for projects that were completed in the area of the spill to attempt to identify how this situation occurred.

Hamilton Water discovered documents related to City construction contract RHW-96-20 for Burlington Street Reconstruction and Widening which, based on the current

understanding was completed by the City's former Transportation, Operations and Environment Division in 1996. In the engineering drawings associated with this contract, staff identified drawing 96-H-11 which includes a note stating, "Break into top of existing box culvert with 15" storm sewer". Staff also noted that on this drawing, a number of lengths of combined sewer pipe are incorrectly labeled as storm sewer pipes. Drawing 96-H-11 has been included as Appendix "B" to Report PW22088 illustrating this fact. It is City staff's current understanding that the 1996 Burlington Street reconstruction work included sub-surface infrastructure upgrades to watermains and a modification to the incorrectly labelled combined sewer that created an improper connection to the storm sewer.

As part of Hamilton Water's current review of archived sewer records related to this spill staff have located two videos of the maintenance access hole where the improper connection was made. The first video was taken as part of a contract for Zoom Camera inspections (C11-29-04) and was made in 2009. The second video was also taken as part of a contract for Zoom Camera inspections (C11-86-10) and was made in 2013. While the scope of the two (2) contracts varied somewhat, both contracts were focused on asset condition assessments to identify structural deficiencies, and to determine any immediate maintenance needs. Both videos show footage of the maintenance access hole where the improper connection was made and clearly shows sewage discharging into a 'hole' in the bottom of the pipe, but this type of connection between sewers isn't uncommon in older Cities like Hamilton. However, since neither of the videos showed immediate maintenance needs and the structures were in good condition, they would not have been flagged by the contractor for further review. In short, staff do not believe that any City staff member reviewed either of these videos until November 22, 2022. In addition, the contractor would not have had detailed enough knowledge of the City's sewer system to identify the improperly connected sewer pipes.

In 2015, Hamilton Water issued a third contract for Zoom Camera inspections (C11-39-15). However, the contractor was unable to complete 100 per cent of the inspections within the budget of the contract. As a result, the maintenance access hole containing the improper connection was not inspected as part of this contract. Following this contract, Hamilton Water decided not to issue another tender for this work. This was partly because, based on the first two rounds of inspections an annual maintenance (sewer flushing) program had been created which addressed many of the maintenance related issues and prevented them from reoccurring. In addition, the maintenance access holes showed very little change in their structural integrity over the relatively

short inspection cycles and it was determined that additional condition data was not immediately required.

A review of Hamilton Water's work order management system has determined that no other historic work orders have been issued for this maintenance access hole. As such, Hamilton Water would not have noticed the improper connection earlier.

Calculation of the Spill Volume

By examining Hamilton Water's Geographical Informational Systems (GIS) staff identified 50 properties with service connections that would have contributed to the sewage spill. A map that identifies these properties has been attached as Appendix "C" to Report PW22088.

Staff have developed an estimated volume for the spill by compiling the historic water meter readings for these properties. Meter readings are available for each property from 2003 which is when water meters were first installed as a result of Hamilton's universal water metering initiative. Staff calculated the average annual metered potable water usage for each property from 2003-2022 and used this average to fill in the annual usage from 1996 - 2002. Staff were then able to estimate the total water usage for each property over approximately 26 years.

It is important to note that some portion of the water used by these properties would have been used for purposes such as watering lawns/gardens and cooking/drinking and as a result it would not have been discharged into the sewer system. However, for the purposes of this calculation, 100 per cent of the water used by each property is assumed to have gone into the sewer system.

Based on the methodology described above, it is estimated that approximately 337 million litres of sanitary sewage from these 50 properties was spilled into the storm sewer over a period of approximately 26 years. This number does not include stormwater which would have entered the combined sewer during rain events or snow melt which would have added to the volume of water discharged and diluted the sanitary sewage being discharged from the properties.

Involvement of the Ministry of the Environment, Conservation and Parks (MECP)

Hamilton Water notified the MECP Spills Action Centre (SAC) of the spill at approximately 12:12 p.m. on Tuesday November 22, 2022. An MECP Environmental Officer attended the site on Tuesday, November 22, 2022 and remained on site for several hours observing how the spill was being contained, taking samples and

collecting information. Senior MECP staff also attended the site briefly and were briefed on the situation.

To date, several documents were requested and have been provided to the MECP, these include:

- Analytical results for samples collected by Hamilton Water's Environmental Enforcement Officers;
- Inspection videos for the sewers;
- Current and past drawings of the sewers;
- A map that identifies the properties that are connected to the combined sewer and that would have contributed to the sewage spill;
- A log that includes the date, time and estimated volume of sewage collected by the vacuum truck, and that was discharged to a properly connected sewer; and
- Timeline of the sewer repair/reconfiguration.

The completion of the spill was reported to the MECP SAC on Wednesday, November 23, 2022 at 9:32 p.m. The estimated spill volume was provided to the MECP the morning of November 28, 2022.

It has been reported through the local media that the Provincial Minister of the Environment, Conservation and Parks has directed MECP staff to issue an Order that will require Hamilton to audit its entire sewer system. However, to date no Order has been issued to the City.

Notifications and Communications

The City held a press conference on Tuesday, November 22, 2022 at 4:30 p.m. to inform media and the community about the spill. This was followed by a press conference by Mayor Horwath at 5:15 p.m. the same day. The media was also invited to attend the location of the spill on Wednesday, November 23, 2022 at 11 a.m. where Director Nick Winters, Hamilton Water explained the circumstance that resulted in the spill occurring and the work that was being completed.

On Wednesday, November 23, 2022, Hamilton Water hand delivered letters to the properties that contributed to the spill. A copy of this notification letter has been included as Appendix "D" to Report PW22088. The notification letter was also provided to the Ward Councillor's Office.

A dedicated webpage on the City's website has been launched to ensure that information about the spill is shared as soon as it becomes available. For details, visit: www.hamilton.ca/burlingtonstreetspill.

In addition to the notifications identified above, notifications were provided to the Hamilton Harbour Remedial Action Plan partners and to First Nations. Appendix “E” to Report PW22088 provides a summary of all of the notifications that were made to the community, partners/stakeholders, First Nations, and the media regarding the spill.

Hamilton Water also consulted with Public Health Services regarding any potential health impacts to the community. Due to the location of the spill, and the associated outfall to the natural environment, it is very unlikely that any member of the public would have come into direct contact with the contaminated water. It is also important to note that the outfall in question regularly receives discharges of combined sewage from sewer regulators that are active during wet weather in order to prevent basement flooding within the community.

Collection of Environmental Samples

Hamilton Water’s Environmental Monitoring and Enforcement unit was dispatched to collect samples as part of the spill investigation. Samples were collected of the flow that was entering the storm sewer, and also of the downstream stormwater (collected at a maintenance access hole closest to the storm outfall). It was not possible to collect samples right at the storm outfall as this particular outlet pipe is submerged and was blocked by a docked ship. Provisional analytical results for these samples are included as Appendix “F” to Report PW22088.

The provisional analytical results are indicative of normal residential sewage entering the storm sewer, and there is evidence that the sewage had been diluted by the time that it reached the downstream sample location.

Costs to Date

The total estimated cost of the spill containment and sewer repair/reconfiguration to date is approximately $30,000, excluding staff time. The estimated costs are:

- Excavation and repair/reconfiguration of the sewer - $17,000;
- Onsite vacuuming of combined sewer wastewater to stop the spill - $9,830; and
- Permanent restoration of the road - $3,000

Next Steps

Hamilton Water’s Water and Wastewater Systems Planning staff are in the process of completing a hydraulic analysis of the reconfigured sewers to validate that the repairs made are the most appropriate long-term solution. To assist with this analysis, Hamilton

Water is investigating the feasibility of installing a flow meter and level sensor in the reconfigured sewer to identify whether there is any concern of sewer flooding during wet weather. Until the analysis can be completed, Hamilton Water will closely monitor the

reconfigured sewer during wet weather events. Once it has been verified that the sewer reconfiguration is the appropriate long-term solution, the permanent road restoration can take place.

Hamilton Water is also working to assess the environmental impact of the improper sewer connection, and whether any remediation work is required or practical.

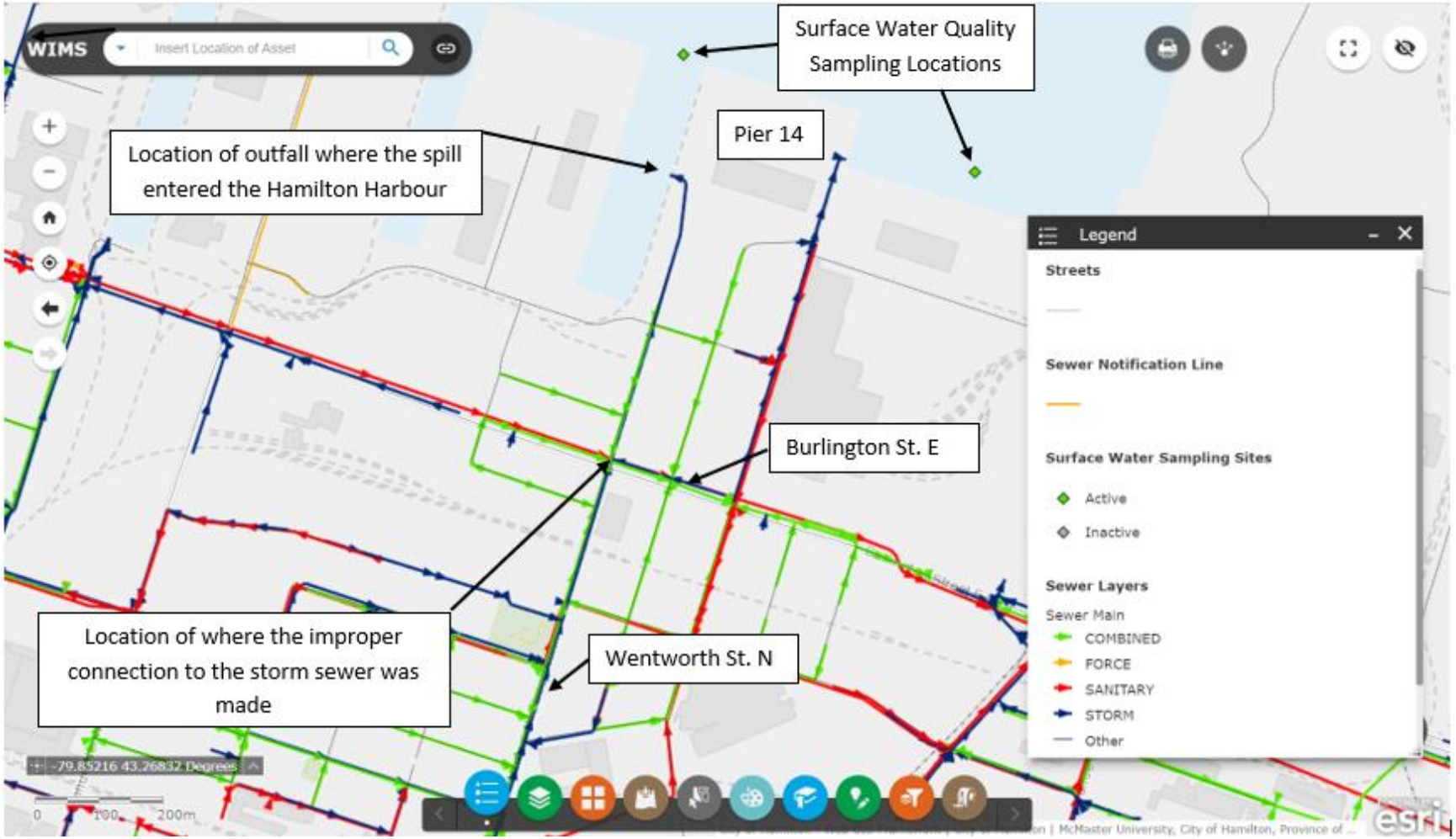
Regardless of whether an order is issued by the MECP or not, Hamilton Water is developing plans to investigate the sewer system so that all stakeholders, can be assured that similar improper sewer connections do not exist elsewhere.

Future updates will be provided to the Public Works Committee regarding any Order issued by the MECP, and Hamilton Water's plan for investigation.

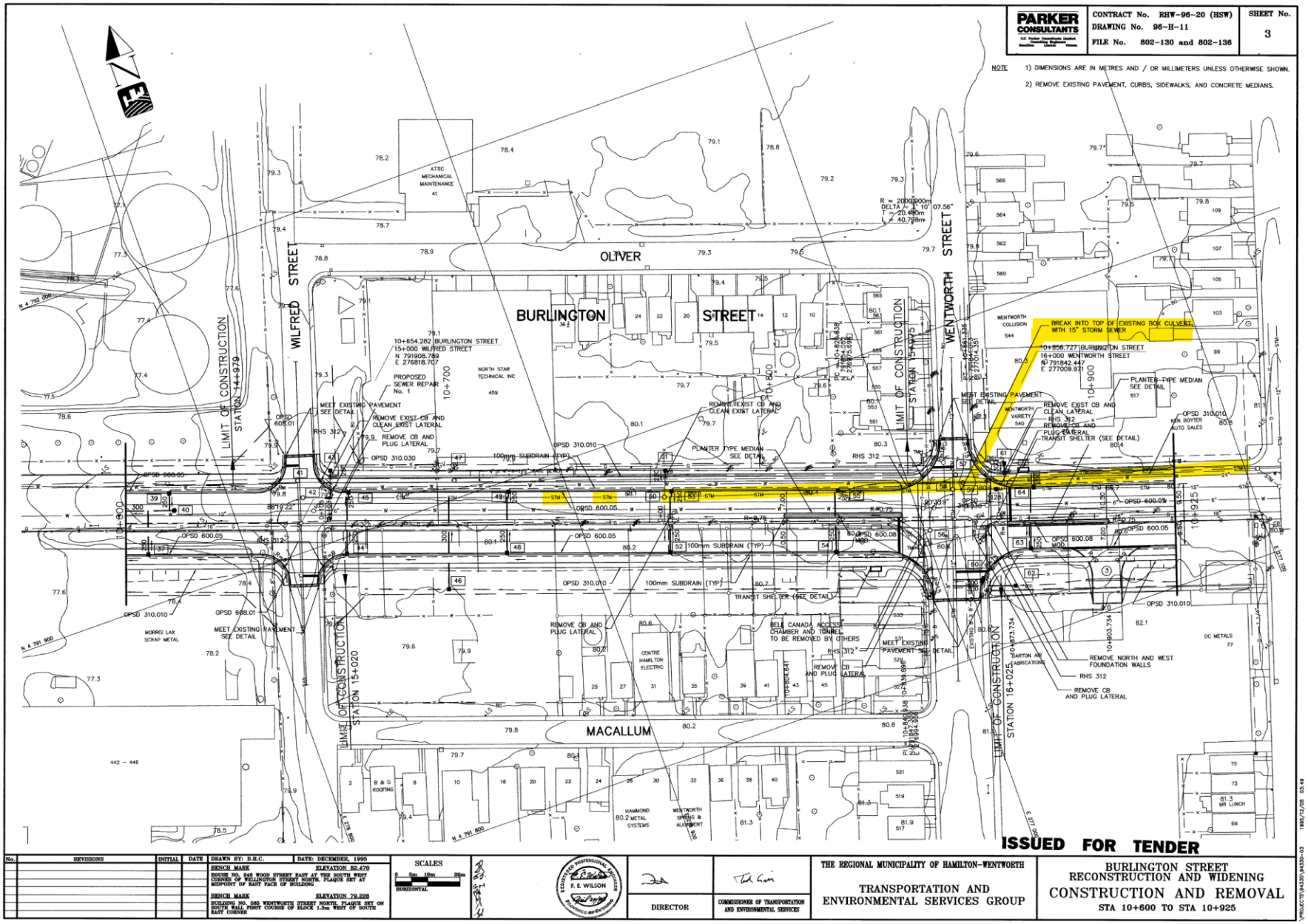
Finally, staff are continuing to identify and review available records related to the 1996 construction project that resulted in the improper sewer connection.

APPENDICES AND SCHEDULES ATTACHED

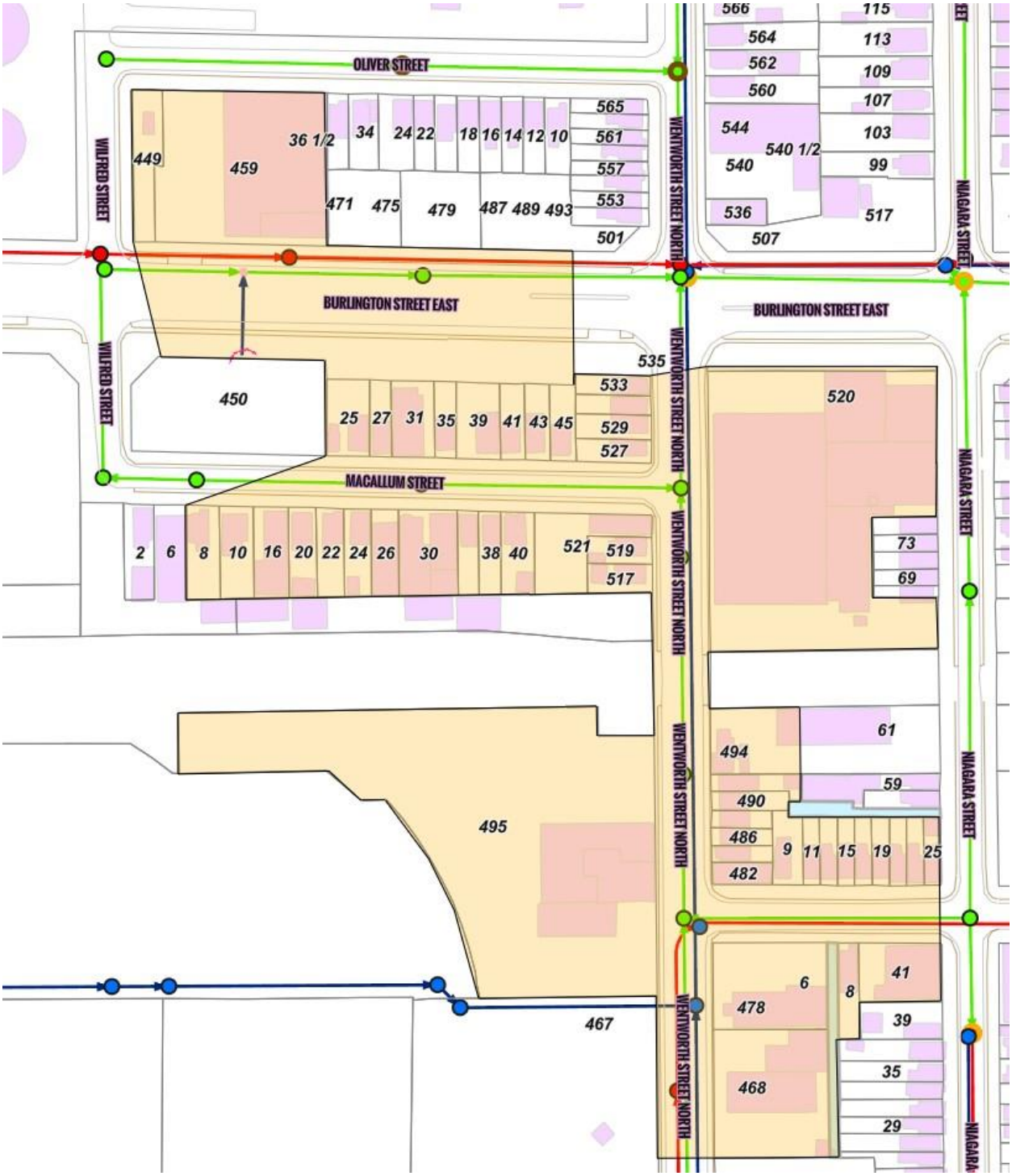
Appendix "A" to Report PW22088 – Map of the Spill Location and Storm Sewer Outfall
Appendix "B" to Report PW22088 – Construction Drawing 96-H-11
Appendix "C" to Report PW22088 – Map Showing Affected Properties
Appendix "D" to Report PW22088 – Hand Delivered Notice to Properties
Appendix "E" to Report PW22088 – Notifications
Appendix "F" to Report PW22088 – Environmental Sample Results


WIMS
Insert Location of Asset
Surface Water Quality Sampling Locations
Pier 14
Location of outfall where the spill entered the Hamilton Harbour
Burlington St. E
Location of where the improper connection to the storm sewer was made
Wentworth St. N
Legend
Streets
Sewer Notification Line
Surface Water Sampling Sites
Active
Inactive
Sewer Layers
Sewer Main
COMBINED
FORCE
SANITARY
STORM
Other
-79.85216 43.26832 Degrees
0
100
200m
esri

Construction Drawing 96-H-11



Properties within the shaded area below were identified as being connected to the combined sewer causing the spill.



City of Hamilton - Hamilton Water
Customer Service & Community Outreach
330 Wentworth Street North, Hamilton, Ontario L8L 5W2
P: 905-546-2489 F: 905-546-2627
www.hamilton.ca/water

November 23, 2022

Dear Owner/Occupant,

RE: BURLINGTON STREET SEWAGE SPILL

On November 22, Hamilton Water maintenance staff uncovered, through their investigation of a separate maintenance issue, a hole in a combined sewer pipe in the area of Burlington Street and Wentworth Street North. This hole led to a sewage spill into a large storm sewer that was discharging into Hamilton Harbour.

Staff have concluded that the section of pipe within the area of Burlington Street East and Wentworth Street North services 50 properties. Your home or business is potentially within the catchment area for the combined sewer tied to this pipe and/or within the vicinity of the impacted outfall. There is no danger to your drinking water supply and there is no action is required from you at this time.

Hamilton Water’s immediate priority upon discovering the leak was to protect the environment and mitigate the spill. Hamilton Water staff who discovered the leak yesterday immediately initiated field investigations and have since taken steps to stop the flow from leaking into the harbour. Crews remain on site with a vacuum truck to contain the leak, and Hamilton Water has initiated a construction project to install a new sewer pipe at this location which will stop the leak. This work is expected to be resolved by 10 p.m. this evening. Further system modeling will be undertaken to determine the most appropriate final resolution.

The City continues to follow the necessary notification protocol to the province and other agencies and have been in contact with the Ministry of Environment, Conservation and Parks as well as other key Hamilton Harbour agencies, stakeholders, and First Nations communities.

After a preliminary investigation, it is believed the hole was put in the combined sewer pipe in 1996. It appears that the contractor at the time was under the impression that all pipes were storm sewers and were designed to directly connect to box culverts leading out to the harbour.

You can expect to see a high level of activity in the area over the next few days with trucks and other vehicles as staff continue work to mitigate the current leak and begin to make the necessary repairs.

More information will be posted on www.hamilton.ca as it becomes available in the coming days. If you have any questions, please contact Hamilton Water’s Community Outreach Educator (coh_water@hamilton.ca).

City of Hamilton
Hamilton Water

Summary of communications regarding the spill and completion of repairs

Tuesday, November 22, 2022

- 12:12 p.m. – Initial notification to the Ministry of Environment Conservation and Parks (MECP) Spills Action Centre (SAC) (Spills Report #1-29OZAO)
- 12:20 p.m. – Notification to the City of Hamilton Spills line
- 4:30 p.m. – Media briefing held by the City, followed by the issuing of a media release (5:45 p.m.)
- 4:39 p.m. – Email notification to Council of the issue
- 5:15 p.m. – Media briefing held by the City with Mayor Horwath, followed by the issuing of a Statement from the Mayor (6:52 p.m.)
- 6:45 p.m.– Notification to the Mississaugas of the Credit First Nation, the Six Nations of the Grand River, and the Haudenosaunee Confederacy Council of Chiefs
- 10:17 p.m. – MECP Request for Information

Wednesday, November 23, 2022

- 8:35 a.m. – Drawings provided to MECP with updates on when the additional information will be available
- 9:10 a.m. – Details of the spill provided to Public Health Services
- 9:20 a.m. – Requested videos sent to MECP
- 10:01 a.m. – Notification to Hamilton Harbour Remedial Action Plan Partners
- 11:00 a.m. – Media event held on site with the Director of Hamilton Water
- 1:12 p.m. – Provisional Sample data provided to MECP (E.coli, nitrate and nitrite)
- 3:14 p.m. – MECP advised on the status of repairs
- 4:09 p.m. – Email update to Council with photos of the hole and 2013 video footage
- Between 5:00 p.m. and 7:00 p.m. – Notification letter hand delivered to residents
- 6:28 p.m. – Public Health Services advised on the status of repairs

- 9:32 p.m. – MECP SAC notified that the reconfiguration was complete, and the spill ended (Spills Report #1-29OZAO) – Public Health Services was also notified

- 10:39 p.m. – Email update to Council that the reconfiguration was complete, and the spill ended.

Thursday, November 24, 2022

- 3:06 p.m. – Email update to Council advising of costs associated with the repair work

Friday, November 25, 2022

- 8:19 a.m. – Resident notification letter sent to the Ward Councillor’s office

- 12:29 p.m. – Provisional Sample Results provided to MECP and PHS (TSS, Ammonia, Ammonium as N, metals and TKN)

- 12:49 p.m. – Notification to the Huron Wendat Nation

- 4:45 p.m. – Email update to Council advising that the webpage for the spill is live, and providing an update on the spill volume calculation timeline and the November 28, 2022 Public Works Committee meeting report

- 5:03 p.m. – Spill Catchment Areas and Properties/Vac-truck log provided to MECP

Monday, November 28, 2022

- 8:00 a.m. – Email update to Council advising them of the estimated spill volume – Estimated spill volume also provided to the MECP

- 10:00 a.m. – Estimated spill volume provided to media partners

Provisional environmental sampling results provided to the MECP on Thursday, November 24, 2022

Parameter	Units	MDL	Lab ID 682905 Location: HJ05E63 RSC0000 STM Sample Date 2022-11-22	Lab ID 682906 Location: HJ05B060 RSC0000 STM Sample Date 2022-11-22
Escherichia coli	MPN/100mL	0	1550000	96000
Nitrate as N	mg/L	0.02	0.76	0.27
Nitrite as N	mg/L	0.01	0.11	0.75

Parameter	Units	MDL	Lab ID 682905 Location: HJ05E063 RSC0000 STM Sample Date 2022-11-22	Lab ID 682906 Location: HJ05B060 RSC0000 STM Sample Date 2022-11-22
Total Suspended Solids	mg/L	0.8	239	17.2
Ammonia + Ammonium as N	mg/L	0.01	20.1	4.01

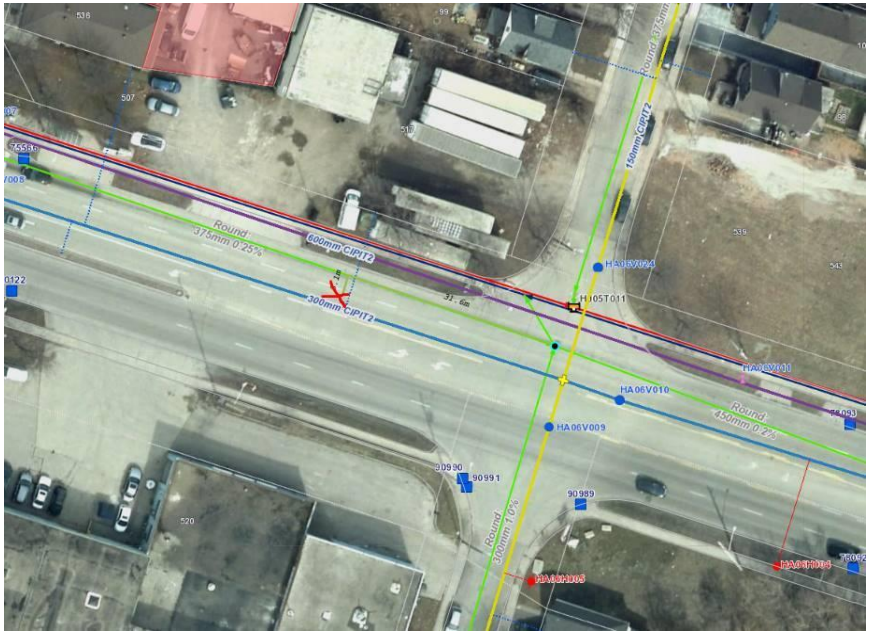
Parameter	Units	MDL	Lab ID 682905 Location: HJ05E063 RSC0000 STM Sample Date 2022-11-22	Lab ID 682906 Location: HJ05B060 RSC0000 STM Sample Date 2022-11-22
Total Kjeldahl Nitrogen as N	mg/L	0.2	34.2	5.9
Aluminum	mg/L	0.002	0.566	0.141
Antimony	mg/L	0.02	<0.020	<0.020
Arsenic	mg/L	0.02	<0.020	<0.020
Barium	mg/L	0.002	0.031	0.049
Beryllium	mg/L	0.0001	<0.0001	<0.0001
Bismuth	mg/L	0.02	<0.020	<0.020
Cadmium	mg/L	0.0005	<0.0005	<0.0005
Chromium	mg/L	0.001	0.004	0.001
Cobalt	mg/L	0.0009	0.0011	<0.0009
Copper	mg/L	0.002	0.038	0.006
Iron	mg/L	0.005	1.23	0.847
Lead	mg/L	0.02	<0.020	<0.020
Manganese	mg/L	0.001	0.113	0.178
Molybdenum	mg/L	0.005	<0.005	<0.005
Nickel	mg/L	0.005	<0.005	<0.005
Phosphorus Total	mg/L	0.01	4.98	1.57
Selenium	mg/L	0.02	<0.020	<0.020
Silver	mg/L	0.005	<0.005	<0.005
Strontium	mg/L	0.005	0.328	0.794
Thallium	mg/L	0.01	<0.010	<0.010
Tin	mg/L	0.02	<0.020	<0.020
Titanium	mg/L	0.001	0.017	0.007
Vanadium	mg/L	0.002	<0.002	<0.002
Zinc	mg/L	0.005	0.149	0.036

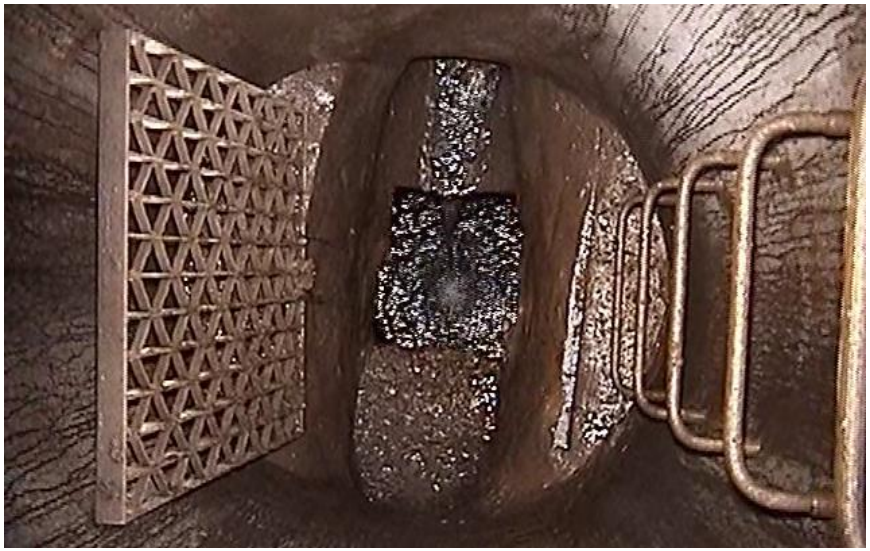
Hamilton

Burlington Street East and Wentworth Street North Sewage Spill

November 28, 2022

How Was This Found?





- 2019: Engineering Services completing inspections for a potential capital project
- November 2022: Hamilton Water asked to investigate a void in a sewer lateral near Burlington Street East, west of Niagara Street
- November 22, 2022: Hamilton Water reviewed a Zoom Camera inspection video made in December 2013 that didn't "look right"
- November 22, 2022: Hamilton Water completed a field investigation that identified the spill

Spill Notification

Initial notification to MECP Spills Action Centre:
Tuesday November 22, 2022 at 12:12 pm
Spills # 1-29OZAO

Notification to City of Hamilton Spills line:
Tuesday November 22, 2022 at 12:20 pm

Hamilton Water's Contractor Onsite for Spill Containment
Tuesday November 22, 2022 at 4:00 pm

Notification to MECP Spills Action Centre regarding the completion of the spill:
Wednesday November 23, 2022 at 9:32 pm
Spills # 1-29OZAO

Catchment Area

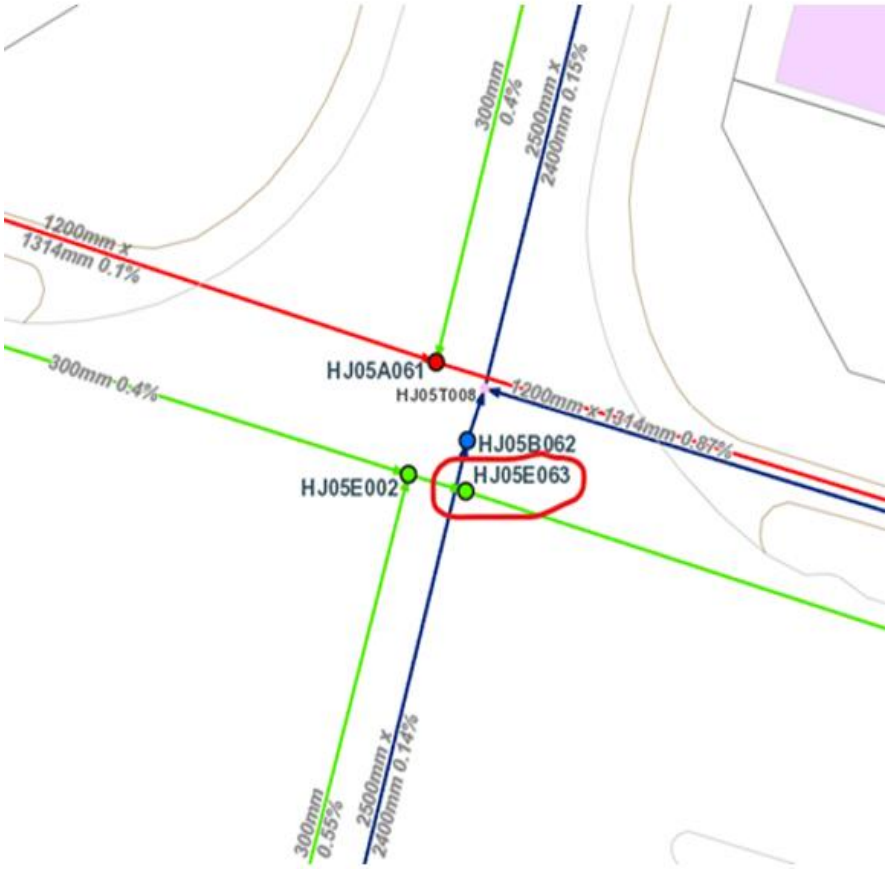
50 properties within the catchment area of the spill:

- Burlington Street East
- Wentworth Street North
- Brant Street
- Macallum Street

Completed Repair & Sewer Realignment

- The repair and sewer realignment started at 8:00 a.m. on November 23, 2022
- The leak was stopped at 9:32 p.m. on November 23, 2022
- The crew completed all works and was offsite at 12:30 a.m. on November 24, 2022

Completed Repair & Sewer Realignment



Pre Repair and Realignment

Post Repair and Realignment

Completed Repair & Sewer Realignment

Door to Door Notification – Catchment Area

City of Hamilton - Hamilton Water
Customer Service & Community Outreach
330 Wentworth Street North, Hamilton, Ontario L8L 5W2
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www.hamilton.ca/water

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After a preliminary investigation, it is believed the hole was put in the combined sewer pipe in 1996. It appears that the contractor at the time was under the impression that all pipes were storm sewers and were designed to directly connect to box culverts leading out to the harbour.

You can expect to see a high level of activity in the area over the next few days with trucks and other vehicles as staff continue work to mitigate the current leak and begin to make the necessary repairs.

More information will be posted on www.hamilton.ca as it becomes available in the coming days. If you have any questions, please contact Hamilton Water's Community Outreach Educator (coh_water@hamilton.ca).

City of Hamilton
Hamilton Water

- Delivered on November 23, 2022
- Hand delivered by Hamilton Water staff
- Delivered to all 50 properties

Sampling Results

- Environmental Monitoring & Enforcement Staff completed sampling on November 22, 2022
- Samples were completed for: Escherichia coli, Conventional Parameters and Metals
- Preliminary sample results available to date show the sample is similar to residential wastewater
- Environmental Monitoring & Enforcement Staff completed post repair sampling at on November 25, 2022

Estimated Costs to Date

- Excavation and repair/realignment of the sewer- $17,000
- Onsite vacuuming of combined sewer wastewater to stop the spill - $9,830
- Permanent restoration of the road (future work) $3,000

Estimated Spill Duration & Volume

- Duration – Approximately 26 Years
- Number of properties - 50
- Used water consumption data for each property
- Total estimated spill volume is 337 million litres (equivalent to 13 million litres per year)

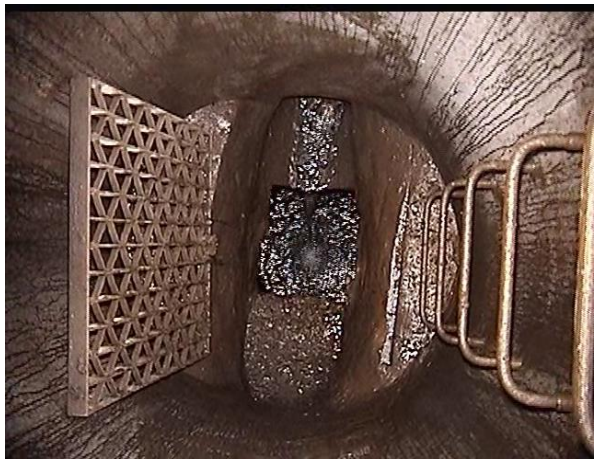
Photo Credit: CP24 www.cp24.com

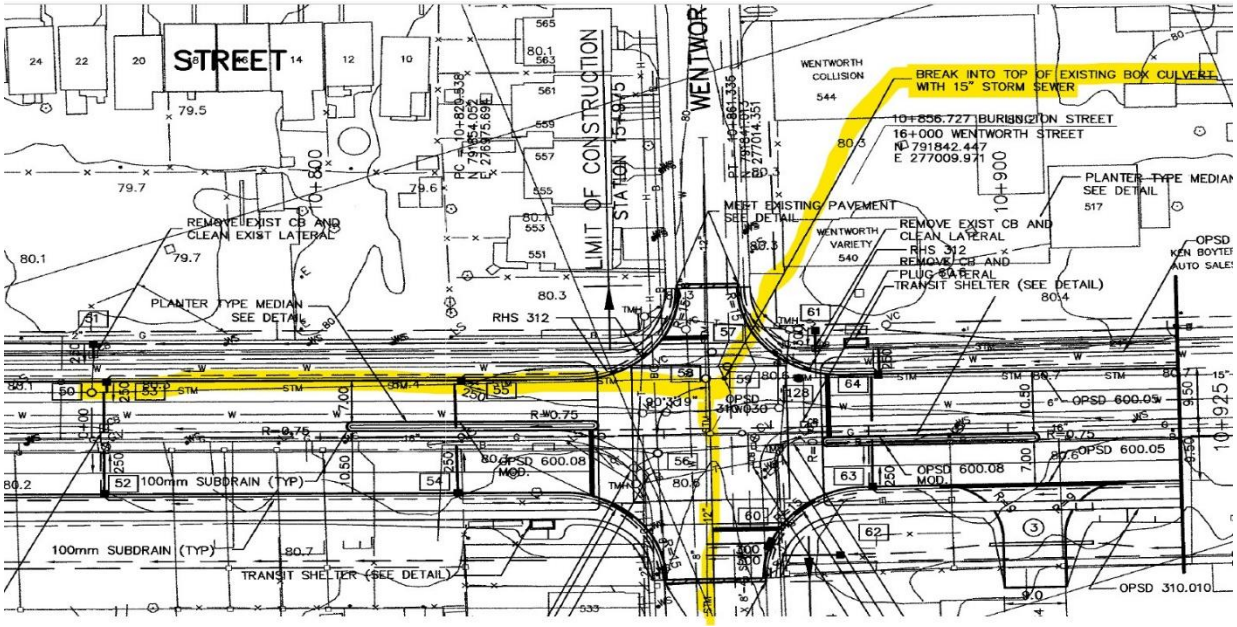
Photo Credit: Joey Coleman www.thepublicrecord.ca

Community and Partner Communications

- Updates to Mayor and Council
- Media Briefings
- Notifications to HHRAP Partners
- Notifications to First Nations
- Notifications to Affected Residents
- Collaboration with Public Health Services
- Notifications to the MECP
- Spill webpage:
  - www.hamilton.ca/burlingtonstreetspill

What Happened and How?





- 1996 Burlington Street Reconstruction & Widening Project
- City of Hamilton – Transportation & Environmental Services Group
- Design drawing 96-H-11_3 has mislabeled sewers – shows a deliberate connection to the storm sewer

Why Was the Spill Not Discovered Sooner?

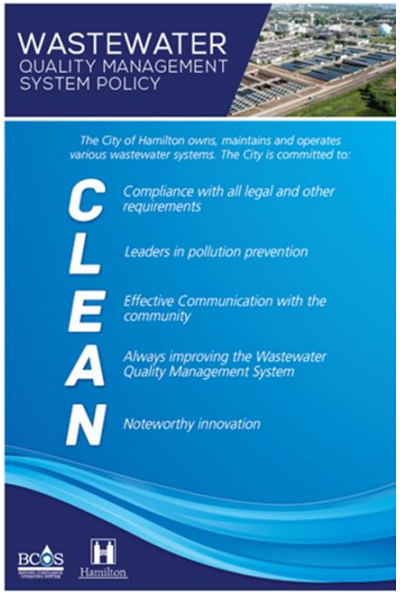
Photo Credit: Peter Vidor www.jjei.com

- Zoom Camera Sewer Inspection Contracts
  - C11-29-04
  - C11-86-10
  - C11-39-15
- Approximately 9,600 videos per year
- PDF Deficiency Reports Provided to City Staff
- Bulk Uploads of Videos
- Contractors not Experienced with City Sewers
- Contractors not Looking for Cross Connected Sewers

Why Was the Spill Not Discovered Sooner?

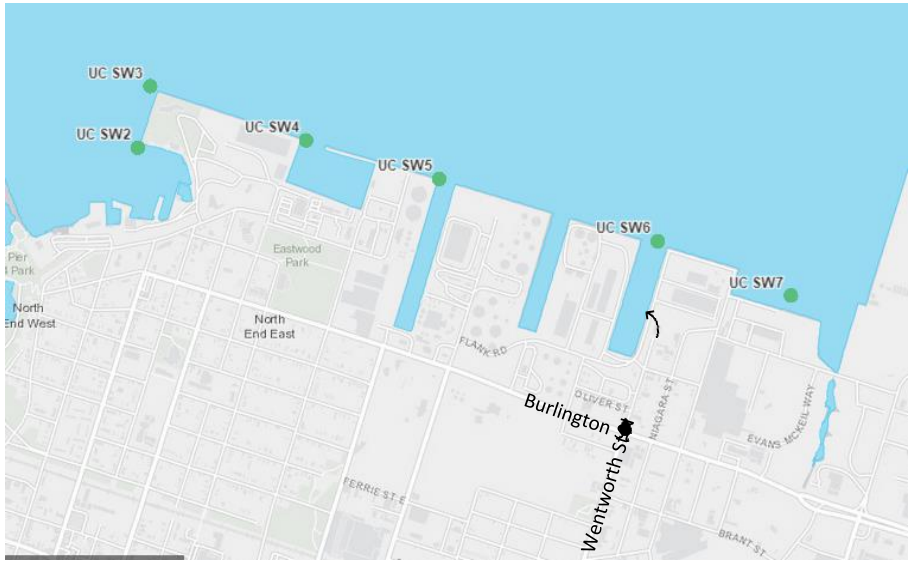
Corrective Actions from Chedoke Creek Spill

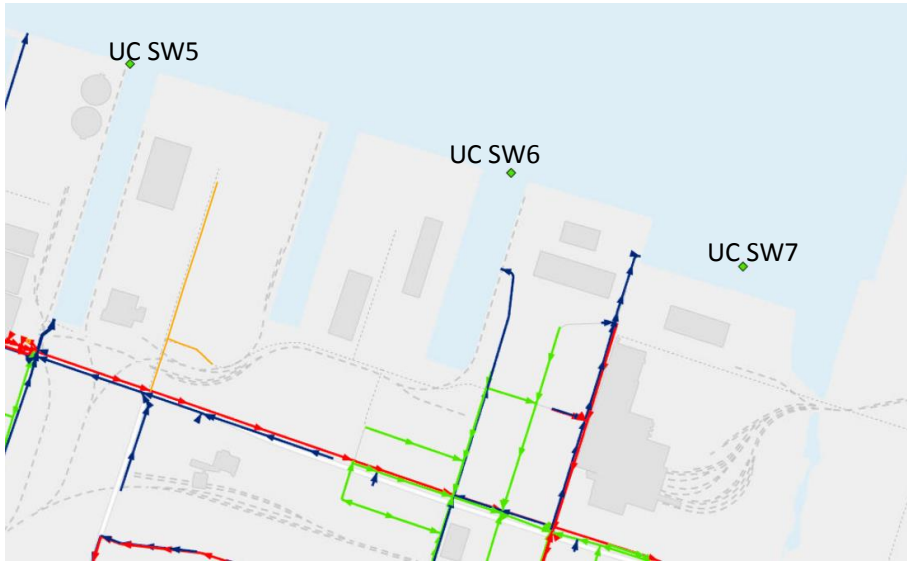
- Bypass gate closed and physically locked
- Computer Programming Error Corrected
- Updated control documents and enhanced operator training
- Enhanced City of Hamilton Outstations Team created
- **Wastewater Quality Management System created**
- **Creation of Surface Water Quality Program**
- **Wastewater Overflows and Bypasses Monitoring website created**
- Chedoke Creek Water Quality Framework Study
- Creation of the Watershed Management Office



Why Was the Spill Not Discovered Sooner?

SURFACE WATER QUALITY PROGRAM: HAMILTON HARBOUR SAMPLE LOCATIONS AT AND UP- / DOWN-STREAM TO WENTWORTH CSO



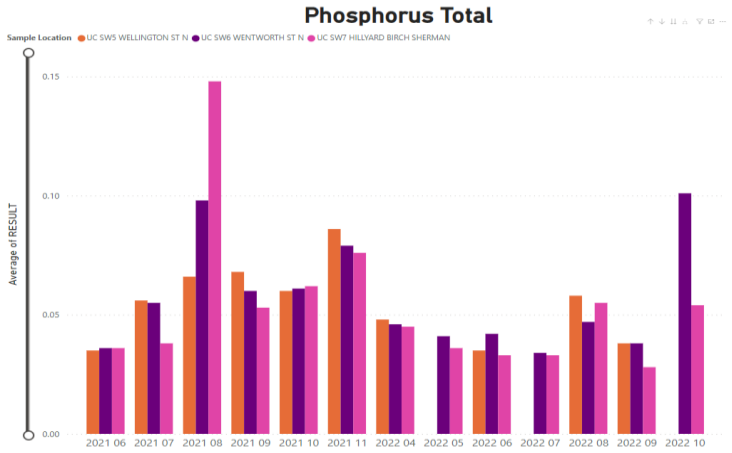


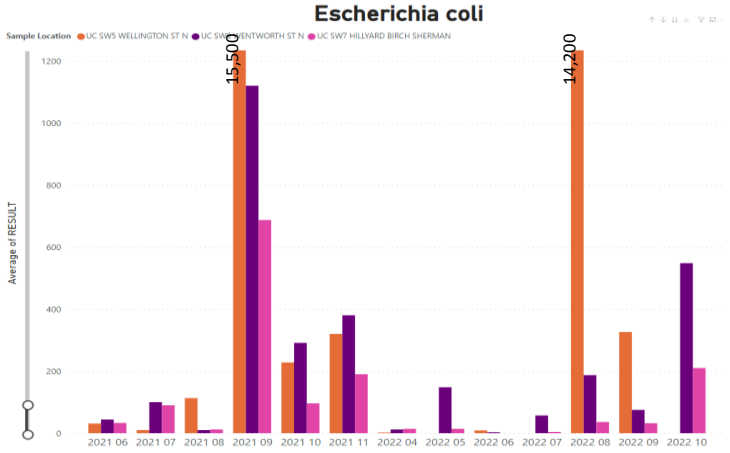
↰ - Wentworth CSO Outfall

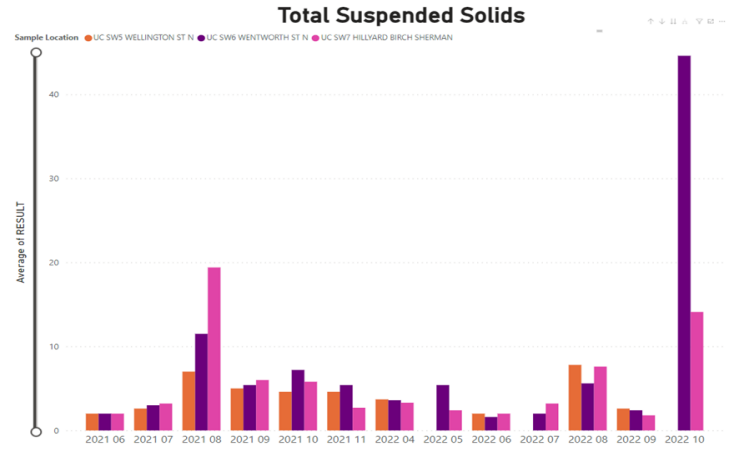
● - Burlington / Wentworth Spill Location

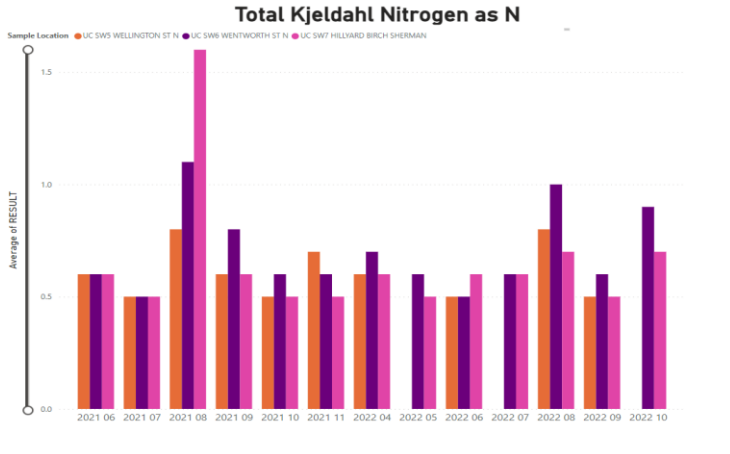
SURFACE WATER QUALITY PROGRAM: SW6 Data

Why Was the Spill Not Discovered Sooner?

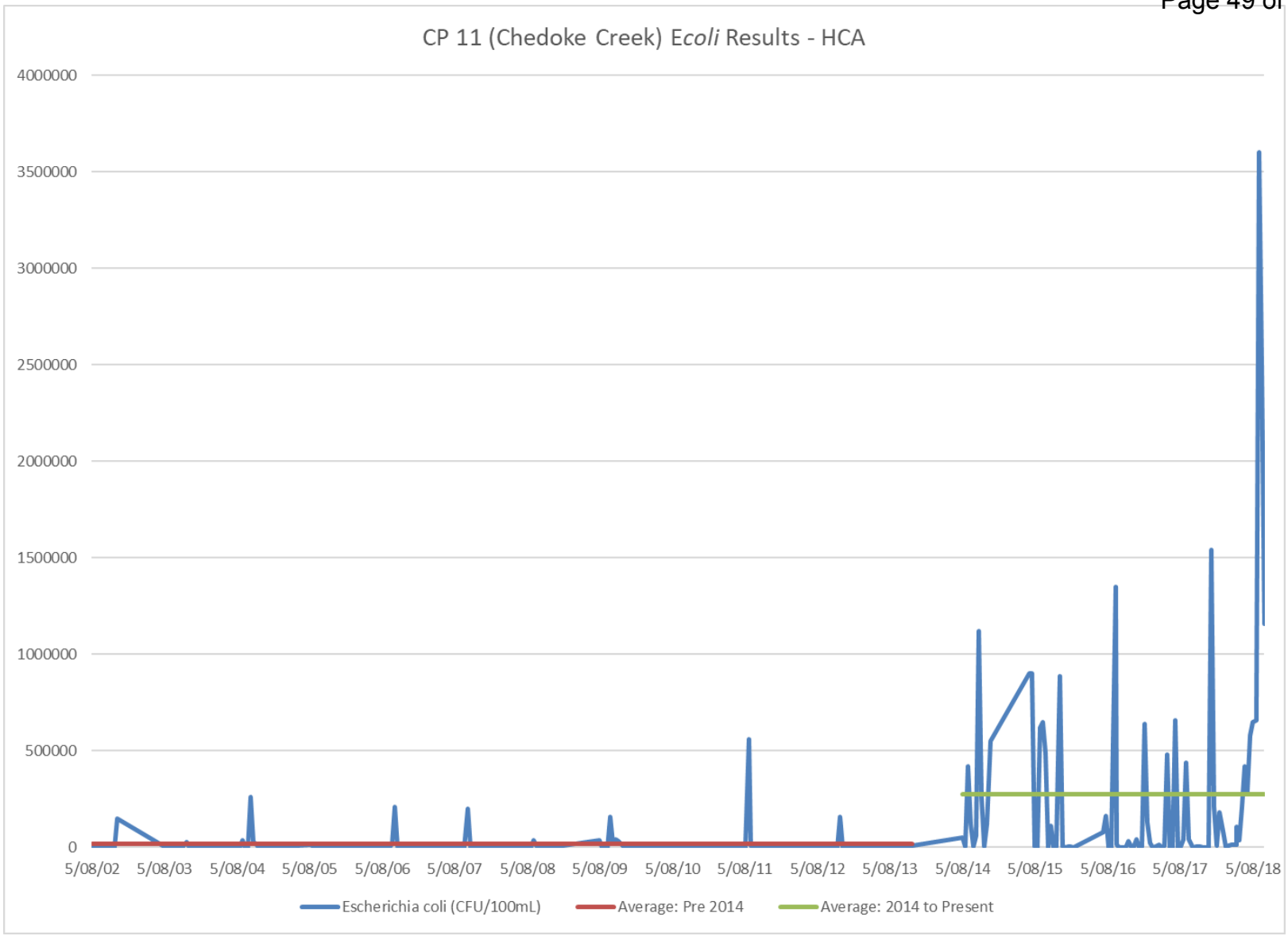




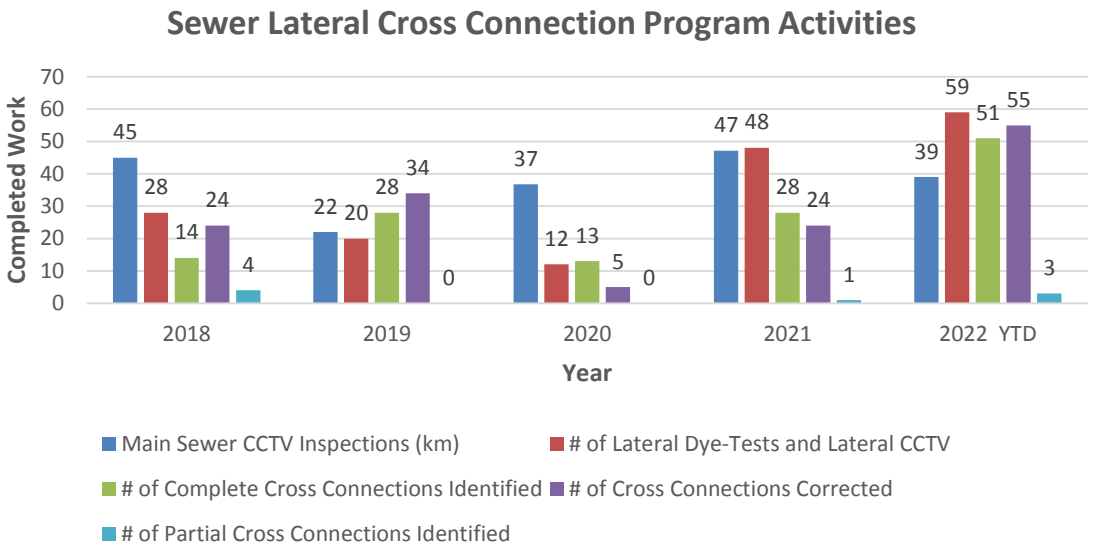




Note: During the Oct 2022 sample event, two (2) tugboats were docking a ship, working up sediment at UC SW6 location.


CP 11 (Chedoke Creek) Ecoli Results - HCA
4000000
3500000
3000000
2500000
2000000
1500000
1000000
500000
0
5/08/02
5/08/03
5/08/04
5/08/05
5/08/06
5/08/07
5/08/08
5/08/09
5/08/10
5/08/11
5/08/12
5/08/13
5/08/14
5/08/15
5/08/16
5/08/17
5/08/18
Escherichia coli (CFU/100mL)
Average: Pre 2014
Average: 2014 to Present

Sewer Lateral Cross Connection Program



Sewer Lateral Cross Connection Program Totals:

- 382 km Storm Sewer surveyed
- 722 Dye Test Investigations completed
- 455 Sewer Lateral Cross Connection Corrections
  = 102.5 million liters of wastewater diverted each year

Next Steps

- Complete hydraulic modelling of the new sewer connection
- Complete permanent restoration of the temporary road cut
- Determine environmental impact and whether remediation is warranted or practical
- Determine and implement appropriate program to assess system to identify issues
- Continue to investigate records related to 1996 capital project


Hamilton

INFORMATION REPORT

TO:	Chair and Members Public Works Committee
COMMITTEE DATE:	November 28, 2022
SUBJECT/REPORT NO:	Provincial Funding to Improve Wastewater and Stormwater in Ontario (PW22010(a)) (City Wide**) (Outstanding Business List Item)**
WARD(S) AFFECTED:	City Wide
PREPARED BY:	Cassandra Kristalyn (905) 546-2424 Ext. 3791
SUBMITTED BY: **SIGNATURE:**	Nick Winters Director, Hamilton Water Public Works Department 

COUNCIL DIRECTION

On February 14, 2022, the Public Works Committee approved the recommendations in Provincial Funding to Improve Wastewater and Stormwater in Ontario (PW22010) (City Wide) which included item (d):

"That should the City of Hamilton's submission under the Ministry of Environment, Conservation, and Parks' funding programs be approved, that staff be directed to report back to the Public Works Committee with a list of the approved projects and a financing strategy for any project costs that are not eligible under the programs."

INFORMATION

On January 27, 2022, the Province of Ontario (Province) announced two new project-based funding programs to assist municipalities to build, upgrade and rehabilitate wastewater and stormwater infrastructure. The City was advised that its total combined funding allocation is $1,819,614 under the:

1. Improving Monitoring and Public reporting of Sewage Overflows and Bypasses Funding Program ($885,936), and

2. Improving Wastewater and Stormwater Discharges in Lake Ontario Funding Program ($933,678).

On February 14, 2022, the Public Works Committee enacted two by-laws authorizing the City to enter into funding agreements with the Province.

On March 31, 2022, the City of Hamilton (City) entered into funding agreements with the Province.

The purpose of this report is to provide a list of projects approved by the Ministry of Environment, Conservation, and Parks (MECP) under each funding program and the financing strategy related to the projects.

1. Improving Monitoring and Public Reporting of Sewage Overflows and Bypasses Program

    a) Funding Available from the Province

The City is eligible for up to $885,936.00 from the Improving Monitoring and Public Reporting of Sewage Overflows and Bypasses Program. All eligible expenses must be submitted via quarterly reporting, with the last report due on March 31, 2024. Expenses incurred after this date will not be eligible for funding.

    b) Objective of the Improving Monitoring and Public Reporting of Sewage Overflows and Bypasses Program

The objective of the the Improving Monitoring and Public Reporting of Sewage Overflows and Bypasses Program is to help municipalities implement and/or make improvements to the municipal monitoring/modelling and public reporting of sewage overflows and bypasses.

    c) Project Details

The approved project for this funding program is the Combined Sewer Overflow (CSO) Facilities Rehabilitation Project. General improvements include the following:

- Replacement and addition of new monitors (flow, level, direction, etc.) at critical overflow locations.
- Addition of flow measurement/detection (velocity-area flow meter and/or level sensors) at 16 new locations.
- Addition of new cameras at critical overflow locations.
- Repairs and modifications required to improve monitoring, performance, reliability including safety enhancements.

- Repairs and modifications required to return each outstation to regular functionality and provide enhanced control and visibility at potential environmental discharge locations.
- Review and assess all signage (or provide new if required) at locations with potential of discharges (overflows or bypasses) of sanitary or combined sewage into the environment. Possible addition of QR codes to signs that direct users to the relevant pages on the City's website.
- Evaluate and provide recommended improvements to the current monitoring, data collection, reporting and information that is available to the public regarding sanitary overflows/bypasses.

d) Funding Strategy

The totally funding required for the CSO Facilities Rehabilitation Project is approximately $4,550,000. The project is to be funded as follows:

Table A - Funding Strategy for CSO Facilities Rehabilitation Project

Funding Stream	Funds Available
Provincial Funding - MECP Improving Monitoring and Public Reporting of Sewage Overflows and Bypasses Program	$885,936*
2023 Rate Budget Request - CSO Facilities Rehabilitation Project ID# 5162166713 (Design and Contract Administration)	$550,000
2023 Rate Budget Request - CSO Facilities Rehabilitation Project ID# 5162367421 (Construction)	$3,114,064**
Total Funding Required	$4,550,000

*Funds from the Provincial funding stream will be reimbursed to the corresponding account supporting the approved project.
** Project expenses that are deemed ineligible and/or that exceed the City's total eligible allocation of $885,936 under the Improving Monitoring and Public Reporting of Sewage Overflows and Bypasses Program. These expenses are funded through the City's 2023 Rate Budget.

For more information on the specifics of the CSO Facilities Rehabilitation Project, please refer to Appendix "A" to report PW22010(a) which provides the second quarterly report for the Improving Monitoring and Public Reporting of Sewage Overflows and Bypasses Program.

2. Improving Lake Ontario Wastewater and Stormwater Discharges Program

a) Funding Available from the Province

The City is eligible for up to $933,678 from the Improving Lake Ontario Wastewater and Stormwater Discharges Program. All eligible expenses must be submitted via quarterly reporting, with the last report due on March 31, 2024. Expenses incurred after this date will not be eligible for funding.

b) Objective of the Improving Monitoring and Public Reporting of Sewage Overflows and Bypasses Program

The objective of the Improving Lake Ontario Wastewater and Stormwater Discharges Program is to make improvements to municipal wastewater and stormwater systems through projects that would lower phosphorus discharges from municipal wastewater and stormwater, reduce the likelihood of sewage overflows and bypasses, and improve the quality of stormwater discharges.

c) Project Details

The approved projects for this funding program are the Targeted Private Disconnection Program and the Regulator Renewal Program.

i) The Targeted Private Disconnection Program details are as follows:

- In areas of the City that have confirmed inflow and infiltration into the sewer system, private sources of inflow into the combined sewer system that contribute to overflow and bypasses during wet weather events will be targeted for disconnection. This can include, but will not be limited to, downspout disconnections and sump pump disconnections.
- The initial focus of this program will begin with the following neighbourhoods before being extended to the rest of the City: Old Dundas, West Mountain, West 18th, Lawsfield & Berrisfield and Beach Boulevard.

ii) The Regulator Renewal Program details are as follows:

- Up to nine (9) critical combined sewer overflow regulators will be replaced or upgraded. A critical sewer overflow regulator is defined as having the ability to result in a direct overflow/spill to the environment during high flows or if the regulator fails.
- Each of the nine (9) regulators are located within manholes and will require individual assessments and designs unique to each location.
- The objective is to renew the existing regulators to achieve a more reliable system with lower maintenance demands.

d) Funding Strategy

i) The totally funding required for the Targeted Private Disconnection Program is approximately $500,000. The project is to be funded as follows:

Table B - Funding Strategy for the Targeted Private Disconnection Program

Funding Stream	Funds Available
Provincial Funding - MECP Improving Lake Ontario Wastewater and Stormwater Discharges Program - Split between the two projects ($466,839 each allocated)	$466,839*
2023 Rate Budget Request - Targeted Private Disconnection Program Project ID# 5162361351	$33,161**
Total Funding Required	$500,000

*Funds from the Provincial funding stream will be reimbursed to the corresponding account supporting the approved project.
** Project expenses that are deemed ineligible and/or that exceed the City's total eligible allocation of $466,839 under Improving Lake Ontario Wastewater and Stormwater Discharges Program. These expenses are funded through the City's 2023 Rate Budget.

For more information on the specifics of the Targeted Private Disconnection Program, please refer to Appendix "B" to report PW22010(a) which provides the second quarterly report for the Improving Lake Ontario Wastewater and Stormwater Discharges Program.

ii) The totally funding required for the Regulator Renewal Program is approximately $466,839. The project is to be funded as follows:

Table C - Funding Strategy for the Regulator Renewal Program

Funding Stream	Funds Available
Provincial Funding - MECP Improving Lake Ontario Wastewater and Stormwater Discharges Program - Split between the two projects ($466,839 each allocated)	$466,839*
2023 Rate Budget Request - Sewer Regulator Rehabilitation/Replacement Project ID# 5162361350	$0**
Total Funding Required	$466,839

*Funds from the Provincial funding stream will be reimbursed to the corresponding account supporting the approved project.
** Project expenses that are deemed ineligible and/or that exceed the City's total eligible allocation of $466,839 under Improving Lake Ontario Wastewater and Stormwater Discharges Program. These expenses are funded through the City's 2023 Rate Budget.

For more information on the specifics of the Regulator Renewal Program, please refer to Appendix "B" to report PW22010(a) which provides the second quarterly report for the Improving Lake Ontario Wastewater and Stormwater Discharges Program.

APPENDICES AND SCHEDULES ATTACHED

Appendix “A” to report PW22010(a) – Second quarterly report to the Province for the Improving Monitoring and Public Reporting of Sewage Overflows and Bypasses Program.

Appendix “B” to report PW22010(a) – Second quarterly report to the Province for the Improving Lake Ontario Wastewater and Stormwater Discharges Program.

Quarterly Report: Improving Monitoring and Public Reporting of Sewage Overflows and Bypasses Program

Quarterly report number and date:	#2 (Sept 23, 2022)
Municipality:	City of Hamilton
Contact person and title:	Mike Christie, Senior Project Manager
Contact email:	Mike.Christie@hamilton.ca
Contact phone number:	905-546-2424 Ext. 6194

Notes:

- Funding must be used to increase municipal implementation of near real-time public reporting of sewage bypass and overflow events.
- Eligible expenses include:
  - Engineering and design work
  - Purchasing of equipment/software (e.g., monitoring devices)
  - Installation costs (e.g., monitoring equipment)
  - Electrical/internet connections
  - Associated capital costs (e.g., access point)
  - Capital upgrading costs (e.g., improved monitoring devices/infrastructure)
  - Signage associated with public reporting of sewage overflows and bypasses (e.g., to support social media – QR code)
  - Other capital expenses related to the development and implementation of monitoring/modelling and public reporting of sewage overflows and bypasses
- Expenses listed above are only considered eligible if they are capital in nature or able to be capitalized based on standard accounting principles. However, engineering, design, or other consultant costs cannot be the significant/sole expenditure. Funding must be used for equipment and construction. Engineering, design, or other consultant costs shall be incidental to that. Municipal staff time and staff costs are not an eligible expense under the Program.
- Eligible expenses do not include any costs (including taxes) for which the Municipality has received, will receive, or is eligible to receive, a rebate, credit, or refund.
- Quarterly report dates are: #1 June 30, 2022; #2 September 30, 2022; #3 December 31, 2022; #4 March 31, 2023; #5 June 30, 2023; #6 September 30, 2023; #7 December 31, 2023; #8 March 31, 2024

Quarterly Report # 1 (June 30,2022) By Municipality: City of Hamilton

Improving Monitoring and Public Reporting of Sewage Overflows and Bypasses Program

Background and Context

Please provide relevant context and background (e.g., current status of monitoring and public reporting of sewage overflow and bypass events in your municipality).

In 2020, the City of Hamilton implemented a real-time monitoring and public reporting of wastewater overflows and bypasses website: Monitoring Wastewater Overflows and Bypasses | City of Hamilton, Ontario, Canada.

- This live map is updated every 15 minutes providing current information for each outfall location. The map will indicate whether there is a current overflow and if an overflow has occurred within the last 48 hours.
- The website also hosts two public facing logs:
  - Historical Wastewater Treatment Plant Bypass Log – Includes date/time, duration, location, type of bypass and volume.
  - Historical Combined Sewer Overflow Log - Includes date/time, duration, location of outfall, type of bypass and volume **if there is flow metering present at the location**.
- The website also has an educational component, explaining why wastewater bypasses and combined sewer overflow events occur, including a video which explains the differences between separated and combined sewer systems, how they work and what happens with the combined sewer system during extreme wet weather: Combined Sewer Overflows in Hamilton

The City of Hamilton currently has 16 combined sewer overflow outfalls and the Dundas Wastewater Treatment Plant tertiary bypass that are unmonitored (no flow metering). These locations have been studied and recommendations have been received through a technical memorandum from AECOM “CSO Outfall Monitoring Feasibility Study” (March 2021) that focuses on the objective of implementing a permanent flow monitoring plan to quantify, using real-time data through the City’s SCADA system, the amount of combined wastewater discharging directly into the environment at the unmonitored outfalls.

The City of Hamilton also received recommendations through the technical memorandum from Hatch “CSO Facilities Assessment” which discusses the findings of the CSO facility inspections and the recommendations to improve the monitoring, performance and reliability of each facility to minimize the potential for bypasses and overflows.

Use of funding

Please provide brief description of how funding will be used (e.g., number of monitors purchased, locations monitored/modelled, cost of monitoring or modelling per location).

General improvements include the following:

- Replacement and addition of new monitors (flow, level, direction, etc.) at critical overflow locations (AECOM Report)
- Addition of flow measurement/detection (velocity-area flow meter and/or level sensors) at 16 new locations.
- Addition of new cameras at critical overflow locations.
- Repairs and modifications required to improve monitoring, performance, reliability including safety enhancements.
- Repairs and modifications required to return each outstation to regular functionality and provide enhanced control and visibility at potential environmental discharge locations.
- Review and assess all signage (or provide new if required) at locations with potential of discharges (overflows or bypasses) of sanitary or combined sewage into the environment. Possible addition of QR codes to signs that direct users to the relevant pages on the City’s website.
- Evaluate and provide recommended improvements to the current monitoring, data collection, reporting and information that is available to the public regarding sanitary overflows/bypasses.

Please see Appendix A – Breakdown of Construction & Engineering Costs for a detailed breakdown of eligible expenses.

Projected Benefits

Quarterly Report # 1 (June 30,2022) By Municipality: City of Hamilton

Improving Monitoring and Public Reporting of Sewage Overflows and Bypasses Program

Please describe how the funding will improve near real-time public reporting of sewage overflow and bypass events. Note: Implementation of near real-time public reporting is required for each municipality receiving funding.

The proposed project will support the overall objective of the funding program: To increase municipal implementation of near real-time public reporting of sewage bypass and overflow events.

- The project will improve our current monitoring/modeling and real-time reporting of these events by the replacement and addition of new monitors that will detect and/or measure flow, level and direction at 16 new locations.
- The addition of cameras at critical overflow points to provide greater visibility of current operational function of the facility.
- Implementation of signage and signage improvements to existing signage at locations with potential discharges (overflows or bypasses), including the addition of QR codes to the signs.
- Replacement of existing monitoring instrumentation to improve reliability and accuracy.
- Enhancements to the current monitoring, data collection, reporting mechanism and information that is available to the public regarding overflows and bypasses through our current website: Monitoring Wastewater Overflows and Bypasses | City of Hamilton, Ontario, Canada.

Expenses

Eligible Expense	Description	Amount
Consultant/Design Costs	Engineering Costs with added 30% contingency	$360,000
Capital Costs	Construction Costs with added 30% contingency	$1,440,000
	Total:	$1,800,000

Reimbursements

Funding allocation:	$885,936.00
Reimbursements requested to date:	$0
Reimbursement requested for this report:	$0
Remaining funding:	$885,936.00

Eligible Expense: The eligible expense as set out in the funding agreement and on page one of this report. Provide additional detail if needed.

Description: A short sentence or paragraph that provides some details of the expense.

Funding allocation: Amount of funding that has been allocated to your municipality by the program.

Reimbursements requested to date: The total amount of reimbursements that have been requested prior to this quarterly report.

Reimbursements requested for this report: The amount of reimbursement requested for this report

Remaining funding: The amount of the funding allocation remaining after reimbursement of all requested reimbursements.

Quarterly Report: Improving Lake Ontario Wastewater and Stormwater Discharges

Quarterly report number and date:	2 – September 23, 2022
Municipality:	City of Hamilton
Contact person and title:	Natalie Carlone, Project Manager Mike Christie, Senior Project Manager
Contact email:	Natalie.Carlone@hamilton.ca Mike.Christie@hamilton.ca
Contact phone number:	(905) 546-2424 Ext.2884 (Natalie) (905) 546-2424 Ext. 6194 (Mike)

Notes:

- Funding must be used to make improvements to municipal wastewater and stormwater systems that discharge to Lake Ontario.
- Eligible expenses include:
    a) Wastewater treatment optimization
        i) Infrastructure upgrades such as instrumentation, pumps, mixers, valves, automation and chemical addition
        ii) Equipment for enhanced sampling and testing
    b) Overflow and bypass reduction
        i) Downspout and sump-pump disconnection programs
        ii) Collection system optimization such as installation of sensors, flow control devices and automation
        iii) Sewer lining and leak repair
        iv) Stormwater separation from combined sewers
    c) Stormwater management
        i) Purchase and installation of stormwater management equipment
        ii) Green stormwater infrastructure installation
        iii) Stormwater pond cleanout
        iv) Collection system optimization such as installation of sensors, flow control devices and automation
        i) Sewer lining and leak repair
    d) Other capital expenses related to improving management of wastewater and stormwater discharges to Lake Ontario
- Expenses listed above are only considered eligible if they are capital in nature or able to be capitalized based on standard accounting principles. However, engineering, design, or other consultant costs cannot be the significant/sole expenditure. Funding must be used for equipment and construction. Engineering, design, or other consultant costs shall be incidental to that. Municipal staff time and staff costs are not an eligible expense under the Program.
- Eligible expenses do not include any costs (including taxes) for which the Municipality has received, will receive, or is eligible to receive, a rebate, credit, or refund.
- Quarterly report dates are: #1 June 30, 2022; #2 September 30, 2022; #3 December 31, 2022; #4 March 31, 2023; #5 June 30, 2023; #6 September 30, 2023; #7 December 31, 2023; #8 March 31, 2024

Quarterly Report # 1 By Municipality: City of Hamilton

Improving Lake Ontario Wastewater and Stormwater Discharges

Background and Context

By today's design standard sewers are separated into sanitary and storm. In older parts of Hamilton sanitary and storm mix in a combined sewer system. The City of Hamilton owns and operates one of the largest and most complex combined sewer systems on the Great Lakes consisting of over 571 km of combined sewer system. During wet weather events sanitary and stormwater volumes can exceed the capacity of the wastewater collection system and the wastewater treatment plant capacity which results in overflows and bypasses into the environment of partially treated or untreated stormwater and wastewater.

Some combined sewer overflow points are located within the collection system and are known as regulators. These regulators are relief structures that are designed to divert wastewater flows from one system to another. During wet weather events, excessive flow is bypassed to receiving waters or to a combined sewage overflow tank. In 2020, the technical memorandum "Combined Sewer Overflow (CSO) Outfall Monitoring Feasibility Study" (AECOM) identified CSO regulators associated with each CSO outfall as either critical, primary, secondary, "through primary" or controlled. A critical CSO regulator is any primary or secondary CSO regulator that has the potential to spill directly to the environment. The other CSO regulators listed do not have the potential to spill directly to the environment and are not considered critical regulators. There are over 170 critical CSO regulator sites in the City and many of these regulators are approaching or exceeded their life expectancy; therefore, they are at risk of structural or mechanical failure. A regulator failure means that a CSO overflow could occur during dry weather flows when the system is not at full capacity or in need of relief.

Use of Funding

Part One – Targeted Private Disconnection Program

- The City will use this funding to develop, manage and run a Targeted Private Disconnection Program in areas of the City that have confirmed inflow and infiltration into the sewer system.
- The initial focus of this program will begin with the following neighbourhoods before being extended to the rest of the City: Old Dundas, West Mountain, West 18th, Lawsfield & Berrisfield and Beach Boulevard. The focus of the Targeted Private Disconnection Program is to mitigate private sources of inflow into the combined sewer system that contributes to overflow and bypasses during wet weather events. This can include, but will not be limited to, downspout disconnections and sump pump disconnections.
- High level cost estimate for implementation of this program is $250,000 for the consultant costs and $250,000 for the labour and equipment to disconnect the private connections.

Part Two – Regulator Renewal Program

- The City intends to use a portion of this funding to replace/upgrade up to 9 combined sewer overflow regulators that have been identified as "critical" (can result in a direct overflow/spill to the environment during high flows or if the regulator fails) and/or in need of repair/replacement. Each of the 9 regulators are located within manholes and will require individual assessments and designs unique to each location.
- The objective is to renew the existing regulators to achieve a more reliable system with lower maintenance demands.
- High level cost estimate for a complete regulator replacement/upgrade is approximately $50,000, including labour and equipment, but excluding design costs. It is estimated that design costs could range from 5-7% for in house design or 8-12% for consultant design.

Projected Benefits

Part One – Targeted Private Disconnection Program

Implementation of the Targeted Private Disconnection Program will reduce the volume of stormwater entering the combined sewer system and reduce the risks of discharges from combined sewer system during wet weathers. This will, in turn, reduce the volume of water making its way to the wastewater treatment plant during wet weather events and reduce the occurrence of overflows and bypasses into Cootes Paradise, Hamilton Harbour and Lake Ontario. Reducing the volume of bypasses and overflows support the objective to improve the management of wastewater and stormwater discharges to Lake Ontario by lowering phosphorus discharges (and other nutrients), and improving the overall quality of stormwater.

Quarterly Report # 1 By Municipality: City of Hamilton

Improving Lake Ontario Wastewater and Stormwater Discharges

Sewer flow monitoring is currently being completed in many of the listed neighbourhoods and will continue throughout this program. The flow data captured by these monitors before, during and after the program will be used to quantify the reduction in rainfall derived inflow and infiltration and the reduction in severe wet weather flows in the combined sewer system. Additionally, combined sewer overflow events and wastewater treatment plant bypass events are monitored in many locations so the reduction in wastewater overflow and bypasses due to the success of the program can be quantified.

Part Two – Regulator Renewal Program

Implementation of the Regulator Renewal Program will help to ensure that preventable dry weather combined sewer overflows (spills) do not occur. Regulators control the amount of flow to a downstream sewer pipe or outfall, and protect infrastructure and properties from flooding (roadways and basements) by providing an outlet for flows in excess of the sewer capacity. Adjustment of regulator settings, proper regulator maintenance and timely renewal are control measures that can ensure optimal system performance. The Regulator Renewal Program will further support the objective of optimal wastewater/stormwater management in the combined sewer network by renewing these aged assets and making improvements where possible.

Expenses

Eligible Expense	Description	Amount
Part 1 - Consultant Expenses	Consultant to develop and execute the Targeted Private Disconnection Program	$ 250,000
Part 1 - Capital Expenses	Labour and equipment to disconnect downspouts and other private connections	$ 250,000
Part 2 - Consultant Expenses	Consultant to assess each combined sewer overflow regulator location and design the regulator upgrade for each location (5% - 12%)	$ 22,500 – $54,000
Part 2 - Capital Expenses	Labour and equipment to upgrade combined sewer overflow regulators	$ 450,000
	Total:	$ 972,500 - $1,004,000

Reimbursements

Funding allocation:	$933,678.00
Reimbursements requested to date:	0
Reimbursement requested for this report:	0
Remaining funding:	$933,678.00

Eligible Expense: The eligible expense as set out in the funding agreement and on page one of this report. Provide additional detail if needed.

Description: A short sentence or paragraph that provides some details of the expense.

Funding allocation: Amount of funding that has been allocated to your municipality by the program.

Reimbursements requested to date: The total amount of reimbursements that have been requested prior to this quarterly report.

Reimbursements requested for this report: The amount of reimbursement requested for this report

Remaining funding: The amount of the funding allocation remaining after reimbursement of all requested reimbursements.

INFORMATION REPORT

TO:	Chair and Members Public Works Committee
COMMITTEE DATE:	November 28, 2022
SUBJECT/REPORT NO:	Feasibility of Testing Soil on City-Owned Property to Assess Risks to Drinking Water (PW22085) (City Wide) **(Outstanding Business List Item)**
WARD(S) AFFECTED:	City Wide
PREPARED BY:	Cassandra Kristalyn (905) 546-2424 Ext. 3791
SUBMITTED BY: **SIGNATURE:**	Nick Winters Director, Hamilton Water Public Works Department

COUNCIL DIRECTION

On November 17, 2021, the General Issues Committee approved the following motion: "That staff be directed to review the feasibility of testing soil on City-owned property, which may come into contact with city drinking water, on a risk-assessment basis, and report back to the Public Works Committee".

INFORMATION

Background:

In August of 2020, during a capital rehabilitation and upgrade project at the Kenilworth water reservoir, soil sample results indicated that the soil covering the concrete reservoir contained various levels of polycyclic aromatic hydrocarbons (PAHs), a group of chemicals which include known carcinogens. As a precautionary measure, the Hamilton Water Division (HW) initiated enhanced water quality testing to ensure that the contaminated soil was not impacting the City's drinking water. No concerns were detected at either the Kenilworth reservoir or any of the other sample locations.

On November 25, 2020, General Issues Committee (Rate Budget) Report 20-020 was approved, and staff were directed to remove the contaminated soil at the Kenilworth Reservoir and replace it with clean fill.

On November 17, 2021, the HDR01 Kenilworth Reservoir Soil Removal and East Cell Upgrades (PW20074(a)) Report was presented to the General Issues Committee which detailed the soil removal/replacement scope. During this meeting, Committee members inquired whether historical soil pollution posed a risk of contamination to any of the other City drinking water reservoirs or drinking water infrastructure. HW routinely tests drinking water at the City's reservoirs, but there is no formal program to test the soils on City-owned property to assess the risks to drinking water. As soil contamination was discovered at the Kenilworth reservoir during a capital project, the question of proactive soil testing at these types of facilities was also posed by Committee.

Analysis:

The City's drinking water infrastructure consists of vertical and linear assets. Vertical assets that store drinking water underground (either partially or fully treated), include the sedimentation tanks and clear wells at the City's Woodward Water Treatment Plant (WTP), and water storage reservoirs across the City. These underground storage tanks are not pressurized and as a result there is a risk of groundwater infiltration if seals and expansion joints are not properly maintained and begin to leak, or if the tanks are otherwise compromised. The City's linear assets include over 2,100 km of buried watermains and more than 146,000 buried water services. However, these linear assets operate under pressure and as a result they are not susceptible to infiltration during normal operation. Through discussions with the City's Public Health Services and Engineering Services Divisions, HW staff determined that soil contamination is prevalent within the City's road allowance, but that the risk to the buried infrastructure is negligible because they are pressurized assets and there are appropriate processes and controls in place to manage any risk. At the same time HW staff determined that it would be a worthwhile exercise to complete a desktop analysis to provide a strategy and cost estimates for evaluating soil conditions at the City's non-pressurized facilities. In addition to presenting the results of the desktop analysis for the soil sampling at non-pressurized facilities, this report also highlights many safeguards and best practices that HW utilizes to mitigate risk to the drinking water system for both pressurized and non-pressurized assets.

HW engaged a third-party consulting firm (Jacobs) to complete the desktop analysis for the development of a strategy to assess soil conditions for the presence or absence of contaminants at 12 City drinking water reservoirs, and at the Woodward WTP sedimentation tanks and clear wells. This desktop analysis provided a budget level cost estimate, the assessment framework and estimated level of effort, along with aerial imaging of the subject facilities with proposed sampling locations. The report from Jacobs is attached as Appendix "A" to report PW22085 and the key points are summarized below:

1. Methodology for Strategy Development and Cost Estimate for Evaluating Soil Conditions at 12 City Reservoirs and at the Woodward WTP Sedimentation Tanks and Clear Wells

As outlined in Appendix "A" to report PW22085, the overview of the proposed sampling program includes the following:

- Estimate the surface area of each subject facility.
- Consider regulations and policies applicable to the proposed soil quality evaluation.
- Develop a conceptual site model (CSM) based on existing information/data, including consideration of principles used for the Kenilworth Reservoir soil management program and definition of Contaminants of Concern (COCs) and mobility properties.
- Determine information/data gaps.
- Recommendations for soil sampling to assess the presence or absence of impacts relative to the applicable Ministry of Environment Conservation and Parks (MECP) standards.
- Completion of the Assessment of Past Uses (AOPU) in accordance with O. Reg 406/19 On-Site and Excess Soil Management, to identify potential COCs based on past uses in the area.
- Prepare a schedule, budget level cost estimate, and details for each site such as sample collection methodology, analytical requirements, and reporting.

2. Budget Level Cost Estimate for Evaluating Soil Conditions at 12 City Reservoirs and at the Woodward WTP Sedimentation Tanks and Clear Wells

Appendix "A" to report PW22085 includes Table 1 - Desktop Cost Estimate of Soil Conditions at 12 City Reservoirs and at the Woodward WTP Sedimentation Tanks and Clear Wells. The cost estimate for sampling and analysis all 14 proposed subject facilities was $135,288 with a $14,000 contingency. The table was populated by each individual site with estimates on:

- Size of infrastructure;
- Estimated soil volume;
- Preliminary sampling and analysis details (number of samples, depth of sample, chemical analytes, etc.);
- Labour costs for screening level AOPU including Eco-Log Eris report;
- Contingency/provisional scope item associated with additional analytical or background analysis if required.

3. Limitations and Assumptions for Strategy Development and Cost Estimate for Evaluating Soil Conditions at 12 City Reservoirs and at the Woodward WTP Sedimentation Tanks and Clear Wells

- The cost estimate and associated level of effort is for the initial baseline soil sampling. A more detailed AOPU for each location may reveal additional sampling needs.
- The proposed sample locations are based on aerial imagery and assumed facility limits. The number of samples may change pending the receipt of additional background information such as historical drawings and/or geotechnical reports.
- Any work to be performed as part of this soil sampling strategy is to be conducted under the supervision of a Qualified Person as defined under regulation O. Reg 153/04.
- Utility locates are not included in the cost estimate.

Safeguards and Best Practices to Mitigate Risk to the Drinking Water System:

The City has many safeguards in place to protect drinking water assets, pressurized and non-pressurized. Appendix “B” to report PW22085 attached to this report details the safeguards and best practices that are employed to mitigate risk to the drinking water system, Table 1 is a high-level summary of the details that are provided in Appendix “B” to report PW22085. Note that while this list is comprehensive, it is not an exhaustive list of all the programs, procedures, and practices employed by HW to protect the City’s drinking water quality.

Table 1 - Summary Safeguards and Best Practices to Mitigate Risk to the Drinking Water System

a) Managing and Maintaining Pressure in the Water Distribution System	Pressurized assets like watermains are less vulnerable to contamination. The internal pressure is managed and maintained through a combination of gravity fed assets, pumping stations, pressure tanks, various types of valves and the Supervisory Control and Data Acquisition System (SCADA).

b) Pressure Transient Mitigation and Monitoring	To assist with documenting the frequency and magnitude of pressure transient events, the City completes pressure monitoring utilizing pressure data loggers. The generation of this high-quality pressure data helps to determine the effect of routine operational practices on the distribution system, such as impact of hydrant operations, pump start-up/shut down and valve closing speed, among others.
c) Backflow Prevention Bylaw	The Prevention of Backflow into the Water Distribution System of the City of Hamilton (By-Law No. 10-103) ensures that through the installation of a backflow prevention device, the drinking water quality and distribution system is protected from contaminants from industrial, commercial, institutional and multi-residential properties should backflow conditions occur.
d) Proactive Leak Detection	Efforts to reduce distribution system leakage are beneficial not only from a water conservation standpoint, but to mitigate the potential for contaminant intrusion into the potable water supply. To date, the City has successfully proactively detected approximately 332 public and private leaks.
e) Drinking Water Quality Management System (DWQMS)	Drinking water contamination mitigation and intervention measures are well documented and exercised through the DWQMS.
f) Water Quality Sampling	To ensure the production and distribution of safe drinking water, the City completes grab sampling, such as discrete samples representing water characteristics at a particular time, and continuous sampling. Samples are collected from approximately 111 locations in the distribution system every month, and more than 55,000 laboratory tests are completed annually.
g) Ministry of Environment, Conservation and Parks (MECP) Watermain Disinfection Procedure	The Ministry of Environment, Conservation and Parks (MECP) Watermain Disinfection Procedure is a tool that outlines a risk management approach to categorize watermain breaks based on the potential for contamination. The procedure sets minimum disinfection requirements to minimize the potential for drinking water health hazards during emergency or unplanned repairs due to watermain and/or appurtenance failure.

h) Procedures for Shutting Down and Recharging Watermains	The City's internal procedure Isolation and Recharging of Watermains (PW-WW-DC-WD-P-011-006) incorporates the requirements of the MECP Watermain Disinfection Procedure while shutting down and recharging watermains. Prior to the watermain shutdown, the licensed operator performing the processes will ensure that there is an air gap to ensure no back siphonage and minimize potential contamination to the drinking water supply.
i) Excess Soils Regulation O. Reg 406/19 On-Site and Excess Soil Management	With the introduction of O. Reg 406/19 On-Site and Excess Soil Management which came into effect Jan 1, 2021, the rules and regulations around managing and re-using excess soils were strengthened to facilitate local beneficial reuse while protecting human health and the environment.
j) Geotechnical Investigation	For the construction of new roads and infrastructure within the right-of-way, such as underground utilities, geotechnical investigation is completed to determine the type of soil and soil conditions. The samples are assessed through laboratory testing, soil classification, estimated permeability and soil chemical analysis.
k) Spills Response	The City has 24 hours a day, 7 days a week Spills Reporting Line and Spills Response Team who co-ordinate with in house staff and qualified contractors to promptly respond to spills and do everything practicable to prevent and eliminate the negative effects from a spill, including clean up and remediation.
l) Reservoir Cleaning & Inspection Program	The City of Hamilton maintains a regular schedule and inspection of all drinking water storage facilities, including in-ground reservoirs which help to ensure that any deficiencies requiring repairs are addressed before they become significant enough to adversely impact water quality.
m) Water Quality Trending and Data Review	Water quality trending allows us to identify any potential decline in water quality or instability in the distribution system. Identifying poor water quality indicators enables us to request pre-emptive flushing in areas of concern. Part of this process involves creating warning limits that serve as internal water quality indicators, including elevated heterotrophic plate counts and high ortho-phosphate results. In the event of elevated results, due diligence resampling takes place to help identify next steps.

n) Annual MECP Drinking Water System Inspections	The Ministry of Environment, Conservation and Parks (MECP) has a comprehensive annual inspection program to help assure the public that owners and operators of drinking water systems (DWS) and owners of laboratories are fulfilling their legislated obligations. Inspections of water systems focus on source, treatment, and distribution components as well as management practices.

Conclusions and Next Steps:

Through discussions with the City's Public Health Services and Engineering Services Divisions, HW staff have determined the risk from contaminated soils to the City's buried linear infrastructure is negligible because they are pressurized assets and there are appropriate processes and controls in place to manage any risk.

HW staff have also identified that there is some risk from contaminated soils to the City's vertical assets that store drinking water underground (either partially or fully treated), including the sedimentation tanks and clear wells at the City's Woodward Water Treatment Plant (WTP), and 12 water storage reservoirs across the City. These underground storage tanks are not pressurized and as a result there is a risk of groundwater infiltration if seals and expansion joints are not properly maintained and begin to leak, or if the tanks are otherwise compromised.

HW's consultant (Jacobs) has developed recommendations for a strategy to assess soil conditions for the presence or absence of contaminants at the 12 drinking water reservoirs, and at the Woodward WTP sedimentation tanks and clear wells. The estimated costs for this assessment are $149,228. HW staff have included these costs in the 2023 Water, Wastewater and Storm Rate Budget, and intend to initiate this study once the budget has been approved. If any contamination is detected as a result of this study, HW staff will report back to Committee and also advise of any required actions.

APPENDICES AND SCHEDULES ATTACHED

Appendix "A" to Report PW22085 – Strategy Development and Cost Estimate for Evaluating Soil Conditions at 12 City Reservoirs and at the Woodward WTP Sedimentation Tanks and Clear Wells

Appendix "B" to Report PW22085 – Safeguards and Best Practices to Mitigate Risk to the Drinking Water System

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April 1, 2022

Hugh Skinner
Project Manager – Water & Wastewater Infrastructure Management
Capital Delivery – Asset Management Section
100 King Street West, Suite 900,
Hamilton, Ontario

Subject: Strategy Development and Cost Estimate for Evaluating Soil Conditions at Twelve City reservoirs and at the Woodward WTP Sedimentation Tanks and Clear Wells.

Dear Mr. Skinner,

This report is being submitted in response to the City of Hamilton's (City's) invitation letter dated February 9, 2022, which requested an initial desktop analysis to develop a sampling, analysis, and recommended strategy to assess soil conditions (presence or absence of contaminants) at twelve City reservoirs, and at the Woodward Water Treatment Plant (WTP) sedimentation tanks and clear wells. This also includes a budget level cost estimate to complete the recommended next steps as presented in this letter.

Enclosed is our initial assessment. Attachment 1 is the budget level cost estimate which includes assessment framework and the estimated level of effort. Attachment 2 includes aerial imaging of the subject facilities along with proposed initial assessment sampling locations to assess for the presence or absence of potential contaminants of concern.

1. Methodology

As outlined in Jacobs proposal dated February 25, 2022, the review of background information which was included with the City of Hamilton letter of invitation and completed as part of this initial strategy development and overview of next steps includes the following:

- Estimating the surface area of each reservoir from available aerial imagery.
- Consideration and interpretation of regulations and policies that would be applicable to the proposed soil quality evaluation over the reservoir areas as a potential next step.
- Development of preliminary conceptual site model (CSM) based on existing information/data including consideration of principles and assumptions used for the Kenilworth Reservoir soil management program, and definition of Contaminant of Concern (COCs) and mobility properties.
- Determination of information/data gaps.

- Preliminary recommendations for soil sampling of fill overlaying the reservoirs to assess for the presence or absence of impacts relative to the applicable MECP Standards, including methodology.

- Development of additional recommendations for next steps, likely including:

    - Recommendation for completion of Assessment of Past Uses (AOPU) in general accordance with Ontario Regulation (O. Reg.) 406/19 (MECP 2019) following the MECP document titled Rules for Soil Management and Excess Soil Quality Standards (Soil Rules) (MECP 2020). The goal of the AOPU is to identify the potential COCs that are considered most likely to have the potential to affect subsurface soil or groundwater quality based on past uses in the area.

    - Preparation of schedule and budget level cost estimate for completing the recommended next steps.

    - Preparation of a letter of opinion summarizing in tabular form (Table 1) basic details for each site such as area, number of initial samples recommended, sample collection methodology, analytical requirements, and reporting.

1.1 Budget Level Cost Estimate

Table 1 as provided in Attachment 1 is the basis of work for this desk top assignment. The table has been structured by each individual site, with estimates on: size of infrastructure, estimated soil volume, preliminary sampling details (number, chemical analysis), labour costs for screening level AOPU including Eco-Log Eris report and contingency/provisional scope item costs associated with additional analytical or background information analysis (if required). Background information provided as part of City's invitation letter was used to calculate the approximate surface areas of the 14 tanks and reservoirs. A depth of 1 m was used for soil cover thickness which matches the depth observed at the Kenilworth Reservoir. The 1m soil depth expectation is an assumption for the sites listed in this report and it is recommended that the COH carry a higher than normal budget contingency in the event greater soil depths and increased sampling is required.. Approximate soil volumes were calculated using guidance from Ontario Regulation (O. Reg.) 406/19 (MECP 2019) and following the Ministry of Environment, Conservation and Parks (MECP) document titled Rules for Soil Management and Excess Soil Quality Standards (Soil Rules) (MECP 2020).

Sample frequency was determined as 1 in 200 m^3 based on an in-situ soil sampling scenario. Sample numbers were initially calculated using this frequency to evaluate approximately how many samples would be needed if the soil was sampled at a frequency in accordance with O. Reg 406/19 necessary to support future removal and the development of a soil management plan. Given that the goal of this initial phase of sampling is to first determine if there are exceedances or not relative to the MECP *Table 3 Full Depth Generic Site Condition Standards in a Non-Potable Groundwater Condition* for industrial/commercial/community (Table 3 SCS), a reduced initial baseline level of sampling is proposed as outlined in Table 1. The reduced sample number set is proposed to be used as an initial presence/absence investigation. Pending analytical results, further delineation may or may not be required.

Chemical analyses proposed for the sites include the primary COCs required as per O. Reg 406/19 including Petroleum Hydrocarbons (PHC's), Poly Aromatic Hydrocarbons (PAHs) and Metals and Inorganics. As part of the initial assessment of each site, and with the goal of better understanding

potential issues of environmental concern or interest in the area that could potentially negatively impact soil or groundwater quality in the vicinity of the reservoirs, an Ecolog Eris Report allowance has been carried for each site, along with labour to perform a limited screening level AOPU. A contingency and provisional items budget for additional analytical testing and labour was included if preliminary findings warrant supplementary sampling or further historical information evaluation.

Sample collection methodology for this initial phase of work to assess for the presence or absence of impacts is expected to be completed by hand tools based on our experience at the Kenilworth Reservoir related to soil depths and structural/weight restrictions on top of infrastructure. Hand tools would be limited to non-powered equipment such as a shovel or trowel, which would be decontaminated between each use. Standard QA/AC procedures would also be applied to the sampling program such as field duplicates.

2. Recommendations

Based on the findings outlined in this letter, the following general recommendations are provided for the City's consideration:

- Review the findings, recommended next phases and budget level cost estimate to evaluate soil conditions at the fourteen City facilities outlined in Table 1 with applicable internal City Stakeholders to determine if/how they wish to proceed with next steps.

- Subject to City Management/Stakeholders concurrence to proceed, formalize the scope, budget level cost estimate and schedule to proceed with some or all the recommendations outlined in this letter and Table 1, which include:

    - Completion of initial baseline soil sampling for the primary COCs required as per O. Reg 406/19 including Petroleum Hydrocarbons (PHC's), Poly Aromatic Hydrocarbons (PAH's) and Metals and Inorganics at all sites using hand sampling equipment to assess for presence or absence of impacts relative to applicable MECP Standards. The number of soil samples initially proposed per site ranges from 5 to 20 based on study area and associated details as outlined in Table 1;

    - Perform a limited initial AOPU for each site, including completion of a site visit, obtaining an Ecolog Eris Report to understand details regarding publicly available records and information of potential environmental interest for each site that could potentially negatively impact soil or groundwater quality in the vicinity of the reservoirs

- Depending on the findings and recommendations from the proposed initial baseline soil sampling and desktop evaluation at each site, consider if subsequent follow-on work is required or not. Pending results, priority ranking with regards to risk for each site or between sites could be applied.

- If it is determined that soil excavation and removal is required, any soil excavated over 100 m^3 will need a Soil Management Plan (SMP) per O.Reg. 406/19 SMP. This effort can be scaled to fit site needs and be provided as a provisional or additional scope item as needed.

3. Limitations and assumptions

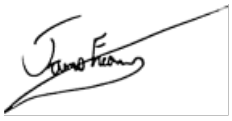
- Cost proposal and associate level of effort is for initial baseline soil sampling. A more detailed AOPU for each location may reveal additional sampling or chemical characterization needs.
- Proposed sample locations are based on aerial imagery and assumed facility limits. Locations and number of samples may change pending receipt of additional background information such as record drawings or geotechnical reports.
- Work performed as part of this strategy development was conducted under the supervision of a Qualified Person (Environmental Site Assessment) as defined under regulation 153/04.
- Utility locates are not included in the cost estimate. It is assumed that all samples will be collected manually without the use of power tools, as was done at the Kenilworth Reservoir.

4. Closing

We trust that this letter meets with your needs. Please feel free to contact Jamie Freeman at 289-308-7311 or Jamie.Freemam@jacobs.com or James Sprenger at 416-419-4556 or james.sprenger@jacobs.com.

Sincerely,

Regards,



James Sprenger, QPRA

Jamie Freeman, C.E.T, EP

Kurt Hanson, M.E.S., P.Geo, QPESA

Copies to: Mike Zantingh, SPM-Capital Delivery

Attachment 1
Cost Estimate

Table 1 - Desktop Cost Estimate of Soil Conditions at twelve City reservoirs and at the Woodward Water Treatment Plant (WTP) Sedimentation Tanks and Clear Wells

Item	Station ID	Description	Address/Location	Area (m^2)	Volume[b] (m^3)	O.Reg 406/19 Sampling Frequency	Initial No. of Soil Samples[c]	Chemical Analysis[d]	Screening Level Assessment of Past Uses (Labour)	ECOLOG ERIS Report (Expense)	Soil Sampling (Labour)	Laboratory Testing (Expense)	Subtotal for Location (Labour + Expenses)	Contingency
1	HDR00	Lee Smith Reservoir - Mineral Springs Rd- Ancaster	445 Sulphur Springs Rd, Ancaster	125	125	5	5	PHCs, PAHs, Metals and Inorganics	$2,140	$1,200	$3,315	$1,030	$7,685	$1,000
2	HDR02	Hillcrest Reservoir	7 Hillcrest Ave, Hamilton	9200	9200	46	15	PHCs, PAHs, Metals and Inorganics	$2,140	$1,200	$4,395	$3,090	$10,825	$1,000
3	HDR05	Stonechurch/Garth St	325 Stonechurch Rd W, Hamilton	37,000	37,000	110	20	PHCs, PAHs, Metals and Inorganics	$2,140	$1,200	$4,395	$4,120	$11,855	$1,000
4	HDR07	Highland Road	293 Highland Rd W, Stoney Creek	3100	3,100	16	5	PHCs, PAHs, Metals and Inorganics	$2,140	$1,200	$3,315	$1,030	$7,685	$1,000
5	HDR10	Fifty Road- Water Reservoir	7 Reservoir Park Rd W, Stoney Creek	480	480	5	5	PHCs, PAHs, Metals and Inorganics	$2,140	$1,200	$3,315	$1,030	$7,685	$1,000
6	HDR11	Woodley Lane Reservoir	4 Woodleys Lane, Hamilton	2000	2000	10	6	PHCs, PAHs, Metals and Inorganics	$2,140	$1,200	$3,315	$1,236	$7,891	$1,000
7	HDR18	Garner Rd & - Glancaster Rd	1107 Garner Road East, Hamilton	5700	5700	29	10	PHCs, PAHs, Metals and Inorganics	$2,140	$1,200	$3,315	$2,060	$8,715	$1,000
8	HDR1B	Greenhill Ave	850 Greenhill Ave, Hamilton	22,200	22,200	78	20	PHCs, PAHs, Metals and Inorganics	$2,140	$1,200	$4,395	$4,120	$11,855	$1,000
9	HDR1C	Dewitt/Ben Nevis Drive	29 Ben Nevis Drive, Stoney Creek	5000	5000	25	10	PHCs, PAHs, Metals and Inorganics	$2,140	$1,200	$3,315	$2,060	$8,715	$1,000
10	HDR2A	Bowman/Scenic Reservoir	300 Beddoe Drive, Hamilton	9900	9900	50	20	PHCs, PAHs, Metals and Inorganics	$2,140	$1,200	$4,395	$4,120	$11,855	$1,000
11	HDR5A	Lynden Reservoir	3630 Governors Rd, Hamilton	16,100	16,100	64	20	PHCs, PAHs, Metals and Inorganics	$2,140	$1,200	$4,395	$4,120	$11,855	$1,000
12	HWWTP	Woodward Ave. Water Treatment Plant - Clearwell	700 Woodward Ave., Hamilton	7900	7900	40	12	PHCs, PAHs, Metals and Inorganics	$2,140	$1,200	$3,315	$2,472	$9,127	$1,000
13	HWWTP	Woodward Ave. Water Treatment Plant - Sedimentation Tanks	700 Woodward Ave., Hamilton	16,600	16,600	65	20	PHCs, PAHs, Metals and Inorganics	$2,140	$1,200	$4,395	$4,120	$11,855	$1,000
14	HDT01	Kelly Street Standpipe & Reservoir	1 Kelly Street, Waterdown	800	800	5	5	PHCs, PAHs, Metals and Inorganics	$2,140	$1,200	$3,315	$1,030	$7,685	$1,000
												Total:	$135,288	$14,000

Notes
a Based on measurements from Google Maps
b Assumed depth of soil cover is 1m (based on experience at Kenilworth Reservoir)
c Initial sampling for presence/absence to assess if impacts may be present or not - see discussion in proposal text for rationale.
d Recommended baseline chemical analysis prior to Screening Level Assessment of Past Uses

Attachment 2
Figures

Figure 1: Sampling Locations for Lee Smith Reservoir - Mineral Springs Rd- Ancaster

Figure 2: Sampling Locations for Hillcrest Reservoir

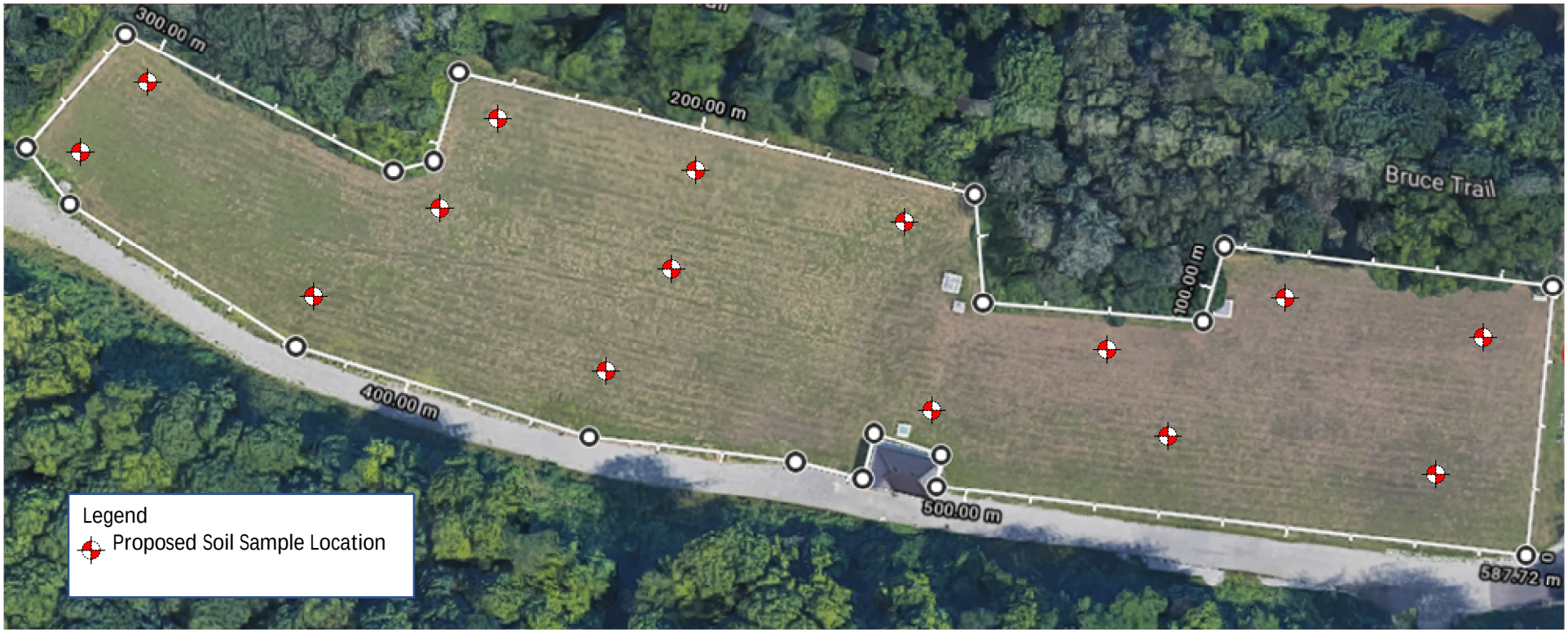


Figure 3: Sampling Locations for Stonechurch/Garth St

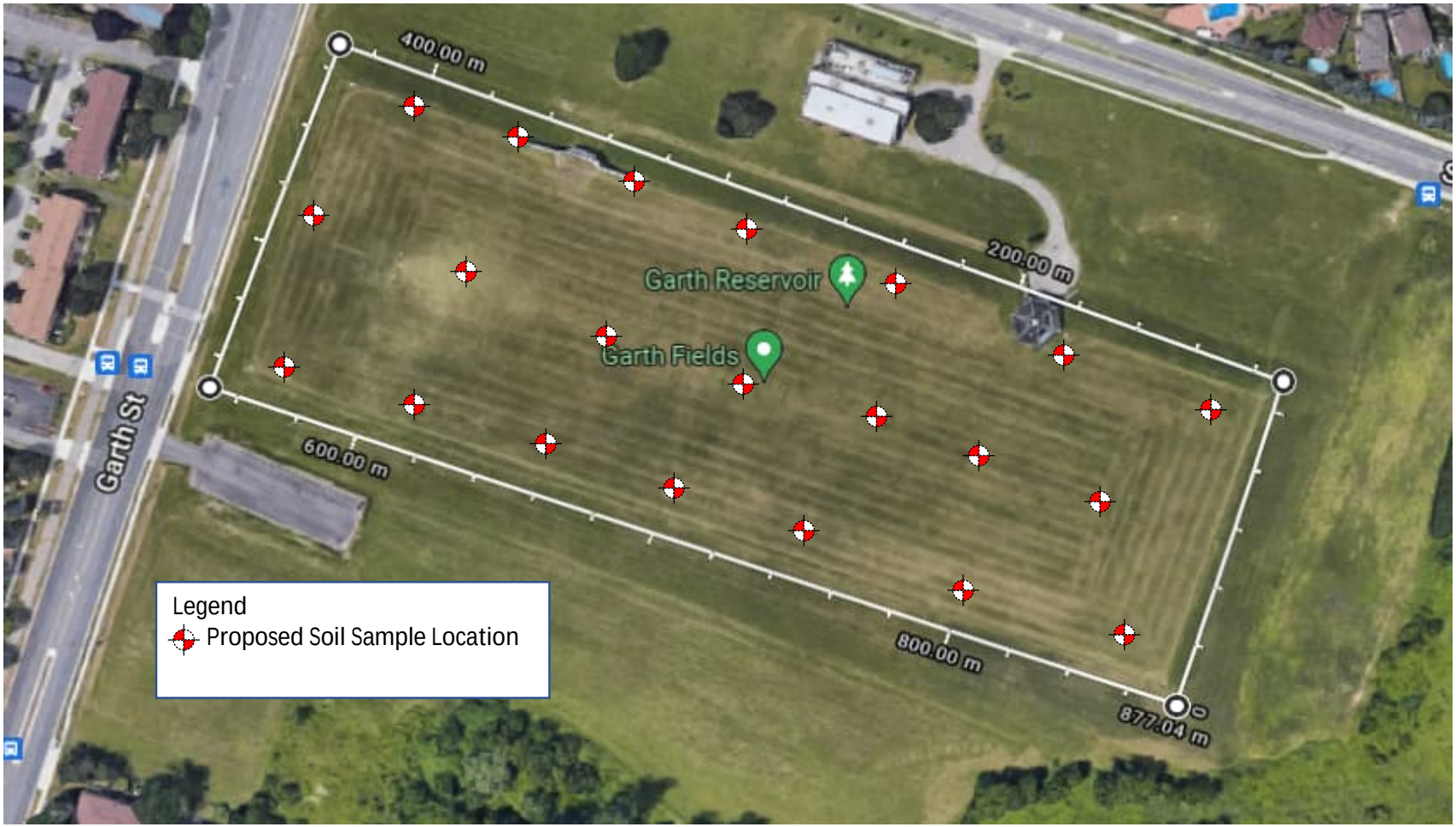


Figure 4: Sampling Locations for Highland Road

Figure 5: Sampling Locations for Fifty Road- Water Reservoir

Figure 6: Sampling Locations for Woodley Lane Reservoir

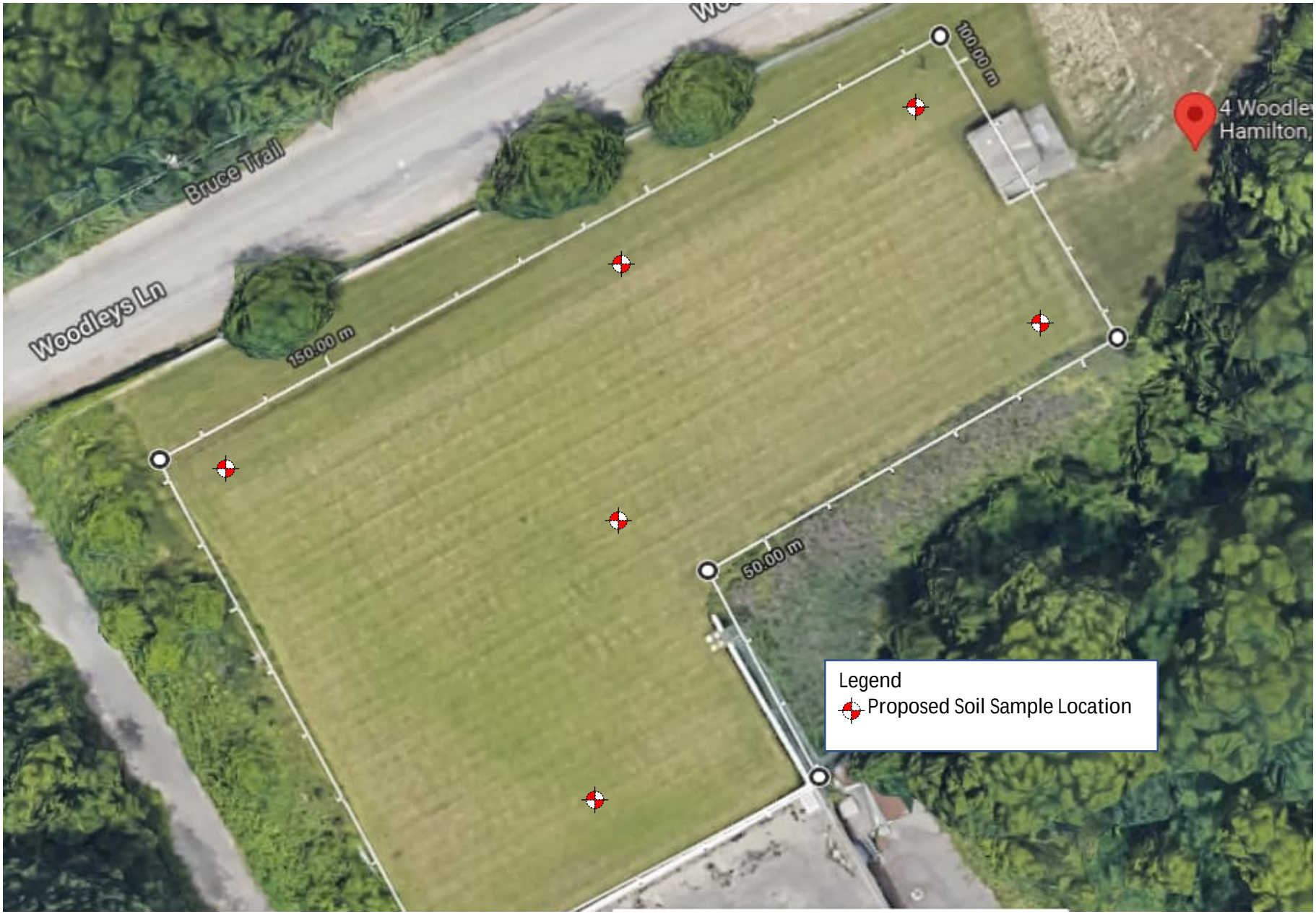


Figure 7: Sampling Locations for Garner Rd & - Glancaster Rd

Figure 8: Sampling Locations for Greenhill Ave

Figure 9: Sampling Locations for Dewitt/Ben Nevis Drive

Figure 10: Sampling Locations for Bowman/Scenic Reservoir

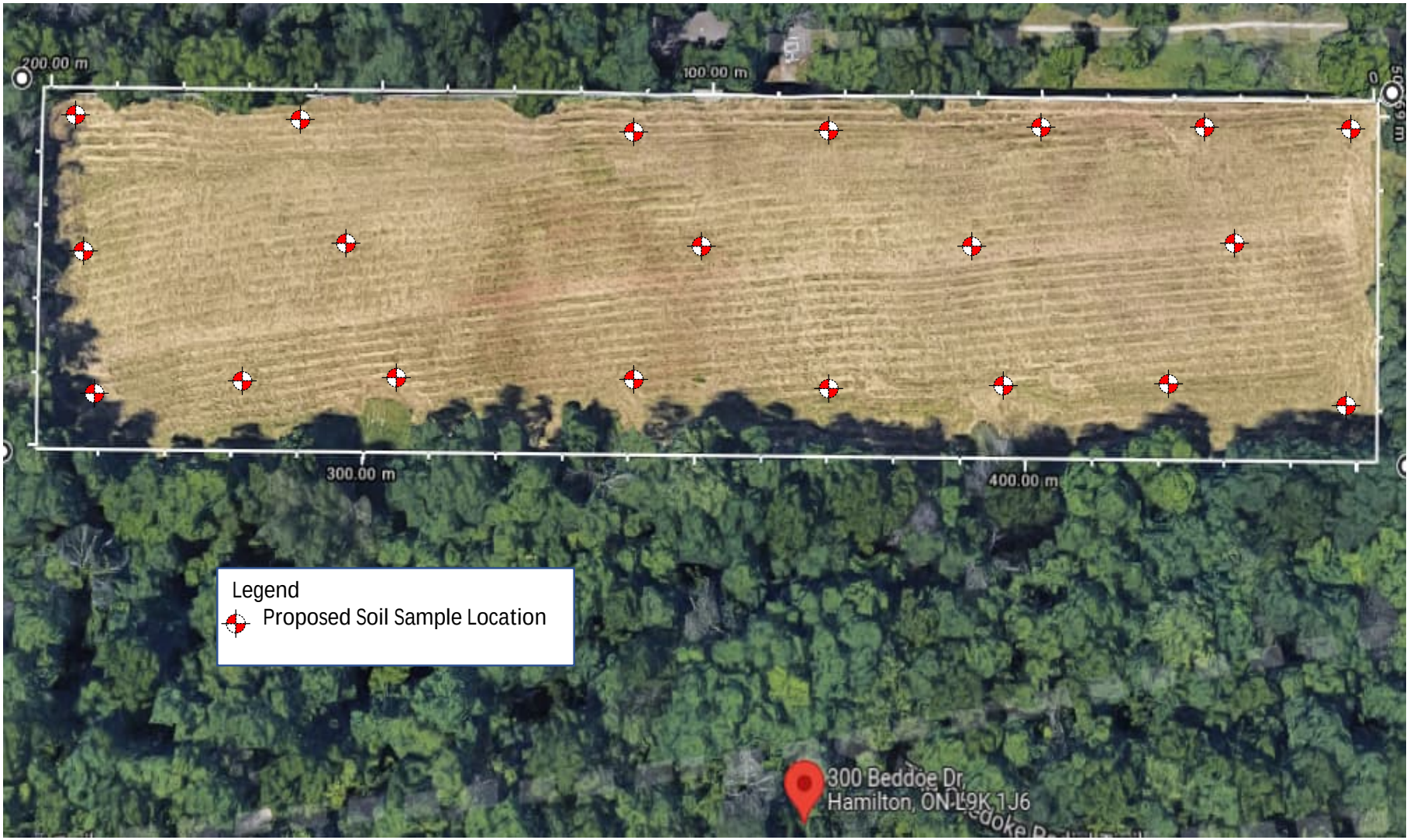


Figure 11: Sampling Locations for Lynden Reservoir

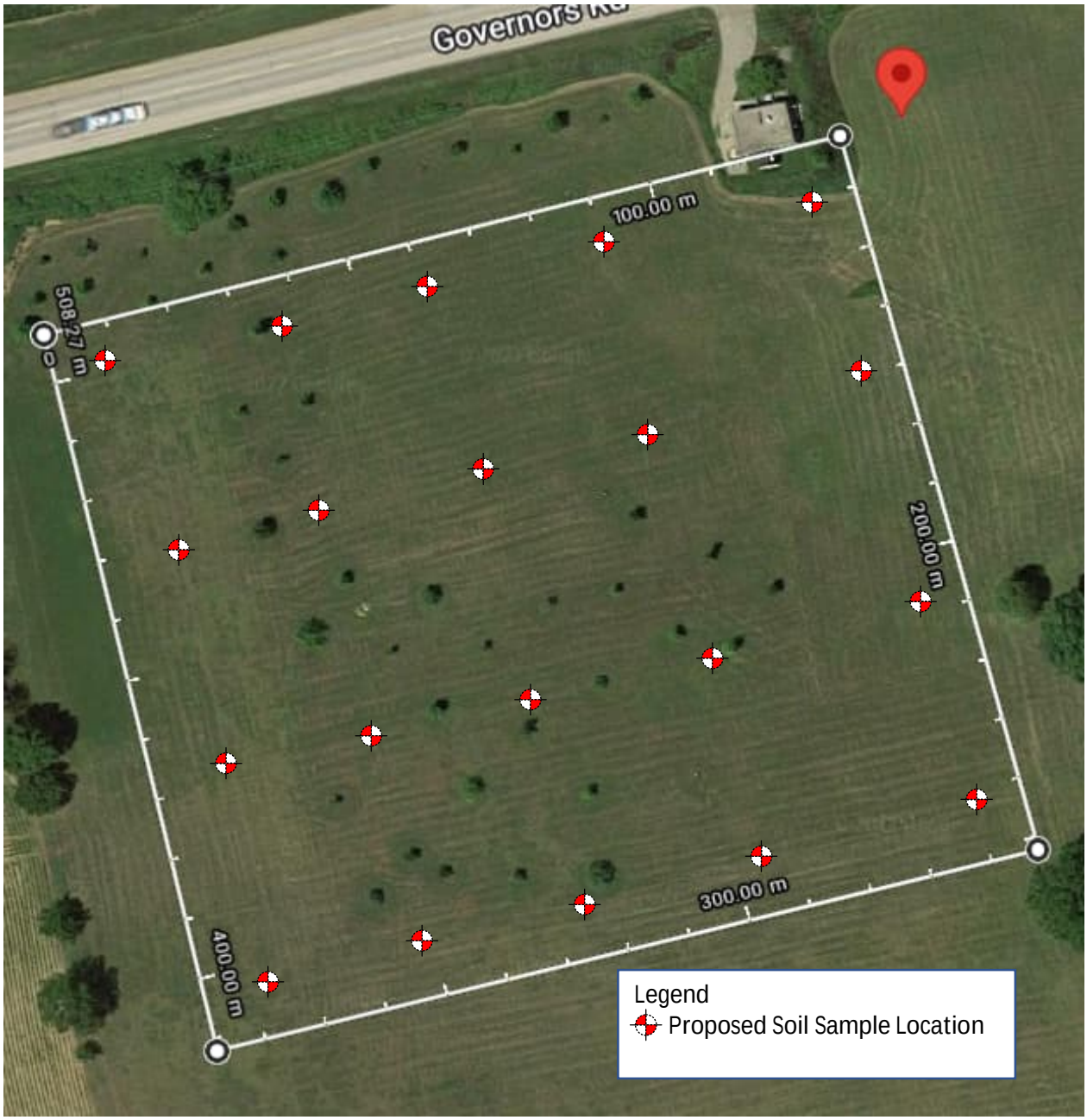


Figure 12: Sampling Locations for Woodward Ave. Water Treatment Plant - Clearwell

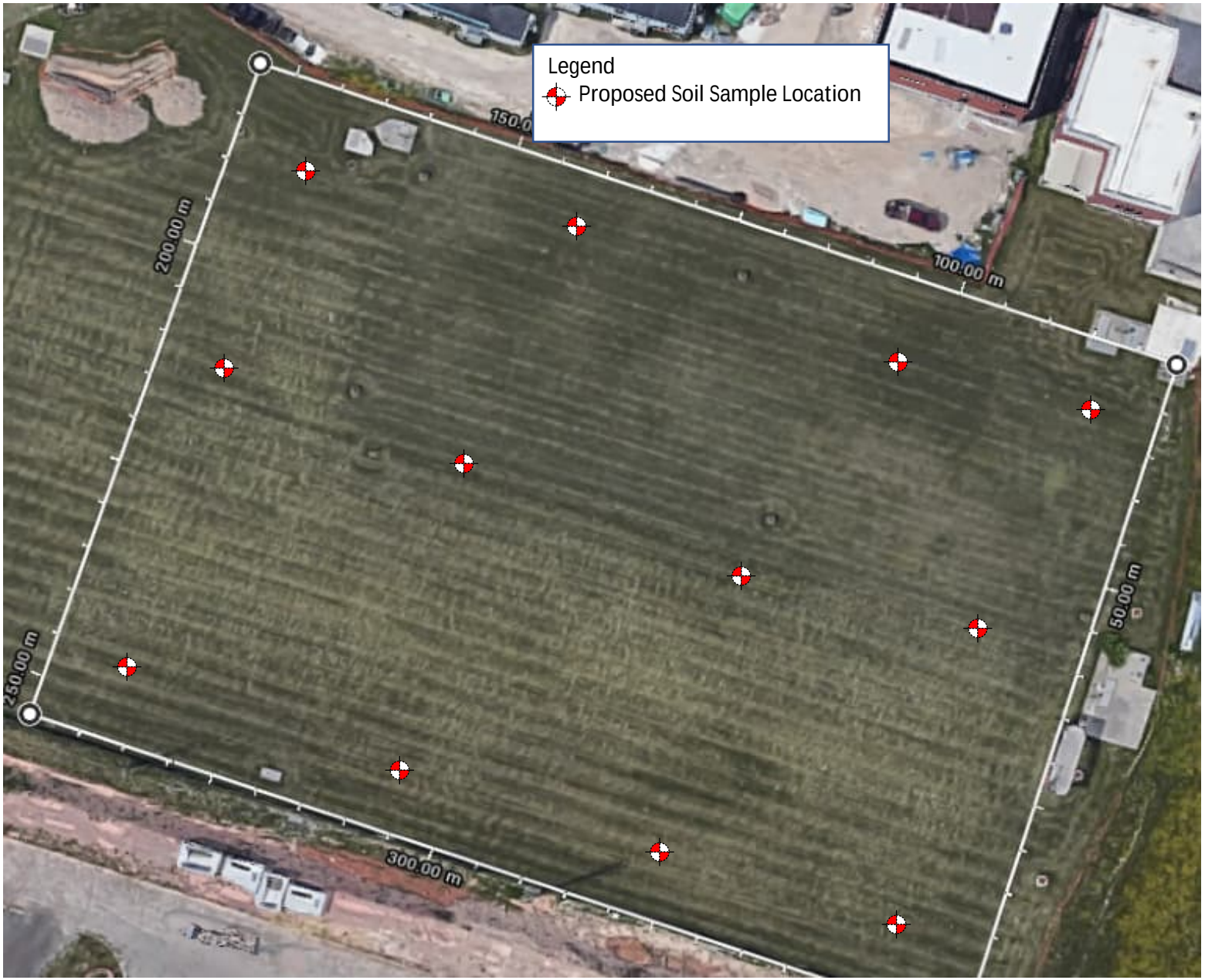
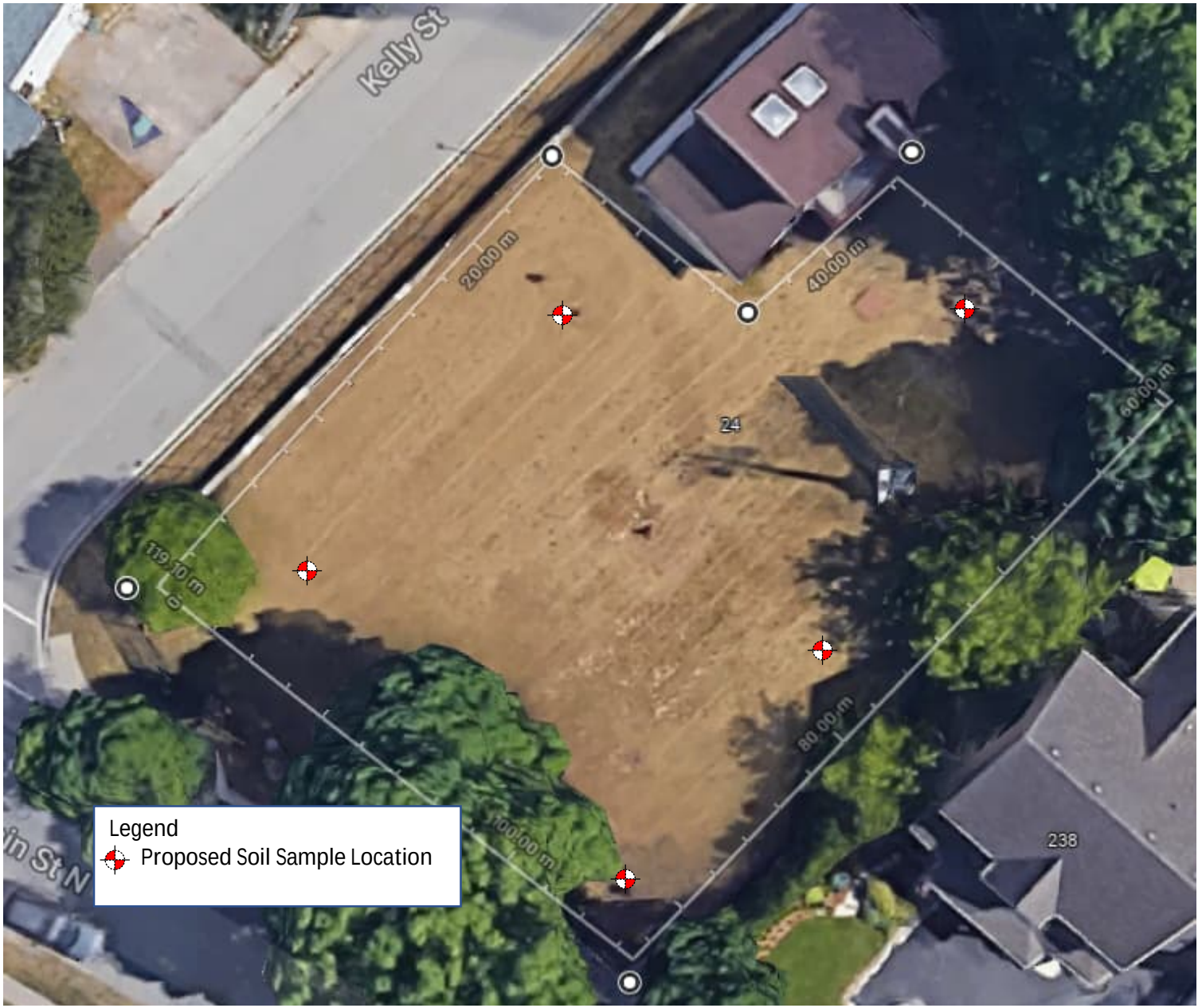


Figure 13: Sampling Locations for Woodward Ave. Water Treatment Plant - Sedimentation Tanks

Figure 14: Sampling Locations for Kelly Street Standpipe & Reservoir



4. Safeguards and Best Practices to Mitigate Risk to the Drinking Water System

The City has many safeguards in place to protect drinking water assets, both pressurized and non-pressurized. Throughout this report we will discuss the following processes, procedures and best practices that are utilized to mitigate risk to the drinking water system:

a) Managing and Maintaining Pressure in the Water Distribution System

The City has approximately 2127 kilometres of watermains that supply fresh and safe drinking water though pressurized pipes. The internal pressure is managed and maintained through a combination of gravity fed assets, pumping stations, pressure tanks, various types of valves and the Supervisory Control and Data Acquisition System (SCADA). As the contents of the pressurized assets are under a pressure that is greater than that of the outside atmosphere, pressurized assets like watermains are less vulnerable to contamination.

b) Pressure Transient Mitigation and Monitoring

A pressure transient in a drinking water pipeline is caused by an abrupt change in the velocity of water. Pressure transients commonly occur in every water system and can be caused by watermain breaks, sudden changes in demand, uncontrolled pumping, and opening or closing of fire hydrants as a few examples. Negative pressure transients create the opportunity for back siphonage or backpressure of non-potable water and other contaminants.

There is potential for intrusion of contaminants into the distribution system from pressure transients, such as low or negative pressures. The public health significance of contaminant intrusion from a pressure transient depends on the number of and/or size of the leak(s), the type of contaminant external to the distribution system and the frequency/duration/magnitude of the event. Any contaminant, chemical or microbial, exterior to the distribution system has the potential enter potable water supplies during a negative pressure event.

The City has many standard operating procedures and industry best practices in place to reduce or counteract the adverse effects of pressure transients. To assist with documenting the frequency and magnitude of pressure transient events, the City completes pressure monitoring utilizing pressure data loggers. The generation of this high-quality pressure data helps to determine the effect of routine operational practices on the distribution system, such as impact of hydrant operations, pump start-up/shut down and valve closing speed, among others. This information is considered (applied) when developing standard operating procedures to minimize low pressure events.

c) Backflow Prevention Bylaw

Contaminants may be drawn back into the City’s water distribution system during a type of backflow occurrence called back siphonage, which can be caused from a pressure drop in the City’s water distribution system, such as a watermain break. The Prevention of Backflow into the Water Distribution System of the City of Hamilton (By-Law No. 10-103) ensures that through the installation of a backflow prevention device, the drinking water quality and distribution system is protected from contaminants from industrial, commercial, institutional and multi-residential properties should backflow conditions occur.

d) Proactive Leak Detection

The phenomenon of negative transient pressures caused by water main breaks and leaks in the distribution system calls for the need to promptly identify leaks so that appropriate response actions are initiated quickly. Efforts to reduce distribution system leakage are beneficial not only from a water conservation standpoint, but to mitigate the potential for contaminant intrusion into the potable water supply.

Since the implementation of the City’s Proactive Leak Detection Program in 2019, the program has had great success in locating underground leaks and repairing them before further risk to the system occurred. To date the City has successfully proactively detected approximately 300 public and private leaks.

e) Drinking Water Quality Management System (DWQMS)

The City adheres to a number of procedures and policies that make up our Drinking Water Quality Management System (DWQMS). Drinking water contamination mitigation and intervention measures are well documented and exercised through the DWQMS. The DWQMS is a core training requirement and developmental competency for all Hamilton Water staff or staff that have a direct input on water quality (including essential suppliers and service providers).

There are two key meetings that take place annually to ensure adherence to the DWQMS: Infrastructure Review and Risk Assessment. Updates from both meetings are reviewed at the annual Top Management Review and reported to Council once a year.

A procedure named DWQMS Risk Assessment (PW-WW-P-031-001) outlines the process in which the City examines all drinking water treatment and distribution processes. Through this process, the City is able to identify relevant critical control points which are essential points in the system where there is an ability to exercise control to prevent or eliminate a drinking water hazard or reduce it to an acceptable level.

The DWQMS Risk Assessment Team examines the City’s drinking water systems to identify potential hazards that could compromise the delivery of safe drinking water. The Risk Assessment Team considers potential hazardous events and associated hazards as identified in the MECP document “Potential Hazardous Events for Municipal Residential Drinking Water Systems”, which includes sustained pressure loss. The DWQMS Risk Assessment Team runs each risk through a risk matrix which determines a risk factor. This assists in assessing the risks associated with the occurrence of hazardous events. Additionally, the Infrastructure Renewal group in Engineering Services rates the pipes across the City and identifies the areas with high risk. These high-risk areas are then prioritized for lining or replacement. Operational controls are implemented to manage risks.

f) Water Quality Sampling and Analysis

In accordance with the Safe Drinking Water Act and as outlined in the DWQMS Sampling, Testing and Monitoring procedure (PW-WW-P-013-004), to ensure the production and distribution of safe drinking water, the City completes grab sampling (collection of discrete samples representing water characteristics at a particular time), and continuous sampling. Samples are collected from approximately 111 locations in the water distribution system every month, and more than 55,000 laboratory tests are completed annually.

This sampling and analysis program ensures the quality of the City’s drinking water and identifies any situations that require action or investigation. Any laboratory tests that exceed MECP criteria for drinking water quality are immediately reported to the MECP and the City’s Public Health Services as an Adverse Water Quality Incident (Adverse Water Quality Incidents (AWQIs) and Corrective Actions, PW-WW-P-015-001) and corrective actions are implemented and documented.

g) Ministry of Environment, Conservation and Parks (MECP) Watermain Disinfection Procedure

The MECP Watermain Disinfection Procedure is a tool that outlines a risk management approach to categorize watermain breaks based on the potential for contamination. The procedure sets minimum disinfection requirements to minimize the potential for drinking water health hazards during emergency or unplanned repairs due to watermain and/or appurtenance failure.

The MECP categorizes watermain breaks based on risk of contamination as follows:

- Category 1: A watermain break with no evident or suspected contamination.
- Category 2: A watermain break with evident or suspected contamination and/or watermain repairs involving more than one pipe length (6 metres) of replacement pipe.

Contamination is typically not suspected for circumferential breaks or small leaks where pressure and flow is maintained. For all emergency watermain breaks (Category 1 and 2), the procedure dictates that the operating authority will attempt to maintain flow from the watermain break until an AIR GAP is established. Maintaining sufficient flow can help to minimize the potential for contamination. An air gap is defined as a space at the location of repair between the watermain and excavation surface that is sufficient to prevent water, soil, or any other contaminant in the excavation from contacting the watermain, fittings or appurtenances. It should be noted that Category 2 watermain breaks are rare, with less than a handful occurring per year.

Maintaining an effective disinfectant residual in all parts of the distribution system is emphasized in the procedure. For distribution system negative pressure events, the volume of the intruded water is a fraction of the water within the pipe network, so the opportunity for effective disinfection exists.

h) Procedures for Shutting Down and Recharging Watermains

The City’s internal procedure Isolation and Recharging of Watermains (PW-WW-DC-WD-P-011-006) incorporates the requirements of the MECP Watermain Disinfection Procedure while shutting down and recharging watermains. Prior to the watermain shutdown, the licensed operator performing the processes will ensure that there is an air gap to ensure no back siphonage and minimize potential contamination to the drinking water supply. In situations where maintaining an air gap is not possible or there is possible contamination, the City completes appropriate sampling upon recharging the watermain. Additionally, the City completes a chlorine residual sample each time the watermain is shutdown and recharged.

i) Excess Soils Regulation O. Reg 406/19 On-Site and Excess Soil Management

With the introduction of O. Reg 406/19 On-Site and Excess Soil Management which came into effect Jan 1, 2021, the rules and regulations around managing and re-using excess soils were strengthened to facilitate local beneficial reuse while protecting human health and the environment. Referenced in O. Reg 406/19, the MECP Rules for Soil Management and Excess Soil Standards, Section B: Excess Soil Reuse Planning includes an assessment of past uses, a sampling and analysis plan, a soil characterization report, destination assessment report and requirements of a tracking system. Any fill materials must have appropriate sampling and reporting completed and meet the soils requirements.

j) Geotechnical Investigations

For the construction of new roads and infrastructure within the right-of-way, such as underground utilities, geotechnical investigation is completed to determine the type of

soil and soil conditions. The samples are assessed through laboratory testing, soil classification, estimated permeability and soil chemical analysis. The investigation will indicate whether the soil is suitable reuse on-site or should be treated as an excess soil and include alternate disposal options consistent with O. Reg 406/19.

k) Spills Response

The City has a 24 hours per day, 7 days per week Spills Reporting Line and Spills Response Team who co-ordinate with City staff and qualitied contractors to promptly respond to spills and do everything practicable to prevent and eliminate the negative effects from a spill, including clean up and remediation. The recovery of a spilled pollutant is a top priority because the pollutants can leach into the groundwater, contaminate soil, and pose a risk to the drinking water infrastructure. The City’s specialized spills contractors are responsible for the clean-up, proper disposal of pollutants and remediation. The City’s Environmental Enforcement and Monitoring unit assesses for potential impacts to the City’s drinking water infrastructure and natural water courses. Through this collaboration, the City’s prompt and efficient spills response methodology helps to mitigate risk of soil and drinking water contamination from pollutants from spills.

l) Reservoir Cleaning & Inspection Program

The City of Hamilton maintains a regular schedule and inspection of all drinking water storage facilities, including in-ground reservoirs. Each reservoir has its own cleaning procedure and a master cleaning schedule is created at the beginning of each year as part of an overall asset management assessment workplan. On a 5-10-year rotational schedule the reservoirs are taken offline, drained, and cleaned prior to being inspected. The inspection process is carried out by third-party experts and includes inspecting the floors, walls, ceiling and expansion joints for condition and evidence of any cracks, leaks, or potential for infiltration. The inspections help ensure that any deficiencies requiring repairs are addressed before they become significant enough to adversely impact water quality.

m) Water Quality Trending and Data Review

All drinking water data is reviewed and monitored in a timely manner to ensure compliance with the Safe Drinking Water Act (SDWA) and all pertinent regulations. All data is reviewed and summarized to ensure regulatory obligations are met under the SDWA, including number of samples, and required parameters. Specific data reviews are completed as results are made available from the ISO 17025 accredited laboratory performing the analysis.

Water quality trending allows us to identify any potential decline in water quality or instability in the distribution system. Identifying poor water quality indicators enables us

to request pre-emptive flushing in areas of concern. Part of this process involves creating warning limits that serve as internal water quality indicators that prompt the laboratory to notify the Project Manager – Regulatory Monitoring immediately after analysis so appropriate actions can be taken. These include elevated heterotrophic plate counts and high ortho-phosphate results. In the event of elevated results, due diligence resampling takes place to help identify next steps. All these measures are key steps to safeguard the water quality and mitigate risk in our drinking water systems.

n) Annual MECP Drinking Water System Inspections

The Ministry of Environment, Conservation and Parks (MECP) has a comprehensive annual inspection program to help assure the public that owners and operators of drinking water systems (DWS) and owners of laboratories are fulfilling their legislated obligations. Inspections of water systems focus on source, treatment, and distribution components as well as management practices. Inspections of laboratories focus on chain of custody (the path of a sample from the time it is collected to when it is accepted by the laboratory), reporting, sample handling, subcontracting and management practices.

The DWS inspections occur between April 1st to March 31st of the following year. For Hamilton, that means that each of the five drinking water systems (e.g. Carlisle, Greensville, Freelton, Lynden, Hamilton-Woodward Subsystem and Hamilton-Fifty Road Subsystem) are inspected annually by the local MECP Inspector(s).

During an inspection at a DWS, the inspector evaluates requirements such as proper operation of the treatment system, the availability of up-to-date policy and procedures, sampling and monitoring, and proper operator certification. They also review test results and operational checks during their inspections to confirm all required activities, such as adjusting operational equipment, reporting adverse water quality incidents, and implementing corrective actions, were completed.

In order to measure individual inspection results, the MECP has established an inspection compliance risk framework based on the principles of the Inspection, Investigation & Enforcement (II&E) Secretariat and advice of internal/external risk experts. The Inspection Summary Rating Record (IRR), included as an Appendix of the inspection reports, provides the MECP, the system owner and the local Public Health Units with a summarized quantitative measure of the drinking water system’s annual inspection and regulated water quality testing performance. IRR ratings are published (for the previous inspection year) in the MECP’s Chief Drinking Water Inspectors’ Annual Report.

During an inspection at a licensed laboratory, the inspector evaluates requirements such as the availability of up-to-date policy and procedures, use of approved testing methods, quality control and assurance practices, and reporting and record-keeping practices.

In cases where the inspection identifies a problem, the inspector works with system or laboratory owners to bring them into compliance. For more serious instances of non-compliance, the inspector may issue an order or refer the matter to the MECP’s Environmental Investigations and Enforcement Branch for investigation.

The decision to refer non-compliant behaviour for investigation depends on a number of criteria, including:

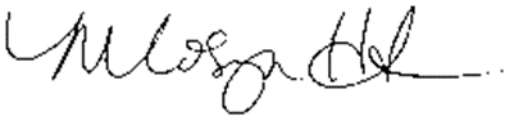
- the potential impact of the non-compliance to the health of the users of the system
- the compliance history of the inspected system owner and/or operator
- how cooperative the owner/operator is
- what steps the owner and/or operator has taken or is taking to resolve the issue

The Compliance and Enforcement Regulation (O. Reg. 242/05) also requires the MECP to take mandatory action (e.g. order or referral for investigation) when a violation may compromise the safety of the drinking water.

Operational controls for how the inspections are managed and the results addressed by Hamilton Water staff are found in the following DWQMS documents:

- Legal and Other Requirements (PW-WW-P-004-004)
- BCOS + DWQMS External Regulatory and Other Communications (PW-WW-P-008-002)
- Non-conformance, Corrective & Preventative Action Process (PW-WW-P-015-002)

INFORMATION REPORT

TO:	Chair and Members Public Works Committee
COMMITTEE DATE:	November 28, 2022
SUBJECT/REPORT NO:	(Re)envision the HSR Update (PW20005(b)) (City Wide)
WARD(S) AFFECTED:	City Wide
PREPARED BY:	Ali Sabourin (905) 546-2424 Ext. 1858
SUBMITTED BY: **SIGNATURE:**	Maureen Cosyn Heath Director, Transit Public Works Department 

COUNCIL DIRECTION

N/A

INFORMATION

The purpose of this report is to provide Council with an update on the (Re)envision the HSR project.

(Re)envision the HSR project was launched to the public in 2019 and its purpose was twofold: to reconfigure the transit network and to transform the customer experience. The project was based on broad stakeholder engagement, striving to grow ridership and, most importantly, to position transit as a preferred choice.

Fifty percent of the network reconfiguration project (i.e. research and design) has been funded by the federal government under the Public Transit Infrastructure Fund program, and the remaining 50% has been funded by the City of Hamilton. Within the City of Hamilton, (Re)envision the HSR is a strategic project that not only integrates with high order transit decisions but also aligns to other key City priorities such as the Economic Development Action Plan and Hamilton's Plan for an Age-Friendly Community.

Engagement efforts have been extensive and total nearly 13,000 instances, including a survey of almost 6,000 customers and residents, attendance at over 50 community events and neighbourhood meetings, meetings with dozens of community stakeholders, and digital consultation with hundreds of participants on the *My HSR* public engagement

website. A summary of the engagement efforts to date is outlined in Appendix "A" attached to Report PW20005(b).

(Re)envision the HSR establishes transit as a key tool for city-building; supporting economic growth, equity, diversity and social inclusion; cultural vibrancy; and environmental balance.

Network Reconfiguration Design

The City's current network design is more than 100 years old. Over time, changes have largely been reactive and incremental, constrained by costs and service cuts, and have relied on extending routes to minimize new resource requirements. The existing network is largely based on a "hub and spoke" network and is not reflective of current and future transit needs based on residential and commercial growth areas. The existing network is stagnant and is comprised mostly of routes travelling to and from the core, resulting in longer than necessary journey times for local trips, with little variation in service that matches demand beyond fulfilling service standards which may no longer meet route modernization practices or travel demand.

As such, HSR embarked on a network redesign, which is a significant undertaking impacting every aspect of transit planning and design, from service models, route types, vehicle capacities, shelters and bus stop locations. The network reconfiguration project is being facilitated by McMaster University's Department of Civil Engineering in collaboration with HSR's planning staff. The work is based on a robust quantitative analysis with over a dozen inputs, including community engagement, insights from a staff survey, assessing the travel behaviour of Hamiltonians, system performance and reliability assessments, route analysis and rationalization, and regional connectivity.

The network reconfiguration design has been prepared multiple times, and progress has been hindered each time due to various circumstances, including COVID-19, and shifting decisions regarding higher order transit along the Main, King, Queenston corridor. The first design was partially completed and was based on a Light Rail Transit (LRT) supportive network. The cancellation of the LRT project in late 2019 necessitated a second network design, supported by Bus Rapid Transit (BRT) as an alternative higher order option to LRT. In early 2021, LRT was re-introduced, and ratified by Council in September 2021, which required a third network design supportive of LRT. Finally, the two-way Main Street conversion was the most recent impact and further design modifications were necessary, noting that the two-way conversion of Main Street is expected to have a positive impact on the design for the overall reconfigured transit network.

Elements of the network design that are not impacted by the two-way conversion are undergoing a technical review with internal stakeholders for feasibility consideration and an assessment by subject matter experts to ensure it aligns with the City's overall

growth plans. Internal stakeholder engagement is underway with Public Works, Planning and Economic Development and other key groups in the months ahead. Once the network undergoes internal review, staff will present the draft network to Council in Q1 of 2023 along with the plan for broader external engagement and public engagement sessions. The target date to commence external engagement is early Q2 of 2023.

The redesigned network is aspirational and focuses on building the transit system from its existing form to the desired future-state for the Hamilton of tomorrow and aligns with the City's major growth plans to support employment, housing and economic development.

Transforming the Customer Experience: HSR Guiding Principles

HSR's six (6) Guiding Principles set the foundation for how transit will be delivered in the City of Hamilton. The Guiding Principles were first made public in Information Report (PW20005(a)) in January 2020 and are summarized in Appendix "B" attached to Report PW20005(b).

The public engagement portion of the (Re)envision the HSR project has largely concluded at this time, leaving behind the 6 Guiding Principles and a legacy on how Transit evolves in the future. Arising from the public consultation and supporting the Guiding Principles, HSR has subsequently identified 19 desired outcomes and 46 operating principles. In addition, 86 action plans have been identified for implementation, and one-third of the actions already are underway, including various pilots and promotional campaigns. These will continue to be incorporated into work plans and have provided a roadmap for future public engagement, which will be reintroduced during the external consultation part of the network redesign.

The culture shift toward innovative practices, including experimentation and collaboration, has already started within HSR. The following highlights some of the transformative efforts taking place that demonstrate each Guiding Principle in action.

(i) Customer experience is at the heart of what we do.

In November 2021, HSR launched a customer satisfaction survey. The "rate my ride" survey is accessed through HSRNow, HSR's real-time trip planning app. HSR continues to promote the app and adoption has tripled since the launch of the survey to approximately 4,700 active users. To grow sample size and solicit more feedback, HSR is also piloting in-person customer satisfaction surveys at transit terminals in November and December.

The customer satisfaction survey, feedback received through customer service agents, a customer panel, and surveys embedded in HSR myRide are part of HSR's Voice of

Customer program that drive positive change. Customer feedback is an integral part of a quality loop for rapid improvement and corrective action. Customer feedback received by HSR is actioned to create positive outcomes such as coaching, training, policy reviews, schedule reviews, and new amenities.

Finally, HSR continues to demonstrate its commitment to community outreach. Throughout the summer and fall, staff attended 20 events and met thousands of people of all ages and abilities including festivals, seniors' organization events, secondary and post-secondary schools, and the Hamilton Public Library.

(ii) We honour equity, diversity and inclusion.

Equity, diversity and inclusion (EDI) is one (1) of eight (8) Council priorities that support the City of Hamilton's Strategic Plan. Hamilton is committed to nurturing a city that is welcoming, and the goal is to increase a sense of belonging, feelings of safety, City responsiveness and inclusive engagement.

HSR honours the City's EDI priority and has established the desired outcome "everyone has a right to feel welcome and safe while using transit". One example of a project that aims to increase safety and belonging is HSR's "See Something Say Something" campaign that is on track to launch by December 2022.

HSR's "See Something, Say Something" campaign encourages transit customers to step forward if they experience or witness discrimination, harassment or other concerning behaviours. The campaign addresses recent research by the Hamilton Immigration Partnership Council that reveals 32.7% of immigrants and visible minorities and 47.2% of indigenous persons surveyed reported experiencing discrimination on transit. The research is an important reminder that transit both reflects and serves the greater community.

The "See Something, Say Something" campaign is the first step among other planned activities to ensure transit is a safe and welcoming space for all residents and visitors. These efforts will require ongoing, collective community action and collaboration across community partners and residents. Transit is an important public space and HSR is committed to being a trusted partner engaged in continuous improvement.

(iii) We deliver on our promise.

HSR is developing a Customer Charter that will formalize HSR's commitments to our customers to provide the best possible customer experience. The work is considered a best practice and will be based on consultation with staff and the community and seeks to improve trust and confidence in the customer experience. The charter will be a key strategic document for staff and will include key performance metrics that are measured, tracked and communicated on an ongoing basis. The Charter is expected to

launch in 2023 following community endorsement with a comprehensive marketing campaign across all communication channels include web, print, and social media.

The (Re)envision the HSR research reinforced that the most important driver of customer satisfaction is on-time performance, also known as service reliability. Actions that are underway to increase service reliability include the establishment of an internal working group, a review of reliability of services such as TransCab, HSR myRide and accessible transit services, and a review of HSR's real-time trip planning tools.

(iv) We connect, innovate and evolve.

One example of innovation at HSR is the Bus Marker Bench (BMB) Pilot. The BMB pilot was inspired by (Re)envision customer research that showed comfort and amenities at bus stops are important drivers of customer satisfaction. Requests for shelters and benches throughout the City are received frequently; however, in certain circumstances, requested locations are constrained by limited space which prohibits the installation of traditional transit amenities. The BMB pilot tested an innovative solution in which a bus stop pole is combined with a bench for customer seating for locations with limited space.

The BMB prototype was designed by HSR staff and manufactured by Daytech Ltd., the City's standardized shelter manufacturer. The design features a bolt pole with a bench and grip bar attached. The unit cost is $1,400 (including installation) and the pilot was funded through the Public Transit Infrastructure Fund (PTIF-HAM-03 Transit Shelter and Bus Stop Rehabilitation). Photographs of the two configurations (single seat and dual seat) are attached to Report PW20005(b) as Appendix "C".

The implementation of the BMB project was undertaken through three (3) phases:

1. Bus Operator feedback and field testing (1 unit);
2. Installation of modified design (10 units); and
3. Installation of additional BMB's (28 units).

Throughout the pilot, internal and external stakeholders, including the Advisory Committee for Persons with Disabilities (ACPD), were provided with opportunities to give feedback, which helped to provide value-added design modifications. An on-line survey of 400 respondents indicated that most respondents felt a BMB would improve the "waiting for the bus" experience.

Going forward, staff have adopted a standard installation procedure that any BMB's placed within a boulevard that has a width of 1.5 metres or less will be a one-seat unit. Two-seat units will be reserved for locations where the BMB can be placed either behind the sidewalk, or within a boulevard with a width greater than 1.5 metres.

The 2023 Capital budget submission 5302385807 HSR Bus Marker Bench, if approved, allows for a BMB yearly expansion program, with priority given to bus stop locations that have previously received requests for shelters from customers, yet which could not be accommodated due to a lack of space for a shelter.

(v) We engage with our employees to improve customer experience.

The customer experience and the employee experience are often symbiotic. Since customer experience relies heavily on the employee experience, HSR staff have developed an employee experience plan as part of the on-going transformational work. Key goals of the employee experience plan include a communication plan, a voice of employee program, a recognition program, and most importantly, enhanced access to training and professional development to equip front line staff to better meet the needs of the customers.

HSR is also developing a customer experience plan by asking operators and other front-line staff, as super-users of the system, to identify tips and hints to help customers get the best experience on their journey. This will be done through staff polls and in-person interviews and will be shared with the HSR customer panel before launching.

(vi) We make a positive impact on communities, environment and economy.

Transit has a growing narrative that centres on the powerful role it plays in city-building and strengthening the quality of life in communities. In Hamilton, HSR is proud to work collaboratively with other City departments such as Economic Development, with the shared goal of increasing access to jobs and economic opportunities, or Tourism Hamilton, with the shared goal of providing safe and efficient mobility that positively reflect Hamilton during major events.

HSR continuously reviews local and national data that measure transit's impact on communities and has started to incorporate these concepts into marketing campaigns that strive to grow ridership based on best-practices. HSR is an active member in the Canadian Urban Transit Association (CUTA), who released an issue paper in 2019 entitled The Economic Impact of Transit Investment in Canada which states the following facts[1]

- The economic benefit of Canada's existing transit systems is at least $19 billion annually.
- The transit industry directly employs 59,600 Canadians and transit capital investment creates an additional 65,000 jobs.
- Transit reduces vehicle operating costs for Canadian households by about $12.6 billion annually

[1] https://cutaactu.ca/wpcontent/uploads/2021/01/final_issue_paper_50_cuta_v2.pdf

- Transit reduces the economic costs of traffic collisions by almost $3.2 billion annually.
- Transit reduces annual greenhouse gas emissions by 4.7 million tonnes, valued at $207 million
- Transit saves about $137 million in annual health care costs related to respiratory illness

Attracting new riders to transit means changing human behaviour from car dependency, and the opportunity to attract new riders to transit has never been more promising. The stark reality of the climate emergency, housing crisis, and economic forecasts combined with rising everyday costs, make transit an increasingly smart and liberating choice.

Conclusion

Transit supports economic growth, employment and education sectors; culture and tourism; climate change; and promotes healthy and safe communities. The City will be well-positioned to achieve its transit mode share target of 12% by 2031 through (Re)envision by focusing on a redesigned network that is future-ready and capable of supporting the LRT and ongoing innovations in service delivery, like demand-responsive and integrated transit, and by continuously improving the customer experience.

APPENDICES AND SCHEDULES ATTACHED

Appendix “A” to Report PW20005(b) – (Re)envision Engagement Efforts

Appendix “B” to Report PW20005(b) – HSR’s Guiding Principles

Appendix “C” to Report PW20005(b) – Photographs of Single Seat and Dual Seat Bus Marker Bench Units

HSR's Guiding Principles

Photographs of Single Seat and Dual Seat Bus Marker Bench Units

Single Seat Bus Marker Bench

Dual Seat Bus Marker Bench

(Re)envision Engagement Efforts

CITY OF HAMILTON
PUBLIC WORKS DEPARTMENT
Engineering Services Division

TO:	Chair and Members Public Works Committee
COMMITTEE DATE:	November 28, 2022
SUBJECT/REPORT NO:	Proposed Permanent Closure and Sale of Portion of Unassumed Alleyway Abutting 81 East 18th Street, Hamilton (PW22084) (Ward 7)
WARD(S) AFFECTED:	Ward 7
PREPARED BY:	Cetina Farruggia (905) 546-2424 Ext. 5803
SUBMITTED BY: **SIGNATURE:**	Jackie Kennedy Director, Engineering Services Public Works Department 

RECOMMENDATION

That the application of the owner of 81 East 18th Street, Hamilton, to permanently close and purchase a portion of the unassumed alleyway abutting the east side of 81 East 18th Street, Hamilton, (“Subject Lands”), as shown in Appendix "A", attached to Report PW22084, be approved, subject to the following conditions:

(i) That the applicant makes an application to the Ontario Superior Court of Justice, under Section 88 of the Registry Act, for an order to permanently close the Subject Lands, if required by the City, subject to:

(1) The General Manager of Public Works, or designate, signing the appropriate documentation to obtain any required court order; and

(2) The documentation regarding any required application to the Ontario Superior Court of Justice being prepared by the applicant, to the satisfaction of the City Solicitor;

(ii) That the applicant be fully responsible for the deposit of a reference plan in the proper land registry office, and that said plan be prepared by an Ontario Land Surveyor, to the satisfaction of the Manager, Geomatics and

Corridor Management Section, and that the applicant also deposit a reproducible copy of said plan with the Manager, Geomatics and Corridor Management Section;

(iii) That, subject to any required application to the Ontario Superior Court of Justice to permanently close the Subject Lands being approved:

(1) The City Solicitor be authorized and directed to prepare all necessary by-laws to permanently close and sell the alleyway, for enactment by Council;

(2) That the City Solicitor be authorized to amend and waive such terms as they consider reasonable to give effect to this authorization and direction;

(iv) The Corporate Real Estate Office of the Planning and Economic Development Department be authorized and directed to enter into any requisite easement agreements, right of way agreements, and/or other agreements deemed necessary to affect the orderly disposition of the Subject Lands and to proceed to sell the Subject Lands to the owners of 81 East 18th Street, Hamilton, as described in Report PW22084, in accordance with the City of Hamilton Sale of Land Policy By-law 14-204;

(v) The City Solicitor be authorized to complete the transfer of the Subject Lands to the owners of 81 East 18th Street, Hamilton, pursuant to an Agreement of Purchase and Sale or Offer to Purchase as negotiated by the Corporate Real Estate Office of the Planning and Economic Development Department;

(vi) The City Solicitor be authorized and directed to register a certified copy of the by-laws permanently closing and selling the alleyway in the proper land registry office; and

(vii) The Public Works Department publish any required notice of the City's intention to pass the by-laws and/or permanently sell the closed alleyway pursuant to City of Hamilton Sale of Land Policy By-law 14-204;

EXECUTIVE SUMMARY

The owner of 81 East 18th Street, Hamilton, has applied to permanently close and purchase a portion of the public unassumed alleyway running at the rear of the property municipally known as 81 East 18th Street, Hamilton. The Subject Lands have been

occupied by the owner of 81 East 18th Street, Hamilton for a number of years and the owner now seeks to legally purchase the Subject Lands to merge with their existing property. There were no objections from any City Department, Division, or Public Utility and no objections from any abutting landowner. As such, staff support the closure and sale of the Subject Lands to the owner of 81 East 18th Street, Hamilton.

FINANCIAL – STAFFING – LEGAL IMPLICATIONS

Financial: The applicant has paid the Council approved user fee of $5,501.41. The Subject Lands will be sold to the owners of 81 East 18th Street, Hamilton, at fair market value, as determined by the Corporate Real Estate Office of the Planning and Economic Development Department in accordance with the City of Hamilton Sale of Land Policy By-law 14-204.

Staffing: An agreement to purchase the Subject Lands will be negotiated by the Corporate Real Estate Office of the Planning and Economic Development Department.

Legal: Subject to any required application to the Ontario Superior Court of Justice to permanently close the Subject Lands being approved, the City Solicitor will prepare all necessary by-laws to permanently close and sell the Subject Lands and will register such by-laws in the Land Registry Office once Council has approved the by-law. The by-law does not take effect until the certified copy of the by-law is registered in the proper land registry office. The City Solicitor will complete the transfer of the Subject Lands to the owners of 81 East 18th Street, Hamilton, pursuant to an agreement negotiated by the Corporate Real Estate Office of the Planning and Economic Development Department.

HISTORICAL BACKGROUND

The Subject Lands were created by Registered Plan 541 in 1912. The Subject Lands are untravelled and the remaining alleyway lands are fully encroached and also not travelled. On April 8th, 2022 staff received an application from the owner of 81 East 18th Street, Hamilton in order to consolidate the Subject Lands with their existing property.

POLICY IMPLICATIONS AND LEGISLATED REQUIREMENTS

The closure of the Subject Lands will be subject to any application required by the City.

In addition, a by-law must be passed to permanently close the Subject Lands in accordance with the *Municipal Act, 2001.*

Alleyway Management Strategy - Classification System (Report PW17008(a)):
The Subject Lands are classified as Hierarchy Class "D": Alleyway is unassumed and could be used for any of the following:

- commercial parking;
- public/private waste collection;
- special consideration; and access to rear yards or overland flow routes

RELEVANT CONSULTATION

The following public utilities, City departments and divisions were provided with a copy of the application and were invited to provide comments:

- Planning and Economic Development Department: Development Engineering, Building, Economic Development, Real Estate, and Planning
- Public Works Department: Engineering Services, Chief Road Official, Hamilton Water, Transportation Operations & Maintenance, and Environmental Services
- Hamilton Emergency Services
- Corporate Services Department: Financial Planning, Administration and Policy
- Mayor and Ward Councillor
- Bell, Alectra Utilities, Hydro One, and Enbridge Gas

There were no objections received from any public utilities, City departments and divisions.

Notice of the proposal was sent to all abutting property owners of the Subject Lands, as shown in Appendix "B", attached to Report PW22084 for comment. In this instance, there were 4 notices mailed, and the results are as follows:

In favour: 0 Opposed: 0 No comment: 0

No objections or comments were received from any abutting landowner.

ANALYSIS AND RATIONALE FOR RECOMMENDATION

As there were no objections received from any City Department, Division, or Public Utility, and no objections received from any abutting landowner, staff are supportive of the closure and sale of the Subject Lands to the owner of 81 East 18th Street, Hamilton.

ALTERNATIVES FOR CONSIDERATION

N/A

ALIGNMENT TO THE 2016 – 2025 STRATEGIC PLAN

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 PW22084 – Aerial Drawing

Appendix “B” to Report PW22084 – Location Plan

Hamilton

PROPOSED CLOSURE OF PORTION OF UNASSUMED ALLEY AT 81 EAST 18th STREET, HAMILTON

Geomatics & Corridor Management Section
Public Works Department

LEGEND

Lands to be Closed

NTS | 11/05/2022 | Sketch By: CF

LOCATION PLAN

PROPOSED CLOSURE OF
UNASSUMED ALLEY AT

81 EAST 18TH STREET, HAMILTON

CITY OF HAMILTON
PUBLIC WORKS DEPARTMENT

LEGEND

SUBJECT LANDS

DATE: May 11, 2022 | Not to Scale | Sketch By: CF

REFERENCE FILE NO : PW22__

CITY OF HAMILTON
PLANNING AND ECONOMIC DEVELOPMENT DEPARTMENT
Transportation Planning and Parking Division

TO:	Chair and Members Public Works Committee
COMMITTEE DATE:	November 28, 2022
SUBJECT/REPORT NO:	Hamilton Cycling Committee Budget 2023 (PED22196) (City Wide)
WARD(S) AFFECTED:	City Wide
PREPARED BY:	Danny Pimentel (905) 546-2424 Ext. 4581
SUBMITTED BY: **SIGNATURE:**	Brian Hollingworth Director, Transportation Planning and Parking Planning and Economic Development Department 

RECOMMENDATION

(a) That the Hamilton Cycling Committee 2023 Base Budget submission, in the amount of $10,000, as described in Appendix “A” attached to Report PED22196, be approved and referred to the 2023 Budget process for consideration;

(b) That, in addition to the base funding, a one-time budget allocation for 2023 of $4,000 to support community events and initiatives that meet the mandate of the Committee, funded by the Hamilton Cycling Committee Reserve, be approved and referred to the 2023 Budget process for consideration;

(c) That remaining funds from the 2022 Hamilton Cycling Committee Budget be allocated into the Hamilton Cycling Committee Reserve, to the upmost allowable amount.

EXECUTIVE SUMMARY

The Hamilton Cycling Committee (HCyC) has developed a request for funding for planned activities in 2023. With the endorsement of the HCyC Members, this request for funding is submitted to the Public Works Committee as Appendix “A” attached to this Report. This Report presents this proposed budget to the Public Works Committee for consideration as part of the 2023 Budget Process.

The HCyC is proposing a 2023 Budget of $14 K. Their proposed budget would be financed with $10 K from the Levy through the Public Works Standing Committee and $4 K from the HCyC Reserve. As of July 2022, the HCyC has a Reserve of $16,416.94, therefore, there is no request to increase from the Levy in 2023.

Alternatives for Consideration – Not Applicable

FINANCIAL – STAFFING – LEGAL IMPLICATIONS

Financial: Annually, citizen advisory committees are funded by the Levy to fund activities that supports the Committee's Mandate. Typically, the annual budget for advisory committees is $10,000. For 2023, the HCyC has requested a budget of $14,000. The proposed budget will finance community educational activities, plus the production of safety and promotional materials. The $4,000 from the Reserve will be used to support community events and initiatives that meet the mandate of the HCyC. As of July 2022, the HCyC has a Reserve of $16,416.94.

The following table highlights the proposed 2023 Budget.

Item	**Proposed 2023 Budget**
Social Media Campaign	$500
Special Projects	$5,000
Tourism Promotions - supporting Ontario by Bike	$500
Supporting Community Events to Raise Awareness for Cycling	$3,000
Special Committee Cycling Events	$2,000
Training, Conferences and Memberships	$2,000
Meeting Expenses	$1,000
TOTAL	**$14,000**
Funds from Levy	**$10,000**
Funds from Reserve	**$4,000**

Staffing: N/A

Legal: N/A

HISTORICAL BACKGROUND

The HCyC advises the City of Hamilton on all matters related to cycling and micro-mobility, monitors the implementation of the Hamilton Cycling Master Plan, encourages and participates in planning for bicycling and micro-mobility facilities, encourages citizens to cycle instead of drive, educates the public about the benefits and necessities of cycling, and integrates the work of area municipal bicycle and active transportation committees. Cycling helps to maintain personal health thus, it helps to foster a healthier community.

POLICY IMPLICATIONS AND LEGISLATED REQUIREMENTS

In preparation of this Report, the HCyC; the City of Hamilton; Corporate Services; Financial Planning, Administration, and Policy staff; and, the Office of the City Clerk were consulted. This Report is consistent with the legislative requirements to request funding for advisory committees.

RELEVANT CONSULTATION

In preparation of this Report, the HCyC; the City of Hamilton; Corporate Services; Financial Planning, Administration, and Policy staff; and, the Office of the City Clerk were consulted. This Report has been prepared in consistency with the legislative requirements to request funding for advisory committees.

ANALYSIS AND RATIONALE FOR RECOMMENDATION(S)

As a result of COVID-19, typical projects and events were not able to be conducted in 2020, 2021, and most of 2022.

The Committee promotes cycling safety through their very successful distribution of Share the Road car magnets and stickers, and the distribution of bicycle lights at special events, to stress the importance of improved visibility of cyclists.

Committee Members, in conjunction with community groups, promote cycling in Hamilton during events like Bike Day, Supercrawl, and other City festivals. The HCyC also proposes to grow the profile of cycling in Hamilton by promoting and hosting more cycling events across the City, like Movie Night, which was held in Corktown Park on June 4, 2022.

Historically, projects or events have typically included film screenings, bicycle rides, various campaigns and project research. Members have also served as volunteer staff for the HCyC booth at the Toronto International Bike Show, promoting Hamilton as a cycling destination. They receive and share feedback from people that cycle on

Hamilton facilities, including Hamilton residents attending the show. The Committee works with Tourism Hamilton to promote the City's recreational assets by distributing the City map "Bike Routes, Trails & Parks", pamphlets printed by the Hamilton Conservation Authority, and financially contributes to the Ontario Cycling Organization - Ontario By Bike, to provide Hamilton specific information online.
Feedback received by HCyC Members ensures cycling projects are well vetted by the community, thereby, improving the quality of cycling facilities for both recreation and commuting purposes.

ALTERNATIVES FOR CONSIDERATION

N/A

ALIGNMENT TO THE 2016 – 2025 STRATEGIC PLAN

Community Engagement and Participation
Hamilton has an open, transparent and accessible approach to City government that engages with and empowers all citizens to be involved in their community

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.

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 PED22196 - 2023 Advisory Committee Budget Submission Form

CITY OF HAMILTON

2023

ADVISORY COMMITTEES

BUDGET SUBMISSION FORM

HAMILTON CYCLING ADVISORY COMMITTEE

PART A: General Information

ADVISORY COMMITTEE MEMBERS:

Jeff Axisa	Kate Berry
Roman Caruk	Sharon Gibbons
Jane Jamnik	Marko Maric
Ann McKay	Jessica Merolli
Cora Muis	William Oates
Chris Ritsma	Gary Rogerson
Cathy Sutherland	Dan van den Beukel
Kevin Vander Meulen	Christine Yachouh

MANDATE:

- all matters related to cycling and micro-mobility
- monitors the implementation of the Hamilton Cycling Master Plan
- encourages and participates in planning for bicycling and micro-mobility facilities
- encourages citizens to cycle instead of drive
- educates the public about the benefits and necessities of cycling
- integrates the work of area municipal bicycle and active transportation committees

PART B: Strategic Planning

STRATEGIC OBJECTIVES:

The Committee's goals are:

- Monitor and support progress in implementing the Cycling Master Plan
- Ensure community input on specific details associated with implementing the Cycling Master Plan
- Ensure that cycling needs are emphasized in all transportation related decisions
- Encourage legislation and policy changes that are supportive of cycling and sustainable mobility
- Promote cycling and micro-mobility for transportation and recreation through relevant events
- Educate the public on the benefits, necessities, and safety aspects of cycling
- Assist in establishing secure, adequate bicycle and scooter parking facilities
- Represent the cycling community at City of Hamilton sponsored functions/events
- Encourage the formation of, and liaise with other municipal cycling and active transportation committees
- Foster a mutual respect between cyclists and other road users

Please check off which Council approved Strategic Commitments your Advisory Committee supports			
1) Community Engagement & Participation	☑	**2) Economic Prosperity & Growth**	☑
3) Healthy & Safe Communities	☑	**4) Clean & Green**	☑
5) Built Environment & Infrastructure	☑	**6) Culture & Diversity**	☑
7) Our People & Performance	☑		

ALIGNMENT WITH CORPORATE GOALS:

PART C: Budget Request

INCIDENTAL COSTS:

Meeting Expenses	$1,000
SUB TOTAL	**$1,000**

SPECIAL EVENT/PROJECT COSTS:

Social Media Campaign	$500
Special Projects	$5,000
Tourism Promotions - supporting Ontario By Bike	$500
Supporting Community Events to Raise Awareness for Cycling	$3,000
Special Committee Cycling Events	$2,000
Training, Conferences and Memberships	$2,000
SUB TOTAL	**$13,000**

TOTAL COSTS	**$14,000**

Funding from Advisory Committee Reserve (only available to Advisory Committees with reserve balances)	**$4,000**

TOTAL 2023 BUDGET REQUEST (net of reserve funding)	**$10,000**
PREVIOUS YEAR (2022) APPROVED BUDGET (2021 Request $14,000)	**$14,000**

CERTIFICATION:

Please note that this document is a request for a Budget from the City of Hamilton Operating budget. The submission of this document does not guarantee the requested budget amount. Please have a representative sign and date the document below.

Representative Name: Chris Ritsma

Signature: Chris Ritsma (Oct 19, 2022 18:36 EDT)

Date: Oct 19, 2022

App A 2023 Advisory Committee Budget Submission Form_DRAFT

Final Audit Report 2022-10-19

Created:	2022-10-19
By:	Danny Pimentel (Danny.Pimentel@hamilton.ca)
Status:	Signed
Transaction ID:	CBJCHBCAABAA_W8fjQ2e3am29-3N_iF-jAiEQyxkcx_g

"App A 2023 Advisory Committee Budget Submission Form_DRAFT" History

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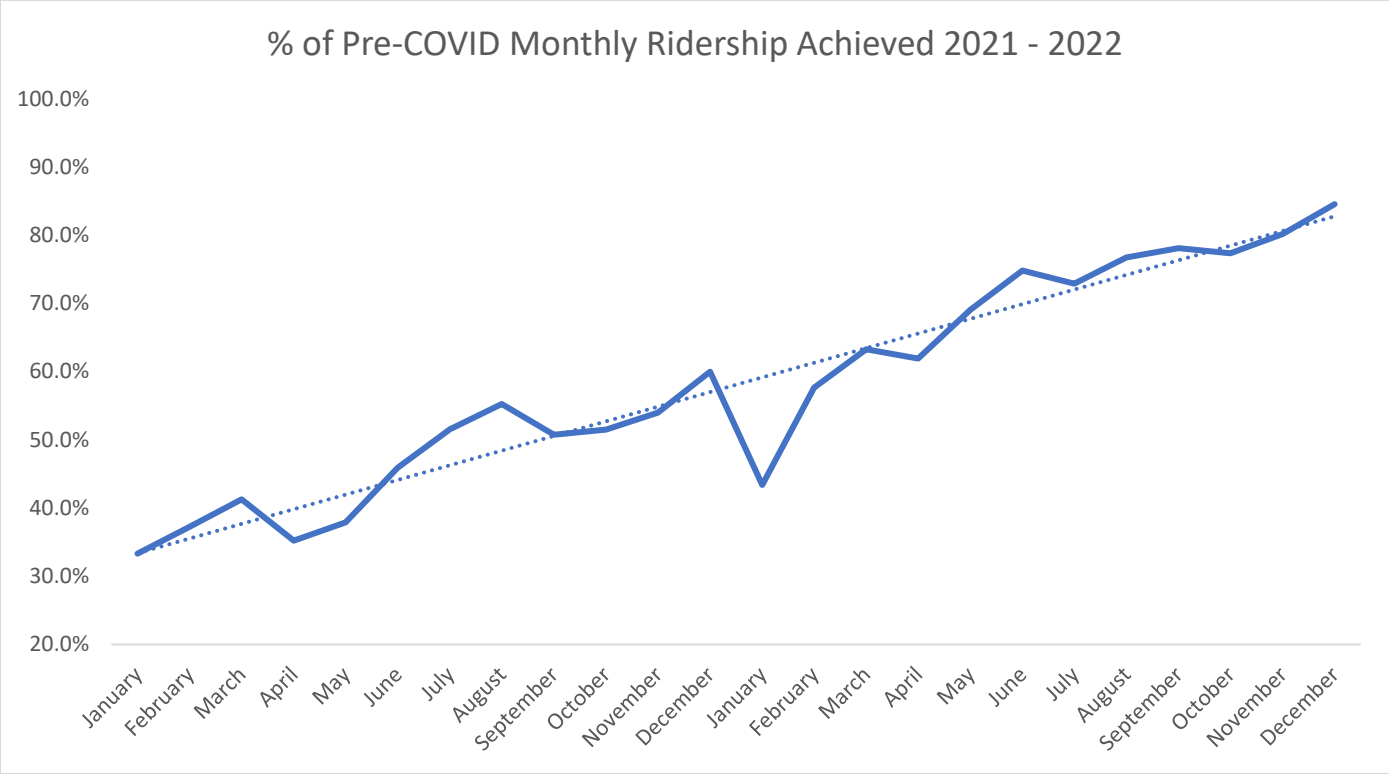
% of Pre-COVID Monthly Ridership Achieved 2021 - 2022
100.0%
90.0%
80.0%
70.0%
60.0%
50.0%
40.0%
30.0%
20.0%
January
February
March
April
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December

CITY OF HAMILTON
PUBLIC WORKS DEPARTMENT
Transit Division

TO:	Chair and Members Public Works Committee
COMMITTEE DATE:	November 28, 2022
SUBJECT/REPORT NO:	HSR Ridership Recovery through Fare Incentives (PW21056(a)) (City Wide)
WARD(S) AFFECTED:	City Wide
PREPARED BY:	Nancy Purser (905) 546-2424 Ext. 1876
SUBMITTED BY: **SIGNATURE:**	Maureen Cosyn Heath Director, Transit Public Works Department

RECOMMENDATIONS

(a) That further to report PW21056, the delegated authority to establish additional short-term fare promotions for the purpose of stimulating transit ridership recovery be extended to the General Manager, Public Works, until December 2023; and

(b) That the General Manager, Public Works, be directed to report back to the Public Works Committee respecting any short-term fare promotion after December 2023.

EXECUTIVE SUMMARY

On October 13, 2021, Council approved report PW21056 which allowed for the implementation of promotions and provided delegated authority to the General Manager Public Works to create additional programs designed to assist with financial needs and ridership recovery. This report seeks to extend this delegated authority for another year.

Due to the ongoing nature of the COVID 19 pandemic, transit ridership and revenue have remained below the 2019 levels for the past 30 months. The impact of the stay-at-home orders and gradual reopening that occurred during 2022 will result in a projected revenue shortfall of approximately $12.6 million, which will be fully funded by Phase 3 of the Safe Restart Program that carried forward into 2022. Looking ahead to 2023, it is

anticipated that ridership will continue to escalate, nearing 2019 levels. While the Safe Restart Program provided financial support through 2022, the status of this program into 2023 is uncertain. Hamilton has approximately $6 million dollars of unused Safe Restart Funding but is unclear if we will be able to carry this amount into 2023 and apply it to ease budget pressures.

The pandemic saw significant drops in ridership at transit agencies globally but impactfully highlighted the number of citizens for whom transit was an essential service. It also demonstrated that marginalized groups bore the brunt of the economic impact, and historically, price-sensitivity and affordability have always been identified areas of concern with transit customers. As such, HSR recognized that we could both support the community and implement new fare programs to welcome new customers to transit during the recovery period.

HSR has implemented a number of fare promotions: free fares to children aged 6-12; improved the loyalty program allowing customers to achieve free fares faster; a youth half price promotion for June, July, and August; and introduced a 72-hour pass for $15 to attract occasional transit users or visitors. We also partnered with Arkells during their “Rally” summer concert event, who in turn provided HSR with social media posts to reach new demographics of potential transit users.

Recent indicators show that ridership in Hamilton continues to recover, reaching 78% of 2019 pre-COVID levels in September of 2022. However, challenges remain as people continue to adapt to the new normal and with potential future waves in the winter months. In addition, work from home or hybrid options may have a long-lasting impact on commuter ridership. With the changing ridership patterns, HSR must introduce options to attract new customers with programs that stimulate greater community uptake while also offering fare options that alleviate financial strain. The continuation of delegated authority will allow HSR to be nimble and innovative and introduce fare options as needed during the on-going recovery period.

Alternatives for Consideration – N/A

FINANCIAL – STAFFING – LEGAL IMPLICATIONS

Financial: N/A

Staffing: N/A

Legal: N/A

HISTORICAL BACKGROUND

The following is a summary of the promotions initiated through approvals and delegated authority provided by Council on October 13, 2022, meant to assist with ridership recovery and address financial needs.

1. Children aged 6 – 12 ride free with a PRESTO card until April 30, 2023.

   This program launched November 1, 2021, by the end of first month we had 589 unique child customers taking 4,289 rides. In February 2022, the Hamilton Public Library partnered with us offering a free PRESTO card to children who were also library card holders. Through sourced funding, the HPL purchased 6,200 PRESTO cards for this purpose. This partnership has allowed more families to access transit with ridership reaching 14,320 from 2,100 unique customers by September 2022.

   This program has some operational issues, as some parents think their children can board without a PRESTO card, therefore their rides are not getting counted, and this is an important metric for transit funding with other levels of government. Also, there are some customers who are not children utilizing the child card. Over the coming months, there will be continued education reminding customers how the program works and the expectations of having the proper fare concession and PRESTO card.

2. Free Fare Faster – Loyalty benefit received after 8 rides until December 31, 2022.

   This program launched November 1, 2021 and has helped to address affordability issues for many of our riders. In October 2021, 2,071 unique customers were able to access the loyalty program when it was set at 11 rides with an average of four (4) free rides. As of September 2022, 8,659 customers were able to get free fare faster, with an average of six (6) free rides per customer.

3. Summer Special - 50% off Youth Transit – Summer 2022.

   This program allowed Youth to purchase any youth fares, tickets or passes, at 50% off for the month of June, July, and August. As part of this promotion, there were many outreach events occurring at high schools to encourage students to utilize transit. The promotion showed an increase in youth ridership from 72,406 in the summer of 2021 to 214,981 in the summer of 2022. Although this increase is still behind 2019 (411,838), the gap between 2019 and 2020 was closing through August and into September.

4. 72 hours for $15 until December 31, 2022.

   The product has been made available on the PRESTO E-ticket platform since August 1, 2022, and is targeted at tourists, therefore new customers to HSR.

Customers who purchase this product have 72 hours of unlimited travel on HSR. To date, 265 passes have been utilized with 1,361 trips taken.

ANALYSIS AND RATIONALE FOR RECOMMENDATION

HSR remains in a recovery phase from the pandemic, with ridership beginning to show steady increases on a monthly basis as indicated in Appendix "A" attached to Report PW21056(a).

The provincial Medical Officer of Health, Dr. Kieran Moore, has stated the COVID-19 pandemic has become something that will require long-term management. However, many people will continue to be impacted by the pandemic through 2023 and some have not yet returned to work or school or participate in large settings for personal health reasons. This will continue to impact ridership recovery.

Price-sensitivity and affordability have always been identified areas of concern with transit customers. With the added global economic pressures, customers are also dealing with diminished buying power due to high inflation causing greater concern for marginalized groups that have been impacted the most. By finding innovative ways to make transit more affordable and attractive during this time of recovery, customers will be encouraged to try transit with programs that alleviate financial strain and allow for greater community participation.

The Free Fare Faster (loyalty) program is available to everyone and provides cost relief weekly to those who utilize transit on a regular basis. This program is valuable and will continue into early 2023 at which point further analysis will be completed to determine its impact on both ridership and revenue in relation to the community benefit.

The 72-hours pass also appears to be successful in the initial data that is available; however, it needs more time in the market to allow for greater usage, data collection and feedback. This type of timed pass is common in large urban centres, and works well with tourists, conference attendees, holiday festival events and students who return home to Hamilton on school breaks.

As more data regarding who is returning to transit becomes available, HSR needs to be able to maintain a flexible approach to targeted promotions that will both increase ridership and provide a balanced approach to transit equity for all customers.

Staff will bring a more fulsome report regarding ongoing fare policies and programs targeted at marginalized customers in Q1 2023 for Council consideration which will include a recommendation regarding free fare to children aged 6-12 prior to the pilot end date of April 30, 2023.

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.

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 PW21056(a) – Percentage of Pre-COVID Monthly Ridership Achieved 2021-2022

CITY OF HAMILTON
PUBLIC WORKS DEPARTMENT
Transit Division
and
CORPORATE SERVICES DEPARTMENT
Financial Planning, Administration and Policy Division

TO:	Chair and Members Public Works Committee
COMMITTEE DATE:	November 28, 2022
SUBJECT/REPORT NO:	Investing in Canada Infrastructure Program, Public Transit Stream - Allocation of Funding Balance (PW19083(a)/FCS18048(b)) (City Wide)
WARD(S) AFFECTED:	City Wide
PREPARED BY:	Tanya Detmar (905) 546-2424 Ext. 1855 Craig Webb (905) 546-2424 Ext. 1870
SUBMITTED BY: **SIGNATURE:**	Maureen Cosyn Heath Director, Transit Public Works Department
SUBMITTED BY: **SIGNATURE:**	Brian McMullen Director, Financial Planning, Administration and Policy Corporate Services Department

RECOMMENDATIONS

(a) That Transit Staff be authorized and directed to submit project application(s) for the remaining Investing in Canada Infrastructure Program – Public Transit Stream funding allocation of $6,280,500 to the Province by January 2, 2023;

(b) That the amended Financing Strategy for the Investing in Canada Infrastructure Program attached as Appendix “A” to Report PW19083(a)/FCS18048(b), be approved;

(c) That the operating budget related to approved ICIP projects as shown in Appendix “B” to Report PW19083(a)/FCS18048(b), be incorporated in the Tax Supported Operating Budget for the appropriate fiscal year;

(d) That the Mayor and Clerk be authorized to execute all necessary documentation and associated ancillary documents including Funding Agreements, to receive funding under Investing in Canada Infrastructure Program, Public Transit Stream with content satisfactory to the General Manager, Public Works and in a form satisfactory to the City Solicitor;

(e) That where required to give effect and authorize the signing of a Transfer Payment Agreement and including any amendments between the City of Hamilton and His Majesty the King in right of Ontario as represented by the Ministry of Transportation for the Province of Ontario, to receive funding under the Investing in Canada Infrastructure Program, Public Transit Stream, Legal staff be directed to prepare a By-law in the form satisfactory to the City Solicitor for consideration by Council;

(f) That staff be authorized and directed to tender and implement projects contained in Appendix "A" to Report PW19083(a)/FCS18048(b) upon execution of a Transfer Payment Agreement between the City of Hamilton and His Majesty the King in right of Ontario as represented by the Minister of Transportation for the Province of Ontario to Receive Funding Investing in Canada Infrastructure Program, Public Transit Stream;

(g) That the Mayor and Clerk be authorized and directed to enter into and/or execute, on behalf of the City of Hamilton, all agreements and necessary ancillary documents required for Investing in Canada Infrastructure Program, Public Transit Stream as contained in PW19083(a)/FCS18048(b) with content acceptable to the General Manager, Public Works, and in a form satisfactory to the General Manager, Finance and Corporate Services and the City Solicitor; and

(h) That staff be directed to prepare all By-law(s) to authorize and implement Investing in Canada Infrastructure Program, Public Transit Stream projects as contained in report PW19083(a)/FCS18048(b), including those By-laws necessary to negotiate, place and secure all required capital funding.

EXECUTIVE SUMMARY

On July 11, 2022, the Province of Ontario informed the City of Hamilton (City) of two (2) changes to the Investing in Canada Infrastructure Program (ICIP) that were highlighted in the Government of Canada's 2022 Federal Budget, specifically:

- Program Extension
  In recognition of the impact of the COVID 19 emergency, the Government of Canada has extended the deadline for substantial completion of projects from

October 2027 to October 2033. The extended timeline applies to new and existing projects.

- Accelerated Timelines to Submit Applications
  The deadline to fully commit the remaining ICIP funding allocation has been accelerated. This means the previously communicated deadline of March 28, 2024, has been cancelled and final applications to allocate the remaining ICIP funding must be submitted to the Province by November 30, 2022. Notwithstanding the announcement, due to the 2022 Municipal Election and the observed Restricted Acts Period, Hamilton has been granted a deadline extension to January 2, 2023, to submit project applications

Hamilton has $6,280,500 in unallocated funding in the Investing in Canada Infrastructure Program – Public Transit Stream. Staff are requesting approval to submit the 2 project applications noted below and contained in Appendix "A" attached to Report PW19083(a)/FCS18048(b) for funding approval.

- Transit Hub Planning & Development $1,280,500; and
- Integrated Transit Accessible Vehicles $5,000,000

These projects will expend the remaining funding allocation and leverage $4,605,490 of senior government grants for transit projects that will improve the quality, safety, and capacity of public transit in Hamilton.

Alternatives for Consideration – See Page 8

FINANCIAL – STAFFING – LEGAL IMPLICATIONS

Financial: Appendix "A" attached to Report PW19083(a)/FCS18048(b) includes the Financing Strategy for the remaining allocation of $4,605,490 under the Investing in Canada Infrastructure Program – Public Transit Stream. The submission for use of these funds includes two (2) projects: Transit Hub Planning & Development and Integrated Transit Accessible Vehicles; with a gross cost of $6,280,500. The municipal share of the projects, totalling $1,675,010, are proposed to be funded through the Unallocated Capital Levy Reserve. Funds will be set aside from the Capital Levy in future capital budgets to ensure sufficient funding is available in the reserve to meet the City's financial obligations under the program.

Operating budget impacts for these capital projects of $1,641,000, as reported in Appendix "B" attached to Report PW19083(a)/FCS18048(b), will impact the Transit Tax Supported Operating Budget in the years 2024 through 2028. These impacts include $739,000 in maintenance costs,

$259,000 in fuel costs and $643,000 in contributions to reserve to replace vehicles in future years.

Staffing: N/A

Legal: The City will be required to enter into an amended transfer payment agreement with the Government of Ontario to receive the Investing in Canada Infrastructure Program, Public Transit Stream grants.

HISTORICAL BACKGROUND

The Investing in Canada Infrastructure Program (ICIP), announced on March 14, 2018, is a federal infrastructure program designed to create long-term economic growth, build inclusive, sustainable, and resilient communities, and support a low-carbon economy.

The Public Transit Stream of ICIP is intended to primarily build new urban transit networks and service extensions that will transform the way Canadians move, live and work.

The following table summarizes the maximum funding allocation available to Hamilton.

Federal Allocation	Provincial Allocation	Hamilton Contribution	Total
40%	33.33%	26.67%	100%
$204,382,600	$170,301,801	$136,272,099	$510,956,500

In October 2019, Hamilton submitted applications to the Province for a series of projects including fleet replacement and acquisition, a secondary maintenance and storage facility with related works on Birch Avenue, A Line priority measures and active transportation connections, totalling $504,676,000. The total approved funding allocation was $510,956,500, with a remaining balance of $6,280,500 as one project for PRESTO device refresh was not approved.

On July 11, 2022, the Province of Ontario informed the City of Hamilton of two (2) changes to the Investing in Canada Infrastructure Program that were highlighted in the Government of Canada's 2022 Federal Budget.

i. Program Extension to 2033; and
ii. Accelerated Timelines to Submit Applications for remaining allocation.

In this regard, the previously communicated application deadline of March 28, 2024, has been cancelled and final applications to utilize remaining ICIP funding must be submitted to the Ministry of Transportation by November 30, 2022. Notwithstanding the announcement, due to the 2022 Municipal Election and the observed Restricted Acts

Period, Hamilton has been granted a deadline extension to January 2, 2023, to submit project applications for the remaining allocation.

POLICY IMPLICATIONS AND LEGISLATED REQUIREMENTS

N/A

RELEVANT CONSULTATION

Corporate Services Department – Financial Planning, Administration and Policy Division and Legal Services Division

ANALYSIS AND RATIONALE FOR RECOMMENDATION

Hamilton must prepare and submit new project applications by the January 2, 2023, deadline or uncommitted funds will be reallocated by Canada to other priorities.

Projects must meet one of the following outcomes in order to be eligible for funding:

- Improved capacity of public transit infrastructure
- Improved quality and safety of existing and future transit system
- Improved access to a public transit system

Based on the ICIP Program Guide, the following projects are recommended to be forwarded for funding approval. These projects will exhaust Hamilton's ICIP funding allocation.

Project 1 – Transit Hub Planning & Development

This project will undertake functional and/or detailed design planning for transit hubs across Hamilton that will support the goals and objectives of the 10 Year Local Transit Strategy and the network redesign through (Re)envision the HSR. While the network redesign is still in its conceptual phase, based on the City's growth plans and considering the desired future-state network, transit hubs and amenities will play an important role in attracting new riders to transit from single occupied vehicles.

Design elements will include transit bus bays, transit shelters, secure bike facilities, wayfinding, benches, PRESTO equipment, lighting, and other amenities as required on a per-location basis to enhance the customer experience, safety, accessibility, and multi-modal travel opportunities.

Transit Hub locations under review include:

- Ancaster Fairgrounds Gateway (new)
- Centre Mall (new)
- Elfrida Gateway (new)
- Meadowlands Terminal (rehabilitation and expansion)
- Stoney Creek Gateway (rehabilitation and expansion)
- Upper Sherman Loop (new)
- Winona Crossing Terminal (new)

This preparatory design work will ensure Hamilton is ready to implement transit hub infrastructure once Capital Budget and/or additional funding opportunities become available.

The total project cost to be submitted is $1,280,500.

Project 2 – Integrated Transit Accessible Vehicles

Integrated transit combines different transportation options to maximize choice for customers in terms of convenience, time, comfort, safety and accessibility, while balancing cost and efficiency for the transit agency. It is accomplished by having a variety of different sized vehicles available for use for service options such as paratransit (Accessible Transportation Services) to conventional transit connections, community bussing and on-demand transit.

The existing HSR fleet is fully accessible; all vehicles are equipped with ramps and kneel. The 294-bus fleet is comprised of eleven 30-foot buses, two hundred and thirty-two 40-foot buses, forty-nine 60-foot articulated buses and 2 replica trollies. No on-road supervisory vehicles are accessible (equipped to carry a passenger in a wheelchair) at present.

This project will support HSR in acquiring smaller vehicles, for example, cutaways or 25 footers, for deployment in service and the replacement of four (4) supervisory vehicles with accessible vehicles.

Transit will identify potential geographic zones and connecting high frequency HSR fixed routes where integrated service can be implemented to support efficiency improvements. These efficiency improvements will arise from the combination of demand-responsive booked trips connecting to HSR fixed-route service, demand-responsive service for ATS customers and development of community bus routes for common destinations.

Four (4) supervisor vehicles will transition to accessible supervisor vehicles to provide for incident response and equipment failure on accessible fixed routes. This is necessary to increase the reliability of an integrated service model and enhance safety, particularly for ATS customers who take some or a portion of their trip on conventional service.

This project will improve systemwide efficiency by right-sizing vehicles to match demand, provide more flexible travel options, encourage the use of accessible fixed-route transit, and enhance customer safety.

The total project cost to be submitted is $5,000,000

The following summary provides the overall Capital costs associated with the new ICIP projects under consideration and the funding shares being recommended for Project Approval.

		Cost Sharing Breakdown		
Project Description	**Total Cost**	**Federal (40%)**	**Provincial (33.33%)**	**City (26.67%)**
1. Transit Hub Planning & Development	$ 1,280,500	$ 512,200	$ 426,790	$ 341,510
2. Integrated Transit Accessible Vehicles	$ 5,000,000	$ 2,000,000	$ 1,666,500	$ 1,333,500
Total:	**$ 6,280,500**	**$ 2,512,200**	**$ 2,093,290**	**$ 1,675,010**

ALTERNATIVES FOR CONSIDERATION

Council can opt not to direct staff to submit new project applications; however, the remaining funding allocation of $6,280,500 will be forfeited.

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.

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

Our People and Performance
Hamiltonians have a high level of trust and confidence in their City government.

APPENDICES AND SCHEDULES ATTACHED

Appendix “A” to Report PW19083(a)/FCS18048(b) – City of Hamilton ICIP Project Submission and Financing Strategy

Appendix “B” to Report PW19083(a)/FCS18048(b) – Operating Costs

City of Hamilton ICIP - Transit Stream Project Submission

Project Description	2023 (000's)	2024 (000's)	2025 (000's)	2026 (000's)	2027 (000's)	Total (000's)	Cost Sharing Breakdown: Federal 40%	Provincial 33.33%	City 26.67%
1. Transit Hub Planning & Development	80.5	300	600	$ 300		$ 1,280.5	$ 512.2	$ 426.8	$ 341.5
2. Integrated Transit Accessible Vehicles	$ 1,050	$ 1,050	$ 1,050	$ 1,050	$ 800	$ 5,000	$ 2,000.0	$ 1,666.5	$1,333.5
Total (000's):	**$ 1,131**	**$ 1,350**	**$ 1,650**	**$ 1,350**	**$ 800**	**$ 6,280.5**	**$ 2,512.2**	**$ 2,093.3**	**$1,675.0**

Financing Strategy	2023 (000's)	2024 (000's)	2025 (000's)	2026 (000's)	2027 (000's)	Total (000's)
Federal Share	$ 452.2	$ 540.0	$ 660.0	$ 540.0	$ 320.0	$ 2,512.2
Provincial Share	$ 376.8	$ 450.0	$ 549.9	$ 450.0	$ 266.6	$ 2,093.3
City Share	$ 301.5	$ 360.0	$ 440.1	$ 360.0	$ 213.4	$ 1,675.0
Total	**$ 1,130.5**	**$ 1,350.0**	**$ 1,650.0**	**$ 1,350.0**	**$ 800.0**	**$ 6,280.5**
City Funding Details:						
Unallocated Capital Levy Reserve	$ 301.5	$ 360.0	$ 440.1	$ 360.0	$ 213.4	$ 1,675.0
Total	**$ 301.5**	**$ 360.0**	**$ 440.1**	**$ 360.0**	**$ 213.4**	**$ 1,675.0**

Operating Budget Tax Impacts	2024 (000's)	2025 (000's)	2026 (000's)	2027 (000's)	2028 (000's)	Total (000's)
$ Operating Budget Impact	$ 333.0	$ 343.0	$ 355.0	$ 366.0	$ 244.0	$ 1,641.0

Summary of Operating Costs

Projects	2024 (000's)	2025 (000's)	2026 (000's)	2027 (000's)	2028 (000's)	Total (000's)
1. Transit Hub Planning & Development	$ -	$ -	$ -	$ -	$ -	**$0**
2. Integrated Transit Accessible Vehicles - Maintenance	$150.0	$155.0	$161.0	$165.0	$108.0	**$739.0**
2. Integrated Transit Accessible Vehicles - Fuel	$50.0	$53.0	$56.0	$60.0	$40.0	**$259.0**
2. Integrated Transit Accessible Vehicles - Reserve Contribution for Replacement	$133.0	$135.0	$138.0	$141.0	$96.0	**$643.0**
Total:	$333.0	$343.0	$355.0	$366.0	$244.0	**$1,641.0**

Total Operating ($000): $1,641.0

12.1

CITY OF HAMILTON

M O T I O N

Public Works Committee: November 28, 2022

MOVED BY COUNCILLOR M. WILSON…..……..……..……...

SECONDED BY COUNCILLOR ……..……..

Locke Street South & Westdale Business Improvement Areas (BIA) Electrical and Lighting Improvements (Ward 1)

WHEREAS, the Locke Street South Business Improvement Area and the Westdale Business Improvement Areas (BIA) promote small business and economic vibrancy within Hamilton;

WHEREAS, residents of Ward 1 and the patrons of both the Locke Street South BIA and Westdale BIA previously enjoyed enhanced seasonal lighting on the hydro poles along Locke and King Streets;

WHEREAS, improvements to the lighting on the street increases activity and vitality to the neighbourhood and promotes a healthy and engaged community;

WHEREAS, the state of the current lighting infrastructure is either broken or no longer compatible with new lighting types; and

WHEREAS, the failure to fix the current electrical and lighting infrastructure undermines the resident experience thereby, threatens the success of the City's Shop Local initiative, and prevents citizens from actively participating in public space.

THEREFORE, BE IT RESOLVED:

(a) That $20,000 be provided to the Locke Street Business Improvement Area to help support the electrical upgrades for the poll receptacles and lighting from Area Rating Capital Reinvestment Discretionary Fund (3302109100);

(b) That $20,000 be provided to the Westdale Business Improvement Area to help support the electrical upgrades for the poll receptacles and lighting from Area Rating Capital Reinvestment Discretionary Fund (3302009100 & 3302109100); and

(c) That the Mayor and City Clerk be authorized and directed to execute any required agreement(s) and ancillary documents, with such terms and conditions in a form satisfactory to the City Solicitor.