



Regular Council Meeting Agenda

December 16, 2019, 6:00 pm

Essex Civic Centre

360 Fairview Avenue West

Essex, Ontario

Accessible formats or communication supports are available upon request. Please contact the Clerk's Office at clerks@essex.ca or 519-776-7336 extension 1100 or 1101.

Pages

1. Call to Order
2. Closed Meeting Report
3. Declarations of Conflict of Interest
4. Adoption of Published Agenda
 - 4.1 Regular Council Meeting Agenda for December 16, 2019

Moved by _____
Seconded by _____
That the published agenda for the December 16, 2019 Regular Council Meeting be adopted as presented / amended.
5. Adoption of Minutes
 - 5.1 Regular Council Meeting Minutes for December 2, 2019 1

Moved by _____
Seconded by _____
That the minutes of the Regular Council Meeting held December 2, 2019, be adopted as circulated.
6. Public Presentations
 - 6.1 Essex Region Conservation Authority 10

Kevin Money, Director of Conservation Services and Kris Ives, Curator
RE: John R. Park Homestead Centre

Moved by _____
Seconded by _____
That the PowerPoint presentation regarding the proposed John R. Park Homestead Heritage Centre given by Kevin Money, Director of Conservation Services and Kris Ives, Curator of the Essex Region Conservation Authority, together with the letter of request, letters of support and request for financial support to assist with the construction of the Heritage Centre be (received/received and supported).
7. Unfinished Business
8. Reports from Administration

RE: Court of Revision for Shepley Drain: Bridge Replacements for Elwood Defour and Garry and Bonnie Quick (Part of Lots 6 and 7, Gore Concession) Geographic Township of Colchester South, Town of Essex, County of Essex

Moved by _____

Seconded by _____

That Legal and Legislative Services Report 2019-31, entitled "Court of Revision for Shepley Drain: Bridge Replacements for Elwood Defour and Garry and Bonnie Quick", dated December 16, 2019, prepared by Robert W. Auger, Town Solicitor/Clerk be received; and

That the following three (3) members of the Drainage Board: Dan Boudreau, Percy Dufour and Luke Martin be appointed to sit as members of the Court of Revision to be convened for the Shepley Drain: Replacement Bridges for Elwood Defour and Garry and Bonnie Quick, Geographic Township of Colchester South, Project REI2018D024, be scheduled for 5:00pm on January 15, 2019 in the Town of Essex, Council Chambers, 33 Talbot Street South, Essex; and

That By-law 1871 being a by-law to provide for the Shepley Drain: Replacement Bridges for Elwood Defour and Garry and Bonnie Quick, be read a first and second time and be provisionally adopted on December 16, 2019.

RE: 2020 Town of Essex Proposed Budget

Moved by _____

Seconded by _____

That Chief Administrative Officer Chris Nepszy's Verbal Report on the 2020 Town of Essex Proposed Budget be received.

RE: Appointment of an engineer to prepare a report under Section 78 of the Drainage Act to replace an existing access culvert over the South Townline Drain to serve the agricultural lands of Richard Dubniac

Moved by _____

Seconded by _____

That Drainage Report 2019-06 entitled "Appointment of an Engineer to Prepare a Report to Replace an Existing Access Culvert(Richard Dubniac)", dated December 16, 2019, prepared by Norm Nussio, Manager, Operations and Drainage be received; and

That Council appoint engineering firm Rood Engineering Incorporated to develop a report replacing an existing culvert over the South Townline Drain to serve the agricultural lands of Richard Dubniac.

RE: 2019 Community Improvement Plan (CIP) Annual Update

Moved by _____

Seconded by _____
That Planning Report 2019-58, entitled “2019 Community Improvement Plan (CIP) Annual Update”, dated December 16, 2019, prepared by Rita Jabbour, Manager, Planning Services be received; and

That the Economic Development Officer, or the Manager of Planning Services in his or her absence, be delegated authority for the administration of the Harrow, Essex Centre and Colchester and County Road 50 CIP, and the execution of agreements on applications submitted under the individual Programs; and

That Council direct Administration to prepare a by-law to amend the Community Improvement Project Area and Implementation Strategy for the Essex Centre CIP; and

That Council direct Administration to prepare a by-law for the Implementation Strategy of the Harrow CIP and Colchester and County Road 50 CIP.

8.5 Planning Report 2019-60 323

RE: M. Skipper Request for By-law Repeal

Moved by _____

Seconded by _____

That Planning Report 2019-60, entitled "M. Skipper Request for By-Law Repeal", dated December 16, 2019, prepared by Jeff Watson, Planner be received; and

That Council support Administration's report that By-laws 430 and 1449 are now redundant site plan control by-laws for the properties located at 186-190 Talbot Street South; and

That By-law 1873 being a by-law to repeal By-laws 430 and 1449 be read a first, second and third time and finally passed on December 16, 2019.

8.6 Finance and Business Services Report 2019-07 329

RE: Revised Schedules to By-Laws 1186, 1331 and 1850

Moved by _____

Seconded by _____

That Corporate Services Report 2019-07 entitled “Revised Schedules to By-Laws 1186, 1331 and 1850”, dated December 16, 2019, prepared by Jeffrey R. Morrison, Director, Corporate Services be received; and

That the following three schedules be revised effective January 1, 2020:

1. Schedule “C” to By-Law Number 1186, being a by-law respecting the maintenance, management, regulation and control of any cemetery owned by The Corporation of the Town of Essex,
2. Schedule “A” to By-Law Number 1331, being a by-law to establish a schedule of miscellaneous fees and charges, and
3. Schedule “B-1” and “B-2” to By-Law Number 1850, being a by-law for the imposition of Development Charges.

8.7 Planning Report 2019-61 336

RE: Site Plan Control Approval 1627015 Ontario Limited, W. Mills, Agent

parking space be installed at the entrance of the church on St. Paul Street be received and forwarded to Administration for review/report; and

That if the request for an accessible parking space be supported , that By-law 223 being a By-law to provide for Accessible Parking be amended accordingly to reflect the addition.

11.2.2 Town of Amherstburg 517

Re: Municipal Modernization Program
Shared Services

Moved by _____

Seconded by _____

That correspondence from the Town of Amherstburg, dated November 29, 2019 advising that a resolution was passed directing Administration to engage the professional services of a third party consultant, in accordance with the program eligibility requirements, to undertake a municipal service delivery review to address opportunities to achieve cost savings and efficiencies for the Town of Amherstburg and opportunities for shared services with regional municipalities; and that the Mayor send correspondence to the regional Mayors seeking participation in the shared services review in a future Municipal Modernization Program be (received/received and supported); and

If Council chooses to support the Town of Amherstburg request, a letter of support be sent to Mayor DiCarlo advising of the Town of Essex's desire to participate in such an initiative.

12. Committee Meeting Minutes

Moved by _____

Seconded by _____

That the minutes listed in Item 12, together with any recommendations noted therein, be received, approved and adopted as circulated.

12.1 **Court of Revision: South Malden Road Bridge for Kendrick** 519
October 7, 2019

12.2 **Court of Revision: Batten Drain and Philip Ferris Drain** 523
November 18, 2019

12.3 **Drainage Board: Shepley Drain: Replacement Bridges for Defour and Quick** 529
November 12, 2019

12.4 **Essex Municipal Heritage Committee** 535
November 13, 2019

13.	Financial	
14.	New Business	
15.	Notices of Motion	
16.	Reports and Announcements from Council Members	
17.	By-Laws	
17.1	By-Laws that require a third and final reading	
17.1.1	By-Law 1872	539
	Being a by-law to confirm the proceedings of the December 2, 2019, Regular Meeting of Council of The Corporation of the Town of Essex	
	Moved by _____	
	Seconded by _____	
	That By-Law 1872, being a by-law to confirm the proceedings of the December 2, 2019, Regular Meeting of Council of The Corporation of the Town of Essex, be read a third time and finally passed on December 16, 2019.	
17.1.2	By-Law 1859	541
	Being a by-law to provide for the Thompson Drain: New Bridge for Cindy Brockman, Part of Lot 32, N.M.R. Concession, Geographic Twp. of Colchester North, Project REI2019D005, Town of Essex, County of Essex	
	Moved by _____	
	Seconded by _____	
	That By-Law 1859 being a by-law to provide for Thompson Drain: New Bridge for Cindy Brockman, Part of Lot 32, N.M.R. Concession, Geographic Township of Colchester North, Project REI2019D005, Town of Essex, County of Essex be read a third time and finally passed on December 16, 2019	
17.1.3	By-Law 1860	544
	Being a by-law to provide for Batten Drain: Replacement Bridge for Abram Harms Holdings, Inc. Part of Lot 27, N.M.R. Concession, Geographic Township of Colchester North, Project REI2019D024, Town of Essex, County of Essex	
	Moved by _____	
	Seconded by _____	
	That By-Law 1860 being a by-law to provide for the Batten Drain: Replacement Bridge for Abram Harms Holdings, Inc., Part of Lot 27, N.M.R. Concession, Geographic Township of Colchester North, Project REI2019D024, Town of Essex, County of Essex be read a third time and finally passed on December 16, 2019.	
17.1.4	By-Law 1861	547
	Being a by-law to provide for the Philip Ferris Drain: Drain	

Diversion for Atlas Tube Inc., Geographic Township of Colchester South, Project REI2019D007, Town of Essex, County of Essex

Moved by _____

Seconded by _____

That By-Law 1861 being a by-law to provide for Philip Ferris Drain: Drain Diversion for Atlas Tube Inc., Geographic Township of Colchester South, Project REI2019D007, Town of Essex, County of Essex be read a third time and finally passed on December 16, 2019.

17.2 By-Laws that require a first, second, third and final reading

17.3 By-Laws that require a first and second reading

17.3.1 By-Law 1875 550

Being a by-law to confirm the proceedings of the December 16, 2019 Regular Meeting of Council of the Corporation of the Town of Essex.

Moved by _____

Seconded by _____

That By-law 1875 being a by-law to confirm the proceedings of the December 16, 2019 Regular Meeting of The Corporation of the Town of Essex be read a first and second time and provisionally adopted December 16, 2019.

18. Adjournment

Moved by _____

Seconded by _____

That the meeting be adjourned at [TIME].

19. Future Meetings

19.1 Monday, January 13, 2020 - 5:30 PM - 8:30 PM Budget Deliberations

Location: Essex Municipal Office, Large Meeting Room, 33 Talbot Street South, Essex

19.2 Monday, January 20, 2020 - 6:00 PM - 9:00 PM Regular Council Meeting

Location: County of Essex Council Chambers, 360 Fairview Avenue West, Essex



The Corporation of the Town of Essex
Regular Council Meeting Minutes

December 2, 2019, 6:00 pm
Essex Civic Centre
360 Fairview Avenue West
Essex, Ontario

Present: Mayor Larry Snively
Deputy Mayor Richard Meloche
Councillor Joe Garon
Councillor Morley Bowman
Councillor Kim Verbeek
Councillor Steve Bjorkman
Councillor Chris Vander Doelen
Councillor Sherry Bondy

Also Present: Chris Nepszy, Chief Administrative Officer
Doug Sweet, Director, Community Services/Deputy CAO
Jeffrey Morrison, Director, Corporate Services/Treasurer
Lori Chadwick, Director, Development Services
Robert Auger, Town Solicitor, Legal and Legislative Services/Clerk
Shelley Brown, Deputy Clerk, Legal and Legislative Services
Robin Hall, Administrative Assistant

1. Call to Order

Mayor Snively called the meeting to order at 6:09 PM.

2. Closed Meeting Report

3. Declarations of Conflict of Interest

4. Adoption of Published Agenda

4.1 Regular Council Meeting Agenda for December 2, 2019

Moved By Councillor Bjorkman
Seconded By Deputy Mayor Meloche

(R19-12-478) That the published agenda for the December 2, 2019 Regular Council Meeting, be adopted as amended with the removal of agenda item 17. By-Law, 17.1.1 By-Law 1859, as this by-law will be placed on the December 16, 2019 Regular Council Meeting Agenda for consideration.

Carried

5. Adoption of Minutes

5.1 Regular Council Meeting Minutes for November 18, 2019

Moved By Councillor Bowman
Seconded By Councillor Garon

(R19-12-479) That the minutes of the Regular Council Meeting held November 18, 2019, be adopted as circulated.

Carried

6. Public Presentations

6.1 Town of Essex Accessibility Advisory Committee

Richard Kokovai, Chair and Lisa Wallace, Vice Chair appeared before Council to present the Town of Essex Multi-Year Accessibility Plan for 2019 - 2024. Mr. Kokovai told Council that the document lays out items that would help the Town be more accessible over the next few years. Ms. Wallace shared some of the successes of the Essex Accessibility Advisory Committee including the Mobi Mat, the ramp at the Colchester Harbour and the accessible swings in parks throughout our municipality.

Moved By Deputy Mayor Meloche
Seconded By Councillor Verbeek

(R19-12-480) That the presentation by the Town of Essex's Accessibility Committee Chair Richard Kokovai and Vice Chair Lisa Wallace, together with a copy of the Town of Essex Multi-Year Accessibility Plan 2019 to 2024, prepared by Town Administration in conjunction with the Town of Essex Accessibility Advisory Committee, be received and adopted; and

That the Multi-Year Accessibility Plan for 2019-2024 to be placed on the Town's various media platforms for public viewing and further shared with the community using suitable methods of communications.

Carried

6.2 Jim Oakley, Essex Resident

Jim Oakley, Essex Resident appeared before Council to ask that they consider reviewing the policy on development charges for semi-detached residences on infill lots. Mr. Oakley asked Council to review the development charges for Ward 3 specifically. He stated that it is difficult to create affordable housing with having a semi-detached unit that brings on a second round of fees.

Moved By Councillor Vander Doelen
Seconded By Councillor Bjorkman

(R19-12-481) That Jim Oakley's presentation asking Council to consider reviewing the Town's policy on development charges for semi detached residences on appropriate infill lots, be received.

Carried

Moved By Councillor Vander Doelen
Seconded By Deputy Mayor Meloche

(R19-12-482) That Administration be directed to prepare a report on the cost to ratepayers on elimination of development charges on residential

infill lots.

Carried

6.3 Valerie Alexander, Daniel Inverarity and Melanie Coulter, Executive Director Windsor Essex County Humane Society

RE: Town of Essex Animal Care and Control By-Law 1606, Part 6, Section 6.04 Tethers

Valerie Alexander, Dan Inverarity and Melanie Coulter, Executive Director of Windsor Essex County Humane Society, appeared before Council asking that consideration be given to reducing the tethering limit from ten (10) hours per day to four (4) hours per day. The delegation reported that studies have suggested that a tethered animal is more likely to be aggressive. The delegation also noted that even though the Town's by-law is progressive the majority of municipalities have moved to a 4 hour tethering limit, and by reducing the tethering limit it would be more humane for the animal and enforcement would be easier.

Discussion ensued amongst the Council Members including discussion that was in support of the delegate's request, but also discussion that suggested that the proposed changes might not be practical for working families or rural segments of the community and further that the by-law already provides for suitable protection.

Moved By Councillor Bjorkman
Seconded By Councillor Bowman

(R19-12-483) That the presentation by Valerie Alexander and Dan Inverarity asking Council to consider reducing the tethering limit from ten (10) hours per day, to four (4) hours per day, be received. Carried

Moved By Councillor Bondy
Seconded By Councillor Bjorkman

(R19-12-484) That the Town of Essex's Animal Control By-Law 1606 - Part 6, Section 6.04 Tethers 6.04.1, Section iii., be amended to read "The animal is not tethered for longer than four (4) hours per day".

Councillor Bondy asked for a recorded vote.

Recorded	Support	Opposed
Mayor Snively	X	
Deputy Mayor Meloche		X
Councillor Garon	X	
Councillor Bowman		X
Councillor Verbeek	X	
Councillor Bjorkman	X	
Councillor Vander Doelen		X
Councillor Bondy	X	
Results	5	3
		Carried (5 to 3)

On the recorded vote of five (5) in support and three (3) opposed the motion is "Carried".

7. Unfinished Business

8. Report from Administration

8.1 Community Services Report 2019-040

RE: New Year's Town Sponsored Events

Moved By Councillor Bjorkman

Seconded By Councillor Bowman

(R19-12-485) That Community Services Report 2019-040, entitled "New Year's Town Sponsored Events", prepared and submitted by Doug Sweet, Director, Community Services/Deputy Chief Administrative Officer, dated December 2, 2019, be received; and

That Council supports the Town sponsored New Year's events which include free public skating sessions on December 31, 2019 at both the Essex Centre Sports Complex from 4:00 PM to 6:00 PM and the Harrow and Colchester South Community Centre from 6:00 to 8:00 PM, and a free public swim session at the Essex Recreation Complex on January 1, 2020 from 1:00 PM to 2:30 PM.

Carried

8.2 Community Services Report 2019-042

RE: Special Events Resource Team (SERT) November Update

Moved By Councillor Vander Doelen

Seconded By Deputy Mayor Meloche

(R19-12-486) That Community Services Report 2019-042, entitled "Special Events Resource Team (SERT) November Update", prepared and submitted by Doug Sweet, Director, Community Services/Deputy Chief Administrative Officer, dated December 2, 2019, be received.

Carried

8.3 Legal and Legislative Services Report 2019-030

RE: Town Insurance Agreement Option to Extend

Moved By Councillor Bjorkman

Seconded By Councillor Garon

(R19-12-487) That Legal and Legislative Services Report 2019-030, entitled "Town Insurance Agreement Option to Extend", prepared and submitted by Robert Auger, Town Solicitor/Clerk, dated December 2, 2019, be received; and

That the Agreement with Aon Reed Stenhouse Inc. ("Aon") for the provision of the Town's general insurance and risk management services program be extended for an additional five (5) year period, beginning January 1, 2020 and continuing until December 31, 2024, all in accordance with RFP CO-14-002 and the Town's Procurement and Disposal of Goods and Services Policy (Policy 013).

Carried

8.4 Planning Report 2019-54

RE: Site Plan Control Approval, Covey Investments Incorporated
(Crawford Packaging), Essex Centre (Ward 1)

8.4.1 By-Law 1867

Being a by-law to enter into a Site Plan Control Agreement between
The Corporation of the Town of Essex and Covey Investments
Incorporated
(South side of South Talbot Road and west of Reed Street)

Moved By Councillor Bjorkman
Seconded By Councillor Garon

(R19-12-488) That Planning Report 2019-54, entitled "Site Plan
Control Approval, Covey Investments Incorporated (Crawford
Packaging, Essex Centre (Ward 1)", submitted by Jeff Watson,
Policy Planner and submitted by Lori Chadwick, Director,
Development Services, dated December 2, 2019, be received and
approved; and

That By-Law 1867, being a by-law to enter into a Site Plan Control
Agreement between The Corporation of the Town of Essex and
Covey Investments Incorporated, be read a first, a second and a
third time and finally passed on December 2, 2019.

Carried

8.5 Planning Report 2019-59

RE: Approval of an off-site temporary advertising sign for Just Drive Right
Driving School, Jason Ferguson

Moved By Councillor Vander Doelen
Seconded By Deputy Mayor Meloche

(R19-12-489) That Planning Report 2019-59, entitled "Approval of an off-
site temporary advertising sign for Just Drive Right Driving School, Jason
Ferguson", prepared by Jeff Watson, Policy Planner and submitted by Lori
Chadwick, Director, Development Services, dated December 2, 2019, be
received and

That the placing of an off-site sign at 167 Talbot Street South for Just
Drive Right Driving School be approved, subject to the issuance of a sign
permit and with the additional condition that Just Drive Right Driving
School may, with owners consent, use this property for the placement of
one off-site commercial advertising sign in the future, subject to the
issuance of a sign permit for each such occasion all in accordance with
the provisions of By-Law 1350.

Carried

8.6 Office of the CAO Report 2019-02

RE: Municipal Modernization Program: Intake 1

Moved By Councillor Garon
Seconded By Councillor Bjorkman

(R19-12-490) That the Office of the CAO Report 2019-02, entitled "Municipal Modernization Program: Intake 1", submitted by Chris Nepszy, Chief Administrative Officer, dated December 2, 2019, be received;

That the submission of the Town of Essex for funding up to the \$200,000 in the Municipal Modernization Program be supported, and

That Administration be directed to engage the professional services of a third party consultant, in accordance with the program eligibility requirements, to undertake a municipal services delivery review to address opportunities to achieve cost savings and efficiencies for the Town of Essex and opportunities for shared services with regional municipalities.

Carried

9. Reports from Youth Members

10. County Council Update

11. Correspondence

11.1 Correspondence to be received

Moved By Councillor Bjorkman
Seconded By Deputy Mayor Meloche

(R19-12-491) That correspondence in agenda item 11.1, listed below be received and where indicated, to further share such information with the community using suitable methods of communication.

Carried

**11.1.5 Windsor Essex County Environment Committee (WECEC) Meeting
- November 14, 2019**

- Appendix A "Draft Climate Change Adaptation Plan: Degrees of Change, dated November 15, 2019"

11.1.6 Union Water Supply System - Joint Board of Management Meeting

- October 16, 2019 Minutes
- November 20, 2019 Agenda

11.1.1 Association of Municipalities of Ontario (AMO) - Policy Update

RE: Public Health and Emergency Health Services Modernization Consultation

Update on the consultation process for Public Health and Emergency Health Services Modernization and to provide communication sites to research ongoing developments.

11.1.2 Essex Region Conservation Foundation

RE: New Heritage Centre at John R. Park Homestead

Correspondence from the Essex Region Conservation Foundation announcing a new facility at John R. Park Homestead that will

enhance the visitor/student experience and serve as a Tourism/Cultural Hub, and to provide an enhanced tourism experience for guests that will better highlight the many incredible places of interest along County Road 50 and within the County of Essex.

11.1.3 Prime Minister's Awards

RE: Invitation for Nominations - 2020 Prime Minister's Awards for Teaching Excellence

Nomination Deadline January 14, 2020 - 11:59 AM at Canada.ca/pm-awards or by mail

- Nomination Form

11.1.4 Town of Amherstburg

RE: Declaration of Climate Emergency in the Town of Amherstburg

Correspondence from the Town of Amherstburg advising the Minister of the Environment, Conservation and Parks on their position with respect to Climate Change.

11.1.7 Municipality of Prescott

RE: Building Code Act

Resolution requesting that the Province of Ontario provide evidence, based on justification to municipalities that the creation of a new Delegated Administrative Authority is necessary, prior to any legislative changes to the Building Code Act.

11.2 Correspondence to be considered for receipt and support

12. Committee Meeting Minutes

Moved By Councillor Bowman

Seconded By Deputy Mayor Meloche

(R19-12-492) That the minutes in agenda item 12, listed below together with any recommendations noted therein, be received, approved and adopted as circulated.

Carried

12.3 Essex Accessibility Advisory Committee - November 7, 2019

12.1 Essex Municipal Heritage Committee

- September 26, 2019
- October 24, 2019

12.2 Arts, Culture and Tourism Committee

- October 9, 2019
- November 13, 2019

13. Financial

14. New Business

15. Notices of Motion

15.1 The following Notice of Motion was presented at the November 18, 2019 Regular Council Meeting and is being brought forward for consideration this evening:

15.1.1 Councillor Bondy - Change to the Procedural By-Law

Moved By Councillor Bondy
Seconded By Councillor Garon

(R19-12-493) That an amendment to the Procedural By-Law to prohibit Town of Essex meetings from being held on November 11th, Remembrance Day.

Carried

16. Reports and Announcements from Council Members

17. By-Laws

17.1 By-Laws that require a third and final reading

17.1.1 By-Law 1863

Being a by-law for the declaration of surplus lands by The Corporation of the Town of Essex
(on Shepley Avenue on Registered Plan 1553, Colchester North, Essex)

Moved By Councillor Bowman
Seconded By Councillor Garon

(R19-12-494) That By-Law 1863 being a by-law for the declaration of surplus lands by The Corporation of the Town of Essex, be read a third time and finally passed on December 2, 2019.

Carried

17.1.2 By-Law 1869

Being a by-law to confirm the proceedings of the November 18, 2019 Regular Meeting of the Council of The Corporation of the Town of Essex

Moved By Councillor Bjorkman
Seconded By Councillor Vander Doelen

(R19-12-495) That By-Law 1869 being a by-law to confirm the proceedings of the November 18, 2019 Regular Meeting of the Council of The Corporation of the Town of Essex, be read a third time and finally passed on December 2, 2019.

Carried

17.2 By-Laws that require a first, second, third and final reading

17.3 By-Laws that require a first and second reading

17.3.1 By-Law 1872

Being a by-law to confirm the proceedings of the December 2, 2019 Regular Meeting of the Council of The Corporation of the Town of Essex

Moved By Councillor Bjorkman
Seconded By Councillor Garon

(R19-12-496) That By-Law 1872 being a by-law to confirm the proceedings of the December 2, 2019 Regular Meeting of the Council of The Corporation of the Town of Essex, be read a first and a second time and provisionally adopted on December 2, 2019.

Carried

18. Adjournment

Moved By Councillor Vander Doelen
Seconded By Deputy Mayor Meloche

(R19-12-497) That the meeting be adjourned at 7:59 PM.

Carried

Mayor

Clerk

From: noreply@esolutionsgroup.ca
To: [Clerks](#)
Subject: New Response Completed for Delegation Request Form
Date: Friday, December 6, 2019 11:20:18 AM
Attachments: [2019-12-06-005.pdf](#)

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Hello,

Please note the following response to Delegation Request Form has been submitted at Friday December 6th 2019 11:19 AM with reference number 2019-12-06-005.

- **Name**
Kevin Money
- **Date of Request**
12/6/2019
- **Are you representing a group?**
Yes
- **Name of Group (if applicable)**
Essex Region Conservation Authority
- **Provide details on the issue(s) you wish to present to Council and any actions you will be asking Council to take.**
The Essex Region Conservation Authority is seeking \$100,000.00 in funding to assist in the construction of a new Heritage Centre at the John R. Park Homestead
- **Have you consulted with Town staff on this issue?**
Yes
- **If you've consulted with Town staff, please provide the names of staff members you've talked to and the details of those discussions.**
Chris Nepszy
- **If this is a property matter, are you an owner?**
Not applicable

- **Have you appeared before Council in the past regarding this issue?**

No

- **Will you have written or printed materials to distribute? If so, please submit 12 copies of printed materials to the Clerk before the meeting.**

Yes

- **Will you be delivering an electronic presentation that requires access to a computer and software? If so, please submit your presentation on CD, DVD or flash drive by noon on the Friday before the Council meeting.**

Yes

- **Your Address or Group Contact Address (full mailing address including postal code)**

Essex Region Conservation Authority
360 Fairview Ave. W. Suite 311

- **Work**

519-776-5209 ext. 351

- **Email Address**

kmoney@erca.org

- **Name and address of all representatives attending, including their positions**

Kevin Money, Director of Conservation Services
Kris Ives, Curator

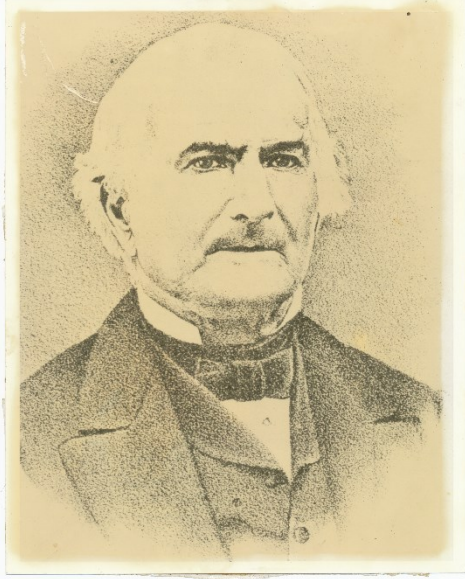
[This is an automated email notification -- please do not respond]

John R. Park Homestead Heritage Center



Essex Region
Conservation Authority
sustaining the place for life

John R. Park Homestead Heritage Centre



- Unique original early settler Homestead site featuring 1842 home and ten period outbuildings
- Park Family and Fox Family agricultural and manufacturing histories
- Human and natural history of the Essex Region
- The only living history, agricultural museum west of London, ON



John R. Park Homestead Heritage Centre



- Welcomes more than 14,000 students and visitors annually
- 4,000 visitors during the 30 day maple syrup season
- Additional features: nature trail, heritage orchard, early settler kitchen garden, and native plant garden.
- Over 90 volunteers, contributing over 4400 hours of time and talent per year (=2.5 FTE)



John R. Park Homestead Heritage Centre

- Knowledge sharing workshops in traditional skills: basket weaving, wood carving, blacksmithing, etc.
- Valuable employment opportunities for local students
- Active livestock program and public education/engagement opportunities



John R. Park Homestead Heritage Center

- Reflect the existing historical buildings in style and provide an unobstructed view of the grounds and lake
- Use environmental sustainable materials and design (including water/wastewater reuse, energy, building materials and renewable energy)
- Be fully accessible
- Have a flexible, multipurpose space that can accommodate school groups, event visitors, exhibits, general day-use visitors, and small rentals
- Include a connected outdoor space to accommodate events and alternative classroom environments
- Include spaces for office and gift shop



John R. Park Homestead Heritage Centre



John R. Park Homestead Heritage Centre

7.9 - The AT Committee, County, Local Municipalities, ERAC and respective partners should make the development of end-of-trip facilities a priority during the planning and implementation of active transportation facilities.

7.10 – Create partnerships with local public and private organizations and integrate end-of-trip facilities into active transportation promotional strategies and initiatives.



John R. Park Homestead Heritage Centre



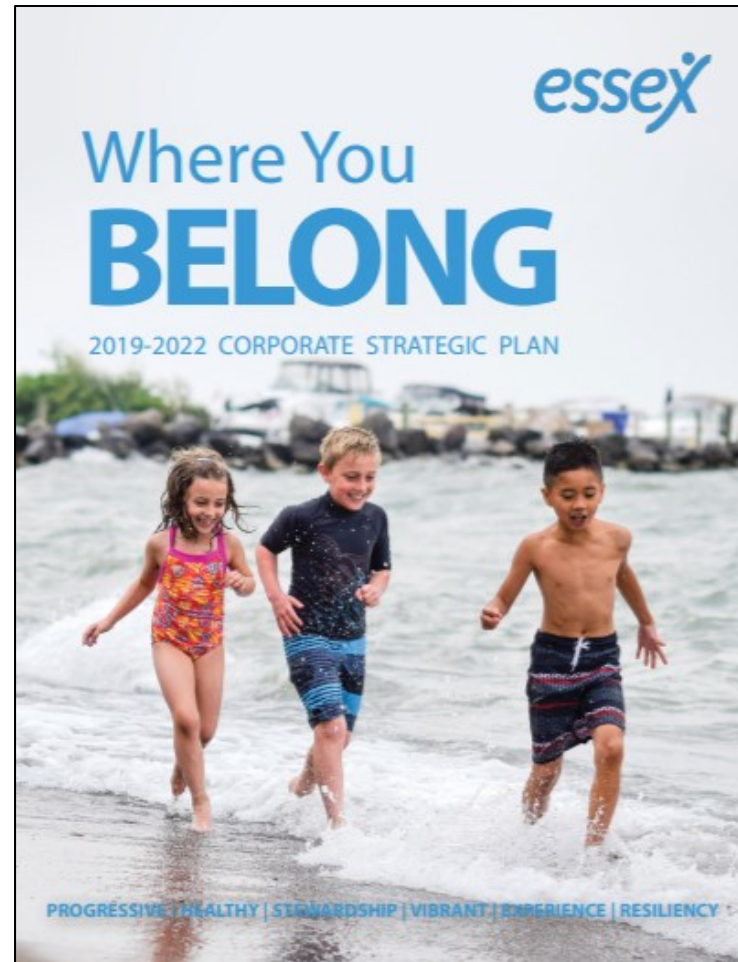
John R. Park Homestead Heritage Centre



Colchester and County Road 50
Community Improvement Plan
Implementation Strategy
April 2018



(Revised July 2019)



John R. Park Homestead Heritage Centre



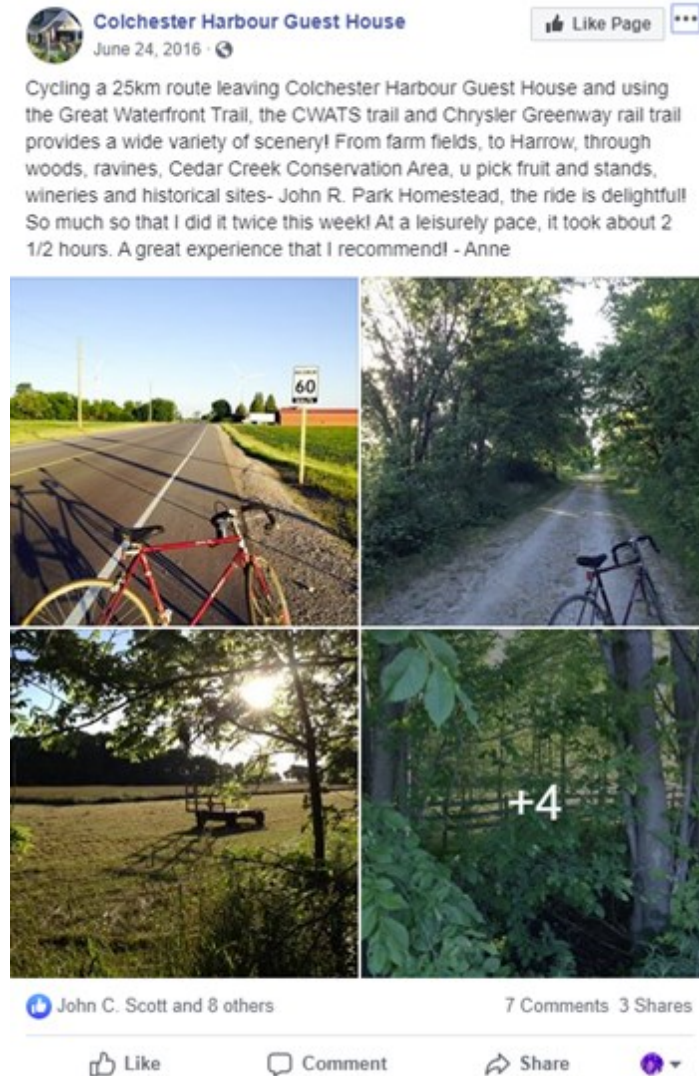
John R. Park Homestead Heritage Centre

- Strong partner in Explore the Shore
- Public Washrooms
- Lakefront Access
- No admission charge except for events
- Developed partnerships with local businesses
- Customer Service Oriented Staff



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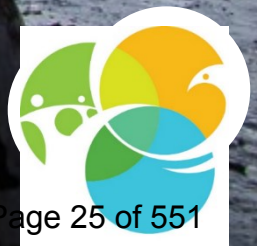


Our Request: \$100,000

- In support of the construction of a tourism hub in partnership with Tourism Windsor Essex Pelee Island with trained staff able to promote area attractions, festivals, restaurants, wineries, stores and more.



Thank You





Creating a Heritage Hub



December 9, 2019

Dear Mayor Larry Snively and Essex Town Councillors:

We sincerely thank you for your past support of the John R. Park Homestead. As you know, a visit to the John R. Park Homestead Conservation Area takes visitors back in time to the 1850s. The original house and farm buildings of John and Amelia Park have been restored to bring the nineteenth century to life. Located in the Town of Essex, the Homestead has been recognized by Tourism Windsor-Essex-Pelee Island as the Best Museum/Heritage Space in Windsor-Essex for the past two years. It



has also received the Russell K. Cooper Award from the Ontario Historical Society for “a living history museum showing excellence in programming, ingenious problem solving or site development”. The Homestead is Ontario’s only living historical farm museum west of London, giving it significant regional importance, and attracting visitors from far and wide.

An important link to our region’s history

When John R. Park and his wife, Amelia (Gamble) Park, completed construction of the Greek Revival Home in 1842, little did they know the impact they would have on our region and community. The three Park brothers – Thomas, John and Theodore - established a shipping and trading business, Park & Co. The Park Brothers were enterprising gentlemen during Essex County’s pioneering era, and their ties to the manufacturing and agricultural history of this region are important. They owned and operated a fleet of schooners and steamships exporting natural resources, raw materials and agricultural goods, and importing manufactured goods

from distant, industrial ports as far away as Liverpool. They also operated a sawmill in the centre of the community, taking advantage of the county's expansive Carolinian forests, and the voracious need for lumber in the developing region for the manufacture of homes, barns, outbuildings, furniture, and more.

John Richardson Park operated a blacksmith shop producing hardware on his homestead in the heart of the Iler Settlement on the shore of Lake Erie. This shop produced and maintained iron pieces critical for construction and survival in the 19th century – everything from nails, hinges, and handles to wagon wheels, agricultural implements, and kitchenware. This historic shop still functions today, with Homestead smiths replicating this fascinating pioneer-era trade.



John R. Park Homestead Conservation Area

The site's most prominent feature is the historic Park Family home. It is one of only six surviving neo-classical architecture style homes, known as Early American Greek Revivalism, found in Ontario. In addition to the incredible house, the farm consists of eight original farm and outbuildings clustered closely together near the family home. The 19 acre conservation area is situated on Fox Creek, a Provincially Significant Wetland, providing a unique mix of human and natural history components.



The Friends of the Homestead provide critically important volunteer services at the site. In total, almost 90 volunteers contribute approximately 4400 hours annually to aid in the operation of the historic site. These volunteers support the site through a diversity of time and talents, including: helping to maintain the site including the heritage gardens and orchard; assisting with costume creation and maintenance; supporting special events and education programs; caring for and assisting with the museum collections; demonstrating 19th century skills; and more.

The Homestead annually welcomes more than 14,000 students and visitors. It is an important tourism destination and educational resource for the region. During maple season, nearly 4,000 students and visitors attend the site. As well, a pilot education program that explores the pre-contact history of the region's Indigenous Peoples was developed in 2019.

Why Preserve Heritage?

Sites like the John R. Park Homestead bring people of all ages, backgrounds, and abilities together. Museums and Conservation Areas are focal points for community and culture, highlighting our Canadian story and providing engaging and authentic educational experiences for all visitors. There are few authentic places where people can experience local history and traditions, while being immersed in the natural environment where these stories first took place, and those early people first lived.



Every historic site has a story to tell. These stories inspire our culture and our convictions. Heritage sites are our connections to the past, and can inspire us into the future. Places like the Homestead are keepers of our collective memory and provide important perspective that helps to shape our present community and to inspire our path forward.

The Current Need

The site is severely limited in its ability to meet our present school programming needs. It features only one indoor climate controlled space. This space seats a maximum of 30 students/visitors (auditorium style) and 20 people (at tables). The facility is aging and washroom facilities are far too limited to meet the needs for important education programs and special tourism events like the Maple Syrup Festival (visitation 3,000 in 2 days) and Harvest and Horses (visitation 1400 people in 4 hours). The current facility has only two female washroom stalls, and one male washroom stall. As the facilities were created approximately 40 years ago, they are not easily wheelchair accessible and do not meet current codes for full accessibility. The site also does not have a 'family' washroom to accommodate



various uses including, but not limited to, adults who require assistance and an adult change table, families and individuals with additional privacy, or other needs.

Schools booking field trips will often bring 60 – 90 students, as they need to be cost effective and fill their buses, creating an additional challenge, as the current 'classroom' area can only seat 30 students auditorium style (20 at tables). Although the bulk of the conservation area field trip experience is spent outside, it is important that we offer modern, climate controlled indoor spaces during inclement weather. These are required for delivery of introduction/safety messages to groups; warming/cooling spaces for comfort and safety during full day field trips. The space is also important for the delivery of



'classroom' elements of the programs where special equipment is used (microscopes, light tables, scientific specimen, etc.) and sensitive historical artifacts can be examined; safe, comfortable, controlled, and quiet spaces for teachers to take children who may be experiencing sensory overload, mental/emotional stress, physical illness; and for shelter during inclement weather or other emergencies.

Investing in our Heritage

The Essex Region Conservation Foundation is currently raising funds to build a modern, environmentally friendly Heritage Centre with educational and exhibit space, accessible and adequate washroom facilities, and a significantly enhanced visitor and student experience. It is envisioned that this space will improve our ability to



interpret life in the 1850s, while also creating a cultural/tourism gateway hub within the region,

highlight the County Road 50 experience, and create important resting/washroom facilities to complement the region's cycling infrastructure.

The total fundraising goal for these critically important projects is \$1.2 million. Thanks to a significant grant, \$600,000 has already been pledged, but matching funds must be raised to fully capitalize on this one-in-a-generation opportunity.

The Essex Region Conservation Authority knows and understands that the Town of Essex places value in our local heritage as shown by the Heritage Grant Program:

The Town of Essex Heritage Grant Program builds on the community feedback received through the Harrow Community Strategic Plan, the Downtown Essex Centre Streetscape and Silo District Plan and the Design Charrette and Public Open House to guide the preparation of the Colchester Secondary Plan. Through these public consultations, a desire to improve heritage preservation and develop culture and tourism opportunities was identified.

Our Request – A County Road 50 Tourism Information Hub for \$100,000

Construction of the new Heritage Centre will enhance the Homestead's tourism capabilities and experiences for the benefit of all neighbouring businesses. Our current facility is limited due to the constraints of the historic buildings and with appropriate additional funding, this point of access could be expanded and enhanced



as a welcoming space. In addition to a seamless visitor/student experience, this space would serve as a tourism/cultural hub, providing an enhanced tourism experience for guests that would highlight many incredible places of interest along County Rd. 50 and within the County of Essex, in line with many Town of Essex priorities.

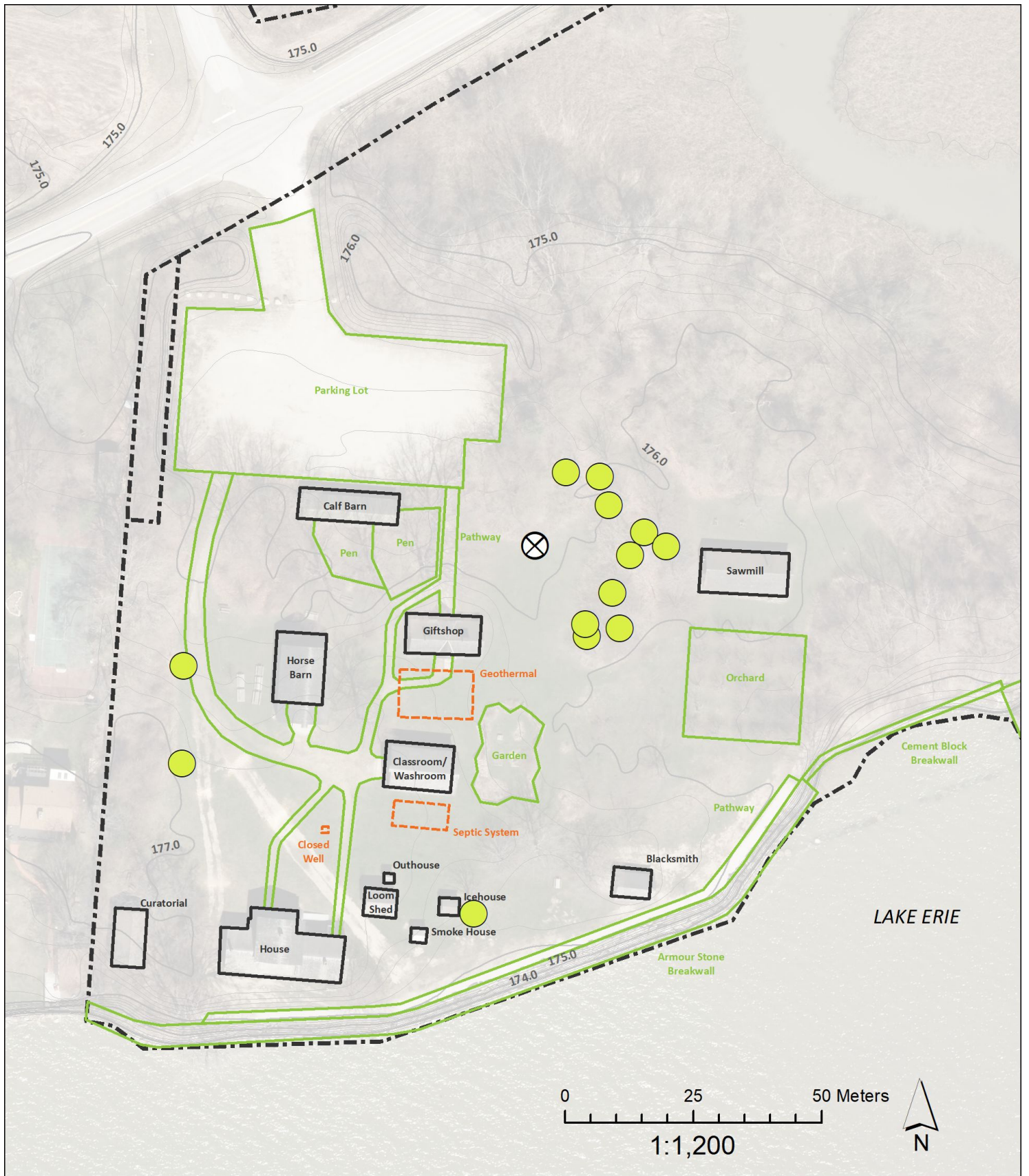
In partnership with Tourism Windsor Essex Pelee Island, ERCA is proposing to utilize the new Heritage Hub as a tourism welcome area along County Road 50, to allow better promotion of the many local attractions, culinary experiences, wineries, cycling routes and regional events.

As a public space with new washrooms, access to the lake and staff trained in assisting visitors, we believe that this new investment fits perfectly into the Town of Essex's vision for County Road 50 and would support the many businesses along this road. More specifically, this request for \$100,000 in funding supports the following initiatives:

- Support cycling and the regional CWATS plan through the development of end of trip facilities and amenities such as public washrooms and a water refill station
- Enhances Heritage education and outreach
- Improves Tourism opportunities for the Municipality
- Champions the County Road 50 *Community Improvement Plan*
- Supports Agri-tourism support through events such as *Harvest and Horses*
- Heightens *Explore The Shore* promotion/partnership
- Aligns with Town of Essex Strategic Plan
- Improves accessibility within the municipality
- Creates opportunity for a new cultural attraction space to host traveling exhibits from major institutions, such as the Royal Ontario Museum

Current Project Status

Field work for a stage 2 archeological report has been completed and ERCA is able to build in the location shown on the attached map. An architectural firm, Architecttttura, has been contracted to begin the design of the building and we anticipate breaking ground in spring 2020 once permits are in place. Fundraising to enhance the basic building and create a larger, multifunctional space that can better service the community is underway through the Essex Region Conservation Foundation and there is broad support for this enhanced education and tourism destination to serve the region.



John R Park Homestead
Base Map

Legend

--- Parcel Boundary



Approx. Heritage Centre Location



Valuable Tree Species



Services Area



Building Outline



Other Features



TOURISM
**WINDSOR
ESSEX**
PELEE ISLAND

333 Riverside Dr W, Suite 103
Windsor, ON N9A 7C5

519.255.6530
1.800.265.3633

October 30, 2019

Mayor Larry Snively
Town of Essex Council
33 Talbot Street South
Essex, Ontario N8M 1A8

Your Worship and Town of Essex Council,

Re: Financial Support for the John R. Park Homestead's Heritage Centre

Tourism Windsor Essex Pelee Island (TWEPI) is pleased to support the Essex Region Conservation Authority's (ERCA) development of a Heritage Centre at John R. Park Homestead. The Centre will create a connected, streamlined year-round visitor experience, and serve as a welcome and gathering space.

Through this ambitious undertaking, funds are being raised to build a modern, environmentally friendly Centre with educational and exhibit space, accessible and adequate washroom facilities, and a significantly enhanced visitor and student facility. This new cultural space will improve the overall education experience, create a tourism gateway between the City of Windsor and County of Essex, and important resting/washroom facilities to complement the region's growing cycling infrastructure.

One of the objectives that will be achieved, if successful in fundraising, is to create a Welcome Space/Tourism Hub, thereby streamlining and significantly improving the visitor experience. The Homestead's gift shop will be expanded, providing visitors with the opportunity to shop for handmade goods by local crafters and artisans, such as those showcased as part of TWEPI's 'WE Made It' program.

As the Destination Marketing Organization for Windsor Essex, TWEPI's mission is to bolster the image and economy of the region by developing, marketing and promoting our destination in cooperation within a united tourism industry. Supporting a tourism hub such as this is paramount, as it is crucial in creating a "sense of place". This is attributed in part to festivals, events, cultural attractions, the region's rich history and heritage, its stories, people, geographical landscape, and cuisine. Visitors can only truly appreciate this full cultural experience through cross-pollination with various other tourist sectors, which thereby churn and sustain further revenue growth within the region, and in turn, support the tourism industry. Through this initiative, John R. Park Homestead will focus on developing many aspects pertaining to experiential tourism and the indelible mark it leaves on visitors and the local economy.

TWEPI is looking forward to partnering with ERCA on this tourism hub, which will also showcase the County Road 50 experience. Staff would be trained as Tourism Ambassadors to highlight the many experiences that W.E. have to offer. Furthermore, visitation data would be readily captured and used cohesively with TWEPI's own visitor statistics. The hours of operation could be enhanced during the high tourism season and the Centre would remain open in the shoulder season to allow for additional access to visitor information.

We are very excited about this project and ask that you give the utmost consideration in financially supporting this highly beneficial opportunity for the Town of Essex and our region as a whole.

Sincerely,

Gordon Orr
Chief Executive Officer



October 31, 2019

Re: Our support for a new visitor welcome centre and tourism hub at the J. R. Park Homestead

To whom it may concern,

Explore the Shore started as a group of businesses that formed a strategic alliance in 2010, to expand County Road 50 as a tourism destination. Our community partnership has proven to be a success and we have experienced a huge increase in tourism along County Road 50. We are pleased that surrounding businesses in neighbouring towns have also benefited. The J. R. Park Homestead is both a founding member and an active participant in our activities. We consider them a very important asset in the area, as their location borders the east end of Essex, welcoming traffic from the nearby towns of Kingsville and Leamington as well as larger cities east of us. We know that our visitors enjoy the wide range of attractions along the lake, and our data shows that more people from a wider area are discovering this region, and are returning with their friends and families.

Our members are very excited about the new Visitors Heritage Centre, and applaud ERCA and their staff for proposing to create a much needed facility that will both attract more visitors and enhance their experience in our area. Visitors and locals enjoy the J. R. Park Homestead, the museum, the interpretive activities, as well as the natural landscape including the lake and creek access. We know, from our business operations, and speaking with hundreds of visitors a day, that people look for accessible washrooms at all times of the day, and seek information on destinations. As well, cycle tourists have discovered County Road 50, and with the completion of the east link of the bike paths, we expect this sector to expand. These cyclists will enjoy a safe place to stop, rest, and refresh at these new facilities. Locating a new tourism hub where tourists actually pass by on bicycle, automobile or walking is crucial for the growing number of visitors who travel along County Road 50.

We support expanding the new visitor centre to become our tourism hub on County Road 50, and encourage the Town of Essex to financially support this project.

Sincerely,

Leslie Balsillie, Chair, Explore the Shore 2019 www.exploretheshore.ca



November 1, 2019

Re: Support for new visitor centre at JR Park Homestead,

To whom it may concern,

Farm Dog Cycles is an established business on County Rd 50 offering bicycle rentals and guided tours since 2012. Recently, we have expanded our rental offerings to make this service available in Kingsville, Point Pelee National Park and Colchester Harbour Park.

The John R Park Homestead sits at an important site joining Essex and Kingsville along the busy wine route and the adjoining bike lanes. It is an important site in a stretch of land without accessible natural parkland and public amenities.

We support expanding the new visitor centre to become our tourism hub on County Road 50, and encourage the Town of Essex to financially support this project.

Sincerely,

Megan Balsillie
Farm Dog Cycles

The Fruit Wagon



Harrow, Ontario

Doug & Leslie Balsillie
793E County Road 50
R.R. 1
Harrow, Ontario N0R 1G0
Phone (519) 738-4819
leslie@thefruitwagon.com

October 31, 2019

To Whom It May Concern:

Re: Our Support for the New Visitor Center at the J. R. Park Homestead

We have grown fruits & vegetables on our County Road 50 farm west of the J.R. Park Homestead since 1983, and have been marketing produce at our roadside wagon to many visitors and neighbours who travel this route. Our business benefits from all the visitors attracted to the Homestead and their many events, and we appreciate the support that we receive from the staff. We are pleased to have a mutual working relationship to support their events with our farm produce.

The expansion of County Road 50 as a tourist destination in the last decade has been incredible, and the J. R. Park Homestead has been a central part in this expansion. We know this, because we talk with many of our customers about where they are from, how they learned about this area, what they enjoy about their visit, and if they plan on returning. We've learned that more people are visiting both from our local area, and from a wider region across the province and into the United States. Many are amazed at our "hidden treasure", enjoy discovering new places and plan on returning.

We have been proud of the developments that ERCA has accomplished at the J. R. Park Homestead Conservation Area, and are very excited about the new visitor center. ERCA staff have been very creative and thoughtful in creating a much needed facility. We are quite pleased that outdoor washrooms will be included as many of our customers ask about facilities. We encourage The Town of Essex to support this project in creating a tourism hub for our region.

Sincerely,

Doug & Leslie Balsillie

D & L Balsillie, 793 County Road 50 East, R.R.1, Harrow, ON N0R 1G0
519-738-4819 leslie@thefruitwagon.com
www.thefruitwagon.com

Local. fresh. healthy. sustainable. from our family to yours

Thank you for sharing the great news about JRPH with our Explore the Shore group, Richard, Kris and Danielle. This is exactly the kind of community development we were hoping for when we started our strategic alliance in 2010 (we think of it as “layering” the Road with interesting things that “call” to people). The goals *then* were to “re-introduce” County Road 50 to Windsor Essex and Kent County and create a vibrant business community that would bring visitors and tourists back year-round.

John R. Park and Holiday Beach have been with us from the beginning, offering unique experiences, and working with us to build the multifaceted cultural and business community that is *now* County Road 50 ... a destination for tourists, cyclists, diners, wine drinkers, explorers, and bridal parties. We’re still working on the year-round part, something the new Heritage Centre will help.

We’ll be cheering you on as you raise funds and make plans for your new space.

All the best to you,

Ann, Murray, Steve and the Oxley team

(Oxley Estate Winery – received via email)



Report to Council

Department: Office of the CAO

Division: Legal and Legislative Services

Date: December 16, 2019

Prepared by: Robert W. Auger, Town Solicitor/Clerk

Report Number: Legal and Legislative Services-2019-31

Subject: Court of Revision for Shepley Drain: Bridge
Replacements for Elwood Defour and Garry and Bonnie
Quick, (Part of Lots 6 and 7, Gore Concession)
Geographic Township of Colchester South, Town of
Essex, County of Essex

Number of Pages: 3

Recommendation(s)

1. That the following three (3) members of the Drainage Board: Dan Boudreau, Percy Dufour and Luke Martin be appointed to sit as members of the Court of Revision to be convened for the Shepley Drain: Replacement Bridges for Elwood Defour and Garry and Bonnie Quick, Geographic Township of Colchester South, Project REI2018D024, pursuant to the Report prepared by Gerard Rood, Professional Engineer, Rood Engineering Inc. and dated October 17, 2019 (hereinafter the "Report"), such Court of Revision to be scheduled for 5:00pm on January 15, 2019 in the Town of Essex, Council Chambers, 33 Talbot Street South, Essex; and
2. That By-law 1871 being a by-law to provide for the Shepley Drain: Replacement Bridges for Elwood Defour and Garry and Bonnie Quick, be read a first and second time and be provisionally adopted on December 16, 2019.

Purpose

A Court of Revision is required in accordance with Section 46 of the Drainage Act, R.S.O. 1990, Chapter D. 17, as amended 2010 (hereinafter the "Drainage Act").

Background and Discussion

Rood Engineering was instructed by the Town of Essex on or about June 12, 2018 to prepare a report for the above Shepley Drain: Replacement Bridges for Elwood Defour and Garry and Bonnie Quick, pursuant to Section 78 of the Drainage Act.

On October 17, 2019 the Report was prepared by Rood Engineering Inc. to provide the details, estimates and assessments therein.

A Consideration Meeting for this Report was held on November 12, 2019. At this meeting the Drainage Board received public correspondence/delegations and heard the various concerns or comments made by those who attended. At this meeting the Drainage Board resolved and recommended that the said Report be adopted and that a provisional By-Law be prepared for Council's consideration (see Drainage Board minutes from the November 12, 2019 consideration meeting, which minutes are included under Item 12 of the December 16, 2019 Regular Council Meeting Agenda).

Appointment of Court of Revision Members:

The Court of Revision is to be comprised of three (3) members of the Drainage Board and so accordingly it is recommended that Court of Revision members when required to be convened shall be appointed on a rotating, alphabetical order basis. If an appointed member is not available then that appointed member shall be replaced by the next available member of the Drainage Board (based on the aforementioned rotating, alphabetical order basis).

It is therefore recommended that Dan Boudreau, Percy Dufour and Luke Martin be selected and appointed to sit as the Town of Essex members of the Shepley Drain: Replacement Bridges for Elwood Defour and Garry and Bonnie Quick.

It is further recommended that By-law 1871 adopting the recommendations in the Rood Engineering Report dated October 17, 2019 be provisionally adopted so that said Report can proceed to the Court of Revision specified in this report.

The Court of Revision is the next step in the process in accordance with Section 46 of the Drainage Act, R.S.O. 1990, Chapter D. 17, as amended 2010.

Financial Impact

Consultations

Link to Strategic Priorities

- ☒ Manage, invest and plan for sustainable municipal infrastructure which meets current and future needs of the municipality and its citizens.
- ☐ Create a safe, friendly and inclusive community which encourages healthy, active living for people of all ages and abilities.
- ☒ Provide a fiscal stewardship and value for tax dollars to ensure long-term financial health to the municipality.
- ☐ Manage responsible and viable growth while preserving and enhancing the unique rural and small town character of the community.
- ☐ Improve the experiences of individuals, as both citizens and customers, in their interactions with the Town of Essex.

The Corporation of the Town of Essex

By-Law Number 1871

Being a by-law to provide for Shepley Drain: Replacement Bridges for Elwood Defour and Garry and Bonnie Quick (Part of Lots 6 and 7, Gore Concession), Geographic Township of Colchester South, Project REI2018D024, Town of Essex, County of Essex

Whereas the Town of Essex Drainage Department recommended that Council appoint a Drainage Engineer to prepare a drainage report for the for Shepley Drain: Replacement Bridges for Elwood Defour and Garry and Bonnie Quick (Part of Lots 6 and 7, Gore Concession), Geographic Township of Colchester South, Project REI2018D024, Town of Essex, County of Essex;

And Whereas Section 78 of the Drainage Act, R.S.O. 1990, Chapter D. 17, as amended 2010, states that the Council of any municipality whose duty it is to maintain and repair the drainage works or any part thereof, may on the report of an Engineer appointed by it, complete the drainage works as set forth in such report;

And Whereas an Engineers Drainage report dated October 17, 2019 and considered by the Drainage Board at its November 12, 2019 Consideration of Report meeting, has been procured and made by Gerard Rood, Professional Engineer, Rood Engineering Inc. and that the said report is attached hereto and forms part of this by-law;

And Whereas the Council of The Corporation of the Town of Essex is of the opinion that the said drainage works and/or improvements are warranted and desirable;

Now therefore the Council of The Corporation of the Town of Essex pursuant to the Drainage Act enacts as follows:

1. That the considered report dated October 17, 2019 and attached hereto as Schedule A to this By-law is hereby adopted and the said drainage works and/or improvements as therein indicated and set forth is hereby authorized and shall be completed in accordance therewith.

2. That the Corporation of the Town of Essex may borrow on the credit of the Corporation the amount of \$51,200.00, the amount necessary for the construction of the said drainage works.
3. That the Corporation may issue debentures for the amount borrowed less the total amount of:
 - Grants received under Section 85 of the Drainage Act, R.S.O. 1990, Chapter D. 17, as amended, 2010;
 - Commuted payments made in respect of lands and roads assessed within the Municipality;
 - Money paid under Section 61(3) of the Drainage Act, R.S.O. 1990, Chapter D. 17, as amended 2010;

and such debentures shall be made payable: a) in the case of assessments in value of between \$500.00 and \$9,999.99 within (5) five years from the date of the debenture and shall bear interest at a rate not higher than the lending rates published by Infrastructure Ontario for municipalities; or b) in the case of assessments in value of \$10,000.00 and greater, within (10) ten years from the date of the debenture and shall bear interest at a rate not higher than the lending rates published by Infrastructure Ontario for municipalities

4. That a special equal annual rate sufficient to redeem the principal and interest on the debentures shall be levied upon the lands and roads as set forth in the Schedule, to be collected in the same manner as other taxes collected in each year for (5) five or (10) ten years (as applicable) after the passing of this by-law.
5. For paying the amount assessed upon the lands and roads belonging to or controlled by the Municipality, a special rate sufficient to pay the amount assessed plus interest thereon, shall be levied upon the whole rateable property in the Town of Essex, in each year for five years after the passing of this by-law to be collected in the same manner and at the same time as other taxes are collected.
6. All assessments of \$499.99 or less are payable in the first year in which the assessment is imposed.
7. The by-law comes into force on the passing thereof and may be cited as "Shepley Drain: Replacement Bridges for DeFour and Quick".

Read a first and a second time and provisionally adopted on December 16, 2019.

Mayor

Clerk

Read a third time and finally passed on

Mayor

Clerk

SHEPLEY DRAIN

Bridge Replacements for Elwood Defour and Garry & Bonny Quick

Geographic Township of Colchester South



TOWN OF ESSEX

33 Talbot Street South

ESSEX, Ontario N8M 1A8

519-776-7336

Rood Engineering Inc.

Consulting Engineers

9 Nelson Street

Leamington, Ontario N8H 1G6

519-322-1621

REI Project 2018D024

October 17th, 2019

October 17th, 2019

Mayor and Municipal Council
Corporation of the Town of Essex
33 Talbot Street South
Essex, Ontario
N8M 1A8

Mayor Snively and Members of Council:

SHEPLEY DRAIN
Replacement Bridges for Elwood Defour and Garry & Bonny Quick
(Part of Lots 6 & 7, Gore Concession)
Geographic Twp. of Colchester South
Project REI2018D024
Town of Essex, County of Essex

I. INTRODUCTION

In accordance with the instructions received from you by letter of June 12th, 2018, from your Town Solicitor/Clerk, Legal and Legislative Services, Robert Auger, we have proceeded with an Engineer's Report for the installation of new replacement access bridges in the Shepley Drain. This Engineer's Report provides for the construction of a replacement access bridge for Elwood Defour, Parcel 710-02800, and the replacement access bridge for future construction for Garry and Bonny Quick, Parcel 710-02900, in the Shepley Drain. The proposed bridge replacement is intended to provide safer access for the agricultural lands of Elwood Defour, in Part of Lot 6, Gore Concession, in the Geographic Township of Colchester South, Town of Essex. Additionally, we investigated the existing bridge conditions for Garry and Bonny Quick and found it to be in fair condition and not in need of immediate replacement. We provided all necessary details for the replacement access bridge for future construction in this report for the residential lands owned by Garry & Bonny Quick, in Part of Lot 7, Gore Concession, in the Geographic Township of Colchester South, Town of Essex. The Shepley Drain is an open drain with a number of access bridges. The drain was constructed pursuant to the Drainage Act. A plan showing the Shepley Drain alignment, as well as the general location of the above-mentioned bridges, are included herein as part of the report.

These investigations were initiated by resolutions passed by Council to prepare a new report to provide for the two replacement access bridges to serve the Defour and Quick Parcels. This investigation, our instructions, and this report are in accordance with Section 78 of the "Drainage Act, R.S.O. 1990, Chapter D.17, as amended 2010". We have performed all of the necessary survey, investigations, etcetera for the proposed bridges, as well as reviewing the history of the Shepley Drain, and we report thereon as follows.

II. DRAINAGE HISTORY

The Shepley Drain is located entirely within the Town of Essex. The drainage basin served by the Shepley Drain consists of approximately 605.10 hectares (1495.2 acres). The Shepley Drain comprises of an open drain and commences at the outlet into the Richmond Drain located along the south side of County Road 20, at Pt. Lot 6, Gore Concession. The Shepley Drain then extends upstream in a generally southeasterly direction to the north side of Gore Road near the property line of Lots 58 and 59, Concession 1. A plan showing the general location of the Shepley Drain and affected Property Owners is attached in **Appendix "REI-E"**.

From our review of the Town's drainage files, we have determined that the last major repair and improvements to the Shepley Drain was completed under an Engineer's Report dated October 14th, 1983 prepared by Maurice Armstrong, P.Eng. The work included in said report consisted of repair and improvements to the drain and repairs to several bridges located in the drain. We also utilized the Engineer's Report dated March 5th, 1993 prepared by Nick Peralta, P.Eng. which investigated sub watershed boundaries from the Aikman Drain, Jurocko Drain, and Southwest Branch of the Shepley Drain. The 1993 Peralta report also investigated watershed boundary changes subsequent to the storm sewer reconstruction report completed by Lafontaine, Cowie, Buratto and Associates on September 12th, 1990. The work included in the 1993 Peralta report consisted of an updated Maintenance Schedule of Assessment and updated plan. We also utilized the Engineer's Report dated October 27th, 2003 prepared by Gerard Rood, P.Eng. The work included in said report consisted of improvements and bank stabilization. Lastly, an Engineer's Report dated December 5th, 2017 was prepared by Gerard Rood, P.Eng. which consisted of a new replacement access bridge for Joseph & Susan Chisholm and an updated maintenance schedule for the drain.

We have utilized the plans within the 1983 Maurice Armstrong, P.Eng. report, the 1993 Nick Peralta, P.Eng. report and the 2017 Gerard Rood P.Eng. report to establish the size parameters for the drain and the details to be used in establishing the replacement bridge culvert installations. We have also used the 1983 report to establish the drain profile grades, and to assist us in establishing the design grade for the subject access bridge installations. The December 5th, 2017 Updated Maintenance Schedule prepared by Gerard Rood, P.Eng. was used for investigating the watershed limits to determine the area and flows to be used for design of the bridges.

III. PRELIMINARY EXAMINATION AND ON-SITE MEETING

After reviewing all of the available drainage information and documentation provided by the Drainage Department, we arranged with Town staff to schedule an on-site meeting for September 25th, 2018. The following people were in attendance at the said meeting: Elwood Defour, Joseph Chisholm, Garry & Bonny Quick, Felix Weigt-Bienzle, Tanya Tuzlova (Town Drainage Clerk), Norm Nussio (Town of Essex Drainage Superintendent), and Kory Snelgrove (Rood Engineering).

Norm Nussio completed introductions explaining the purpose of the on-site meeting. The town has received a request for a new replacement bridge access to serve the agricultural lands of Elwood Defour as the existing reinforced concrete bridge has deteriorated to a state that structural integrity is compromised. Additionally, there is concern with the width of the existing bridge width being narrow causing concern for safe access to the agricultural lands. The town has also received a request for a new replacement bridge access to serve the residential lands of Garry and Bonny Quick. Mr. Quick stated that he does not believe his bridge is in need of replacement at this time as his headwalls and pipe are in fair shape. Garry Quick reviewed the

history of his bridge stating that his headwalls have been reused three times now with new pipes installed. We explained to Mr. and Mrs. Quick that we would survey their bridge and investigate the condition to confirm whether or not their bridge is in need of replacement at this time.

We advised the owners that the minimum standard top width for an access bridge is 6.10 metres (20 ft.) and that the bridges centreline locations will need to be established with Mr. Defour and Mr. and Mrs. Quick. Elwood Defour requested that the bridge be designed to have a 9.14m (30.0 ft.) top width to allow for better egress and ingress into the agricultural lands. The larger driveway top width gives consideration for safe access to the larger farming equipment being used in today's farming practises. The owners were also advised that because the bridges are replacement bridges, the cost of the new replacement access bridge construction, as well as all the cost for the preparation of the Engineer's Report would be shared by the abutting owner and affected upstream lands and roads. Any cost for additional top width beyond the standard 6.10 metres will be borne by the abutting owners served by the bridges.

We went on to discuss that sloped quarried limestone on filter cloth end protection is usually the most economical based on previous similar bridges. Since the two replacement bridges are located so close together it was discussed that this option may not be practical, and difficult to achieve. It was discussed that concrete filled jute bag ends or precast concrete blocks for the installation, like those on some other newer bridges, would be checked and the Engineer would contact the owners to review the engineering cost based on each option. Mr. Nussio had concerns with using sloped quarried limestone on filter cloth giving consideration to the depth of the drain, size of pipe, and space between the two bridges to be replaced. He explained that there may not be enough space between the bridges for sloped quarried limestone endwalls while maintaining a stretch of open drain for meeting all applicable environmental regulations in place. It was discussed that once the bridges are surveyed and investigated we will have a better direction for what headwall options will be the most practical giving consideration to all comments and concerns made.

Mr. Quick and Mr. Defour requested that the new bridge replacements be aligned approximately at the existing centerline of the current bridges. Mr. Snelgrove confirmed that we will try to re-align the new bridge replacements to match the existing centreline of the driveways. Mr. Snelgrove explained that the bridges may need to be shifted slightly to allow for the extra top width requested by Mr. Defour or for any extra length needed for the sloped quarried limestone option, if chosen.

Felix Weigt-Bienzele asked if the survey from the prior bridge replacement upstream will be used. Mr. Nussio confirmed that the prior existing work that was completed will be used for these two bridge replacements. Mr. Snelgrove supported these statements and explained how a field survey of the two bridges will need to be completed for sufficient information to be provided for our report, specifications, and plans. It was confirmed that all prior work completed on the drain will be used on this project to try and keep cost down to all affected owners.

The overall drainage report procedure, timelines, future maintenance processes, and grant eligibility were generally reviewed with the owners. They were also advised that the works will be subject to the approval of the Department of Fisheries and Oceans (D.F.O.), Ministry of the Environment, Conservation and Parks (M.E.C.P.), Ministry of Natural Resources and Forestry (M.N.R.F.), and the Essex Region Conservation Authority (E.R.C.A.). We further discussed bridge maintenance, sizing, and materials of the proposed bridges, suggesting that an aluminized corrugated steel pipe or aluminized Ultra-Flo pipe will likely be employed similar to the more recent bridges a short distance upstream. Mr. Quick asked if we have considered using plastic coated pipes. Mr. Nussio explained how the plastic or polymer coated pipes are fairly expensive.

Mr. Snelgrove explained to owners on-site that the new corrugated steel pipes have an aluminized coating which has a lifespan of up to 75 years depending on the water quality present within the drain. It was further discussed that the current 2017 report is the most up to date maintenance schedule of assessment, and this will be utilized as part of the drainage report.

The Drainage Act process was discussed including scheduling of meetings and availability of grants. It was noted that construction work would be done after the drainage report is adopted. Mr. Snelgrove asked the owners to call the Town or his office if there are any questions on the project.

Further discussions over the telephone were had with Garry Quick after the meeting regarding the construction of his replacement bridge. It was discussed with Mr. Quick that upon surveying and inspecting his bridge, if it is found to be satisfactory and not in need of replacement, our report will recommend that the bridge not be replaced at this time. We will provide all necessary bridge details for future construction included in our report if the bridge is found to not be in need of replacement. Details were also discussed by telephone discussions with Mr. Defour. Cost estimates, bridge top width, and end wall options were generally discussed with Elwood Defour confirming that he would prefer the 9.14 metre (30 ft.) top width with vertical precast concrete block endwalls for his bridge installation.

IV. FIELD SURVEY AND INVESTIGATIONS

Following the on-site meeting we arranged for our survey crew to attend at the site and perform a topographic survey, including taking the necessary levels and details to establish the design parameters for the installation of these two replacement access bridges.

A benchmark was looped from previous work carried out on the drain and was utilized in establishing a site benchmark near the location of the bridges. We surveyed the drain both upstream and downstream of the proposed replacement access bridges and picked up the existing bridges and culvert elevations in order to establish a design grade profile for the installation of the replacement bridges. Cross-sections of the Shepley Drain at the general location of the proposed bridges were taken, as necessary for us to complete our design calculations, estimates and specifications. Bridge inspections were carried out for the two replacement bridges. The condition and details of the existing reinforced concrete bridge for Elwood Defour and corrugated steel pipe with poured concrete headwalls for Garry and Bonny Quick were inspected.

We reviewed the E.R.C.A. and D.F.O. Species at Risk mapping for fish and mussels and the Town made initial submissions to the E.R.C.A. regarding their requirements or any D.F.O. requirements for work that would be proposed to be carried out on the Shepley Drain. A response from the Conservation Authority was received by email on September 18th, 2018 and indicated that the Town must apply for a permit and follow standard mitigation requirements. We also reviewed the Town maps for fish and mussel species at risk for this Class F drain and find that there are no species indicated in the vicinity of this project. A copy of the concerns and requirements to satisfy E.R.C.A. and D.F.O. is included in **Appendix "REI-A"** of this report.

The M.N.R.F. Species at Risk former Town agreement with M.N.R.F. pursuant to Section 23 of the "Endangered Species Act, 2007" expired as of June 30th, 2015. The former agreements are replaced with new legislation provisions under Ontario Regulation 242/08 administered by the M.E.C.P. Section 23.9 allows repairs, maintenance and improvements to be conducted by the Town within existing municipal drains. These works are exempt from Sections 9 and 10 of the

Endangered Species Act provided that the rules in the regulations are followed. When eligible, the new regulations allow Municipalities to give notice to M.N.R.F. by registering their drainage activities through an online registry system.

For the purposes of establishing the watershed area upstream of the proposed bridges, and determining the bridge size required, we investigated and reviewed the past drainage reports dated December 5th, 2017 by Gerard Rood, P.Eng. and March 5th, 1993 by Nick Peralta, P.Eng. The October 14th, 1983 Engineers Report by Maurice Armstrong, P.Eng. was used to establish a design grade at the Defour and Quick bridge locations.

V. FINDINGS AND RECOMMENDATIONS

Prior to the preparation of our report, we reviewed the details of the bridge installations including the end treatment options based on the regulatory restrictions and the cost estimates that we were to review. From our investigations, it was determined that the Quick bridge (Parcel 710-02900) does not need to be replaced as it was found to be in satisfactory condition. We have included details for future maintenance for the Quick bridge within our report, specifications, and plans. We also find that a vertical endwall option for the Defour bridge was the most practical option due to the close proximity of the two bridges and we have therefore proceeded with the vertical precast concrete block option, along with using aluminized Ultra-Flo pipe. We find that all existing bridge structures adjacent to County Road 20 constructed prior to the 1993 Peralta report did not take into consideration watershed boundary changes due to the storm sewer reconstruction report completed by Lafontaine, Cowie, Buratto and Associates on September 12 1990. Therefore the pipe sizing is based on minimum conveyance of a 1:2 year storm event corresponding to the full flow capacity of the upstream and downstream pipe culverts in the drain plus an allowance for embedment of the pipe, and conforms to the watershed boundaries changes updated in the 1993 Peralta report and grade requirements set out in the 1983 report. We recommend that in the future any bridge along County Road 20 constructed prior to the 1993 Peralta report, which do not recognize the watershed boundaries from the 1990 Lafontaine, Cowie, Buratto and Associates report, be designed to convey the greater hydraulic flows experienced due to said watershed boundary changes.

Based on our detailed survey, investigations, examinations, and discussions with the affected property owners, we would recommend that a replacement access bridge for Defour (Parcel 710-02800) be constructed in the Shepley Drain at the location and to the general parameters as established in our design drawings attached herein. Additionally, we recommend that the replacement access bridge for Quick (Parcel 710-02900) be replaced in the future under maintenance in the Shepley Drain at the location and to the general parameters as established in our design drawings attached herein. We find that because the replacement bridges are needed to access their lands, the entire cost of the access bridge construction, as well as all the cost for the preparation of the Engineer's Report, will be shared by the affected owners of the parcels served by the access and any affected upstream lands and roads. A Watershed Plan has been prepared and attached in **Appendix "REI-E"** to illustrate all affected upstream lands and roads for the bridge replacements. Additionally, a Construction Schedule of Assessment for the replacement bridges have been prepared and included herein as outlined further in the report for the Defour and Quick bridges. It is anticipated that the agricultural lands served by the replacement Defour bridge should be eligible for the Ontario Ministry of Agriculture, Food and Rural Affairs (O.M.A.F.R.A) grant as the agricultural property currently holds the Farm Property Tax Class designation. Additionally, all upstream lands that hold the Farm Property Tax Class designation are also expected to be eligible for the O.M.A.F.R.A. grant as detailed in our Schedule of Assessment. Subsequent to the construction of the bridge access, the access will form part of

the drain, and the future maintenance of same shall be shared with the abutting parcel and affected upstream lands and roads as set out further in this report.

During the course of our investigations, this drainage project was discussed and reviewed with E.R.C.A., to deal with any Authority and D.F.O. issues and comments related to this Municipal drain. The Town will be required to obtain an E.R.C.A. permit for the works. In the interest of fish habitat and migration, D.F.O. requires that the invert of any new bridge be embedded below the lower of the design or existing bottom of the drain a minimum of 10% of the bridge opening diameter or height to ensure a continued path for fish migration through the access bridge. To prevent flooding and adverse impacts upstream, the new structure needs to provide an equivalent level of service. Therefore, based on this, we have made provisions to use an aluminized steel type II Ultra-Flo pipe for the replacement access bridged as set out below. The D.F.O. Species at Risk screening maps confirm that there are no Species at Risk Fish or Mussels identified in this area. The Shepley Drain is a Class F drain and is located within the Regulated Area under the jurisdiction of the E.R.C.A., and therefore all work has to comply with the current mitigation provisions of the E.R.C.A. and D.F.O. Details of these mitigation measures are included in the Specifications and **Appendix "REI-A"** forming part of this report.

As is now required under the new "Endangered Species Act, 2007" provincial legislation administered by the M.E.C.P., we have reviewed the former M.N.R.F. agreement with the Town and their self-assessment. The M.N.R.F. mapping has basically confirmed that snake species including Butler's Garter Snake and Eastern Fox Snake are threatened and endangered, respectively, on this project and threatened birds may be present. Because turtles and snakes are mobile and indicated as sensitive and endangered in the area, we have included herein a copy of the M.N.R.F. mitigation requirements for them in **Appendix "REI-B"**.

Providing mitigation requirements are implemented it was concluded that present wildlife Species at Risk will be protected from negative impacts and will not contravene with Section 9 (species protection) or Section 10 (habitat protection) of the Endangered Species Act, 2007. Based on this information we find that the Town can proceed with the eligible repairs, maintenance and improvements to the drain as they are exempt under Sections 9 and 10 of the Act, provided that they follow the rules within Ontario Regulation 242/08. To address these requirements the Town has established comprehensive mitigation measures as well as species identification guides for reference. Copies of the measures and guides shall be provided to the successful Tenderer for use during construction, and these documents are available for viewing by any interested parties at the Town office.

We find that all the work for the construction of the replacement access bridges can be carried out from the road allowance and within the drain and immediate area of the bridge. We have provided for full restoration of all the work areas. Accordingly, we find that no allowances are necessary pursuant to Sections 29 and 30 of the Drainage Act for the construction work provided in this report.

Based on all of the above, we recommend that the Defour bridge be replaced for construction as shown and detailed on the attached plans. Additionally, we recommend that the Quick bridge be replaced in the future as maintenance on the bridge crossing as shown and detailed on the attached plans. We recommend that the costs for the construction and incidentals for these access bridges in the Shepley Drain be assessed in accordance with the Construction Schedule of Assessment included in this report, and that future maintenance costs for all bridges outlined in the plans be assessed in accordance with the bridge cost sharing outlined in the report.

Based on all of the above, we recommend that a replacement access bridge be constructed in the Shepley Drain to serve the agricultural lands of Elwood Defour, in Part of Lot 6, Gore Concession. We further recommend that the access bridge serving the residential lands of Garry & Bonny Quick, in Part of Lot 7, Gore Concession remain in service and be maintained in the future for replacement. We recommend that all work be in accordance with this report, the attached specifications and the accompanying drawings, and that all works associated with same be carried out in accordance with Section 78 of the "Drainage Act, R.S.O. 1990, Chapter D.17 as amended 2010".

VI. ESTIMATE OF COST

Our estimate of the total cost of this work including all incidental expenses is the sum of **FIFTY ONE THOUSAND TWO HUNDRED DOLLARS (\$51,200.00)**, made up as follows:

CONSTRUCTION

Item 1)	Provide all labour, equipment and material to construct a new replacement access bridge consisting of 11.0 metres (36.1 ft.) of 2000mm Ultra-Flo smooth wall pipe, 2.8mm thick, aluminized steel type II spiral rib pipe and 190mm x 19mm corrugation profile, including precast concrete block end walls with geogrid reinforcement, quarried limestone on non-woven filter cloth abutting the endwalls on the drain side slopes, excavation, granular bedding and backfill, granular approaches, tile extensions, tree removal, excavation, compaction, removal of the existing structure and deleterious materials off site, hauling, silt and sediment controls, traffic control, cleanup and restoration, complete. (Elwood Defour Bridge)	Lump Sum	\$	36,100.00
	Net H.S.T. (1.76%)		\$	636.00
TOTAL FOR CONSTRUCTION				\$ 36,736.00

INCIDENTALS

1)	Report, Estimate, and Specifications	\$	4,800.00
2)	Survey, Assistants, Expenses, Drawings, Duplication Cost of Report and Drawings, Consideration Meeting, etcetera	\$	6,000.00
3)	Estimated Cost of Preparing Tender Documents	\$	1,000.00
4)	Estimated Cost of Construction Supervision and Inspection (based on 2 days)	\$	2,000.00

5) Net H.S.T. on Items Above (1.76%)	\$	243.00
6) Estimated Cost of E.R.C.A. permit	\$	150.00
7) Estimated Contingency Allowance	\$	271.00
		<hr/>
TOTAL FOR INCIDENTALS	\$	14,464.00
TOTAL FOR CONSTRUCTION (brought forward)	\$	36,736.00
		<hr/>
TOTAL ESTIMATE	\$	51,200.00
		<hr/>

VII. DRAWINGS AND SPECIFICATIONS

As part of this report we have attached design drawings for the construction of these replacement access bridges. The design drawings show the subject bridges locations and the details of the new access bridge installations. The design drawings are attached to the back of this report and are labelled **Appendix "REI-E"**.

Also attached, we have prepared Specifications which set out the required construction details for the proposed bridge installations and future maintenance works, which also includes Standard Specifications within **Appendix "REI-C"**.

VIII. CONSTRUCTION SCHEDULE OF ASSESSMENT

We would recommend that all of the costs associated with the construction of the Defour replacement access bridge, and the incidental costs associated with the Defour and Quick bridges, be assessed against the agricultural lands of Elwood Defour (710-02800), in Part of Lot 6, Gore Concession, and the residential lands of Garry & Bonny Quick (710-02900), in Part of Lot 7, Gore Concession, and all affected upstream lands and roads. A Construction Schedule of Assessment has been prepared and included herein to indicate the lands and roads assessed for this replacement access bridge installation.

It has been clearly established that this replacement access bridge for Elwood Defour is being provided to serve as the access from County Road 20 to an existing agricultural parcel. Pursuant to the current Agricultural Drainage Infrastructure Program (A.D.I.P.) Policies that are in place, it is anticipated that this property and the upstream agricultural lands designated Farm Property Tax Class will be eligible for a grant from the Ontario Ministry of Agriculture, Food and Rural Affairs (O.M.A.F.R.A.) in the amount of 1/3 of their total assessment for this project related to the replacement bridge serving the Elwood Defour parcel.

IX. FUTURE MAINTENANCE

After the completion of the construction of the replacement access bridge, the said bridge shall be maintained in the future by the Town of Essex. We would also recommend that the Defour access bridge newly constructed in the drain and Quick bridge to be constructed in the future, for which the future maintenance costs are to be borne by the abutting affected landowners and

upstream lands and roads, be maintained by the Town and that said maintenance would include works to the bridge culvert, bedding, backfill and end treatment. Should concrete, asphalt or other decorative driveway surfaces over the bridge culvert require removal as part of the maintenance works, these surfaces should also be repaired or replaced as part of the works. Likewise, if any fencing, gate, decorative walls, guard rails or other special features exist that will be impacted by the maintenance work, they are also to be removed and restored or replaced as part of the bridge maintenance work. However, the cost of the supply and installation of any surface material other than Granular "A" material, and the cost of removal and restoration or replacement, if necessary, of any special features, shall be totally assessed to the benefiting adjoining parcel served by said access bridge.

When any works of maintenance are required to the replacement access bridges, the following provisions with respect to cost sharing shall apply as set out in the Table below. In said table the parcel class has been noted as: "G" - grantable assessment and "NG" - non-grantable assessment.

<u>Shepley Drain</u> <u>Bridge Summary</u>					
<u>Bridge No.</u>	<u>Roll No.</u>	<u>Owners</u>	<u>Parcel Class</u>	<u>% to Abutting Owners</u>	<u>% to Upstream Owners</u>
2.	710-02800	Elwood Defour	G	43.5 %	56.5%
3.	710-02900	Garry & Bonny Quick	NG	36.8%	63.2%

Should any works of maintenance be required to the existing access bridges, the cost will be shared as noted in the above table. The share indicated for the Owners shall be assessed as a Benefit to the bridge Owners and the remaining cost share shall be assessed as an Outlet Liability against the lands and roads within the watershed lying upstream of said access bridge, and shall be assessed in the same proportions as the Outlet Liability assessments shown in the 2017 Gerard Rood, P.Eng. report Updated Maintenance Schedule of Assessment.

The above provisions for the future maintenance of the drain, the replacement access bridge being constructed under this report, and for future maintenance on the other existing bridge, shall remain as aforesaid until otherwise determined under the provisions of the "Drainage Act, R.S.O. 1990, Chapter D.17 as amended 2010".

All of which is respectfully submitted.

Rood Engineering Inc.

Gerard Rood

Gerard Rood, P.Eng.



att.

ROOD ENGINEERING INC.

Consulting Engineers
 9 Nelson Street
LEAMINGTON, Ontario N8H 1G6

CONSTRUCTION SCHEDULE OF ASSESSMENT**SHEPLEY DRAIN****(Replacement Bridges for Elwood Defour and Garry & Bonny Quick)****TOWN OF ESSEX****3. MUNICIPAL LANDS:**

Con. or Plan No.	Lot or Part of Lot	Tax Roll No.	Owner's Name	Hectares Afft'd	Acres Afft'd	Value of Benefit	Value of Outlet	TOTAL VALUE
	County Road 20		County of Essex	1.223	3.02	\$ -	\$ 164.00	\$ 164.00
	County Road 13		County of Essex	3.270	8.08	\$ -	\$ 437.00	\$ 437.00
	Gore Road		Town of Essex	2.791	6.90	\$ -	\$ 339.00	\$ 339.00
	Snake Lane		Town of Essex	2.023	5.00	\$ -	\$ 246.00	\$ 246.00
	Ferris Road		Town of Essex	1.432	3.54	\$ -	\$ 174.00	\$ 174.00
	Harrow Centre Roads		Town of Essex	20.599	50.90	\$ -	\$ 2,748.00	\$ 2,748.00
Total on Municipal Lands.....						\$ -	\$ 4,108.00	\$ 4,108.00

4. PRIVATELY OWNED - NON-AGRICULTURAL LANDS:

Con. or Plan No.	Lot or Part of Lot	Tax Roll No.	Owner's Name	Hectares Afft'd	Acres Afft'd	Value of Benefit	Value of Outlet	TOTAL VALUE
	Harrow Centre Lands		Town of Essex	96.228	237.78	\$ -	\$ 12,783.00	\$ 12,783.00
1	56	630-13300	Hailey Trealtout, and Jaremy & Sheri Mayville	0.210	0.52	\$ -	\$ 18.00	\$ 18.00
1	57	630-13301	Manuel Gaspar	0.417	1.03	\$ -	\$ 30.00	\$ 30.00
1	57	630-13410	James Wright	1.011	2.50	\$ -	\$ 54.00	\$ 54.00
1	58	630-13440	Tyler Ryersee & Hailey Broadwell	0.917	2.27	\$ -	\$ 49.00	\$ 49.00
1	60	630-13710	Terry Dube & Kristi Taylor	0.247	0.61	\$ -	\$ 20.00	\$ 20.00

Con. or Plan No.	Lot or Part of Lot	Tax Roll No.	Owner's Name	Hectares Afft'd	Acres Afft'd	Value of Benefit	Value of Outlet	TOTAL VALUE
1	62	630-13900	Russell & Kimberly Gyori	0.563	1.39	\$ -	\$ 37.00	\$ 37.00
1	66	640-32300	Peter & Patricia McKeen	0.704	1.74	\$ -	\$ 43.00	\$ 43.00
1	66	640-32400	Christopher & Linda Palmer	0.923	2.28	\$ -	\$ 50.00	\$ 50.00
1	63	640-32750	Jerome & Rose Mary Ferriss	0.467	1.15	\$ -	\$ 33.00	\$ 33.00
1	63	640-32850	Philip Jr & Eleonore Kroh	0.417	1.03	\$ -	\$ 30.00	\$ 30.00
1	61	700-00400	Steven & Tonya Hammel	0.202	0.50	\$ -	\$ 17.00	\$ 17.00
Gore	11	700-00609	Colleen & Michael Cox	0.547	1.35	\$ -	\$ 36.00	\$ 36.00
Gore	11	700-00695	Edmund & Sherri Winter	1.683	4.16	\$ -	\$ 70.00	\$ 70.00
Gore	11	700-00900	Gordon & Brenda Dunn	0.350	0.86	\$ -	\$ 27.00	\$ 27.00
Gore	11	700-01000	Loraine Crosby	0.405	1.00	\$ -	\$ 26.00	\$ 26.00
Gore	11	700-01100	Michael & Roberta Pillon	3.513	8.68	\$ -	\$ 94.00	\$ 94.00
Gore	11	700-01200	Gale Williams	0.660	1.63	\$ -	\$ 36.00	\$ 36.00
Gore	14	700-01309	Vincent & Helen Klomp	0.210	0.52	\$ -	\$ 18.00	\$ 18.00
Gore	13	700-01700	Gerald & Ashley Vigneux	0.170	0.42	\$ -	\$ 16.00	\$ 16.00
Gore	13	700-01800	Christine Leal	0.077	0.19	\$ -	\$ 9.00	\$ 9.00
Gore	13	700-01900	Andrew & Barbara Spurdza	0.437	1.08	\$ -	\$ 31.00	\$ 31.00
Gore	13	700-01950	Gregory & Sharon Pillon	0.308	0.76	\$ -	\$ 24.00	\$ 24.00
Gore	13	700-02001	Robin Cadieux-Grayson	0.372	0.92	\$ -	\$ 28.00	\$ 28.00
Gore	10	700-02201	Robert Whitehead	0.372	0.92	\$ -	\$ 28.00	\$ 28.00
Gore	10	700-02290	Rainer & Lynne Pahl	0.371	0.92	\$ -	\$ 28.00	\$ 28.00
Gore	9	700-02401	Russell & Kimberly Gyori	0.324	0.80	\$ -	\$ 25.00	\$ 25.00
Gore	12	700-03210	Derek & Julie Hedges	0.223	0.55	\$ -	\$ 19.00	\$ 19.00
Gore	8	700-03220	Christopher & Roseann O'Keefe	0.223	0.55	\$ -	\$ 19.00	\$ 19.00
Gore	7	700-03250	Brian & Elizabeth Yaciuk	0.223	0.55	\$ -	\$ 19.00	\$ 19.00
Gore	12	700-03300	Perry & Kelly Landry	0.308	0.76	\$ -	\$ 24.00	\$ 24.00

Con. or Plan No.	Lot or Part of Lot	Tax Roll No.	Owner's Name	Hectares Afft'd	Acres Afft'd	Value of Benefit		Value of Outlet		TOTAL VALUE
Gore	12	700-03400	Teresa Pereira	0.438	1.08	\$	-	\$	31.00	\$ 31.00
Gore	12	700-03450	Bradley & Alice Laporte	0.344	0.85	\$	-	\$	26.00	\$ 26.00
Gore	12	700-03470	2275694 Ontario Inc.	0.344	0.85	\$	-	\$	26.00	\$ 26.00
Gore	12	700-03500	Owl Management Inc.	0.329	0.81	\$	-	\$	25.00	\$ 25.00
Gore	12	700-03550	Harrow Health Centre Inc.	0.602	1.49	\$	-	\$	38.00	\$ 38.00
1	58	700-04800	Michael Daum	0.247	0.61	\$	-	\$	20.00	\$ 20.00
Gore	6	710-02900	Garry & Bonny Quick	1.020	2.52	\$	1,840.00	\$	52.00	\$ 1,892.00
Gore	7	710-03100	Joseph & Susan Chisholm	0.213	0.53	\$	-	\$	18.00	\$ 18.00
Gore	7	710-03200	Aaron & Sarah Swartz	0.819	2.02	\$	-	\$	44.00	\$ 44.00
Gore	7	710-03300	Jordan Castro & Dayna St. Louis	0.138	0.34	\$	-	\$	14.00	\$ 14.00
Gore	7	710-03400	Margaret Hennessey	0.146	0.36	\$	-	\$	14.00	\$ 14.00
Gore	7	710-03500	Margaret Hennessey	0.101	0.25	\$	-	\$	10.00	\$ 10.00
Gore	7	710-03600	Maria Morujo	0.802	1.98	\$	-	\$	45.00	\$ 45.00
Gore	7	710-03700	Joan & Debra Sabo	0.816	2.02	\$	-	\$	44.00	\$ 44.00
Gore	7	710-03800	Robert & Teresa Durand	0.163	0.40	\$	-	\$	16.00	\$ 16.00
Gore	7	710-03900	Ronald & Deborah Tofflemire	0.140	0.35	\$	-	\$	14.00	\$ 14.00
Gore	7	710-04000	Jose & Theresa Matos	0.677	1.67	\$	-	\$	42.00	\$ 42.00
Gore	7	710-04100	Jose & Joana Roberto	0.614	1.52	\$	-	\$	39.00	\$ 39.00
Gore	7	710-04101	Dean Adam & Tania Morin	0.113	0.28	\$	-	\$	12.00	\$ 12.00
Gore	7	710-04200	Patrick & Judy Ford	0.127	0.31	\$	-	\$	13.00	\$ 13.00
Gore	7	710-04300	Richard & Mary Sinasac	0.267	0.66	\$	-	\$	22.00	\$ 22.00
Gore	7	710-04400	Tracey Ralston	0.151	0.37	\$	-	\$	14.00	\$ 14.00
Gore	7	710-04500	Bradley Swarts	0.129	0.32	\$	-	\$	13.00	\$ 13.00
1504	9	710-04600	Brent & Nancy Scratch	0.130	0.32	\$	-	\$	13.00	\$ 13.00
1504	8	710-04700	Erin Gall	0.129	0.32	\$	-	\$	13.00	\$ 13.00

Con. or Plan No.	Lot or Part of Lot	Tax Roll No.	Owner's Name	Hectares Afft'd	Acres Afft'd	Value of Benefit	Value of Outlet	TOTAL VALUE
1504	7	710-04800	Antonio Gomes & Diane Bondy	0.128	0.32	\$ -	\$ 13.00	\$ 13.00
1504	6	710-04900	Timothy & Jacqueline Shepley	0.129	0.32	\$ -	\$ 13.00	\$ 13.00
1504	5	710-05000	Preston Weaver	0.129	0.32	\$ -	\$ 13.00	\$ 13.00
1504	4	710-05100	Donald Flore	0.129	0.32	\$ -	\$ 13.00	\$ 13.00
1504	3	710-05200	Alma Campbell	0.130	0.32	\$ -	\$ 13.00	\$ 13.00
1504	2	710-05300	Shane & Mary Ruthven	0.109	0.27	\$ -	\$ 11.00	\$ 11.00
Gore	8	710-06420	Joseph St. Pierre	1.054	2.60	\$ -	\$ 54.00	\$ 54.00
Total on Privately Owned - Non-Agricultural Lands.....						\$ 1,840.00	\$ 14,489.00	\$ 16,329.00

5. PRIVATELY OWNED - AGRICULTURAL LANDS (grantable):

Con. or Plan No.	Lot or Part of Lot	Tax Roll No.	Owner's Name	Hectares Afft'd	Acres Afft'd	Value of Benefit	Value of Outlet	TOTAL VALUE
1	61	630-09640	Robert Howie, Linda Nichol & Shirley Reh	6.070	15.00	\$ -	\$ 148.00	\$ 148.00
1	56	630-13250	Rodney Wright	7.883	19.48	\$ -	\$ 192.00	\$ 192.00
1	58	630-13500	Betty Agla, Catherine Fudurich & Barbara Banský, Linda Kavanaugh	11.251	27.80	\$ -	\$ 273.00	\$ 273.00
1	60	630-13700	Terry Dube & Kristi Taylor	3.270	8.08	\$ -	\$ 80.00	\$ 80.00
1	61	630-13800	Fathe Samour	10.421	25.75	\$ -	\$ 253.00	\$ 253.00
1	67	640-32100	Frederick Pook	0.405	1.00	\$ -	\$ 10.00	\$ 10.00
1	65 & 66	640-32301	Bernard & Martin Gorski	10.117	25.00	\$ -	\$ 246.00	\$ 246.00
1	64	640-32500	Gorski Land Holdings Inc.	16.414	40.56	\$ -	\$ 399.00	\$ 399.00
1	64	640-32701	Bernard Gorski	0.227	0.56	\$ -	\$ 19.00	\$ 19.00
1	63	640-32800	Bernard Gorski	0.251	0.62	\$ -	\$ 7.00	\$ 7.00

Con. or Plan No.	Lot or Part of Lot	Tax Roll No.	Owner's Name	Hectares Afft'd	Acres Afft'd	Value of Benefit		Value of Outlet		TOTAL VALUE
1	63	640-32870	Bernard Gorski	0.728	1.80	\$	-	\$	52.00	\$ 52.00
1	58	700-00100	Chun Shi & Xianglin Wu	9.021	22.29	\$	-	\$	219.00	\$ 219.00
1	58	700-00101	Jose & Celeste Damaso	8.094	20.00	\$	-	\$	197.00	\$ 197.00
1	58	700-00200	Julia Fabok	24.282	60.00	\$	-	\$	589.00	\$ 589.00
1	60 & 61	700-00300	Joan & Martin Bansky	0.949	2.34	\$	-	\$	51.00	\$ 51.00
1	61	700-00500	David & Yvonne Hernandez	8.928	22.06	\$	-	\$	217.00	\$ 217.00
1	62	700-00600	Marilyn Boulton	4.051	10.01	\$	-	\$	99.00	\$ 99.00
Gore	11	700-00700	Edward & David Pohanka	13.975	34.53	\$	-	\$	339.00	\$ 339.00
Gore	11	700-00800	Joan & Martin Bansky	7.871	19.45	\$	-	\$	191.00	\$ 191.00
Gore	11	700-01300	David & Laura Jenner	12.424	30.70	\$	-	\$	302.00	\$ 302.00
Gore	14	700-01400	Mary Hrutka	2.023	5.00	\$	-	\$	50.00	\$ 50.00
Gore	11	700-01600	Michael & Amy Flanagan	9.550	23.60	\$	-	\$	232.00	\$ 232.00
Gore	13	700-02000	John & Roberta Mailloux	20.026	49.48	\$	-	\$	486.00	\$ 486.00
Gore	13	700-02100	James Lamoure	10.021	24.76	\$	-	\$	244.00	\$ 244.00
Gore	10	700-02200	AFF Farms Limited	46.880	115.84	\$	-	\$	1,138.00	\$ 1,138.00
Gore	10	700-02203	Felix Weigt-Bienzle & Susan Weaver	2.812	6.95	\$	-	\$	96.00	\$ 96.00
Gore	10	700-02400	Ronald & Etna Stefani	40.146	99.20	\$	-	\$	974.00	\$ 974.00
Gore	9	700-02500	Roger & Elizabeth Stefani	3.035	7.50	\$	-	\$	74.00	\$ 74.00
Gore	9	700-03000	Mary Rechwan , Tivador & Kathleen Boros	8.094	20.00	\$	-	\$	197.00	\$ 197.00
Gore	9	700-03100	David & Anna Hildebrandt	9.486	23.44	\$	-	\$	231.00	\$ 231.00
Gore	12	700-03200	Richard & Cheryl Huczel	5.666	14.00	\$	-	\$	138.00	\$ 138.00
Gore	12	700-04750	Joe & Susan Da Silva	9.103	22.49	\$	-	\$	221.00	\$ 221.00
Gore	7	710-00700	AFF Farms Limited	22.036	54.45	\$	-	\$	535.00	\$ 535.00
Gore	6	710-02800	Elwood Defour	0.304	0.75	\$	20,097.00	\$	8.00	\$ 20,105.00

Con. or Plan No.	Lot or Part of Lot	Tax Roll No.	Owner's Name	Hectares Afft'd	Acres Afft'd	Value of Benefit	Value of Outlet	TOTAL VALUE
Gore	7	710-03000	Windsor EEG Laboratory Inc.	1.649	4.07	\$ -	\$ 40.00	\$ 40.00
Total on Privately Owned - Agricultural Lands (grantable).....						\$ 20,097.00	\$ 8,547.00	\$ 28,644.00

5. PRIVATELY OWNED - AGRICULTURAL LANDS (non-grantable):

Con. or Plan No.	Lot or Part of Lot	Tax Roll No.	Owner's Name	Hectares Afft'd	Acres Afft'd	Value of Benefit	Value of Outlet	TOTAL VALUE
1	57	630-13400	Colio Estate Wines Inc	16.188	40.00	\$ -	\$ 393.00	\$ 393.00
1	59	630-13600	Allen & Scott McLean	11.736	29.00	\$ -	\$ 285.00	\$ 285.00
1	60	700-00320	1808236 Ontario Limited	34.142	84.37	\$ -	\$ 829.00	\$ 829.00
Gore	10	700-02150	Felix Weigt-Bienzle & Susan Weaver	19.683	48.64	\$ -	\$ 478.00	\$ 478.00
Gore	8	700-03230	Teresa Pereira	5.497	13.58	\$ -	\$ 134.00	\$ 134.00
Total on Privately Owned - Agricultural Lands (non-grantable).....						\$ -	\$ 2,119.00	\$ 2,119.00
TOTAL ASSESSMENT				589.938	1457.74	\$ 21,937.00	\$ 29,263.00	\$ 51,200.00

1 Hectare = 2.471 Acres
 Project No. REI2018D024
 October 17th, 2019

SPECIFICATIONS
SHEPLEY DRAIN
Replacement Bridges for Elwood Defour and Garry & Bonny Quick
(Geographic Township of Colchester South)
TOWN OF ESSEX

I. GENERAL SCOPE OF WORK

The Shepley Drain is located entirely within the Town of Essex. The drainage basin served by the Shepley Drain consists of approximately 605.10 hectares (1495.2 acres). The Shepley Drain comprises of an open drain and commences at the outlet to the Richmond Drain located along the south side of County Road 20, at Pt. Lot 6, Gore Concession. The Shepley Drain then extends upstream in a generally southeasterly direction to the north side of Gore Road near the property line of Lots 58 and 59, Concession 1. A plan showing the general location of the Shepley Drain, and affected Property Owners is attached in **Appendix "REI-E"**. The work under this project generally comprises of the construction of replacement access bridges for the agricultural lands of Elwood Defour and residential lands of Garry and Bonny Quick. The work on the bridges being replaced includes the removal of the existing structures; the installation of a new culverts at the locations as shown in **"Appendix REI-E"**; new culvert end treatments comprising of precast concrete block walls for Defour, and battered concrete jute bags or the reuse of the existing poured concrete headwalls for Quick; granular approach, granular backfill, and granular transition areas. The Quick bridge is to be replaced as future works as the existing bridge is found to be in satisfactory condition and not in need of replacement as of the date of these specifications. The poured concrete headwalls can be reused in consultation with the Drainage Superintendent if they are found to be in good condition when the maintenance replacement of the Quick bridge is required.

The Contractor shall provide all material, labour, and equipment to construct a replacement access bridge for Elwood Defour consisting of 11.0 metres (36.1 ft.) of 2000mm diameter aluminized steel type II Ultra Flo smooth wall pipe, 2.8mm thick, with 190mm X 19mm corrugation profile, with a Hugger band aluminized bolted coupler, including precast concrete block end walls, geogrid reinforcement to secure the walls, grout, and filter cloth backing the walls, in the Shepley Drain. The replacement access bridge shall be constructed so that the centerline of the Defour pipe is set approximately 0.24 metres east of the west end of the existing concrete bridge currently serving the lands, and in accordance with the information as shown on the plans in **Appendix "REI-E"**. The Contractor shall provide all material, labour, and equipment to construct a replacement access bridge for Garry & Bonny Quick consisting of 6.0 metres (19.7 ft.) of 2000mm aluminized steel type II Ultra Flo smooth wall pipe, 2.8mm thick, with 190mm X 19mm corrugation profile, including reusing the existing poured concrete headwalls with grouting to be completed around the pipe opening, in the Shepley Drain. The replacement access bridge shall be constructed so that the centerline of the Quick pipe is set aligned with the existing concrete headwalls bridge currently serving the lands, and in accordance with the information as shown on the plans in **Appendix "REI-E"**. The Contractor will be required to lower the opening in each concrete headwall to suit and shall then securely grout the new replacement pipe into place. If the poured concrete headwalls are determined to be unsatisfactory for use for future construction, we recommend that the Contractor provides 8.0 metres of 2000mm aluminized steel type II Ultra Flo smooth wall pipe, 2.8mm thick, with 190mm X 19mm corrugation profile with a Hugger band aluminized bolted coupler in the Shepley Drain. The new headwall options, if the poured concrete headwalls are not satisfactory for reuse, includes vertical precast concrete block end walls, geogrid reinforcement to secure

the walls, grout, and filter cloth backing the walls or battered concrete jute bags in the Shepley Drain.

The location shall be the exact designated location of these replacement access bridges unless otherwise directed by the property owners and the Town Drainage Superintendent, prior to the construction of same. Any changes to the location of the replacement access bridges must be approved in writing by the Engineer. The general layout of the access bridges and other ancillary works shall be provided as shown and detailed in the accompanying drawing attached within **Appendix "REI-E"**. A Benchmark has been set near these proposed access bridges so that same can be utilized for the setting of these new bridge culvert grades. The **Benchmark** is the *"top of nail in north face of hydro pole located on the south side of County Road 20 approximately 8.0 metres east of the existing bridge serving Municipal Number 2361"*, with same being **Elevation 187.694 metres**.

All work shall be carried out in accordance with these specifications, the plans forming part of this drainage project, as well as the Standard Details included in **Appendix "REI-C"**. The replacement bridge construction shall be of the size, type, depth, etcetera, as is shown in the accompanying drawings, as determined from the Benchmarks, and as may be further laid out at the site at the time of construction. All work carried out under this project shall be completed to the full satisfaction of the Town Drainage Superintendent and the Consulting Engineer.

II. E.R.C.A. AND D.F.O. CONSIDERATIONS

All of the work shall be carried out in accordance with any permits or authorizations issued by the Essex Region Conservation Authority (E.R.C.A.) or the Department of Fisheries and Oceans (D.F.O.), copies of which will be provided, if available. The standard mitigation response received from E.R.C.A. shall be followed and a copy of same is included within **Appendix "REI-A"**. The Contractor shall ensure that sediment and erosion control provisions, set out further in these specifications and in **Appendix "REI-A"**, are followed. Work shall be scheduled so that it can be completed in the dry and when there is no risk of a rain event that might exceed the capacity of the water control system that the Contractor employs. Any damming of the drain will be done on the upstream side in accordance with the provisions set out in **Appendix "REI-A"**. The Contractor will be required to carry out a fish salvage operation if there is water in the drain when the work is being done. Details for the fish salvage are set out in **Appendix "REI-A"**.

The Contractor is to review **Appendix "REI-A"** in detail and is required to comply in all regards with the contents of said E.R.C.A. and D.F.O. measures, and follow the special requirements therein included during construction.

The Contractor will be required to implement stringent erosion and sedimentation controls during the course of the work to help minimize the amount of silt and sediment being carried downstream into the outlet drainage system. It is intended that work on this project be carried out during relatively dry weather to ensure proper site and drain conditions and to avoid conflicts with sediment being deposited into the outlet drainage system. All disturbed areas shall be restored as quickly as possible with grass seeding and mulching installed to ensure a protective cover and to minimize any erosion from the work sites subsequent to construction. The Contractor may be required to provide temporary silt fencing and straw bales as outlined further in these specifications.

III. M.N.R.F. & M.E.C.P. ENDANGERED SPECIES ACT CONSIDERATIONS

The Contractor is to note that the Ministry of Environment, Conservation and Parks (M.E.C.P.) screening process by way of a Species at Risk (S.A.R.) review of the M.E.C.P. "Endangered Species Act, 2007" (E.S.A.) will be completed as a self-assessment by the Town pursuant to Section 23.9 of the E.S.A. prior to construction. This Section allows the Town to conduct eligible works of repair, maintenance, and improvements to existing municipal drains under the Drainage Act, and exemptions from Sections 9 and 10 of the E.S.A., provided that the requirements are followed in accordance with Ontario Regulation 242/08. The results of the review will be provided to the Contractor and copies of the mitigation measures, habitat protection and identification sheets will be included within **Appendix "REI-B"**.

The Ministry of Natural Resources & Forestry (M.N.R.F.) Species at Risk former Town agreement with M.N.R.F. pursuant to Section 23 of the "Endangered Species Act, 2007" expired as of June 30th, 2015. The former agreements are replaced with new regulation provisions under Ontario Regulation 242/08 administered by the M.E.C.P. Section 23.9 allows repairs, maintenance and improvements to be conducted by the Town within existing municipal drains. These works are exempt from Sections 9 and 10 of the Endangered Species Act provided that the rules in the regulations are followed. When eligible, the new regulations allow Municipalities to give notice to M.N.R.F. by registering their drainage activities through an online registry system.

The M.N.R.F. - M.E.C.P. mapping has basically confirmed that snake species including Butler's Garter Snake and Eastern Fox Snake are threatened and endangered, respectively, on this project. Because snakes are mobile and indicated as sensitive and endangered in the area, we have included herein a copy of the M.N.R.F. - M.E.C.P. mitigation requirements for them in **Appendix "REI-B"**. Providing mitigation requirements are implemented, it was concluded that present wildlife Species at Risk will be protected from negative impacts and the works will not contravene Section 9 (species protection) or Section 10 (habitat protection) of the Endangered Species Act, 2007.

The Contractor is to review **Appendix "REI-B"** in detail and is required to comply in all regards with the contents of said M.N.R.F. & M.E.C.P. measures, and follow the special requirements therein included during construction. Throughout the course of construction the Contractor will be responsible to ensure that all necessary provisions are undertaken to protect all species at risk and their habitats. If a threatened or sensitive species is encountered, the Contractor shall notify the Town and M.N.R.F. - M.E.C.P. and provide all the equipment and materials stipulated by the mitigation requirements for handling the species and cooperate fully with the Town and M.N.R.F. - M.E.C.P. staff in the handling of the species.

IV. ACCESS TO WORK

The Contractor is advised that the majority of the work to be carried out on this project for the Defour & Quick Bridges extends along the south side of County Road 20. A plan showing the general location of the Shepley Drain and affected Property Owners is attached in **Appendix "REI-E"**. The Contractor shall have access for the full width of the roadway abutting the proposed drainage works where the said roadway is present, or through the easements as set out in the December 5th, 2017 report by Gerard Rood, P.Eng. The Contractor may utilize the right-of-way as necessary, to permit the completion of all of the work required to be carried out for this project. The Contractor shall also have access into the driveway as necessary to carry out the removal of the existing access bridges and to construct the new replacement access

bridges, as set out on the plans and in these specifications, along with a sufficient area in the vicinity of the bridges to carry out the required construction of the removal and new structure installations and ancillary works.

The Contractor shall ensure that the traveling public is protected at all times while utilizing the roadway for its access. The Contractor shall provide traffic control, including flag persons when required. Should the Contractor have to close any of the roads for the proposed works, it shall obtain the permission of the Town Drainage Superintendent or Consulting Engineer and arrange to provide the necessary notification of detours around the site. The Contractor shall also ensure that all emergency services, school bus companies, etcetera are contacted about the disruption to access at least 48 hours in advance of same. All detour routes shall be established in consultation with the County of Essex and Town of Essex Works Departments.

Throughout the course of the work it is imperative that the Contractor protect as much landscaping and vegetation as possible when accessing along the drain. This will be of particular concern along the lawn areas of residential properties. Due to the extent of the work and the area for carrying out the work, the Contractor will be required to carry out all of the necessary steps to direct traffic and provide temporary diversion of traffic around work sites, including provision of all lights, signs, flag persons, and barricades required to protect the safety of the traveling public. Any accesses or areas used in carrying out the works are to be fully restored to their original conditions by the Contractor at its cost, including topsoil placement and lawn restoration as directed by the Town Drainage Superintendent and the Consulting Engineer. Restoration shall include but not be limited to all necessary levelling, grading, shaping, topsoil, seeding, mulching, and granular placement required to make good any damage caused.

V. REMOVAL OF BRUSH, TREES AND RUBBISH

Where there is any brush, trees or rubbish along the course of the drainage works, including the full width of the work access, all such brush, trees or rubbish shall be close cut and grubbed out, and the whole shall be chipped up for recycling, burned or otherwise satisfactorily disposed of by the Contractor. The brush and trees removed along the course of the work are to be put into piles by the Contractor in locations where they can be safely chipped and disposed of, or burned by it, or hauled away and disposed of by the Contractor to a site to be obtained by it at its expense. Prior to and during the course of any burning operations, the Contractor shall comply with the guidelines prepared by the Air Quality Branch of the Ontario Ministry of the Environment, and shall ensure that the Environmental Protection Act is not violated. The Contractor will be required to notify the local fire authorities to obtain any permits and co-operate with them in the carrying out of any work. The removal of brush and trees shall be carried out in close consultation with the Town Drainage Superintendent or Consulting Engineer to ensure that no decorative trees or shrubs are disturbed by the operations of the Contractor that can be saved. It is the intent of this project to save as many trees and bushes as practical within the roadway allowances and on private lands. Where decorative trees or shrubs are located directly over drainage pipes, the Contractor shall carefully extract same and turn them over to the Owner when requested to do so, and shall cooperate with the Owner in the reinstallation of same if required.

The Contractor shall protect all other trees, bushes, and shrubs located along the length of the drainage works except for those trees that are established, in consultation with the Town Drainage Superintendent, the Consulting Engineer, and the Owners, to be removed as part of the works. The Contractor shall note that protecting and saving the trees may require the

Contractor to carry out hand work around the trees, bushes, and shrubs to complete the necessary final site grading and restoration.

Following the completion of the work, the Contractor is to trim up any broken or damaged limbs on trees which are to remain standing, and it shall dispose of said branches along with other brush, thus leaving the trees in a neat and tidy condition. The Contractor shall remove all deleterious materials and rubbish along the course of the open drain in the location of the work areas and any such materials located in the bridge culverts while carrying out its cleaning of same. All such deleterious materials and rubbish shall be loaded up and hauled away by the Contractor to a site to be obtained by it at its cost.

VI. FENCING

Where it is necessary to take down any fence to proceed with the work, the same shall be done by the Contractor across or along that portion of the work where such fence is located. The Contractor will be required to exercise extreme care in the removal of any fencing so as to cause a minimum of damage to same. The Contractor will be required to reinstall any fence that is taken down in order to proceed with the work, and the fence shall be reinstated in a neat and workmanlike manner. The Contractor will not be required to procure any new materials for rebuilding the fence provided that it has used reasonable care in the removal and replacement of same. When any fence is removed by the Contractor, and the Owner thereof deems it advisable and procures new material for replacing the fence so removed, the Contractor shall replace the fence using the new materials and the materials from the present fence shall remain the property of the Owner.

VII. DETAILS OF BRIDGE WORK

When completed, the new replacement access bridge for Elwood Defour (Parcel 710-02800) along the centreline of the new culvert shall have a total top width, including the top width of the precast concrete block end walls, of approximately 10.88 metres (35.7 ft.) and a travelled driveway width of 9.78 metres (32.1 ft.). When completed, the new replacement access bridge for Garry and Bonny Quick along the centreline of the new culvert shall have a total top width, including the top width of the existing concrete headwalls, of approximately 6.0 metres (19.7 ft.) and a travelled driveway width of 5.12 metres (16.8 ft.). The new pipe shall be set to the invert elevations shown on the plans. The Contractor will be required to lower the opening in each concrete headwall to suit and shall then securely grout the new replacement pipe into place. In the event that the existing poured concrete headwalls are found to not be satisfactory, the culvert shall have a total top width, including the top width of the precast concrete block end walls, of approximately 8.00 metres (26.2 ft.) and a travelled driveway width of 6.78 metres (22.2 ft.). If a battered concrete jute bag end wall is the more preferred option, the culvert shall have a total top width, including the top width of the battered concrete jute bag end walls, of approximately 8.00 metres (26.2 ft.) and a travelled driveway width of 6.10 metres (20.0 ft.). The walls shall have a batter of 1 unit horizontal for every 5 units of vertical distance.

The proposed pipe inverts are set approximately 200mm below the drain design grade. The aluminized steel Type II smooth wall pipe to be provided for this project is to be supplied as no more than two (2) approximately equal lengths of pipe for the bridge and joined together with a hugger band aluminized bolted coupler with non-woven geotextile filter cloth wrapped around it, secured in accordance with the manufacturer's recommendations. The Ultra-Flo aluminized steel Type II smooth wall pipe to be utilized for this bridge installation must be a

minimum of 2.8mm thick with a 190mm by 19mm corrugation profile and shall be approved by the Town Drainage Superintendent or Engineer, prior to its placement in the drain.

The Contractor shall have access to carry out the work from the road right-of-way, along with a sufficient distance along both sides of the drain upstream and downstream from the bridge to complete the access bridge installation and drain cleaning as specified. Any accesses or areas utilized in carrying out the works are to be fully restored to their original conditions by the Contractor, including topsoil placement and lawn restoration as directed by the Engineer or the Town Drainage Superintendent. Restoration shall include, but not be limited to, all necessary levelling, grading, shaping, topsoil placement, and granular required to make good any damage caused.

The Contractor shall also note that the placement of the replacement access bridge culverts are to be performed totally in the dry, and it shall be prepared to take whatever steps are necessary to ensure same, all to the full satisfaction of the Town Drainage Superintendent or Engineer. As part of the work, the Contractor will be required to clean out the drain along the full length of the bridge pipe and for a distance of 3.0 metres (10.0ft.) both upstream and downstream of said pipe. The design parameters of the Shepley Drain at the location of the new access bridges to be installed consists of a 1.22m (4.0 ft.) bottom width, 0.08% grade, and 1.5 horizontal to 1.0 vertical sideslopes. The Contractor shall be required to cut any brush and strip the existing drain sideslopes of any vegetation as part of the grubbing operation. The Contractor shall also dispose of all excavated and deleterious materials, as well as any grubbed out materials, to a site to be obtained by it at its own expense. The Contractor shall note that the survey indicates that the existing drain bottom is slightly above the design grade. The Contractor shall be required to provide any and all labour, material and equipment to set the pipe to the required design grades. The Contractor shall also be required to supply, if necessary for a solid base, a minimum thickness of 150mm (6") of 20mm (3/4") clear stone bedding underneath the culvert pipe, extending from the bottom of the excavation to the culvert invert grade, all to the full satisfaction of the Town Drainage Superintendent or Engineer.

Once the new Ultra-Flo aluminized steel Type II smooth wall pipe has been satisfactorily set in place at the site, the Contractor shall completely backfill same with granular material M.T.O. Type "B" O.P.S.S. (Ontario Provincial Standard Specification) Form 1010, with the exception of the top 305mm (12") of the backfill material for the full top width of the drain and the access bridge, which shall be granular material M.T.O. Type "A" O.P.S.S. Form 1010. The Contractor shall then install the vertical precast concrete block or battered concrete jute bag end protection on both ends of the bridge. The installation of the endwalls, as well as the backfilling of the pipe where applicable, shall be provided in compliance with Items 1), 2), 3), and 4) of the **"Standard Specifications for Access Bridge Construction"** attached within **Appendix "REI-C"** and in total compliance and in all respects with the General Conditions included in Item 4) of said Appendix. The Contractor, in all cases, shall comply with these specifications and upon completion of the precast concrete block end protection installation shall restore the adjacent areas to their original conditions.

The Contractor shall install vertical interlocking precast concrete blocks with filter cloth backing for walls on both ends of the bridge requiring same. The blocks shall be minimum 600X600X1200mm in size as available from Underground Specialties - Wolseley, in Windsor, Ontario, or equal, and installed as set out in **Appendix "REI-C"**. Vertical joints shall be staggered by use of half blocks where needed and wingwall deflections when required shall employ 45-degree angled blocks. Voids between the blocks and the pipe shall be grouted with 30mPa concrete grout having 6% \pm 1% air entrainment and extend for the full thickness of the

wall, and have a smooth uniform finish on the face that blends with the precast blocks. The installation of the endwalls, as well as the backfilling of the pipe where applicable, shall be provided in compliance with Items 1), 3), and 4) of the "Standard Specifications for Access Bridge Construction" attached within **Appendix "REI-C"** and in total compliance and in all respects with the General Conditions included in said Appendix. The Contractor shall submit shop drawings for approval of the wall installation that includes details for a minimum 300mm thick concrete footing that extends from the pipe invert downward. The footing shall extend into the drain banks each side for the required embedment of the blocks and be constructed to ensure that the completed wall will be completely vertical. The precast concrete block end wall protection shall be extended from a minimum of 300mm below the invert of the new aluminized steel type II Ultra Flo smooth wall pipe to the top elevation of the driveway. Where the block walls extend more than 1.8 metres in height, the supplier shall provide the Contractor with uni-axial geogrid (SG350 or equivalent) reinforcement for installation to tie the wall back into the granular backfill. The Contractor, in all cases, shall comply with these specifications and upon completion of the stacked precast concrete block end protection installation shall restore the adjacent areas to their original conditions. The Contractor shall supply quarried limestone rock on filter cloth protection adjacent to the headwalls at each corner of the bridge as seen on the plans in **Appendix "REI-E"**. All rock protection shall be 1.0 metres wide and 305mm (12") thick, installed on non-woven filter cloth, and shall be installed in accordance with Item 2) of the "Standard Specifications for Access Bridge Construction". The synthetic filter mat to be used shall be non-woven geotextile GMN160 conforming to O.P.S.S. 1860 Class I, as available from Armtec Construction Products through Underground Specialties - Wolseley in Windsor, Ontario or equal. The quarried limestone to be used shall be graded in size from a minimum of 100mm to a maximum of 250mm, and is available from Walker Industries Amherst Quarries, in Amherstburg, Ontario, or equal.

The concrete filled jute bags are to be provided and laid out as is shown and detailed in the drawings provided by the Town and as noted in the Standard Specifications in **Appendix "REI-C"**. In all cases, the concrete filled jute bag headwalls shall be topped with a minimum 100mm (4") thick continuous concrete cap comprising 30MPa concrete with 6% $\pm 1\%$ air entrainment for the entire length of the headwalls. The headwalls shall be installed on an inward batter to be not less than 1 horizontal to 5 vertical, and under no circumstances shall this batter, which is measured from the top of the headwall to the projection of the end of the pipe, be less than 305mm (12"). From the midpoint of the pipe height down to the concrete footing, the wall shall be a double concrete filled jute bag installation. On the road side the walls shall be deflected as shown to provide daylighting and a better approach across the new bridge.

The installation of the concrete filled jute bag headwalls, unless otherwise specified, shall be provided in total compliance with the Items 1, 3, and 4 included in the **"STANDARD SPECIFICATIONS FOR ACCESS BRIDGE CONSTRUCTION"**. These are attached to the back of these specifications and labelled **Appendix "REI-C"**. The Contractor shall comply in all respects with the General Conditions included in Item 4 and the **"Typical Concrete Filled Jute Bag Headwall End Protection"** detail also shown therein.

The installation of the complete length of the new access bridge culvert, including all appurtenances, shall be completely inspected by the Town Drainage Superintendent or Engineer prior to backfilling any portions of same. Under no circumstance shall the Contractor backfill same until the Town Drainage Superintendent or Engineer inspects and approves said pipe installation. The Contractor shall provide a minimum notice of 2 working days to the Town Drainage Superintendent or Engineer prior to the commencement of this work. The installation

of this new access bridge is to be performed during the normal working hours from Monday to Friday of the Town Drainage Superintendent or Engineer.

The Contractor shall also perform the necessary excavation to extend the driveway from the north top bank of the drain to the south limit of the roadway granular. This driveway approach from the existing edge of granular shoulder to approximately 1.0 metres south of the south top of bank shall consist of a minimum of 305mm (12") of granular material M.T.O. Type "A" satisfactorily compacted in place. The gravel apron shall extend for the full width of the access culvert top, and include a gore section at the roadside curved protection with a 5.0m turning radius to the edge of the roadway granular, as shown on the plans. The gravel backfill shall also extend across the pipe to approximately 1.0m beyond the south top of bank as shown on the plans. The pipe shall have a minimum of 500mm of cover, and be uniformly graded down to the existing field level from the existing road edge level at a maximum of 10% grade.

The Ultra-Flo aluminized steel Type II smooth wall pipe for this installation shall be provided with a depth of cover measured from the top of the aluminized steel pipe to the top of the granular backfill of approximately 0.500m (19.7 in.) for the new bridge and if the culvert is placed at its proper elevations, this should be easily achieved. If the Contractor finds that the specified cover is not being met, they shall notify the Drainage Superintendent and the Engineer immediately so that steps can be taken to rectify the condition prior to the placement of any backfill. The cover requirement is **critical** and must be attained. In order for this new access bridge culvert to properly fit the channel parameters, all of the design grade elevations provided below must be strictly adhered to.

Also, for use by the Contractor, we have established a Benchmark near the site. This Benchmark is the *"top of nail in north face of hydro pole located on the south side of County Road 20 approximately 8.0 metres east of the existing bridge serving Municipal Number 2361"*, with same being **Elevation 187.694 metres**.

The new pipe culvert and the backfilling for the Defour Bridge No. 2 (Parcel 710-02800) are to be placed on the following basis:

- i) The **East (upstream) invert** of the proposed bridge culvert is to be set at Elevation **185.135** metres.
- ii) The **West (downstream) invert** of the proposed bridge culvert is to be set at Elevation **185.127** metres.
- iii) The centreline of driveway for this bridge installation shall be set to approximately Elevation **187.940** metres at the existing gravel shoulder edge, Elevation **187.710** metres at the culvert pipe centreline, and Elevation **187.564** metres at approximately 1.0 metre south of the south top of bank and then graded to match the existing ground elevation at each end of the granular approaches. The access bridge driveway, in all cases, shall be graded with a cross-fall from the centreline of the driveway to the outer edges of the driveway at an approximate grade of 1.50%.

The new pipe culvert and the backfilling for the Quick Bridge No. 3 (Parcel 710-02900) are to be placed on the following basis:

- iv) The **East (upstream) invert** of the proposed bridge culvert is to be set at Elevation **185.143** metres.

- v) The **West (downstream) invert** of the proposed bridge culvert is to be set at Elevation **185.139** metres.
- vi) The centreline of driveway for this bridge installation shall be set to approximately Elevation **187.878** metres at the existing gravel shoulder edge, Elevation **187.679** metres at the culvert pipe centreline, and Elevation **187.550** metres at approximately 1.0 metre south of the south top of bank and then graded to match the existing ground elevation at each end of the granular approaches. The access bridge driveway, in all cases, shall be graded with a cross-fall from the centreline of the driveway to the outer edges of the driveway at an approximate grade of 1.50%.

As a check, all of the above design grade elevations should be confirmed before commencing to the next stage of the new access bridge installation. The Contractor is also to check that the pipe invert grades are correct by referencing the Benchmark provided for the site.

The Contractor shall also be required to provide all labour, equipment and material to provide granular fill to all gore areas at the road as noted on the plans. The Contractor shall provide a 5.0 metre radius on the roadside approach of the drain as seen on the plans and protect any existing landscape features during the course of the work.

As part of the work provided for the construction of the access bridge, the Contractor shall be required to protect or extend any existing lateral tile ends and swales which conflict with the bridge installation. All existing lateral tile drains and swales, where required, shall be diverted and extended to the ends of the new access bridge culvert and shall be extended and installed in accordance with the "Standard Lateral Tile Detail" as shown in **Appendix "REI-C"**, unless otherwise noted. Connections shall be made using manufacturer's couplers wherever possible. All other connections shall be completely sealed with concrete grout around the full exterior perimeter of each joint. Grouted mortar joints shall be composed of three (3) parts of clean, sharp sand to one (1) part of Portland cement and the mortar connection shall be performed to the full satisfaction of the Town Drainage Superintendent or the Engineer. The mortar joint shall be of a sufficient mass around the full circumference of the joint to ensure a tight, solid seal.

The Contractor is to note that the granular driveway approaches extending from the existing edge of gravel shoulder to the north top of bank of the drain shall consist of granular material M.T.O. Type "A" O.P.S.S. Form 1010 and is to be provided to a minimum depth of 305mm (12"), and be satisfactorily compacted in place. The Contractor is to also note that all granular material being placed as backfill for this bridge installation shall be compacted in place to a minimum Standard Proctor Density of 100%, and that all granular fill material to be used for the construction shall be compacted in place to a minimum Standard Proctor Density of 95%.

All of the granular backfill and the compaction levels for same shall be provided to the full satisfaction of the Town Drainage Superintendent or the Engineer. The Contractor shall also note that any sediment being removed from the drain bottom as previously specified herein, shall not be utilized for the construction of the driveway, and shall be disposed of by the Contractor to a site to be obtained by it at its own expense. The Contractor shall be required to restore any and all drain sideslopes damaged by the access bridge installation and removal of vegetation, utilizing the available scavenged topsoil, and shall seed and mulch over all of said areas.

VIII. TOPSOIL, SEED AND MULCH

The Contractor shall be required to restore all existing grassed areas and drain side slopes damaged by the structure replacements, construction or cutting of the drain cross section, by placing topsoil, and then seed and mulch over said areas including any specific areas noted on the bridge details. The Contractor shall be required to provide all the material and to cover the above mentioned surfaces with approximately 50mm of good, clean, dry topsoil on slopes and 100mm of good, clean, dry topsoil on horizontal surfaces, fine graded and spread in place ready for seeding and mulching. The placing and grading of any topsoil shall be carefully and meticulously carried out in accordance with Ontario Provincial Standard Specifications, Form 802 dated November 2010, or as subsequently amended, or as amended by these specifications and be readied for the seeding and mulching process. The seeding and mulching of all of the above mentioned areas shall comply in all regards to Ontario Provincial Standard Specifications, Form 803 dated November 2010 and Form 804, dated November 2013, or as subsequently amended, or as amended by these specifications. The seeding mixture shall be the Standard Roadside Mix (Canada No. 1 Lawn Grass Seed Mixture) as set out in O.P.S.S. 804. All cleanup and restoration work shall be performed to the full satisfaction of the Town Drainage Superintendent or Engineer.

When all of the work for this installation has been completed, the Contractor shall ensure that positive drainage is provided to all areas, and shall ensure that the site is left in a neat and workmanlike manner, all to the full satisfaction of the Town Drainage Superintendent or Engineer.

IX. GENERAL CONDITIONS

- a) The Town Drainage Superintendent or Consulting Engineer shall have authority to carry out minor changes to the work where such changes do not lessen the efficiency of the work.
- b) The Contractor shall satisfy itself as to the exact location, nature and extent of any existing structure, utility or other object which it may encounter during the course of the work. The Contractor shall indemnify and save harmless the Town of Essex, the County of Essex and the Consulting Engineer and their representatives for any damages which it may cause or sustain during the progress of the work. It shall not hold the Town of Essex, County of Essex, or the Consulting Engineer liable for any legal action arising out of any claims brought about by such damage caused by it.
- c) The Contractor shall provide a sufficient number of layout stakes and grade points so that the Drainage Superintendent and Consulting Engineer can review same and check that the work will generally conform to the design and project intent.
- d) The Contractor will be responsible for any damage caused by it to any portion of the Municipal road system, especially to the travelled portion. When excavation work is being carried out and the excavation equipment is placed on the travelled portion of the road, the travelled portion shall be protected by having the excavation equipment placed on satisfactory timber planks or timber pads. If any part of the travelled portion of the road is damaged by the Contractor, the Municipality shall have the right to have the necessary repair work done by its' employees and the cost of all labour and materials used to carry out the repair work shall be deducted from the Contractor's contract and credited to the Municipality. The Contractor, upon completing the works, shall clean all debris and junk,

etcetera, from the roadside of the drain, and leave the site in a neat and workmanlike manner. The Contractor shall be responsible for keeping all public roadways utilized for hauling materials free and clear of mud and debris.

- e) The Contractor shall provide all necessary lights, signs, and barricades to protect the public. All work shall be carried out in accordance with the requirements of the Occupational Health and Safety Act, and latest amendments thereto. If traffic control is required on this project, signing is to comply with the M.T.O. Manual of Uniform Traffic Control Devices (M.U.T.C.D.) for Roadway Work Operations and Ontario Traffic Manual Book 7.
- f) During the course of the work the Contractor shall be required to connect existing drainage pipes to the Municipal Drain. In the event that polluted flows are discovered, the Contractor shall delay the connection of the pipe and leave the end exposed and alert the Municipality, the Drainage Superintendent and the Consulting Engineer so that steps can be taken by the Municipality to address the concern with the owner and the appropriate authorities. Where necessary the Contractor shall cooperate with the Municipality in providing temporary measures to divert the drain or safely barricade same. Should the connection be found acceptable by the authorities, the Contractor shall complete the connection of the drain as provided for in the specifications, at no extra cost to the project.
- g) Following the completion of the work, the Contractor is to trim up any broken or damaged limbs on trees which are to remain standing, and it shall dispose of said branches along with other brush, thus leaving the trees in a neat and tidy condition.
- h) The whole of the work shall be satisfactorily cleaned up, and during the course of the construction, no work shall be left in any untidy or incomplete state before subsequent portions are undertaken.
- i) All driveways, laneways and access bridges, or any other means of access on to the job site shall be fully restored to their former condition at the Contractor's expense. Before authorizing Final Payment, the Town Drainage Superintendent and the Consulting Engineer shall inspect the work in order to be sure that the proper restoration has been performed. In the event that the Contractor fails to satisfactorily clean up any portion of these accesses, the Consulting Engineer shall order such cleanup to be carried out by others and the cost of same be deducted from any monies owing to the Contractor.
- j) The Contractor will be required to submit to the Municipality, a Certificate of Good Standing from the Workplace Safety and Insurance Board prior to the commencement of the work and the Contractor will be required to submit to the Municipality, a Certificate of Clearance for the project from the Workplace Safety and Insurance Board before Final Payment is made to the Contractor.
- k) The Contractor shall furnish a Performance and Maintenance Bond along with a separate Labour and Material Payment Bond within ten (10) days after notification of the execution of the Agreement by the Owner. One copy of said bonds shall be bound into each of the executed sets of the Contract. Each Performance and Maintenance Bond and Labour and Material Payment Bond shall be in the amount of 100% of the total Tender Price. All Bonds shall be executed under corporate seal by the Contractor and a surety company, authorized by law to carry out business in the Province of Ontario. The Bonds shall be acceptable to the Owner in every way and shall guarantee faithful performance of the

contract during the period of the contract, including the period of guaranteed maintenance which will be in effect for twelve (12) months after substantial completion of the works.

The Tenderer shall include the cost of bonds in the unit price of the Tender items as no additional payment will be made in this regard.

- l) The Contractor shall be required, as part of this Contract, to provide Comprehensive Liability Insurance coverage for not less than \$5,000,000.00 on this project, and shall name the Town of Essex, the County of Essex and their officials and the Consulting Engineer and their staff as additional insured under the policy. The Contractor must submit a copy of this policy to both the Municipal Clerk and the Consulting Engineer prior to the commencement of work.
- m) Monthly progress orders for payment shall be furnished the Contractor by the Municipal Drainage Superintendent. Said orders shall be for not more than 90% of the value of the work done and the materials furnished on the site. The paying of the full 90% does not imply that any portion of the work has been accepted. The remaining 10% will be paid 60 days after the final acceptance and completion of the work and payment shall not be authorized until the Contractor provides the following:
 - i) a Certificate of Clearance for the project from the Workplace Safety and Insurance Board
 - ii) proof of advertising
 - iii) a Statutory Declaration, in a form satisfactory to the Consulting Engineer and the Municipality, that all liabilities incurred by the Contractor and its Sub-Contractors in carrying out the Contract have been discharged and that all liens in respect of the Contract and Sub-Contracts thereunder have expired or have been satisfied, discharged or provided for by payment into Court.

The Contractor shall satisfy the Consulting Engineer or Municipality that there are no liens or claims against the work and that all of the requirements as per the Construction Act, 2018 and its' subsequent amendments have been adhered to by the Contractor.

- n) In the event that the Specifications, Information to Tenderers, or the Form of Agreement do not apply to a specific condition or circumstance with respect to this project, the applicable section or sections from the Canadian Construction Documents Committee C.C.D.C.2. shall govern and be used to establish the requirements of the work.

APPENDIX "REI-A"

STANDARD E.R.C.A. AND D.F.O.
MITIGATION REQUIREMENTS

As part of its work, the Contractor will implement the following measures that will ensure that any potential adverse effects on fish and fish habitat will be mitigated:

1. As per standard requirements, work will not be conducted at times when flows in the drain are elevated due to local rain events, storms, or seasonal floods. Work will be done in the dry.
2. All disturbed soils on the drain banks and within the channel, including spoil, must be stabilized immediately upon completion of work. The restoration of the site must be completed to a like or better condition to what existed prior to the works. The spoil material must be hauled away and disposed of at a suitable site, or spread an appropriate distance from the top of the drain bank to ensure that it is not washed back into the drain.
3. To prevent sediment entry into the drain in the event of an unexpected rainfall, silt barriers and/or traps must be placed in the channel during the works and until the site has been stabilized. All sediment and erosion control measures are to be in accordance with the related Ontario Provincial Standards. It is incumbent on the proponent and Contractors to ensure that sediment and erosion control measures are functioning properly and maintained/upgraded as required.
4. Silt or sand accumulated in the barrier traps must be removed and stabilized on land once the site is stabilized.
5. All activities including maintenance procedures should be controlled to prevent the entry of petroleum products, debris, rubble, concrete, or other deleterious substances into the water. Vehicular refuelling and maintenance should be conducted away from the water.
6. Any drain banks trimmed outside of the July 1st to September 15th timing window will require erosion control blankets to be installed to promote re-vegetation and to protect the slope from erosion in the interim.

Measures to Avoid Causing Harm to Fish and Fish Habitat

If you are conducting a project near water, it is your responsibility to ensure you avoid causing [serious harm to fish](#) in compliance with the *Fisheries Act*. The following advice will help you avoid causing harm and comply with the *Act*.

PLEASE NOTE: This advice applies to all project types and replaces all “Operational Statements” previously produced by DFO for different project types in all regions.

Measures

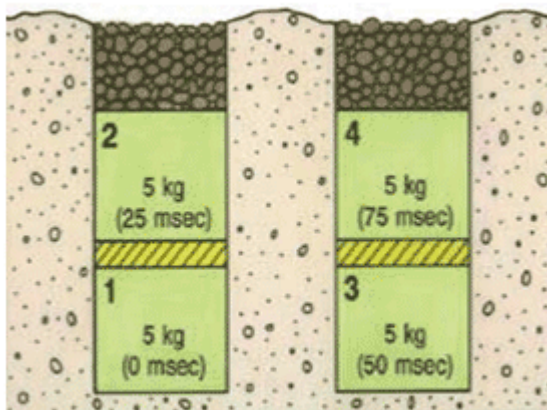
- Time work in water to respect [timing windows](#) to protect fish, including their eggs, juveniles, spawning adults and/or the organisms upon which they feed.
- Minimize duration of in-water work.
- Conduct instream work during periods of low flow, or at low tide, to further reduce the risk to fish and their habitat or to allow work in water to be isolated from flows.
- Schedule work to avoid wet, windy and rainy periods that may increase erosion and sedimentation.
- Design and plan activities and works in waterbody such that loss or disturbance to aquatic habitat is minimized and sensitive spawning habitats are avoided.
- Design and construct approaches to the waterbody such that they are perpendicular to the watercourse to minimize loss or disturbance to riparian vegetation.
- Avoid building structures on meander bends, braided streams, alluvial fans, active floodplains or any other area that is inherently unstable and may result in erosion and scouring of the stream bed or the built structures.
- Undertake all instream activities in isolation of open or flowing water to maintain the natural flow of water downstream and avoid introducing sediment into the watercourse.
- Plan activities near water such that materials such as paint, primers, blasting abrasives, rust solvents, degreasers, grout, or other chemicals do not enter the watercourse.
- Develop a response plan that is to be implemented immediately in the event of a sediment release or spill of a deleterious substance and keep an emergency spill kit on site.
- Ensure that building material used in a watercourse has been handled and treated in a manner to prevent the release or leaching of substances into the water that may be deleterious to fish.

- Develop and implement an Erosion and Sediment Control Plan for the site that minimizes risk of sedimentation of the waterbody during all phases of the project. Erosion and sediment control measures should be maintained until all disturbed ground has been permanently stabilized, suspended sediment has resettled to the bed of the waterbody or settling basin and runoff water is clear. The plan should, where applicable, include:
 - Installation of effective erosion and sediment control measures before starting work to prevent sediment from entering the water body.
 - Measures for managing water flowing onto the site, as well as water being pumped/diverted from the site such that sediment is filtered out prior to the water entering a waterbody. For example, pumping/diversion of water to a vegetated area, construction of a settling basin or other filtration system.
 - Site isolation measures (e.g., silt boom or silt curtain) for containing suspended sediment where in-water work is required (e.g., dredging, underwater cable installation).
 - Measures for containing and stabilizing waste material (e.g., dredging spoils, construction waste and materials, commercial logging waste, uprooted or cut aquatic plants, accumulated debris) above the high water mark of nearby waterbodies to prevent re-entry.
 - Regular inspection and maintenance of erosion and sediment control measures and structures during the course of construction.
 - Repairs to erosion and sediment control measures and structures if damage occurs.
 - Removal of non-biodegradable erosion and sediment control materials once site is stabilized.
- Clearing of riparian vegetation should be kept to a minimum: use existing trails, roads or cut lines wherever possible to avoid disturbance to the riparian vegetation and prevent soil compaction. When practicable, prune or top the vegetation instead of grubbing/uprooting.
- Minimize the removal of natural woody debris, rocks, sand or other materials from the banks, the shoreline or the bed of the waterbody below the ordinary high water mark. If material is removed from the waterbody, set it aside and return it to the original location once construction activities are completed.
- Immediately stabilize shoreline or banks disturbed by any activity associated with the project to prevent erosion and/or sedimentation, preferably through re-vegetation with native species suitable for the site.
- Restore bed and banks of the waterbody to their original contour and gradient; if the original gradient cannot be restored due to instability, a stable gradient that does not obstruct fish passage should be restored.
- If replacement rock reinforcement/armouring is required to stabilize eroding or exposed areas, then ensure that appropriately-sized, clean rock is used; and that rock is installed at a similar slope to maintain a uniform bank/shoreline and natural stream/shoreline alignment.
- Remove all construction materials from site upon project completion.

- Ensure that all in-water activities, or associated in-water structures, do not interfere with fish passage, constrict the channel width, or reduce flows.
- Retain a qualified environmental professional to ensure applicable permits for relocating fish are obtained and to capture any fish trapped within an isolated/enclosed area at the work site and safely relocate them to an appropriate location in the same waters. Fish may need to be relocated again, should flooding occur on the site.
- Screen any water intakes or outlet pipes to prevent entrainment or impingement of fish. Entrainment occurs when a fish is drawn into a water intake and cannot escape. Impingement occurs when an entrapped fish is held in contact with the intake screen and is unable to free itself.
 - In freshwater, follow these measures for design and installation of intake end of pipe fish screens to protect fish where water is extracted from fish-bearing waters:
 - Screens should be located in areas and depths of water with low concentrations of fish throughout the year.
 - Screens should be located away from natural or artificial structures that may attract fish that are migrating, spawning, or in rearing habitat.
 - The screen face should be oriented in the same direction as the flow.
 - Ensure openings in the guides and seals are less than the opening criteria to make “fish tight”.
 - Screens should be located a minimum of 300 mm (12 in.) above the bottom of the watercourse to prevent entrainment of sediment and aquatic organisms associated with the bottom area.
 - Structural support should be provided to the screen panels to prevent sagging and collapse of the screen.
 - Large cylindrical and box-type screens should have a manifold installed in them to ensure even water velocity distribution across the screen surface. The ends of the structure should be made out of solid materials and the end of the manifold capped.
 - Heavier cages or trash racks can be fabricated out of bar or grating to protect the finer fish screen, especially where there is debris loading (woody material, leaves, algae mats, etc.). A 150 mm (6 in.) spacing between bars is typical.
 - Provision should be made for the removal, inspection, and cleaning of screens.
 - Ensure regular maintenance and repair of cleaning apparatus, seals, and screens is carried out to prevent debris-fouling and impingement of fish.
 - Pumps should be shut down when fish screens are removed for inspection and cleaning.
- Avoid using explosives in or near water. Use of explosives in or near water produces shock waves that can damage a fish swim bladder and rupture internal organs. Blasting vibrations may also kill or damage fish eggs or larvae.
 - If explosives are required as part of a project (e.g., removal of structures such as piers, pilings, footings; removal of obstructions such as beaver dams; or preparation of a river or lake bottom for installation of a structure such as a dam or water intake), the potential for impacts to fish and fish habitat should be minimized by implementing the following measures:

- Time in-water work requiring the use of explosives to prevent disruption of vulnerable fish life stages, including eggs and larvae, by adhering to appropriate fisheries [timing windows](#).
- Isolate the work site to exclude fish from within the blast area by using bubble/air curtains (i.e., a column of bubbled water extending from the substrate to the water surface as generated by forcing large volumes of air through a perforated pipe/hose), cofferdams or aquadams.
- Remove any fish trapped within the isolated area and release unharmed beyond the blast area prior to initiating blasting
- Minimize blast charge weights used and subdivide each charge into a series of smaller charges in blast holes (i.e., decking) with a minimum 25 millisecond (1/1000 seconds) delay between charge detonations (see Figure 1).
- Back-fill blast holes (stemmed) with sand or gravel to grade or to streambed/water interface to confine the blast.
- Place blasting mats over top of holes to minimize scattering of blast debris around the area.
- Do not use ammonium nitrate based explosives in or near water due to the production of toxic by-products.
- Remove all blasting debris and other associated equipment/products from the blast area.

Figure 1: Sample Blasting Arrangement



Per Fig. 1: 20 kg total weight of charge; 25 msecs delay between charges and blast holes; and decking of charges within holes.

- Ensure that machinery arrives on site in a clean condition and is maintained free of fluid leaks, invasive species and noxious weeds.

- Whenever possible, operate machinery on land above the high water mark, on ice, or from a floating barge in a manner that minimizes disturbance to the banks and bed of the waterbody.
- Limit machinery fording of the watercourse to a one-time event (i.e., over and back), and only if no alternative crossing method is available. If repeated crossings of the watercourse are required, construct a temporary crossing structure.
- Use temporary crossing structures or other practices to cross streams or waterbodies with steep and highly erodible (e.g., dominated by organic materials and silts) banks and beds. For fording equipment without a temporary crossing structure, use stream bank and bed protection methods (e.g., swamp mats, pads) if minor rutting is likely to occur during fording.
- Wash, refuel and service machinery and store fuel and other materials for the machinery in such a way as to prevent any deleterious substances from entering the water.

Date modified:
2013-11-25

APPENDIX "REI-B"

SCHEDULE C

MITIGATION PLAN

The Municipality shall undertake measures to minimize adverse effects on species at risk in accordance with the general conditions described in Part B and taxa-specific conditions described in Part C, and the monitoring and reporting requirements described in Part D of this Mitigation Plan.

PART A. DEFINITIONS

1. Definitions:

1.1. In this Schedule, the following words shall have the following meanings:

"DFO" means Fisheries and Oceans Canada;

"MNR" means the Aylmer District Office of the Ministry of Natural Resources;

"Contact" means to contact the MNR in accordance with the notification/contact schedule provided to the Municipality by the MNR Designated Representative from time to time;

"Holding Tub" means a large, light-coloured container fitted with a non-airtight latchable lid approved by the MNR for the temporary storage of captured snakes, turtles, amphibians, birds or eggs;

"Interagency Notification Form" means the form issued by DFO, available at www.dfo-mpo.gc.ca, which is required to be completed when a drain is being maintained or constructed;

"Monitoring and Reporting Form" means the document that must be completed by the Municipality in accordance with Part D to this Schedule and will be provided to the Municipality;

"Ontario Operational Statement" means one of the documents issued by DFO, available at www.dfo-mpo.gc.ca, that sets out the conditions and measures to be incorporated into a project in order to avoid negative impacts to fish and fish habitat in Ontario, as modified from time to time;

"Process Charts" means the charts attached as Part E to this Schedule which describe the steps set out in this Mitigation Plan;

"Seasonal Timing Windows Chart" means the chart attached as Part G to this schedule which describes the Sensitive Periods applicable to each Taxonomic Group;

"Sensitive Area" means a geographic area in the Municipality where additional mitigation measures are required to be undertaken for one or more Taxonomic Groups;

"Sensitive Areas Map" means any one of the maps attached as Part F to this schedule which sets out the applicable Sensitive Areas;

"Sensitive Period" means a time of year set out in the Seasonal Timing Windows Chart during which taxa-specific mitigation measures are required to be undertaken for a Taxonomic Group because of ambient air/water temperatures, water-levels or important life-history stages;

"Taxonomic Group" means the distinct group comprising one or more Species based on their taxonomic relationship and common approaches to mitigating adverse effects (i.e., fish, mussels, turtles, snakes, amphibians, birds or plants); and

"Work Zone" means the geographic area in the Municipality where an Activity in respect of one of the Drainage Works is being conducted.

- 1.2. For greater certainty, any defined terms that are not defined in section 1.1 have the same meanings as in the Agreement.

PART B. GENERAL MEASURES TO MINIMIZE ADVERSE EFFECTS

2. Process Charts

- 2.1. The general steps set out in this Part B are visually described in the Process Charts (Part E).

3. Review of Documentation

- 3.1. Prior to conducting any Activities in respect of the Drainage Works the Municipality shall determine if conditions apply to the place, time or manner in which the Municipality wishes to pursue them by reviewing:
 - (a) the Sensitive Areas Maps (Part F) to determine if the Work Zone for the proposed Activities will occur within a Sensitive Area;
 - (b) the DFO Reference Guide for Fish and Mussel Species at Risk Distribution Maps: A Referral Review Tool for Projects Affecting Aquatic Species at Risk;
 - (c) the Seasonal Timing Windows Chart (Part G) to determine if the proposed Activities will occur during a Sensitive Period for one or more of the Taxonomic Groups; and
 - (d) the Process Charts to determine if prior notification is required;
 - (e) the mitigation measures for each applicable Taxonomic Group in Part C to determine what additional site-specific mitigation measures, if any, are required.
- 3.2. The Municipality shall document the results of the review undertaken in accordance with section 3.1 using the Monitoring and Reporting Form.

4. Sensitive Areas Maps

- 4.1. The Sensitive Areas Maps contain sensitive information about the distribution of species at risk, are provided for the sole purpose of informing this Agreement and are not to be copied or distributed for any other purposes or to any other party without the prior written authorization of the MNR Designated Representative.

5. Prior Notification to Seek Direction

- 5.1. If, after completing the review of documents described in section 3.1, the Municipality determines that the proposed Activities will be undertaken:
 - (a) in a place;
 - (b) at a time; or
 - (c) in a manner,that requires prior notification in accordance with the Process Charts, the Municipality shall provide prior notification to the MNR in order for the MNR to determine if the Municipality must undertake additional site-specific or Species-specific mitigation

- measures to minimize adverse effects on the Species and, if applicable, to identify such measures.
- 5.2. The prior notification under section 5.1 shall include a completed Interagency Notification Form:
- (a) in respect of maintenance/repair where the proposed Activities are being undertaken pursuant to subsection 3(18) or section 74 of the *Drainage Act*; or
 - (b) in respect of construction/improvement where the proposed Activities are being undertaken pursuant to section 77 or 78 of the *Drainage Act*.
- 5.3. Where an Activity is undertaken in accordance with section 124 of the *Drainage Act* and would otherwise have required prior notification under section 5.1, the Municipality shall Contact the MNR by email prior to the commencement of the Activity, and complete and submit the applicable Interagency Notification Form within one week of the Activity's completion, unless otherwise directed in writing by the MNR Designated Representative.

6. General Mitigation Measures

- 6.1. Notwithstanding that prior notification or additional mitigation measures may be required in accordance with this schedule, in undertaking any Activity at any time in respect of the Drainage Works the Municipality shall:
- (a) undertake the mitigation measures for sediment control and for erosion control and bank stabilization set out in The Drain Primer (Cliff Evanitski 2008) published by DFO (ISBN 978-0-662-48027-3), unless otherwise authorized in writing by the MNR Designated Representative;
 - (b) use net free, 100% biodegradable erosion control blanket for all erosion control or bank stabilization done in conjunction with their Activities or, if authorized in writing by the MNR Designated Representative, alternative erosion control blankets that provide equal or greater protection to individual Species; and
 - (c) where applicable, follow the guidelines set out in the following Ontario Operational Statements:
 - (i) Beaver Dam Removal;
 - (ii) Bridge Maintenance;
 - (iii) Culvert Maintenance;
 - (iv) Isolated Pond Construction;
 - (v) Maintenance of Riparian Vegetation in Existing Right of Ways; and
 - (vi) Temporary Stream Crossing.

PART C. TAXA-SPECIFIC MEASURES TO MINIMIZE ADVERSE EFFECTS

ADDITIONAL MITIGATION MEASURES FOR MUSSEL SPECIES

7. Activities undertaken in Sensitive Areas for Mussels

- 7.1. Subject to section 7.2, where a proposed Activity will occur in a Sensitive Area for a mussel Species, the Municipality shall Contact the MNR to seek further direction.
- 7.2. Section 7.1 does not apply where the applicable Drainage Works are:
 - (a) in a naturally dry condition;
 - (b) classified as a Class F drain in DFO's *Class Authorization System for the Maintenance of Agricultural Municipal Drains in Ontario* (ISBN 0-662-72748-7); or
 - (c) a closed drain.

ADDITIONAL MITIGATION MEASURES FOR TURTLE SPECIES

8. Training and Required On Site Materials for Turtles

- 8.1. The Municipality will ensure any person:
 - (a) involved in the capture, temporary holding, transfer and release of any turtle Species has received training in proper turtle handling procedures; and
 - (b) who undertakes an Activity has a minimum of two Holding Tubs and cotton sacks on site at all times.

9. Activities undertaken in Sensitive Areas and Sensitive Periods for Turtles

- 9.1. Subject to section 9.2, where a proposed Activity will occur in a Sensitive Area for any turtle Species and during a Sensitive Period for that Species, the Municipality shall:
 - (a) not undertake any Activities that include the excavation of sediment or disturbance to banks during the applicable Sensitive Period unless otherwise authorized;
 - (b) undertake Activities in accordance with any additional site-specific measures provided in writing by the MNR Designated Representative;
 - (c) avoid draw-down and de-watering of the Sensitive Area during the applicable Sensitive Period; and
 - (d) if authorized by the MNR Designated Representative under (a) above to undertake Activities that include excavation of sediment or disturbance of banks, in addition to any other measures required under (b) above, ensure any person undertaking an Activity has at least two Holding Tubs on site at all times.
- 9.2. Section 9.1 does not apply where the applicable Drainage Works are:
 - (a) in a naturally dry condition;
 - (b) classified as a Class F drain in DFO's *Class Authorization System for the Maintenance of Agricultural Municipal Drains in Ontario* (ISBN 0-662-72748-7); or
 - (c) a closed drain.

10. Measures for Encounters with Turtles During a Sensitive Period

- 10.1. Where one or more individuals belonging to a turtle Species is encountered in the undertaking of an Activity in any part of a Work Zone (including, but not limited to, a Sensitive Area) during a Sensitive Period for that Species, the Municipality shall:
- (a) capture and transfer all uninjured individuals of that Species into a Holding Tub;
 - (b) capture and transfer all individuals injured as a result of the Activities into a Holding Tub separate from any Holding Tub containing uninjured individuals;
 - (c) ensure that the Holding Tubs with the captured individuals are stored at a cool temperature to prevent freezing until the individuals can be transferred; and
 - (d) immediately Contact the MNR to seek direction and to arrange for the transfer of the individual turtles.

11. Measures for Encounters with Turtles Laying Eggs or Nest Sites

- 11.1. Where one or more individuals belonging to a turtle Species laying eggs, or an active nest site of any turtle Species, is encountered in undertaking an Activity in a Work Zone, the Municipality shall:
- (a) not disturb a turtle encountered laying eggs and not conduct any Activities within 20 metres of the turtle while it is laying eggs;
 - (b) collect any displaced or damaged eggs and capture any injured dispersing juveniles and transfer them to a Holding Tub;
 - (c) store all captured injured individuals and collected eggs out of direct sunlight;
 - (d) immediately Contact the MNR to seek direction and to arrange for the transfer of any injured individuals and eggs;
 - (e) immediately stop any disturbance to the nest site and recover exposed portions with soil or organic material to protect the integrity of the remaining individuals;
 - (f) not drive any equipment over the nest site or conduct any Activities within 5 metres of the nest site;
 - (g) not place any dredged materials removed from the Drainage Works on top of the nest site;
 - (h) mark out the physical location of the nest site for the duration of the project but not by any means that might increase the susceptibility of the nest to predation or poaching; and
 - (i) where there are no collected eggs or captured individuals, record relevant information and Contact the MNR within 72 hours to provide information on the location of the nest site.

12. Measures for Encounters with Turtles Outside of a Sensitive Period

- 12.1. Where one or more individuals belonging to a turtle Species is encountered while undertaking an Activity in any part of a Work Zone (including, but not limited to, a Sensitive Area) but outside of any Sensitive Period for that Species, the Municipality shall:
- (a) briefly stop the Activity for a reasonable period of time to allow any uninjured individual turtles of that Species to leave the Work Zone;

- (b) where individuals do not leave the Work Zone after the Activity is briefly stopped in accordance with (a) above, capture all uninjured individuals and release them in accordance with section 13.1;
- (c) where circumstances do not allow for their immediate release, transfer captured uninjured individuals for a maximum of 24 hours into a Holding Tub which shall be stored out of direct sunlight and then release them in accordance with section 13.1;
- (d) capture and transfer any individuals that have been injured into a Holding Tub separate from any Holding Tub containing uninjured individuals; and
- (e) store all captured injured individuals out of direct sunlight and immediately Contact the MNR to seek direction and to arrange for their transfer.

13. Release of Captured Individuals Outside of a Sensitive Period

- 13.1. Where uninjured individuals are captured under section 12.1, they shall be released:
 - (a) within 24 hours of capture;
 - (b) in an area immediately adjacent to the Drainage Works;
 - (c) in an area that will not be further impacted by the undertaking of any Activity; and
 - (d) not more than 250 metres from the capture site.
- 13.2. Following a release under section 13.1, the Municipality shall Contact the MNR within 72 hours of the release to provide information on the name of the Drainage Works, the location of the encounter and the location of the release site.

14. Measures for Dead Turtles

- 14.1. Where one or more individuals of a turtle Species is killed as a result of an Activity in a Work Zone, or if a person undertaking an Activity finds a deceased individual of a turtle Species within the Work Zone, the Municipality shall:
 - (a) place any dead turtles in a Holding Tub outside of direct sunlight; and
 - (b) Contact the MNR within 72 hours to seek direction and to arrange for the transfer of the dead individuals.

ADDITIONAL MITIGATION MEASURES FOR SNAKE SPECIES

15. Training and Required On Site Materials for Snakes

- 15.1. The Municipality will ensure any person:
 - (a) involved in the capture, temporary holding, transfer and release of any snake Species has received training in proper snake handling procedures; and
 - (b) who undertakes an Activity has a minimum of two Holding Tubs and cotton sacks on site at all times.

16. Activities undertaken in Sensitive Areas and Sensitive Periods for Snakes

- 16.1. Where a proposed Activity involves physical infrastructure (e.g., culverts, pump houses, etc.) and will occur in a Sensitive Area for any snake Species and during a *Sensitive Period – Hibernation* for that Species, the Municipality shall undertake the Activity outside of the Sensitive Period, unless otherwise authorized by and in accordance with any site-specific measures provided in writing by the MNR Designated Representative.

- 16.2. Where a proposed Activity will occur at or adjacent to a known hibernacula (as identified by the MNR) for any snake Species and during a *Sensitive Period – Staging* for that Species, the Municipality shall:
- (a) erect effective temporary snake barriers approved by the MNR that will not pose a risk of entanglement for snakes and that shall be secured so that individual snakes may not pass over or under the barrier or between any openings to enter or re-enter the Work Zone;
 - (b) inspect the temporary snake barriers daily during periods when snakes are active, capture any individuals incidentally encountered within the area bounded by the snake barrier and release the captured individuals in accordance with section 20.1; and
 - (c) remove the temporary snake barriers immediately upon completion of the Activity.
- 16.3. Where a proposed Activity that does not involve physical infrastructure will occur in a Sensitive Area for any snake Species and during a *Sensitive Period – Staging* for that Species, the Municipality shall undertake the Activity outside of the Sensitive Period, unless otherwise authorized by and in accordance with any site-specific measures provided in writing by the MNR Designated Representative.

17. Measures for Encounters with Snakes During a Sensitive Period

- 17.1. Where one or more individuals belonging to a snake Species is encountered, or should an active hibernacula be uncovered, while conducting an Activity in any part of a Work Zone (including, but not limited to, a Sensitive Area) during a Sensitive Period for that Species, the Municipality shall:
- (a) capture and transfer all injured and uninjured individual snakes of that Species into individual light-coloured, drawstring cotton sacks;
 - (b) place all cotton sacks filled with the captured individuals into a Holding Tub;
 - (c) ensure that the Holding Tub with the captured individuals is stored at a cool temperature to protect the snakes from freezing until the individuals can be retrieved or transferred;
 - (d) if an active hibernacula is uncovered, cease all Activities at the hibernacula site; and
 - (e) immediately Contact the MNR to seek direction and to arrange for the transfer and/or retrieval.

18. Measures for Encounters with Snake Nests

- 18.1. Where an active nest of any of the snake Species is encountered and disturbed while undertaking an Activity in any part of a Work Zone, the Municipality shall:
- (a) collect any displaced or damaged eggs and transfer them to a Holding Tub;
 - (b) capture and transfer all injured dispersing juveniles of that Species into a light-coloured drawstring cotton sack;
 - (c) place all cotton sacks with the captured injured individuals into a Holding Tub;
 - (d) ensure that the Holding Tub with the captured injured individuals is stored out of direct sunlight;
 - (e) immediately Contact the MNR to seek direction and to arrange for the transfer of the injured individuals;
 - (f) immediately stop any disturbance to the nest site and loosely cover exposed portions with soil or organic material to protect the integrity of the remaining individuals;

- (g) not drive any equipment over the nest site or conduct any Activities within 5 metres of the nest site;
- (h) not place any dredged materials removed from the Drainage Works on top of the nest site;
- (i) mark out the physical location of the nest site but not by any means that might increase the susceptibility of the nest to predation or poaching; and
- (j) where there are no collected eggs or captured individuals, Contact the MNR within 72 hours to provide information on the location of the nest site.

19. Measures for Encounters with Snakes Outside of a Sensitive Period

- 19.1. Where one or more individuals belonging to a snake Species is encountered while undertaking an Activity in any part of a Work Zone (including, but not limited to, a Sensitive Area) but outside of any Sensitive Period for that Species, the Municipality shall:
- (a) follow the requirements in section 15;
 - (b) briefly stop the Activity for a reasonable period of time to allow any uninjured individual snakes of that Species to leave the Work Zone;
 - (c) if the individuals do not leave the Work Zone after the Activity is briefly stopped in accordance with (b) above, capture all uninjured individuals and release them in accordance with section 20.1;
 - (d) where circumstances do not allow for the immediate release of captured uninjured individuals, they may be transferred into individual, light-coloured, drawstring cotton sacks before placing them in a Holding Tub which shall be stored out of direct sunlight for a maximum of 24 hours before releasing them in accordance with section 20.1;
 - (e) capture and transfer any individuals injured as a result of conducting the Activities into a Holding Tub separate from any Holding Tub containing uninjured individuals; and
 - (f) store all captured injured individuals out of direct sunlight and immediately Contact the MNR to seek direction and to arrange for their transfer.

20. Release of Captured Individuals Outside of a Sensitive Period

- 20.1. Where uninjured individuals are captured under section 19.1, they shall be released:
- (a) within 24 hours of capture;
 - (b) in an area immediately adjacent to the Drainage Works where there is natural vegetation cover;
 - (c) in an area that will not be further impacted by the undertaking of any Activity; and
 - (d) not more than 250 metres from the capture site.
- 20.2. Following a release under section 20.1, the Municipality shall Contact the MNR within 72 hours of the release to provide information on the name of the Drainage Works, the location of the encounter and the location of the release site.

21. Measures for Dead Snakes

- 21.1. Where one or more individuals belonging to a snake Species is killed as a result of an Activity in a Work Zone, or if a person undertaking an Activity finds a deceased individual of a snake Species within the Work Zone, the Municipality shall:

- (a) collect and transfer any dead individuals into a Holding Tub outside of direct sunlight; and
- (b) Contact the MNR within 72 hours to seek direction and to arrange for the transfer of the carcasses of the dead individuals.

ADDITIONAL MITIGATION MEASURES FOR HERBACEOUS PLANTS

22. Activities Undertaken in Sensitive Areas for Herbaceous Plants

- 22.1. Where a proposed Activity will occur that involves physical disturbance to vegetated banks or the killing and/or removal of vegetation through chemical or mechanical means in a Sensitive Area for any herbaceous plant Species, the Municipality shall:
- (a) undertake the Activity outside of the Sensitive Period, unless otherwise authorized;
 - (b) limit equipment access and operations to the side of the Drainage Works that will minimize disturbances where any of the plant Species occur;
 - (c) locate temporary storage sites for excavated sediments or bank materials on areas of open soil away from where any of the plant Species are likely to occur;
 - (d) not use any broad spectrum herbicides in Sensitive Areas; and
 - (e) undertake Activities in accordance with any additional site-specific measures provided in writing by the MNR Designated Representative.

ADDITIONAL MITIGATION MEASURES FOR TREE SPECIES

23. Additional Measures for Butternut

- 23.1. Where Butternuts may exist in a Work Zone and may be affected by an Activity, the Municipality shall:
- (a) identify and mark as retainable trees all individual Butternut trees within the Work Zone during work planning site visits unless the individual Butternut has been assessed as a non-retainable tree due to infection by Butternut canker by a person designated by the Minister as a Butternut Health Assessor;
 - (b) retain and avoid disturbance to all individuals identified under (a) above that have been identified as retainable trees or that have not been assessed, unless otherwise authorized in writing by the MNR Designated Representative;
 - (c) conduct Activities by:
 - (i) limiting equipment access and operations to the side of the Drainage Works that will minimize disturbance to where any of the individual Butternut trees occur,
 - (ii) working around trees,
 - (iii) avoiding compacting and/or disturbing the soil by keeping excavation and other heavy equipment a minimum of 2 metres away from the main stem of retained individuals to avoid damaging roots and stems,
 - (iv) placing excavated materials on areas not within 2 metres of the main stem of retained individuals; and
 - (v) where branches are required to be removed to allow for safe operation of equipment, removing them using appropriate equipment, such as pruning saws, chain saws or lopping shears, in accordance with good forestry practices.

24. Measures for Other Trees

- 24.1. Where Kentucky Coffee-tree, Common Hoptree, Eastern Flowering Dogwood and American Chestnut may exist in a Work Zone and may be affected by an Activity, the Municipality shall:
- (a) identify and mark all individual Kentucky Coffee-tree, Common Hoptree, Eastern Flowering Dogwood and American Chestnut within the Work Zone during work planning site visits;
 - (b) avoid disturbance to all individuals identified under (a) above, unless otherwise authorized in writing by the MNR Designated Representative;
 - (c) conduct Activities by:
 - (i) limiting equipment access and operations to the side of the Drainage Works that will minimize disturbance where any of the individuals occur,
 - (ii) working around trees,
 - (iii) avoiding compacting and/or disturbing the soil by keeping excavation and other heavy equipment a minimum of 2 metres away from the main stem of retained individuals to avoid damaging roots and stems, and
 - (iv) placing excavated materials on areas not within 2 metres of the main stem of retained individuals; and
 - (d) where branches are required to be removed to allow for safe operation of equipment, remove them using appropriate equipment, such as pruning saws, chain saws or lopping shears, in accordance with good forestry practices.

PART D. MONITORING AND REPORTING REQUIREMENTS

25. Compliance Monitoring.

- 25.1. The Municipality shall inspect the undertaking of the Activities at the locations described in Part F of this Schedule C, and shall record the results of the inspections in the Monitoring and Reporting Form.
- 25.2. The Municipality shall record all encounters with Species and the resulting mitigation measures taken by the Municipality in the Monitoring and Reporting Form.

26. Reporting

- 26.1. Prior to March 31 of each year the Mitigation Plan is in effect, the Municipality shall submit a completed Monitoring and Reporting Form containing all of the information collected under sections 25.1 and 25.2 during the previous twelve months to the MNR Designated Representative.

27. Review

- 27.1. Within six months of the expiry of this Mitigation Plan but no later than three months from the time of its expiry, the Parties shall meet to review the measures and actions taken and the Activities undertaken during its term and to discuss the terms and conditions of the next Mitigation Plan.

APPENDIX "REI-C"

STANDARD SPECIFICATIONS **FOR ACCESS BRIDGE CONSTRUCTION**

1. PRECAST CONCRETE BLOCK & CONCRETE FILLED JUTE BAG HEADWALLS

After the Contractor has set the endwall foundations and the new pipe in place, it shall completely backfill same and install new precast concrete blocks or concrete filled jute bag headwalls at the locations and parameters indicated on the drawing. All concrete used for headwalls shall be a minimum of 30 mPa at 28 days and include 6% +/- 1% air entrainment.

Precast concrete blocks shall be interlocking and have a minimum size of 600mmX600mmX1200mm. Half blocks shall be used to offset vertical joints. Cap blocks shall be a minimum of 300mm thick. A foundation comprising minimum 300mm thick poured concrete or precast blocks the depth of the wall and the full bottom width of the drain plus 450mm embedment into each drain bank shall be provided and placed on a firm foundation as noted below. The Contractor shall provide a levelling course comprising a minimum thickness of 150mm Granular "A" compacted to 100% Standard Proctor Density or 20mm clear stone, or a lean concrete as the base for the foundation. The base shall be constructed level and flat to improve the speed of installation. Equipment shall be provided as required and recommended by the block supplier for placing the blocks such as a swift lift device for the blocks and a 75mm eye bolt to place the concrete caps,. The headwall shall extend a minimum of 150mm below the invert of the access bridge culvert with the top of the headwall set to match the finished driveway grade, unless a 150mm high curb is specified at the edge of the driveway. To achieve the required top elevation, the bottom course of blocks and footing may require additional embedment into the drain bottom. The Contractor shall provide shop drawings of the proposed wall for approval by the Drainage Superintendent or Engineer prior to construction.

Blocks shall be placed so that all vertical joints are staggered. Excavation voids on the ends of each block course shall be backfilled with 20mm clear stone to support the next course of blocks above. Walls that are more than 3 courses in height shall be battered a minimum of 1 unit horizontal for every 5 units of vertical height. The batter shall be achieved by careful grading of the footing and foundation base, or use of pre-battered base course blocks. Filter cloth as specified below shall be placed behind the blocks to prevent the migration of any fill material through the joints. Backfill material shall be granular as specified below. Where the wall height exceeds 1.8 metres in height, a uni-axial geogrid SG350 or equivalent shall be used to tie back the walls and be installed in accordance with the manufacturer's recommendations. The wall face shall not extend beyond the end of the access bridge pipe. Non-shrink grout shall be used to fill any gaps between the blocks and the access bridge pipe for the full depth of the wall. The grout face shall be finished to match the precast concrete block walls as closely as possible.

When constructing the concrete filled jute bag headwalls, the Contractor shall place the bags so that the completed headwall will have a slope inward from the bottom of the pipe to the top of the finished headwall. The slope of the headwall shall be one unit horizontal to five units vertical. The Contractor shall completely backfill behind the new concrete filled jute bag headwalls with Granular "B" and Granular "A" material as per O.P.S.S. Form 1010 and the granular material shall be compacted in place to a Standard Proctor Density of 100%. The placing of the jute bag headwalls and the backfilling shall be performed in lifts simultaneously. The granular backfill shall be placed and compacted in lifts not to exceed 305mm (12") in thickness.

The concrete filled jute bag headwalls shall be constructed by filling jute bags with concrete. All concrete used to fill the jute bags shall have a minimum compressive strength of 25 MPa in 28 days and shall be provided and placed only as a wet mix. Under no circumstance shall the concrete to be used for filling the jute bags be placed as a dry mix. The jute bags, before being filled with concrete, shall have a dimension of 460mm (18") x 660mm (26"). The jute bags shall be filled with concrete so that when they are laid flat, they will be approximately 100mm (4") thick, 305mm (12") to 380mm (15") wide and 460mm (18") long.

The concrete jute bag headwall to be provided at the end of the bridge pipe shall be a single or double bag wall construction as set out in the specifications. The concrete filled bags shall be laid so that the 460mm (18") dimension is parallel with the length of the new pipe. The concrete filled jute bags shall be laid on a footing of plain concrete being 460mm (18") wide, and extending for the full length of the wall, and 305mm (12") thick extending below the bottom of the culvert pipe.

All concrete used for the footing, cap and bags shall have a minimum compressive strength of 30 mPa at 28 days and shall include 6% ± 1% air entrainment.

Upon completion of the jute bag headwall the Contractor shall cap the top row of concrete filled bags with a layer of plain concrete, minimum 100mm (4") thick, and hand trowelled to obtain a pleasing appearance. If the cap is made more than 100mm thick, the Contractor shall provide two (2) continuous 15M reinforcing bars set at mid-depth and equally spaced in

the cap. The Contractor shall fill all voids between the concrete filled jute bags and the corrugated steel pipe with concrete, particular care being taken underneath the pipe haunches to fill all voids.

The completed jute bag headwalls shall be securely embedded into the drain bank a minimum of 450mm (18") measured perpendicular to the sideslopes of the drain.

As an alternate to constructing a concrete filled jute bag headwall, the Contractor may construct a grouted concrete rip rap headwall. The specifications for the installation of a concrete filled jute bag headwall shall be followed with the exception that broken pieces of concrete may be substituted for the jute bags. The concrete rip rap shall be approximately 460mm (18") square and 100mm (4") thick and shall have two (2) flat parallel sides. The concrete rip rap shall be fully mortared in place using a mixture composed of three (3) parts of clean sharp sand and one (1) part of Portland cement.

The complete placement and backfilling of the headwalls shall be performed to the full satisfaction of the Drainage Superintendent and the Engineer.

2. QUARRIED LIMESTONE ENDWALLS

The backfill over the ends of the corrugated steel pipe shall be set on a slope of 1-½ units horizontal to 1 unit vertical from the bottom of the corrugated steel pipe to the top of each end slope and between the drain banks. The top 305mm (12") in thickness of the backfill over the ends of the corrugated steel pipe shall be quarried limestone. The quarried limestone shall also be placed on a slope of 1-½ units horizontal to 1 unit vertical from the bottom of the corrugated steel pipe to the top of each bank of the drain adjacent each end slope. The quarried limestone shall have a minimum dimension of 100mm (4") and a maximum dimension of 250mm (10"). The end slope protection shall be placed with the quarried limestone pieces carefully tamped into place with the use of a shovel bucket so that, when complete, the end protection shall be consistent, uniform, and tightly laid in place.

Prior to placing the quarried limestone end protection over the granular backfill and on the drain banks, the Contractor shall lay non-woven geotextile filter fabric "GMN160" conforming to O.P.S.S. 1860 Class I or approved equal. The geotextile filter fabric shall extend from the bottom of the corrugated steel pipe to the top of each end slope of the bridge and along both banks of the drain to a point opposite the ends of the pipe.

The Contractor shall take extreme care not to damage the geotextile filter fabric when placing the quarried limestone on top of the filter fabric.

3. BRIDGE BACKFILL

After the corrugated steel pipe has been set in place, the Contractor shall backfill the pipe with Granular "B" material, O.P.S.S. Form 1010 with the exception of the top 305mm (12") of the backfill. The top 305mm (12") of the backfill for the full width of the excavated area (between each bank of the drain) and for the top width of the driveway, shall be Granular "A" material, O.P.S.S. Form 1010. The granular backfill shall be compacted in place to a Standard Proctor Density of 100% by means of mechanical compactors. All of the backfill material, equipment used, and method of compacting the backfill material shall be inspected and approved and meet with the full satisfaction of the Drainage Superintendent and Engineer.

4. GENERAL

Prior to the work commencing, the Drainage Superintendent and Engineer must be notified, and under no circumstances shall work begin without one of them being at the site. Furthermore, the grade setting of the pipe must be checked, confirmed, and approved by the Drainage Superintendent or Engineer prior to continuing on with the bridge installation.

The alignment of the new bridge culvert pipe shall be in the centreline of the existing drain, and the placing of same must be performed totally in the dry.

Prior to the installation of the new access bridge culvert, the existing sediment build-up in the drain bottom must be excavated and completely removed. This must be done not only along the drain where the bridge culvert pipe is to be installed, but also for a distance of 3.05 metres (10 ft.) both upstream and downstream of said new access bridge culvert. When setting the new bridge culvert pipe in place it must be founded on a good undisturbed base. If unsound soil is encountered, it must be totally removed and replaced with 20mm (3/4") clear stone, satisfactorily compacted in place.

When doing the excavation work or any other portion of the work relative to the bridge installation, care should be taken not to interfere with, plug up, or damage any existing surface drains, swales, and lateral or main tile ends. Where damage is encountered, repairs to correct same must be performed immediately as part of the work.

The Contractor and/or landowner performing the bridge installation shall satisfy themselves as to the exact location, nature and extent of any existing structure, utility or other object that they may encounter during the course of the work. The Contractor shall indemnify and save harmless the Town, or the Municipality, the Engineer, and their staff from any damages which it may cause or sustain during the progress of the work. It shall not hold them liable for any legal action arising out of any claims brought about by such damage caused by it.

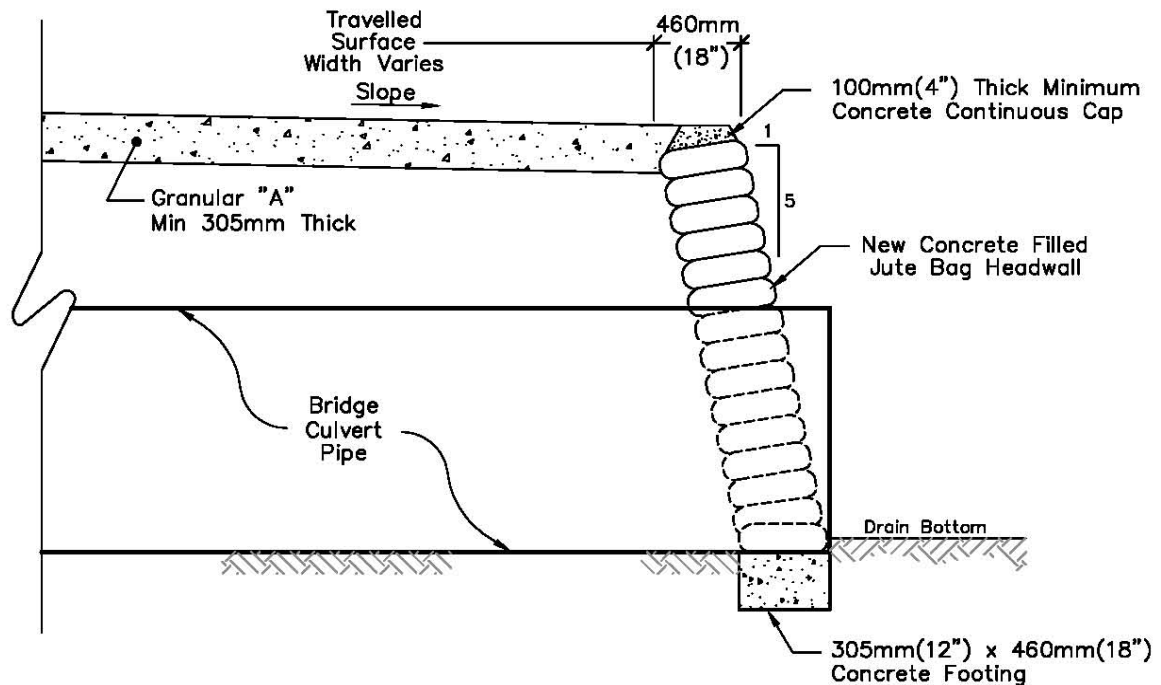
Where applicable, the Contractor and/or landowner constructing the new bridge shall be responsible for any damage caused by them to any portion of the Town road right-of-way. They shall take whatever precautions are necessary to cause a minimum of damage to same and must restore the roadway to its original condition upon completion of the works.

When working along a municipal roadway, the Contractor shall provide all necessary lights, signs, barricades and flagpersons as required to protect the public. All work shall be carried out in accordance with the requirements of the Occupational Health and Safety Act, and latest amendments thereto. If traffic control is required on this project, it is to comply with the M.T.O. Traffic Control Manual for Roadway Work Operations and Ontario Traffic Manual Book 7.

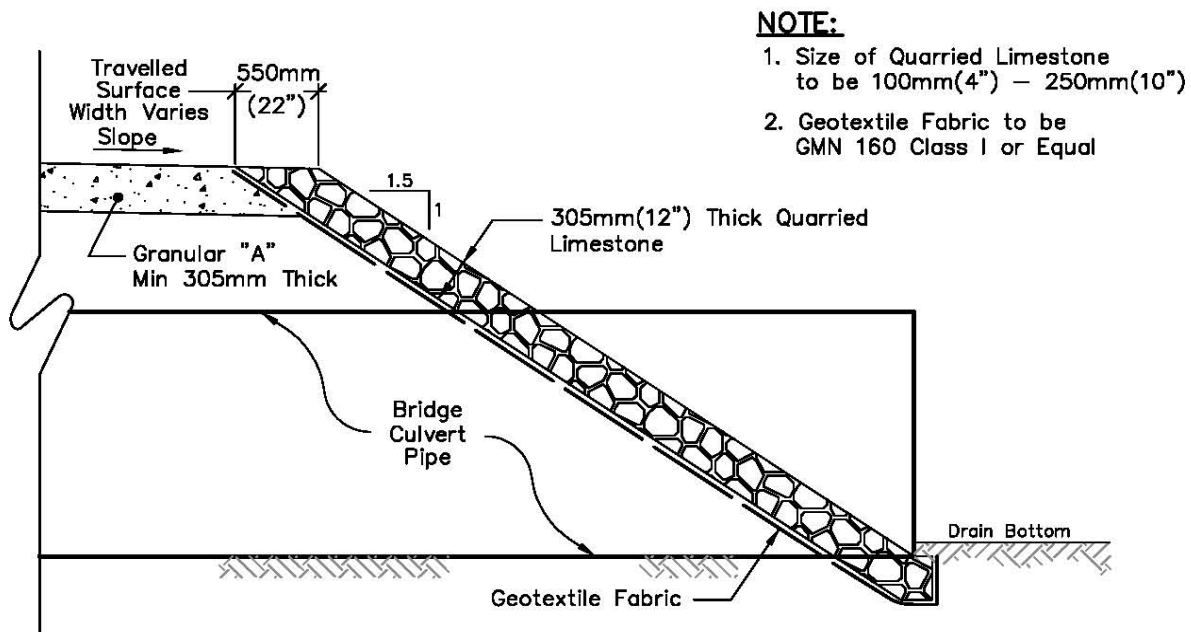
Once the bridge installation has been completed, the drain sideslopes directly adjacent the new headwalls and/or endwalls are to be completely restored including revegetation, where necessary.

All of the work required towards the installation of the bridge shall be performed in a neat and workmanlike manner. The general site shall be restored to its' original condition, and the general area shall be cleaned of all debris and junk, etc. caused by the work

All of the excavation, installation procedures, and parameters as above mentioned are to be carried out and performed to the full satisfaction of the Drainage Superintendent and Engineer.

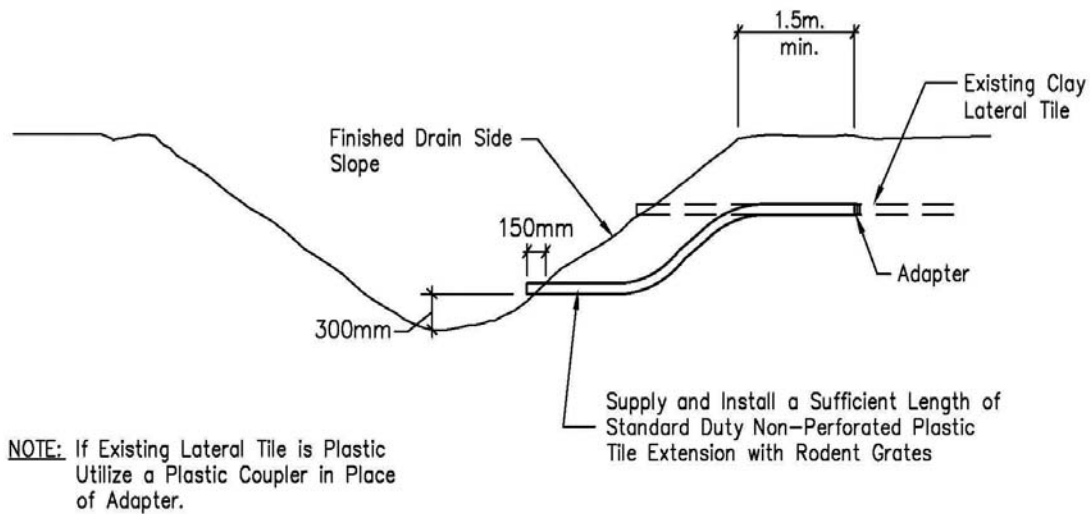


Typical Jute Bag Headwall



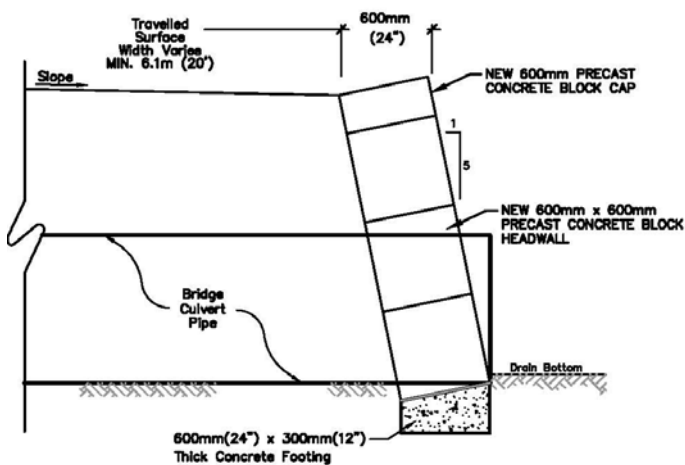
Typical Quarried Limestone End Protection

Rood Engineering Inc.
Consulting Engineers
 9 Nelson Street
 Leamington, Ontario N8H 1G6
 519-322-1621



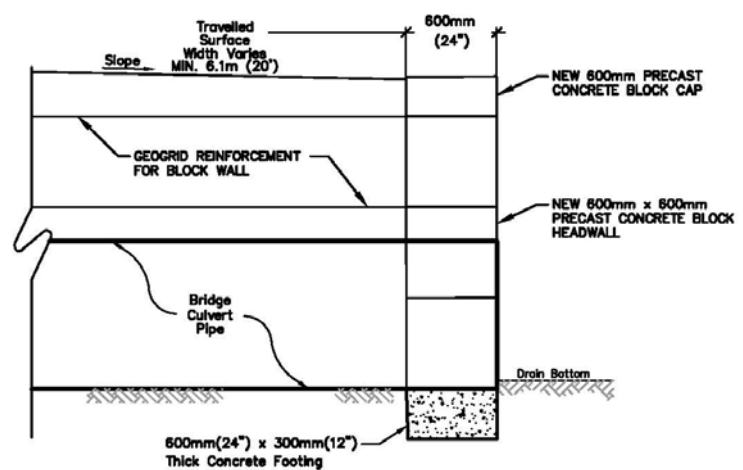
STANDARD LATERAL TILE DETAIL

N.T.S.



TYPICAL PRECAST CONCRETE BLOCK END PROTECTION

Scale = N.T.S.



TYPICAL VERTICAL PRECAST CONCRETE BLOCK END PROTECTION

Scale = N.T.S.

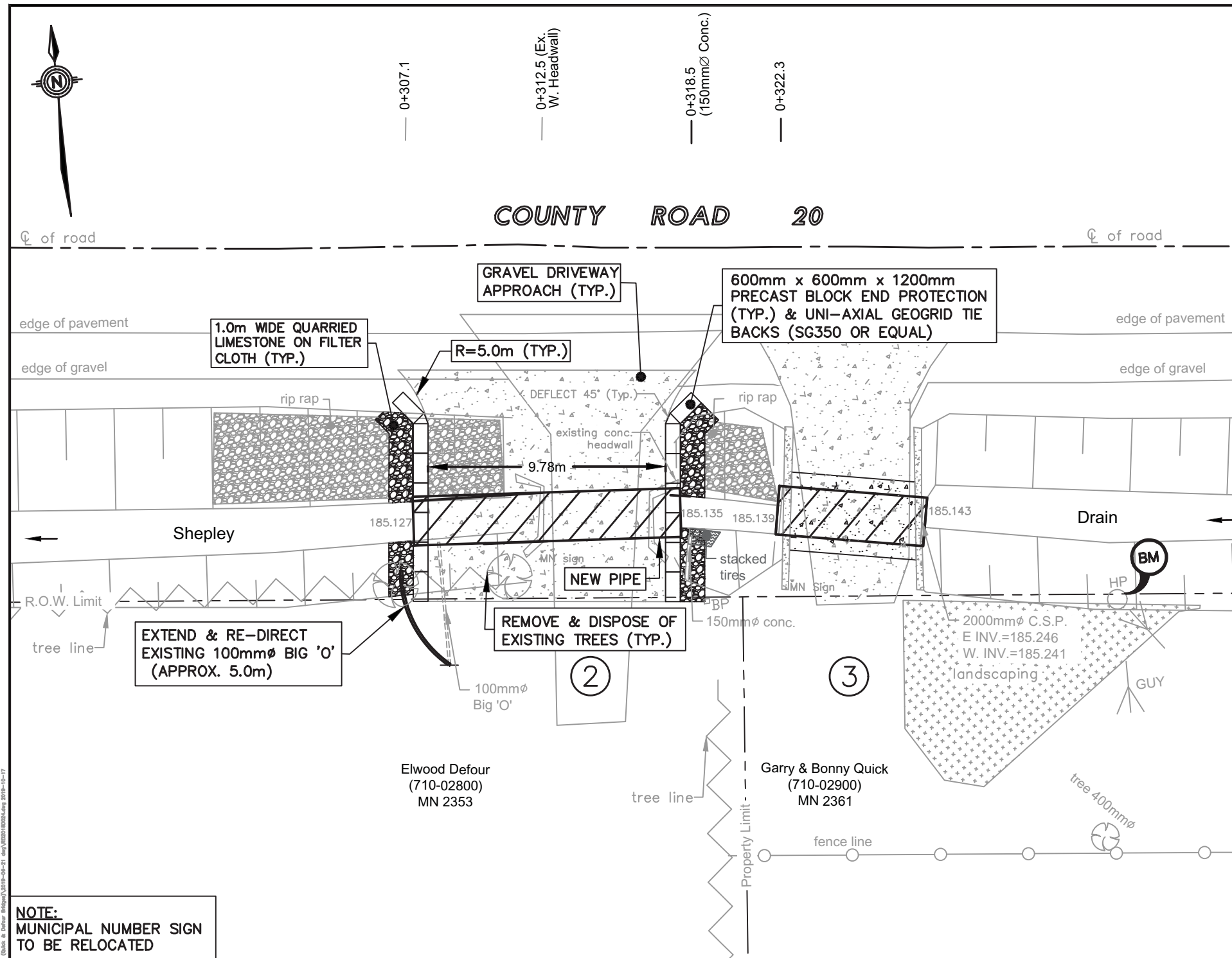
APPENDIX "REI-D"

Appendix D – General Conditions and Specifications

not required.

APPENDIX "REI-E"

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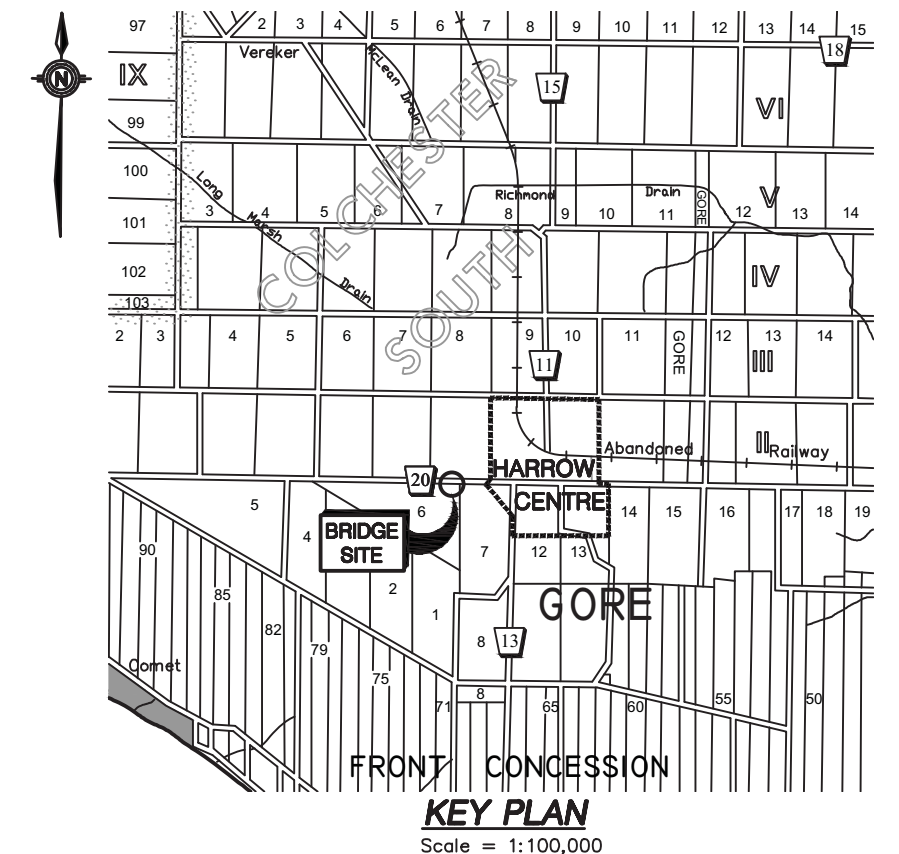
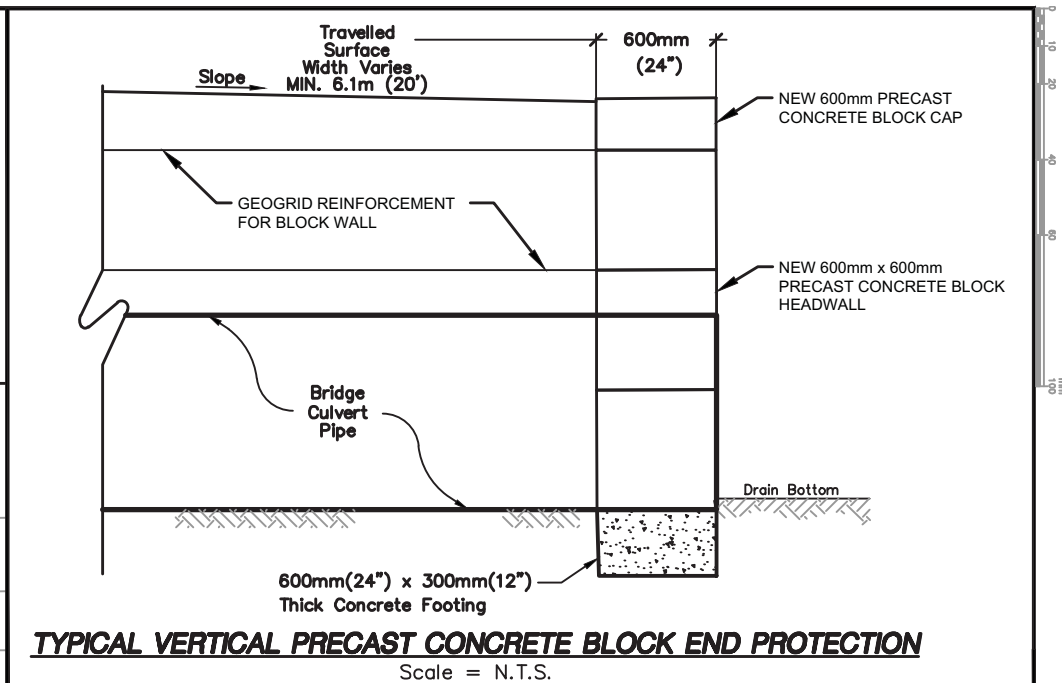


BRIDGE NO. 2 PLAN
SCALE = 1:200

BENCHMARK:
TOP OF NAIL IN NORTH FACE OF HYDRO POLE LOCATED ON THE SOUTH SIDE OF COUNTY ROAD 20 APPROX. 8.0m EAST OF THE EXISTING BRIDGE SERVING MN 2361. **ELEV. = 187.694m**

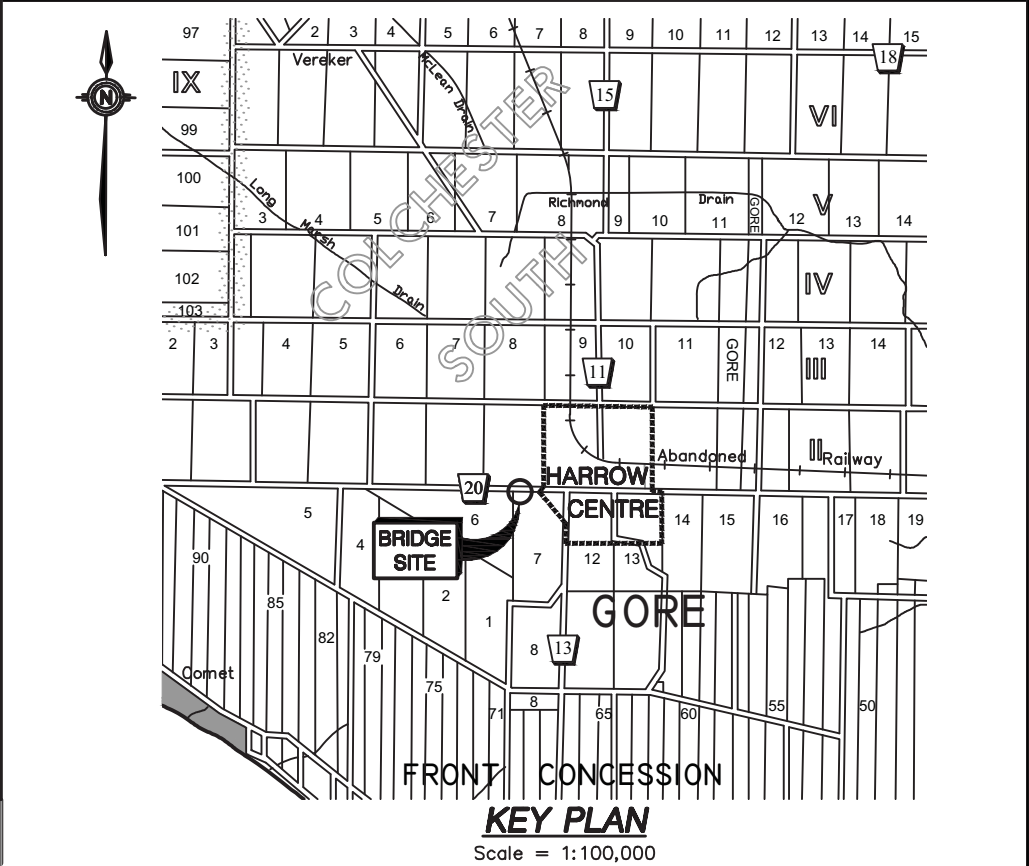
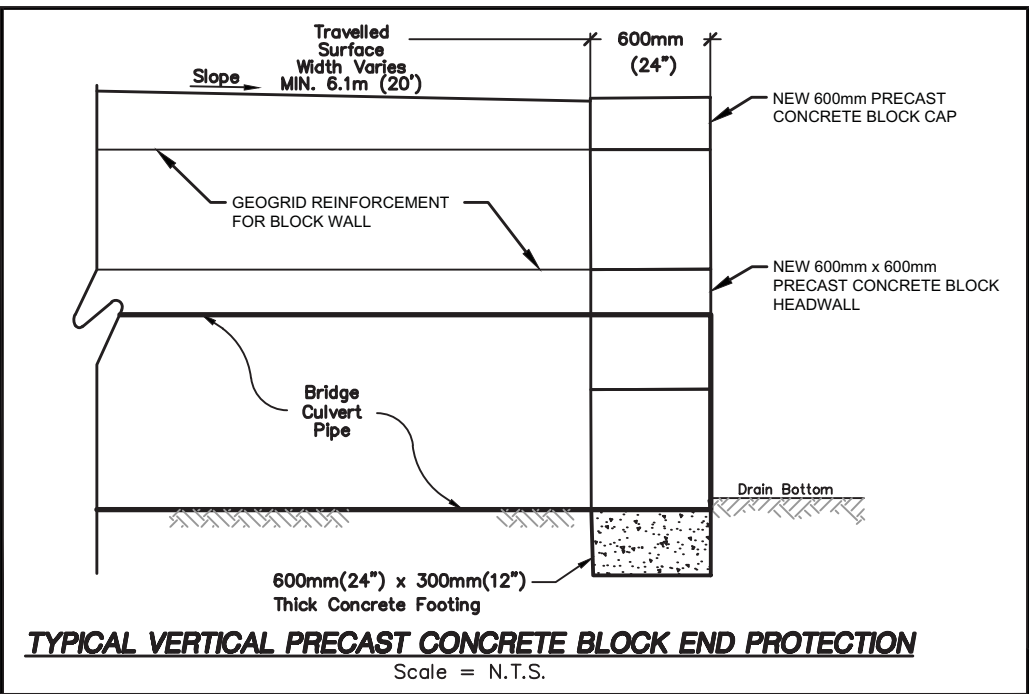
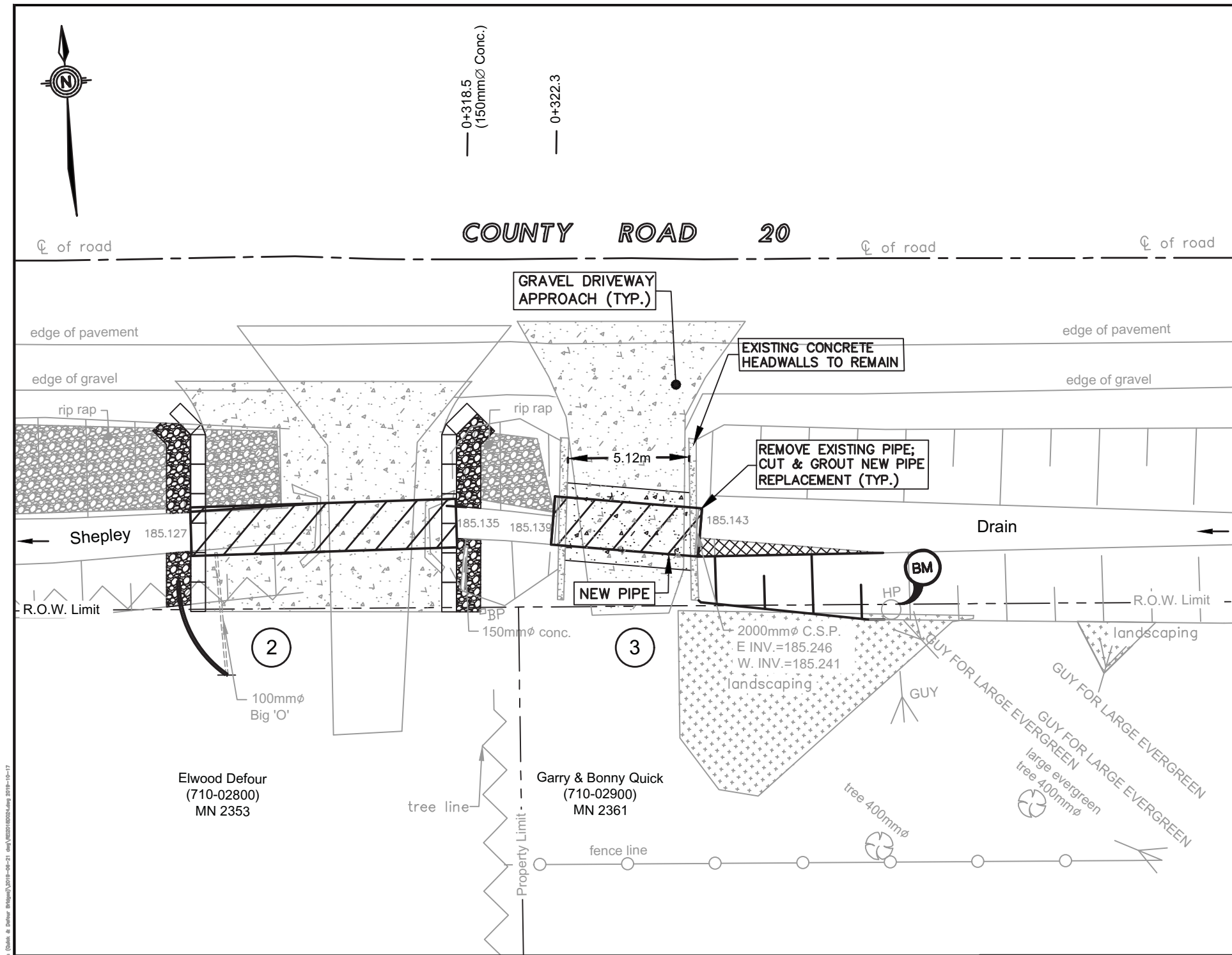
PIPE SIZE:	PIPE LENGTH:	PIPE GAUGE:	CORRUGATIONS:	TYPE OF PIPE:	DESIGN ELEVATIONS:
2000mm	11.0m (36.08 FT.)	2.8 mm (12 GA.)	190x19mm (7.5"x 0.75")	ULTRA-FLO ALUMINIZED	UPSTREAM INV. (E) = 185.135m DOWNSTREAM INV. (W) = 185.127m ℄ TOP OF DRIVEWAY = 187.710m DRAIN GRADE = 0.08%

SHEPLEY DRAIN
Bridge Replacement for Elwood Defour (710-02800)
(GEOGRAPHIC TOWNSHIP OF COLCHESTER SOUTH)
IN THE
TOWN OF ESSEX
IN THE
COUNTY OF ESSEX • ONTARIO



ROOD ENGINEERING INC.
CONSULTING ENGINEERS
Leamington, Ontario
519-322-1621

DATE: 2019-10-17	
FILE No.: 2018D024	DRAWN BY: L.V.&J.S. PLOT CODE: 1:1 FILE: REI2018D024.DWG
APPENDIX 'E' 2 OF 3	



BENCHMARK:
TOP OF NAIL IN NORTH FACE OF HYDRO POLE LOCATED ON THE SOUTH SIDE OF COUNTY ROAD 20 APPROX. 8.0m EAST OF THE EXISTING BRIDGE SERVING MN 2361. **ELEV. = 187.694m**

PIPE SIZE:	PIPE LENGTH:	PIPE GAUGE:	CORRUGATIONS:	TYPE OF PIPE:	DESIGN ELEVATIONS:
2000mm	6.0m (19.68 FT.)	2.8 mm (12 GA.)	190x19mm (7.5"x 0.75")	ULTRA-FLO ALUMINIZED	UPSTREAM INV. (E) =185.143m DOWNSTREAM INV. (W) =185.139m ℄ TOP OF DRIVEWAY =187.679m DRAIN GRADE = 0.08%

SHEPLEY DRAIN
Bridge Replacement for Garry & Bonny Quick (710-02900)
(GEOGRAPHIC TOWNSHIP OF COLCHESTER SOUTH)
IN THE
TOWN OF ESSEX
IN THE
COUNTY OF ESSEX • ONTARIO

ROOD ENGINEERING INC.
CONSULTING ENGINEERS
Leamington, Ontario
519-322-1621

DATE: 2019-10-17

FILE No.: 2018D024

DRAWN BY: L.V.&J.S.
PLOT CODE: 1:1
FILE: REI2018D024.DWG

APPENDIX 'E'
3 OF 3

Town of Essex

2020 Budget and 4 Year Forecast



The Town of Essex, as a progressive and resilient organization, commits to providing leadership, high quality community programming, sustainable assets, opportunities for growth, and vibrant experiences for citizens, stakeholders, and visitors.

essex *Where you belong*

Where You Belong

2019-2022 Corporate Strategic Plan

The 2019-2022 Corporate Strategic Plan guides the overall direction of the Town of Essex while identifying key goals to achieve. Below is a summary of the vision, mission, and values which inform the plan.

Vision

The Town of Essex will be a prosperous, sustainable, and thriving community for families, business, and development.

Mission

The Town of Essex, as a progressive and resilient organization, commits to providing leadership, high quality community programming, sustainable assets, opportunities for growth, and vibrant experiences for citizens, stakeholders, and visitors.

Values

Progressive

Progressive and Sustainable Infrastructure

Healthy

Healthy Community and Quality of Life

Stewardship

Financial and Economic Stewardship

Vibrant

Vibrant Growth and Development

Experience

Citizen and Customer Experience

Resiliency

Organizational Effectiveness and Resiliency

essex.ca/StrategicPlan

2020 Budget Introduction

4	2020 Budget Snapshot
6	2020 Budget Welcome Messages
7	Organization Structure
8	Investing In A Complete Community
10	2020 Budget Simplified

11 | 2020 Operating Budget and 4 Year Forecast

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15	Long-Term Debt	26	Corporate Services
16	Personnel Overview and Expense Summary	28	Community Services
17	Department Operating Budgets and Forecast	30	Development Services
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35 | 2020 Capital Budget and 4 Year Forecast

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38	Asset Management Implications	63	Council and Administration Requests Outside of 2020 Budget
40	Asset Management Snapshot	67	2021 to 2024 Capital Forecast
42	Asset Management Lifecycle Reserve Forecast		

Property Tax

The proposed **change** to the **Municipalities Mill Rate** for the 2020 Budget is **0%**. A 0% change to the Municipalities Mill Rate does not mean that a property owner will not experience an increase in property taxation.

To establish a property's assessed value, MPAC analyzes sales of comparable property's in a properties area. This method, called Current Value Assessment (CVA), is used by most assessment jurisdictions in North America. In addition, MPAC looks at all of the key features that affect market value (up to 200 factors are considered).

The assessed value and classification of a property is used as the basis for calculating property taxes. To help provide an additional level of property tax stability and predictability, the Ontario Government introduced a phase-in program for market increases and decreases. An increase in assessed value is introduced gradually, while a decrease in assessed value is introduced immediately. A property that experiences an increase in assessment would have that increase phased in over a four-year period. This four-year period is called an 'Assessment Cycle'.

For the 2020 Budget, the **phased-in** increase is estimated to provide the Town with an additional **\$230,000** of revenue from Property Taxation.

The year-over-year **growth** as a result of construction experienced in Essex (new residential, industrial, commercial) is estimated to contribute an additional **\$400,000** to revenue from Property Taxation.

Ontario Municipal Partnership Fund (OMPF)

All four grant components of the 2020 OMPF are providing the same level of support as 2019. The Transitional Assistance has been adjusted, and as a result the 2020 OMPF will provide a total of \$500 million to 389 municipalities across the province, versus \$505 million in 2019. The Town of Essex will receive **\$4,008,100** in 2020; a **\$147,300 reduction** from the 2019 OMPF of \$4,155,400.

2020 Operating / Capital Summary + 2021 to 2024 Forecast

The Operating / Capital Summary for all departments provides a high level snapshot of the Town's Budget. It is separated into Operating and Capital with revenues and expenditures broken out by source of revenue and type of expense.

Operating Summary

Grouping	2019 Budget	Budget	Change		Forecast			
		2020	\$	%	2021	2022	2023	2024
Operating Revenues								
Amounts Added to Taxes and Special Levies	2,547,343	2,550,361	3,018	0%	2,528,178	2,499,230	2,502,824	2,420,211
Conditional and Unconditional Grants	6,600,949	6,410,904	(190,045)	-3%	6,392,374	6,397,783	6,431,014	6,436,229
Contributions from Developers	434,443	758,836	324,393	75%	540,507	553,900	569,256	585,705
Fines and Penalties	352,200	312,200	(40,000)	-11%	312,244	312,289	312,335	312,381
Interfund Transfers	4,313,479	3,630,489	(682,990)	-16%	3,220,749	3,239,031	3,256,120	3,272,228
Internal Allocations	490,659	526,774	36,116	7%	532,059	532,073	532,088	532,088
Investment and Other Income	260,044	294,731	34,687	13%	294,924	294,924	294,924	294,924
License and Permit Fees	355,794	430,737	74,944	21%	439,352	448,139	457,102	466,244
Payments in Lieu of Taxation	62,570	62,570	-	0%	62,570	62,570	62,570	62,570
Prior Years' Surplus	434,474	879,854	445,380	103%	-	-	-	-
Property Taxation	14,867,301	15,498,614	631,313	100%	15,898,614	16,298,614	16,698,614	17,098,614
Supplementary Taxation	153,544	153,544	-	0%	153,544	153,544	153,544	153,544
User Fees and Service Charges	12,063,260	12,184,937	121,677	1%	12,296,126	12,355,740	12,416,547	12,478,564
Total Operating Revenues	42,936,058	43,694,550	758,492	2%	42,671,240	43,147,836	43,686,937	44,113,301
Operating Expenses								
Amortization Expense	90,982	90,982	-	0%	90,982	90,982	90,982	90,982
Contracted Services	7,899,339	8,106,465	207,126	3%	8,193,675	8,332,349	8,492,254	8,625,161
Debt Servicing	3,141,921	3,089,085	(52,836)	-2%	3,558,746	3,673,640	3,539,167	3,146,392
External Transfers	706,238	644,849	(61,389)	-9%	635,435	489,287	468,219	472,227
Interfund Transfers - Expense	12,011,965	12,027,611	15,645	0%	11,850,620	11,851,837	11,744,037	11,763,330
Internal Allocations - Expense	561,385	597,501	36,116	6%	602,786	602,800	602,815	602,815
Materials and Supplies	2,428,398	2,459,182	30,784	1%	2,479,177	2,488,172	2,492,791	2,494,284
Miscellaneous Services	909,818	1,250,418	340,600	37%	1,200,500	1,286,575	1,375,455	1,463,045
Professional Fees	464,674	377,845	(86,829)	-19%	315,345	348,345	315,345	325,345
Rents and Financial Services	306,988	326,918	19,930	6%	321,855	284,416	286,604	288,717
Repairs and Maintenance	923,563	906,532	(17,030)	-2%	915,205	917,331	920,512	924,348
Salaries, Wages, Benefits and Personnel Expenses	10,761,849	10,819,961	58,111	1%	10,797,840	10,943,399	10,957,566	10,963,169
Taxation Adjustments	172,000	167,000	(5,000)	-3%	167,000	167,000	167,000	167,000
Uncollectible Taxes and Accounts Receivable	12,775	12,775	-	0%	12,775	12,775	12,775	12,775
Utilities, Insurance and Property Taxes	2,139,143	2,111,900	(27,244)	-1%	2,166,284	2,209,296	2,248,426	2,299,383
Total Operating Expenses	42,531,039	42,989,024	457,984	1%	43,308,225	43,698,204	43,713,950	43,638,974
Operating Surplus/(Deficit)	405,019	705,527	300,508	74%	(636,985)	(550,368)	(27,013)	474,327

2020 Operating / Capital Summary + 2021 to 2024 Forecast (Continued)

Capital Summary

Grouping	2019 Budget	Budget	Change		Forecast			
		2020	\$	%	2021	2022	2023	2024
Capital Revenue								
Canada Conditional Grants	123,568	-	(123,568)	0%	-	-	-	180,000
Ontario Conditional Grants	3,334,660	3,793,299	(458,639)	100%	2,038,947	-	-	534,000
Revenue Contributions from General Funds	7,611	-	-	0%	-	-	-	-
Revenue Contributions from Reserve Funds	9,642,877	8,761,968	880,909	9%	8,380,624	7,729,208	6,966,972	4,825,068
Land and Equipment Sales	-	-	-	0%	-	-	-	-
Miscellaneous Revenue	44,120	39,350	4,770	11%	30,000	21,898	-	-
Long Term Debt Financing	5,073,605	5,016,670	56,935	1%	1,667,758	-	-	2,500,000
Unfinanced Capital to be Financed	-	-	-	0%	-	-	-	-
Aquatics -School Board Share	648,150	125,000	523,150	81%	-	-	-	-
Recovered Drain Billing Costs	108,841	26,519	-	0%	216,250	880	-	-
Total Capital Revenue	18,983,431	17,762,806	883,556	5%	12,333,580	7,751,985	6,966,972	8,039,068
Capital Expenses								
Contracted Services	15,671,534	14,138,880	1,532,654	10%	11,889,164	5,968,031	6,804,034	8,406,098
Materials and Supplies	2,724,897	3,930,452	(1,205,555)	0%	2,210,996	2,473,632	1,495,377	32,837
Miscellaneous Services	-	-	-	0%	-	-	-	-
Professional Fees	616,198	244,000	372,198	60%	80,000	32,500	40,000	-
Repairs and Maintenance	-	30,000	(30,000)	0%	-	125,000	-	-
Salaries, Wages, Benefits and Personnel Expenses	-	-	-	0%	13,000	-	-	-
Unfinanced Capital - Prior Years	375,821	125,000	250,821	0%	-	-	-	-
Utilities, Insurance and Property Taxes	-	-	-	0%	-	-	-	-
Total Capital Expenses	19,388,450	18,468,332	920,118	-38%	14,193,159	8,599,163	8,339,411	8,438,935
Capital Surplus/(Deficit)	(405,019)	(705,527)	(36,562)	-41%	(1,859,580)	(847,178)	(1,372,440)	(399,867)

The Town's 'Net Surplus / (Deficit)' is calculated by adding the Operating Surplus / (Deficit) and the Capital Surplus / (Deficit). When

Operating / Capital Summary - Net Surplus/(Deficit)

Grouping	2019 Budget	Budget	Change		Forecast			
		2020	\$	%	2021	2022	2023	2024
Net Surplus/(Deficit)	-	-	-	0%	(2,496,565)	(1,397,546)	(1,399,452)	74,460

Municipalities are not allowed to budget for a surplus or deficit; this means that all expenses must be funded by a budgeted source of revenue. The 2020 Budget is balanced, meaning that the net surplus/(deficit) is \$0.

Welcome Message



Message from the Chief Administrative Officer

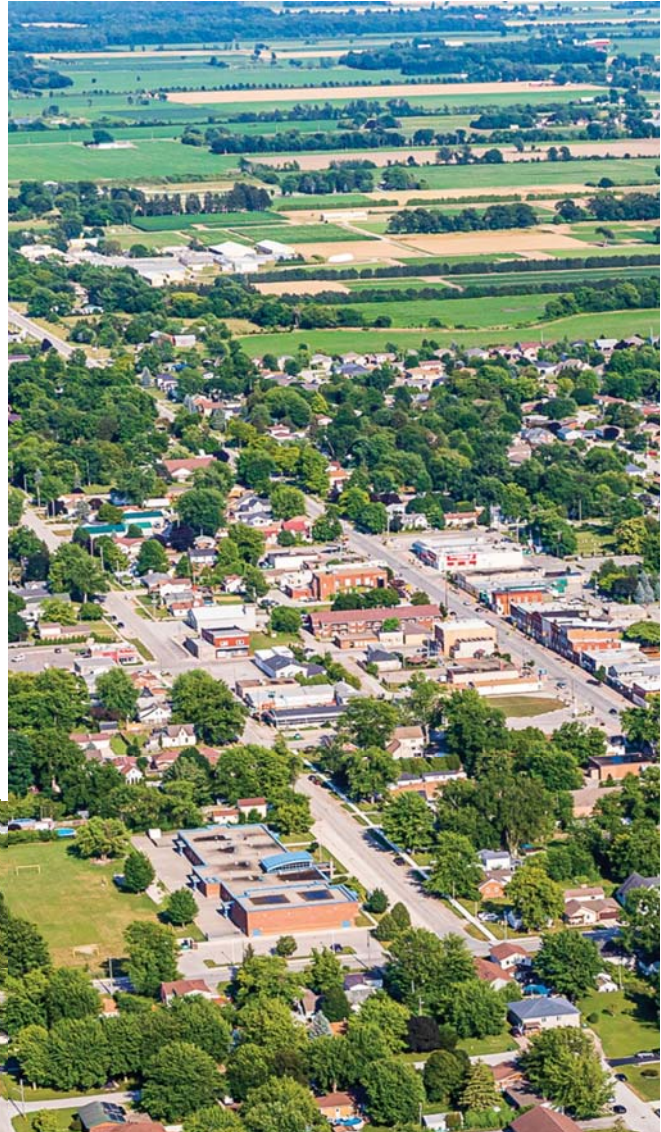
We are pleased to present the 2020 Budget and Four Year Forecast for 2021 to 2024.

Both Operating and Capital Budgets are aligned with our 2019-2022 Corporate Strategic Plan and Asset Management Plan (AMP). In combination, these documents provide a vision and roadmap for the Town as we move towards achieving our strategic goals.

This Council has taken deliberate steps to provide fiscal stewardship and value for tax dollars and to ensure the long-term fiscal sustainability of the Town. This includes adopting a structurally balanced annual budget, funding long-term needs, and maintaining a healthy level of reserves.

With this budget the Town is in a position to maintain and enhance the services our citizens expect, while providing affordability and predictability over the long-term. This is another step towards keeping Essex as the place **where you belong**.

Chris Nepszy, P.Eng, PE



Message from the Director, of Corporate Services / Treasurer

It is with great pride we present the 2020 Town of Essex Budget and the 2021 to 2024 forecast.

I would like to extend my sincere thanks to Council for providing a vision, mission, and core values through the 2019 to 2022 Corporate Strategic Plan. These values were fundamental to administration, who through their dedication to their craft are making many a reality.

The development of the budget was mindful of the valuable input and feedback received through Council.

Jeffrey R. Morrison CPA, CGA, Dipl.M.M., CMRP

Town Council

The governing body that is responsible for representing the public and considering the well-being and interests of the municipality.



Back row, left to right: Ward 1 Councillor Morley Bowman, Deputy Mayor Richard Meloche, Mayor Larry Snively, Ward 3 Councillor Steve Bjorkman, Ward 3 Councillor Chris Vander Doelen.

Front row, left to right: Ward 4 Councillor Sherry Bondy, Ward 1 Councillor Joe Garon, Ward 2 Councillor Kim Verbeek.

Administrative Services

Through a variety of departments, staff are responsible for the administration of the Town's programs and services.

Office of the Chief Administrative Officer
(CAO)

Chris Nepszy
CAO

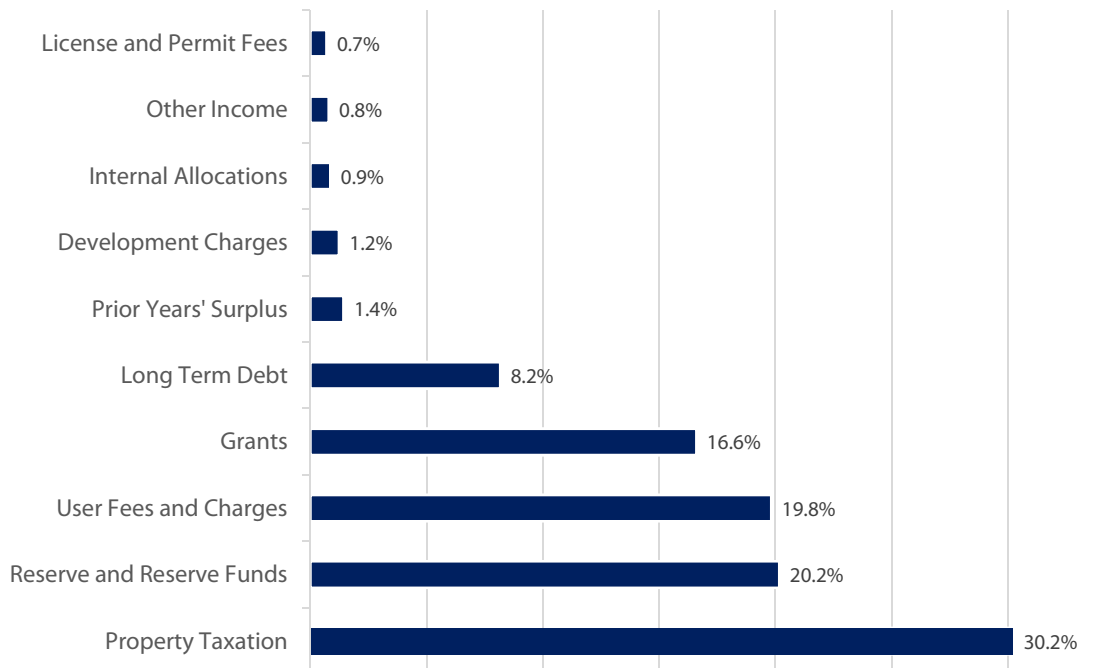
- Legislative Services/Clerks Department
- Strategic Communications

Doug Sweet
Deputy CAO

Corporate Services	Community Services	Development Services	Infrastructure Services
Jeffrey R. Morrison Director, Corporate Services / Treasurer	Doug Sweet Director, Community Services and Deputy CAO	Lori Chadwick Director, Development Services	Vacant Director, Infrastructure Services
<ul style="list-style-type: none"> • Finance and Business Services • Human Resources • Information Technology 	<ul style="list-style-type: none"> • Parks and Recreation • Recreation Facilities • Harbour • Fire 	<ul style="list-style-type: none"> • Planning Services • Building Services • Economic Development 	<ul style="list-style-type: none"> • Operations • Water • Wastewater • Municipal Drainage

2020 Revenue at a Glance

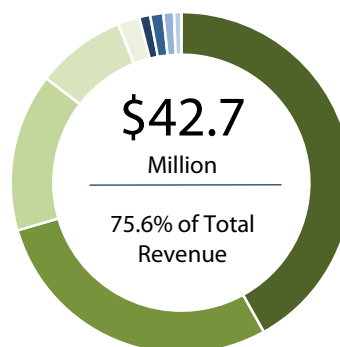
The Town of Essex relies on a combination of various revenue sources to fund both operating and capital activities. Total revenue for the 2020 Budget for both operating and capital is **\$61.5 million**.



If all revenues combined for Operating and Capital equal \$61.5 million, how much goes to fund operations and how much goes to capital?

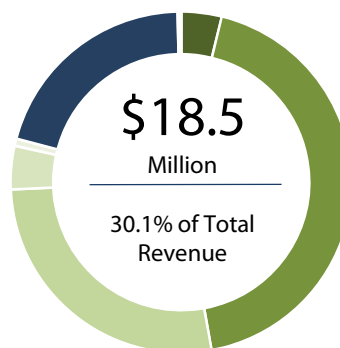
Operating Revenue Allocation

- 42.0% Property Taxation
- 28.5% User Fees and Service Charges
- 15.0% Grants
- 8.5% Reserve and Reserve Funds
- 2.1% Prior Years' Surplus
- 1.0% Development Charges
- 1.2% Internal Allocations
- 1.0% License and Permit Fees
- 0.7% Other Income



Capital Revenue Allocation

- 3.8% Property Taxation
- 69.6% Reserve and Reserve Funds
- 19.3% Long Term Debt
- 3.4% Development Charges
- 7.1% Unfinanced Carryforward
- .2% Grants
- 0.4% Other Revenue
- 0.0% Miscellaneous Revenue

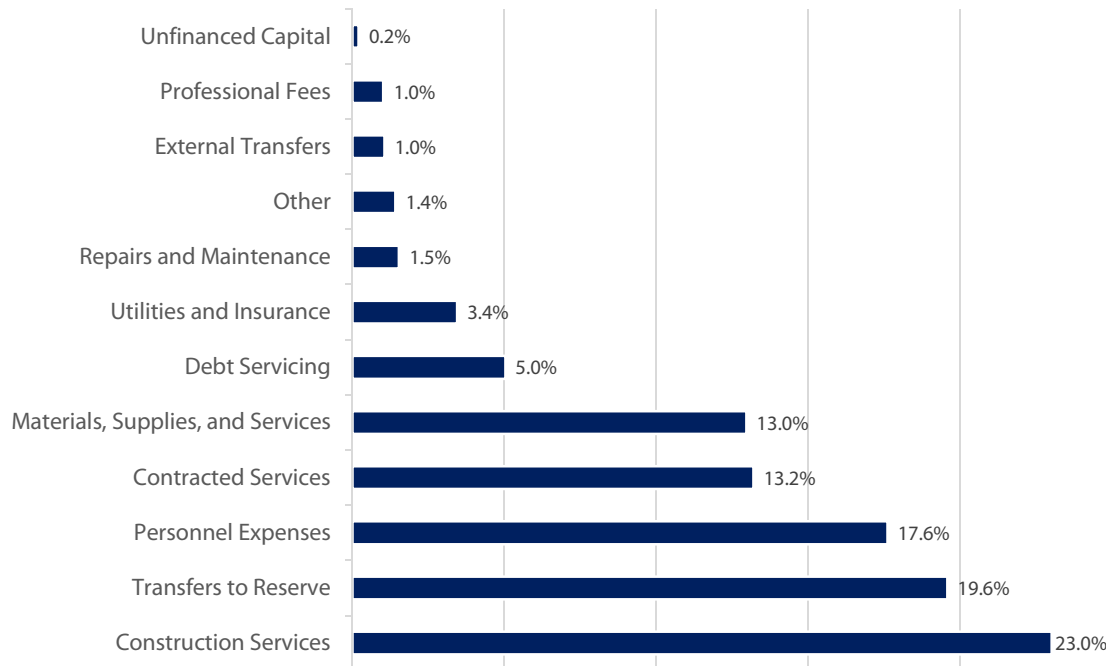


Investing In A Complete Community



2020 Expenses at a Glance

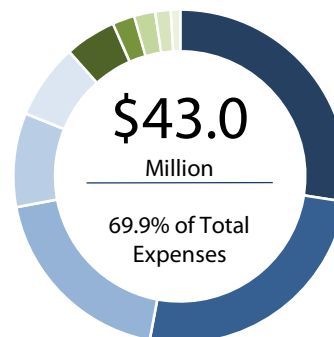
The Town of Essex invests in a complete community which is inclusive for all citizens and visitors alike. Operating and capital revenue is spent on the following key areas within the Town. Total expenses under the 2020 budget are:



If all expenditures combined for Operating and Capital equal \$61.5 million, how much is spent on operations and how much is spent on capital?

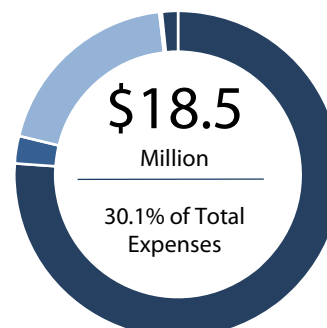
Operating Expense Allocation

- 27.4% Transfers to Reserve
- 25.5% Personnel Expenses
- 19.1% Contracted Services
- 9.1% Supplies and Services
- 7.3% Debt Servicing
- 5.0% Utilities and Insurance
- 2.1% Development Charges
- 2.0% Other
- 1.5% Internal Allocations
- 0.9% Professional Fees



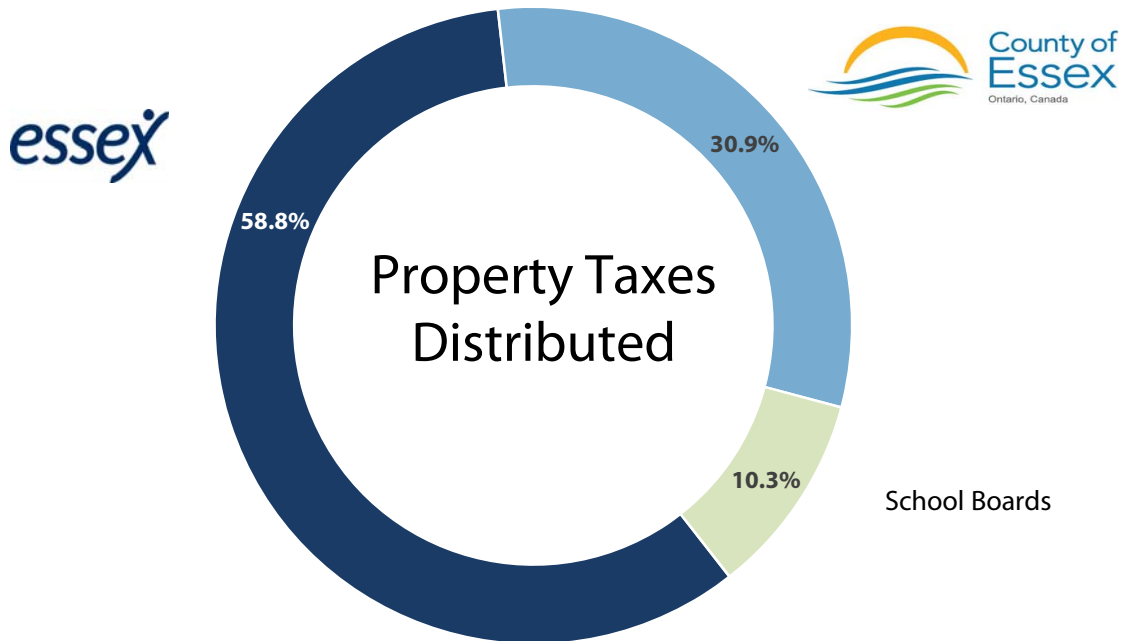
Capital Expense Allocation

- 76.1% Construction Services
- 2.7% Unfinanced Capital - Prior Year
- 19.4% Machinery and Equipment
- 0.2% Repairs and Maintenance
- 0.1% Salaries, Wages, Benefits
- 1.6% Professional Fees



That's great, but do all my property tax dollars end up with the Town?

When you pay your taxes these funds are broken up and distributed to three different government bodies; the Town of Essex, the County of Essex, and the School Boards. Each government body provides a unique set of programs and services. The distribution between these government bodies for \$1 of your property tax dollars is:



For every \$100 of Property Taxes that the Town collects, where does that go? and what services does it support?

\$100 =
of
Property Taxes

County of Essex	\$	30.90	30.9%
School Boards	\$	10.30	10.3%
Town of Essex	\$	58.80	58.8%
Infrastructure Services	\$	15.64	15.6%
Community Services	\$	13.78	13.8%
Community Services: Fire	\$	10.88	10.9%
Other: Police	\$	6.20	6.2%
Office of the CAO	\$	4.00	4.0%
Development Services	\$	2.66	2.7%
Corporate Services	\$	2.64	2.6%
Council	\$	1.99	2.0%
Other	\$	1.00	1.0%

The amount of property tax dollars that the Town of Essex receives and retains per year on a residential home assessed at \$179,000 (average home value in Essex)



\$ 1,644

2020 Operating Budget and 4 Year Forecast



Operating Summary



The Operating Summary provides a snapshot of the proposed Operating Budget. The 2020 Operating Budget has a \$705,527 surplus that carries over to the 2020 Capital Budget to help fund 'New' and 'Upgrade' projects.

Grouping	2019 Budget	Budget	Change		Forecast			
		2020	\$	%	2021	2022	2023	2024
Operating Revenues								
Amounts Added to Taxes and Special Levies	2,547,343	2,550,361	3,018	0%	2,528,178	2,499,230	2,502,824	2,420,211
Conditional and Unconditional Grants	6,600,949	6,410,904	(190,045)	-3%	6,392,374	6,397,783	6,431,014	6,436,229
Contributions from Developers	434,443	758,836	324,393	75%	540,507	553,900	569,256	585,705
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Interfund Transfers - Revenue	4,313,479	3,630,489	(682,990)	-16%	3,220,749	3,239,031	3,256,120	3,272,228
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License and Permit Fees	355,794	430,737	74,944	21%	439,352	448,139	457,102	466,244
Payments in Lieu of Taxation	62,570	62,570	-	0%	62,570	62,570	62,570	62,570
Property Taxation	14,867,301	15,498,614	631,313	4%	15,898,614	16,298,614	16,698,614	17,098,614
Prior Years' Surplus	434,474	879,854	445,380	100%	-	-	-	-
Supplementary Taxation	153,544	153,544	-	0%	153,544	153,544	153,544	153,544
User Fees and Service Charges	12,063,260	12,184,937	121,677	1%	12,296,126	12,355,740	12,416,547	12,478,564
Total Operating Revenues	42,936,058	43,694,550	758,492	2%	42,671,240	43,147,836	43,686,937	44,113,301
Operating Expenses								
Amortization Expense	90,982	90,982	-	0%	90,982	90,982	90,982	90,982
Contracted Services	7,899,339	8,106,465	207,126	3%	8,193,675	8,332,349	8,492,254	8,625,161
Debt Servicing	3,141,921	3,089,085	(52,836)	-2%	3,558,746	3,673,640	3,539,167	3,146,392
External Transfers	706,238	644,849	(61,389)	-9%	635,435	489,287	468,219	472,227
Interfund Transfers - Expense	12,011,965	12,027,611	15,645	0%	11,850,620	11,851,837	11,744,037	11,763,330
Internal Allocations - Expense	561,385	597,501	36,116	6%	602,786	602,800	602,815	602,815
Materials and Supplies	2,428,398	2,459,182	30,784	1%	2,479,177	2,488,172	2,492,791	2,494,284
Miscellaneous Services	909,818	1,250,418	340,600	37%	1,200,500	1,286,575	1,375,455	1,463,045
Professional Fees	464,674	377,845	(86,829)	-19%	315,345	348,345	315,345	325,345
Rents and Financial Services	306,988	326,918	19,930	6%	321,855	284,416	286,604	288,717
Repairs and Maintenance	923,563	906,532	(17,030)	-2%	915,205	917,331	920,512	924,348
Salaries, Wages, Benefits and Personnel Expenses	10,761,849	10,819,961	58,111	1%	10,797,840	10,943,399	10,957,566	10,963,169
Taxation Adjustments	172,000	167,000	(5,000)	-3%	167,000	167,000	167,000	167,000
Uncollectible Taxes and Accounts Receivable	12,775	12,775	-	0%	12,775	12,775	12,775	12,775
Utilities, Insurance and Property Taxes	2,139,143	2,111,900	(27,244)	-1%	2,166,284	2,209,296	2,248,426	2,299,383
Total Operating Expenses	42,531,039	42,989,024	457,984	1%	43,308,225	43,698,204	43,713,950	43,638,974
Operating Surplus/(Deficit)	405,019	705,527	300,508	74%	(636,985)	(550,368)	(27,013)	474,327

Operating Expense and Revenue Summary



Grouping	2018 Actual	2019 Budget	Budget	Change		Forecast			
			2020	\$	%	2021	2022	2023	2024
Expenditures									
Personnel Expenses	9,403,725	10,761,849	10,819,961	58,111	1%	10,797,840	10,943,399	10,957,566	10,963,169
Supplies and Services	14,976,939	14,476,160	14,940,468	464,308	3%	14,934,735	15,020,032	15,224,753	15,466,700
Transfers to Reserves	13,144,959	12,011,965	12,027,611	15,645	0%	11,850,620	11,851,837	11,744,037	11,763,330
Utilities and Insurance	2,102,989	2,139,143	2,111,900	(27,244)	-1%	2,166,284	2,209,296	2,248,426	2,299,383
Total Expenditures	39,628,612	39,389,118	39,899,939	510,821	1.3%	39,749,479	40,024,564	40,174,782	40,492,582
Revenues									
Property Taxation	16,904,835	17,630,757	18,265,088	634,331	4%	18,642,906	19,013,957	19,417,551	19,734,938
Provincial and Federal Funding	6,264,251	6,600,949	6,410,904	(190,045)	-3%	6,392,374	6,397,783	6,431,014	6,436,229
Other Revenue	18,610,233	17,779,219	17,611,930	(167,290)	-1%	17,103,901	17,204,023	17,306,283	17,410,045
Prior Years' Surplus	-	434,474	879,854	445,380	100%	-	-	-	-
Transfers from Reserves	352,079	490,659	526,774	36,116	7%	532,059	532,073	532,088	532,088
Total Revenues	42,131,399	42,936,058	43,694,550	758,491	1.8%	42,671,240	43,147,836	43,686,937	44,113,301
Net Total (incl. debt)	2,502,787	3,546,940	3,794,611	247,670	7%	2,921,761	3,123,272	3,512,154	3,620,719
Debt Charges	2,888,563	3,141,921	3,089,085	(52,836)	-2%	3,558,746	3,673,640	3,539,167	3,146,392
Operating Surplus/(Deficit)	(385,776)	405,019	705,527	300,507	74%	(636,985)	(550,368)	(27,013)	474,327

2020 to 2024 Net Operating Budget by Cost Centre



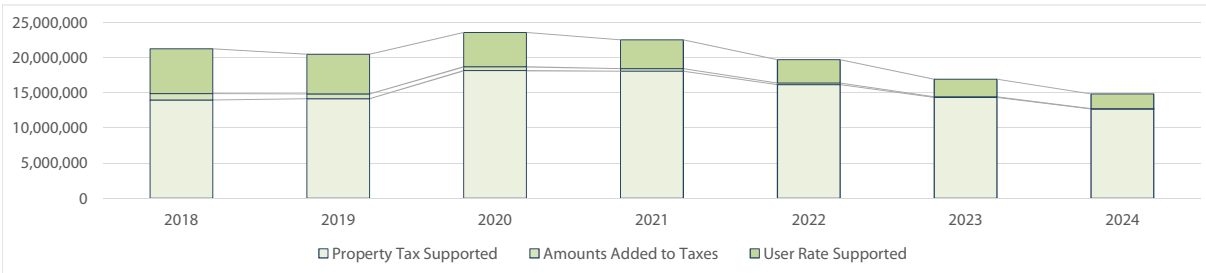
Cost Centre	2019 Budget	Budget	Change		Forecast			
		2020	\$	%	2021	2022	2023	2024
Council	370,992	595,582	224,590	61%	696,480	830,481	813,377	795,117
Other								
Police	3,302,775	3,230,076	(72,699)	-2%	3,296,629	3,364,428	3,433,584	3,501,420
Police Services Board	28,591	19,641	(8,950)	-31%	19,641	19,641	19,641	20,141
Nurse Practitioner	-	9,515	9,515	100%	6,603	3,558	911	-
Public Health	4,000	4,000	-	0%	4,000	4,000	4,000	4,000
Cemeteries	57,404	56,205	(1,199)	-2%	57,201	58,216	61,610	62,619
Garbage Collection and Disposal	-	-	-	0%	-	-	-	-
Conservation Authority	155,980	166,099	10,119	6%	169,421	172,808	176,266	179,790
Animal Control	29,158	62,241	33,083	113%	49,240	49,437	49,636	50,562
Office of the CAO								
CAO	295,332	409,952	114,620	39%	421,645	433,920	435,054	435,054
Communications	220,146	237,200	17,054	8%	211,515	272,683	272,683	272,683
Legislative Services	410,080	459,251	49,171	12%	458,876	458,493	458,103	457,706
Training and Development	89,293	86,721	(2,572)	-3%	86,721	86,721	86,721	86,721
Green Fund	701	684	(18)	-2%	684	684	684	684
Corporate Services								
Director, Corporate Services	(3,099,880)	(3,467,916)	(368,036)	12%	(2,630,012)	(2,627,709)	(2,625,360)	(2,627,387)
Finance & Business Services	(14,633,339)	(14,946,882)	(313,542)	2%	(15,586,866)	(15,987,713)	(16,388,573)	(16,789,445)
Human Resources	253,320	333,599	80,279	32%	626,631	727,207	826,788	927,358
Information Technology	532,805	605,510	72,706	14%	576,107	541,331	538,462	533,812
Community Services								
Fire - Administration	412,790	470,629	57,839	14%	470,909	471,196	408,988	409,285
Public Education, Prevention & Inspection	169,828	171,375	1,546	1%	171,510	171,648	171,789	171,933
Fire - Station 1	588,285	598,470	10,185	2%	598,800	599,138	599,476	483,730
Fire - Station 2	311,254	283,782	(27,472)	-9%	498,956	499,799	500,652	457,834
Fire - Station 3	290,517	299,876	9,359	3%	368,173	369,095	370,035	380,146
Emergency Operations	27,955	28,555	600	2%	28,555	28,555	28,555	28,555
Administration	288,027	256,705	(31,322)	-11%	256,709	256,856	256,858	257,008
Events and Tourism	17,000	2,000	(15,000)	-88%	2,020	2,040	2,061	2,082
Parks	1,467,329	1,502,315	34,986	2%	1,759,159	1,758,091	1,702,575	1,693,139
Essex FunFest*	-	-	-	0%	-	-	-	-
Misc Recreation Programs	295,610	238,234	(57,376)	-19%	239,774	241,681	243,746	179,281
Arenas	1,550,734	1,366,687	(184,047)	-12%	1,347,905	1,348,955	1,330,982	1,331,169
Essex Recreation Complex	385,381	389,903	4,523	1%	374,487	358,797	342,826	325,751
Harbour	202,634	211,745	9,111	4%	211,822	211,269	210,704	210,130
Libraries	6,142	6,908	766	12%	6,964	7,218	7,478	7,742
Arts, Culture & Tourism	11,003	11,003	-	0%	11,103	11,205	11,309	11,415
Communities in Bloom	96,901	97,879	978	1%	97,895	98,661	97,928	97,945
Urban Centre Revitalization	30,000	30,000	-	100%	30,600	31,212	31,836	32,473
Accessibility	2,350	2,350	-	0%	1,500	1,500	1,500	1,500
Development Services								
Director of Development	-	-	-	0%	-	-	-	-
Economic Development	141,828	246,890	105,062	74%	231,018	231,049	231,080	231,112
Planning and Zoning	493,956	412,793	(81,163)	-16%	404,606	400,977	404,149	403,007
Heritage Committee	26,111	23,202	(2,909)	-11%	22,752	22,803	(2,145)	(2,092)
Committee of Adjustment	(33,669)	(34,426)	(757)	0%	(36,114)	(37,260)	(38,428)	(39,621)
Parkland Contributions*	-	-	-	0%	-	-	-	-
Business Improvement Area*	-	-	-	0%	-	-	-	-
Community Improvement Plan - Essex Centre	100,000	-	(100,000)	-100%	100,000	-	-	-
Community Improvement Plan - Harrow/Colchester South	190,000	-	(190,000)	-100%	100,000	50,000	50,000	50,000
Building	47,047	10,750	(36,297)	-77%	10,358	9,369	7,971	6,501
By-Law Enforcement	82,079	134,102	52,023	63%	135,151	135,915	136,054	136,196
Development Charges*	-	-	-	0%	-	-	-	-
Infrastructure Services								
Administration	980,187	1,106,642	126,455	13%	1,116,502	1,182,326	1,072,016	1,028,297
Infrastructure, Director	-	-	-	0%	-	-	-	-
Equipment	-	-	-	0%	-	-	-	-
Paved Roads	439,710	520,896	81,186	18%	516,289	525,064	533,913	542,627
Shoulder Maintenance	131,397	154,829	23,432	18%	158,010	159,073	160,156	161,111
Roadside Maintenance	317,582	313,977	(3,604)	-1%	320,601	323,098	325,641	327,928
Road Traffic Operations	266,585	252,333	(14,251)	-5%	255,709	256,892	258,098	259,227
Stormwater Management	788,122	782,384	(5,738)	-1%	781,073	824,401	801,934	812,584
Unpaved Roads	308,956	308,005	(951)	0%	339,245	340,978	342,743	344,441
Winter Control	648,055	662,511	14,456	2%	665,066	669,434	673,900	679,426
Streetlighting	312,256	389,094	76,838	25%	394,677	400,371	406,179	412,103
Drainage	183,680	180,594	(3,086)	-2%	180,683	180,774	180,867	180,872
Tile Drainage	-	-	-	0%	-	-	-	-
Shoreline Protection	-	-	-	0%	-	-	-	-
Shoreline Assistance	-	-	-	0%	-	-	-	-
Sanitary Sewer	-	-	-	0%	-	-	-	-
Water	-	-	-	0%	-	-	-	-
Total	(405,019)	(705,527)	(300,508)	74.2%	636,985	550,368	27,013	(474,327)
Operating Surplus	405,019	705,527	300,508	74.2%	(636,985)	(550,368)	(27,013)	474,327

Long-Term Debt



Long-Term Debt Balance 2018 to 2024

The Town's annual repayment limit (ARL) is calculated by the Ministry of Municipal Affairs and Housing. The 2019 ARL indicates that the Town has an estimated ARL of \$5.5 million available to service debt. Based on an interest rate of 5%, the Town would be permitted to enter into new borrowing of \$23.9 million for a five-year term. As illustrated in the chart below long-term debt will increase in 2020 due to Fire Station #2 and the Harrow Streetscape Project and will be declining in 2021.



			Budget	Change		Forecast			
	2018 Actual	2019 Budget	2020	\$	%	2021	2022	2023	2024
Property Tax Supported									
Protection to Persons and Property	2,662,941	3,039,344	5,768,433	2,729,089	90%	5,350,861	4,918,122	4,469,644	4,166,470
General Government	44,281	36,796	2,499,164	2,462,368	6692%	4,040,099	3,824,380	3,599,475	3,369,412
Public Works	1,741,774	2,362,143	1,988,329	(373,813)	-16%	1,604,692	1,210,966	923,350	675,152
Community Services	9,528,787	8,695,229	7,895,474	(799,755)	-9%	7,063,362	6,203,682	5,327,753	4,496,635
Drainage	896	745	589	(156)	-21%	427	261	89	-
Subtotal	13,978,679	14,134,257	18,151,989	4,017,732	28%	18,059,441	16,157,411	14,320,310	12,707,670
Amounts Added to Taxes									
Water	5,108	-	-	-	0%	-	-	-	-
Sanitary Sewer	257,310	217,928	177,207	(40,721)	-19%	135,102	91,565	46,548	0
Drainage	631,380	497,652	360,700	(136,953)	-28%	237,426	139,829	39,499	32,210
Tile Drainage	8,811	1,500	0	(1,500)	-100%	-	-	-	-
Shoreline Assistance	-	-	-	-	0%	-	-	-	-
Shoreline Protection	13,542	6,897	(0)	(6,897)	-100%	-	-	-	-
Subtotal	916,151	723,977	537,907	(186,070)	-26%	372,528	231,394	86,047	32,210
User Rate Supported									
Sanitary Sewer	6,356,198	5,628,237	4,880,479	(747,758)	-13%	4,112,384	3,323,401	2,512,959	2,099,511
Water	17,365	14,430	11,400	(3,030)	-21%	8,272	5,042	1,708	-
Sub-Total	6,373,563	5,642,667	4,891,879	(750,788)	-13%	4,120,656	3,328,443	2,514,668	2,099,511
Total - All	21,268,392	20,500,901	23,581,775	3,080,874	15%	22,552,625	19,717,248	16,921,025	14,839,391

Long-Term Debt Principal and Interest Payments by Department

Principal and interest payments are allocated to the applicable department. The majority of these expenditures are related to prior year capital expenditures. For the purposes of the operating budget and to ensure that the impacts of principal and interest payments related to debt do not skew the year over year changes within a department, they are shown separately from all other operating expenses. The 2020 Budgeted amounts for long-term debt by department are:

			Budget	Change		Forecast			
	2018 Actual	2019 Budget	2020	\$	%	2021	2022	2023	2024
Property Tax Supported									
Council	-	-	-	-	0%	230,000	380,000	380,000	380,000
Corporate Services	8,847	8,847	8,847	-	0%	8,847	8,847	8,847	4,423
Police	5,404	5,404	5,404	-	0%	5,404	5,404	5,404	2,702
Fire	322,691	460,460	371,735	(88,725)	-24%	637,694	637,694	637,694	477,405
Building	430	430	430	-	0%	430	430	430	215
Public Works	329,746	281,388	437,821	156,433	36%	437,821	437,821	322,032	274,113
Community Services	1,197,436	1,279,521	1,158,521	(121,000)	-10%	1,158,521	1,152,363	1,133,680	1,053,836
Subtotal	1,864,553	2,036,049	1,982,757	(53,292)	-3%	2,478,716	2,622,558	2,488,087	2,192,694
Amounts Added to Taxes									
Water	5,285	-	-	-	0%	-	-	-	-
Sanitary Sewer	62,162	62,480	62,480	-	0%	62,480	62,480	62,480	62,480
Drainage	44,151	138,874	150,866	11,992	9%	133,316	104,367	104,367	8,719
Tile Drainage	18,981	7,840	1,590	(6,250)	-80%	-	-	-	-
Shoreline Protection	7,159	7,159	7,159	-	0%	-	-	-	-
Shoreline Assistance	1,721	-	-	-	0%	-	-	-	-
Subtotal	139,458	216,353	222,095	5,742	3%	195,796	166,848	166,847	71,199
User Rate Supported									
Sanitary Sewer	881,082	880,764	880,764	0	0%	880,764	880,764	880,764	880,764
Water	3,469	8,755	3,469	(5,286)	-152%	3,470	3,470	3,469	1,735
Subtotal	884,552	889,519	884,233	(5,286)	-1%	884,234	884,234	884,233	882,499
Total - All	2,888,563	3,141,921	3,089,085	(52,836)	-2%	3,558,746	3,673,640	3,539,167	3,146,392

Personnel Overview and Expense Summary



Council

Cost Centre	2019			2020			Change (2019 to 2020)		
	Full-time	Part-time	Student	Full-time	Part-time	Student	Full-time	Part-time	Student
Council	8	0	0	8	0	0	0	0	0
Total - Council	8	0	0	8	0	0	0	0	0

Administration

Cost Centre	2019			2020			Change (2019 to 2020)		
	Full-time	Part-time	Student	Full-time	Part-time	Student	Full-time	Part-time	Student
Health Services	1	0	0	1	0	0	0	0	0
CAO	1.3	0	0	1.3	0	0	0	0	0
Legislative Services	4	9	1	4	9	1	0	0	0
Communications	1	0	1	1	0	1	0	0	0
Director, Corporate Services	1	0	0	1	0	0	0	0	0
Finance & Business Services	9	0	1	9	0	1	0	0	0
Human Resources	1.7	0	0	1.7	0	1	0	0	1
Information Technology	3	0	0	3	0	0	0	0	0
Director, Community Services	1	0	1	1	0	1	0	0	0
Recreation and Culture	5	2	45	5	2	45	0	0	0
Parks and Facilities	12	11	35	12	11	35	0	0	0
Fire	3	65	0	3	65	0	0	0	0
Director, Development Services	1	0	0	1	0	0	0	0	0
Economic Development	1	0	0	1	0	0	0	0	0
Planning Services	4	1	1	4	1	1	0	0	0
Building and By-Law	4.4	0	0	4.4	0	0	0	0	0
Director, Infrastructure	1.60	0	0	1.6	0	0	0	0	0
Public Works	13.4	0	2	13.4	0	2	0	0	0
Agriculture and Reforestation	1.6	0	1	1.6	0	1	0	0	0
Environmental Services	5	0	0	5	0	0	0	0	0
Total Personnel Count	75	88	88	75	88	89	0	0	1

Personnel Expense Summary

	2019	2020	Increase/(Decrease)
Salaries Wages & Benefits and Personnel Expenses	10,761,849	10,819,961	58,111

Add: Annual Negotiated Increase	TBD
Add: Employee progression / grid changes	52,940
Add: Human Resource student to perform physical demands analysis (New)	5,172
2019 Salaries Wages & Benefits and Personnel Expenses Increase/(Decrease)	58,111

Notes:

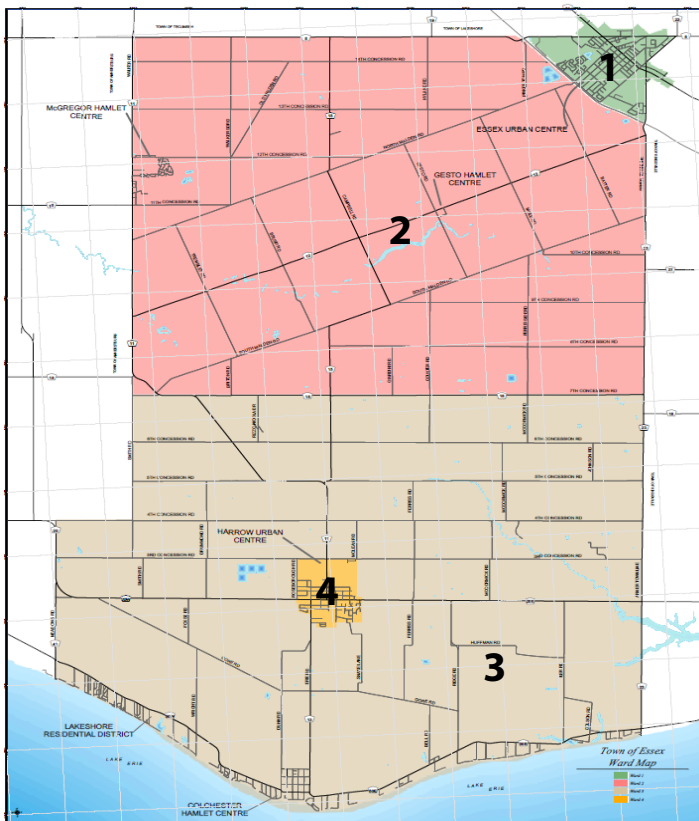
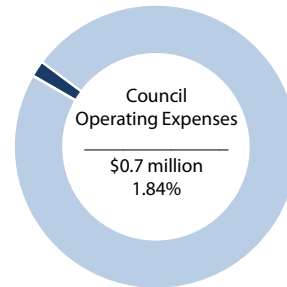
Adjustments to 2019 include one student from Public Works to Parks and Facilities to match actuals, and the addition of crossing guards under Legislative Services who were not included in the 2019 Budget document.

18	Council
20	Other - Contracts / Special Levies
24	Office of the Chief Administrative Officer
26	Corporate Services
28	Community Services
30	Development Services
32	Infrastructure Services



Council

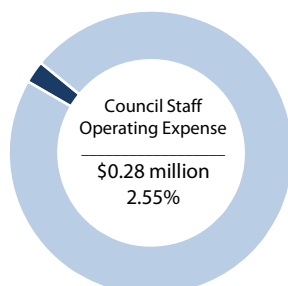
Council is the governing body of the municipal corporation and the custodian of its powers, both legislative and administrative. The policies that Council sets are the guidelines that administration follows as it performs the task of running the municipality. Council spends a significant amount of their time creating new policies and programs or reviewing the current ones to make sure they are working as they should. Council has established a 2019-2022 Corporate Strategic Plan which will guide them through the next four-year term.



Council Compliment

Cost Centre	2019			2020			Change		
	Full-time	Part-time	Student	Full-time	Part-time	Student	Full-time	Part-time	Student
Council	8.0	0.0	0.0	8.0	0.0	0.0	0.0	0.0	0.0
Total - Council	8.0	0.0	0.0	8.0	0.0	0.0	0.0	0.0	0.0

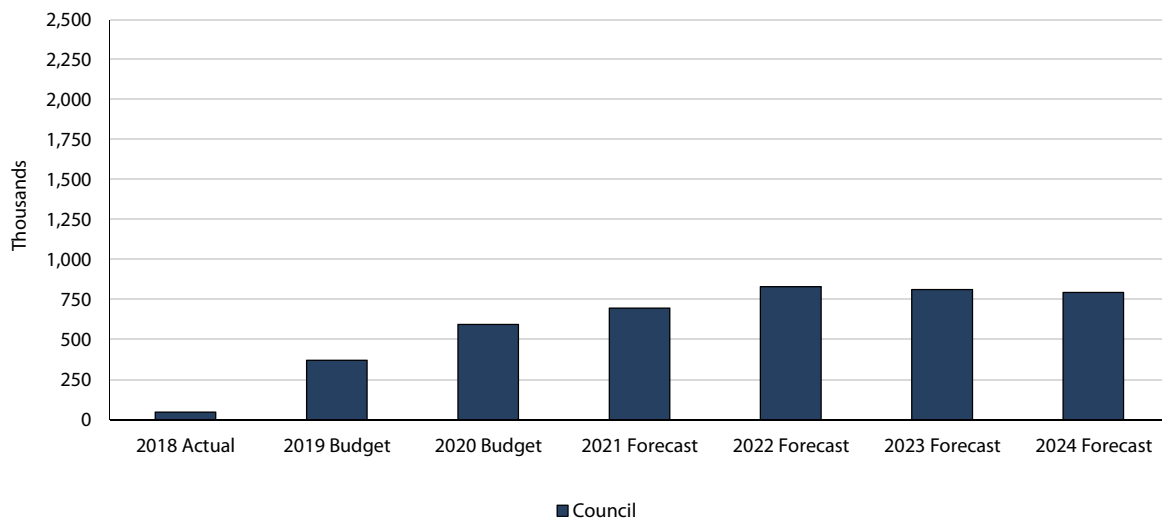
Summary of Changes to the Staff Compliment



There is no change in the compliment of Council for 2020. In 2018 Council approved the election of the Deputy-Mayor at large which increased the number of elected officials in the Town of Essex from seven to eight.

2020 to 2024 Net Operating Budget by Cost Centre

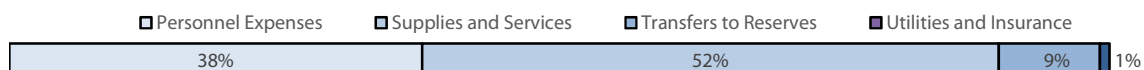
Cost Centre	2018 Actual	2019 Budget	Budget	Change		Forecast			
			2020	\$	%	2021	2022	2023	2024
Council	47,704	370,992	595,582	224,590	61%	696,480	830,481	813,377	795,117
Total	47,704	370,992	595,582	224,590	61%	696,480	830,481	813,377	795,117



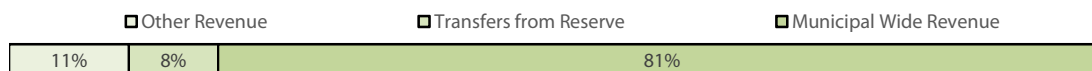
2020 to 2024 Operating Budget by Expense and Revenue Grouping

Grouping	2018 Actual	2019 Budget	Budget	Change		Forecast			
			2020	\$	%	2021	2022	2023	2024
Expenditures									
Personnel Expenses	182,229	271,531	276,102	4,572	2%	273,480	273,481	273,481	273,481
Supplies and Services	280,394	239,903	385,873	145,970	38%	259,390	243,386	226,279	208,015
Transfers to Reserves	134,494	67,500	67,500	-	0%	67,500	67,500	67,500	67,500
Utilities and Insurance	7,518	6,417	6,417	-	0%	6,421	6,424	6,428	6,432
Total Expenditures	604,634	585,351	735,893	150,542	20%	606,791	590,792	573,688	555,428
Revenues									
Property Taxation	-	-	-	-	0%	-	-	-	-
Provincial and Federal Funding	-	-	-	-	0%	-	-	-	-
Other Revenue	77,930	79,359	80,311	951	1%	80,311	80,311	80,311	80,311
Transfers from Reserves	479,000	135,000	60,000	(75,000)	-125%	60,000	60,000	60,000	60,000
Total Revenues	556,930	214,359	140,311	(74,049)	-53%	140,311	140,311	140,311	140,311
Net Total (incl. debt)	47,704	370,992	595,582	224,590	38%	466,480	450,481	433,377	415,117
Debt Charges	-	-	-	-	0%	230,000	380,000	380,000	380,000
Net Total	47,704	370,992	595,582	224,590	38%	696,480	830,481	813,377	795,117

2020 Expenditure by Groupings

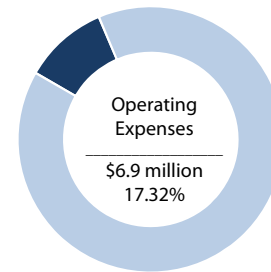


2020 Revenue by Groupings



Other - Contracts / Special Levies

Other contracts includes the contract for policing services provided by the Ontario Provincial Police, as well as contracts and other revenues and expenditures associated with Animal Control and Health Services. Special levies include the compensation that the Town receives as the host municipality for the regional landfill, expenditures related to garbage collection and disposal, the garbage collection and disposal levy collected by the Town, and the levy paid by the Town to support the Essex Region Conservation Authority.



Police	Conservation Authority	Animal Control	Health Services	Garbage Collection
<ul style="list-style-type: none"> Provide adequate and effective policing for the Town, including both a pro-active and re-active services Maintain community service programs and community policing committees Provide regular reports to the Essex Police Services Board on overall policing activities Enforce key municipal by-laws 	<ul style="list-style-type: none"> Further the conservation, restoration, development and management of natural resources in nine municipalities covering 1,681 square kilometres Manage 4,200 acres of natural lands Protect the water quality and use of water in the watersheds with the Authority's jurisdiction 	<ul style="list-style-type: none"> Provide Animal Control Services through contracted Animal Control Officers Maintain and operate a joint dog pound with other local municipalities Control feral cat populations through a spay and neuter voucher program and Trap, Neuter and Return program 	<ul style="list-style-type: none"> Manage and provide cemetery services for active cemeteries and maintain inactive cemeteries owned by the Town Support the services of a Nurse Practitioner Provide for the cost of annual treatments to combat West Nile Virus 	<ul style="list-style-type: none"> Provide waste and yard waste collection pickup and disposal Billing of the garbage collection and disposal levy Receive compensation as the host of the regional landfill

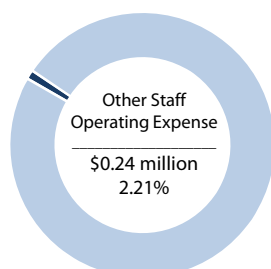


Staff Compliment

Cost Centre	2019			2020			Change		
	Full-time	Part-time	Student	Full-time	Part-time	Student	Full-time	Part-time	Student
Health Services	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Total - Other	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0

* Staff compliment is not applicable to contracts and levies, which includes Police, Conservation Authority, Animal Control, and Garbage Collection.

Summary of Changes to the Staff Compliment



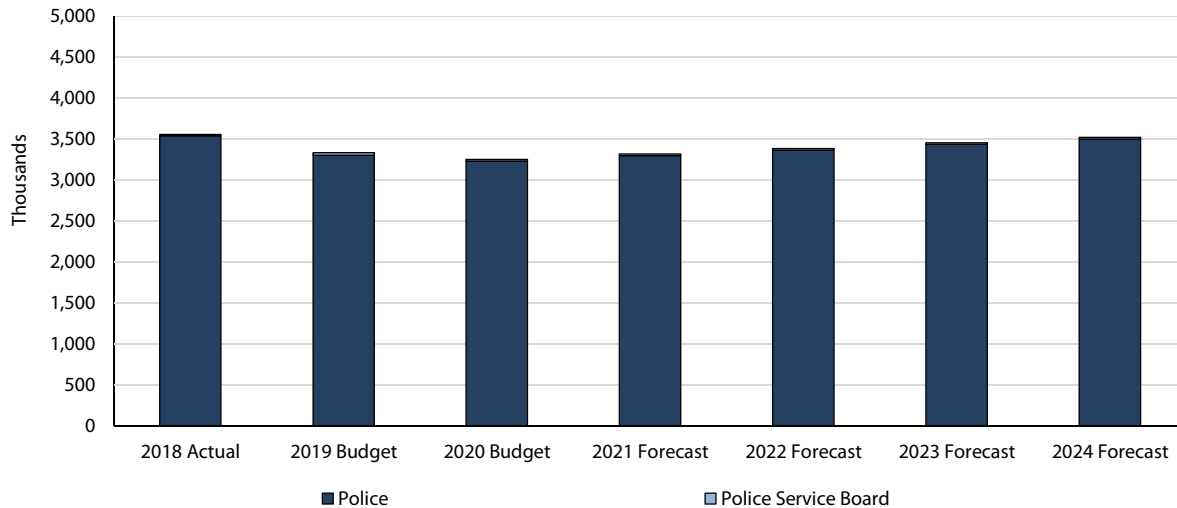
There are no changes for 2019 to the Staff Compliment for Other - Contracts / Special Levies.

Other - Police



2020 to 2024 Net Operating Budget by Cost Centre

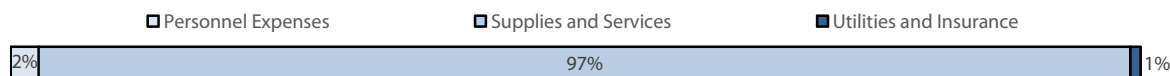
Cost Centre	2018 Actual	2019 Budget	Budget	Change		Forecast			
			2020	\$	%	2021	2022	2023	2024
Police	3,541,064	3,302,775	3,230,076	(72,699)	-2%	3,296,629	3,364,428	3,433,584	3,501,420
Police Service Board	15,281	28,591	19,641	(8,950)	-31%	19,641	19,641	19,641	20,141
Total	3,556,345	3,331,366	3,249,717	(81,649)	-2%	3,316,270	3,384,069	3,453,225	3,521,561



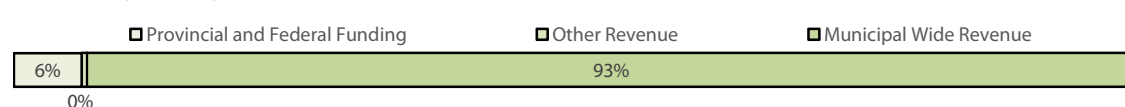
2020 to 2024 Operating Budget by Expense and Revenue Grouping

Grouping	2018 Actual	2019 Budget	Budget	Change		Forecast			
			2020	\$	%	2021	2022	2023	2024
Expenditures									
Personnel Expenses	83,006	94,395	86,745	(7,650)	-9%	86,745	86,745	86,745	87,245
Supplies and Services	3,387,152	3,423,275	3,353,038	(70,237)	-2%	3,419,054	3,486,391	3,555,074	3,625,131
Transfers to Reserves	230,466	-	-	-	0%	-	-	-	-
Utilities and Insurance	30,564	34,892	31,130	(3,762)	-12%	31,691	32,178	32,675	33,182
Total Expenditures	3,731,188	3,552,562	3,470,913	(81,649)	-2%	3,537,490	3,605,314	3,674,494	3,745,558
Revenues									
Property Taxation	-	-	-	-	0%	-	-	-	-
Provincial and Federal Funding	166,901	210,400	210,400	-	0%	210,400	210,400	210,400	210,400
Other Revenue	13,346	16,200	16,200	-	0%	16,224	16,248	16,273	16,299
Transfers from Reserves	-	-	-	-	0%	-	-	-	-
Total Revenues	180,248	226,600	226,600	-	0%	226,624	226,648	226,673	226,699
Net Total (incl. debt)	3,550,941	3,325,962	3,244,313	(81,649)	-2%	3,310,866	3,378,666	3,447,821	3,518,860
Debt Charges	5,404	5,404	5,404	-	0%	5,404	5,404	5,404	2,702
Net Total	3,556,345	3,331,366	3,249,717	(81,649)	-2%	3,316,270	3,384,069	3,453,225	3,521,561

2020 Expenditure by Groupings



2020 Revenue by Groupings

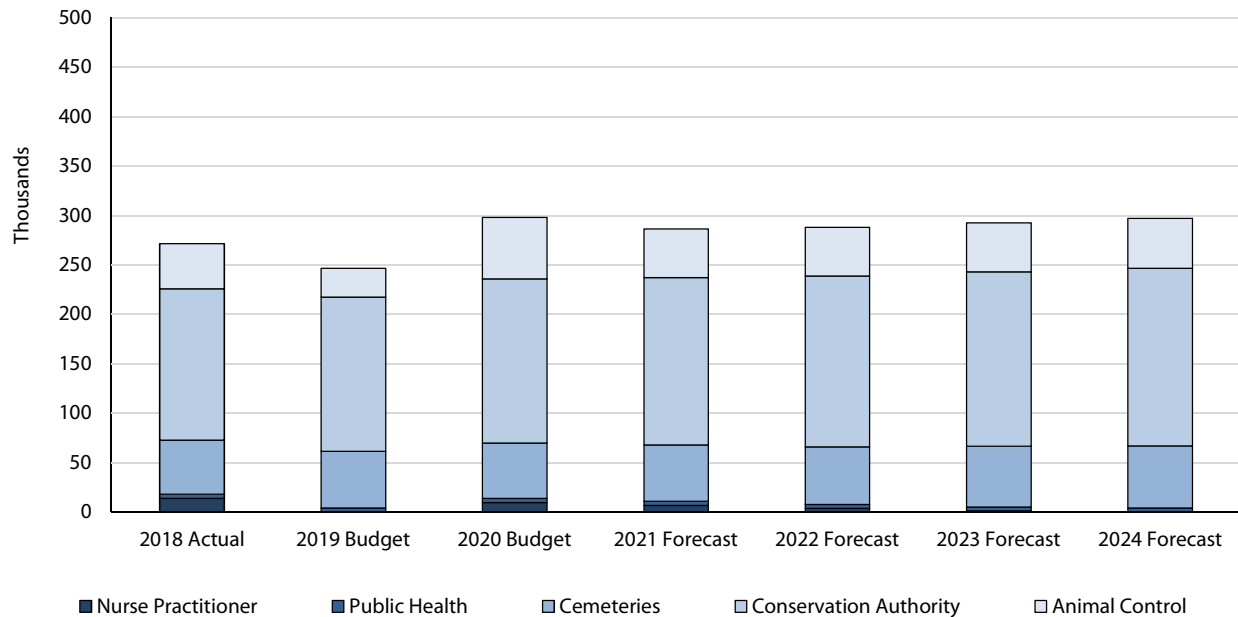


Other - Health Services/Conservation/Animal Control



2020 to 2024 Net Operating Budget by Cost Centre

Cost Centre	2018 Actual	2019 Budget	Budget	Change		Forecast			
			2020	\$	%	2021	2022	2023	2024
Nurse Practitioner	13,699	0	9,515	9,515	100%	6,603	3,558	911	0
Public Health	4,053	4,000	4,000	0	0%	4,000	4,000	4,000	4,000
Cemeteries	54,807	57,404	56,205	-1,199	-2%	57,201	58,216	61,610	62,619
Conservation Authority	153,146	155,980	166,099	10,119	6%	169,421	172,808	176,266	179,790
Animal Control	45,555	29,158	62,241	33,083	113%	49,240	49,437	49,636	50,562
Total	271,260	246,542	298,060	51,519	21%	286,466	288,019	292,422	296,971



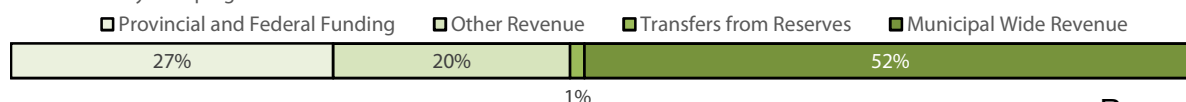
2020 to 2024 Operating Budget by Expense and Revenue Grouping

Grouping	2018 Actual	2019 Budget	Budget	Change		Forecast			
			2020	\$	%	2021	2022	2023	2024
Expenditures									
Personnel Expenses	142,288	147,259	152,548	5,289	3%	156,139	158,299	160,507	162,715
Supplies and Services	378,314	368,155	413,426	45,271	11%	406,818	413,941	423,566	431,652
Transfers to Reserves	26,509	15,304	9,880	(5,424)	-55%	29,880	29,880	29,880	31,764
Utilities and Insurance	1,684	1,657	1,678	21	1%	1,712	1,746	1,781	1,817
Total Expenditures	548,795	532,375	577,532	45,158	8%	594,549	603,866	615,734	627,948
Revenues									
Property Taxation	-	-	-	-	0%	-	-	-	-
Provincial and Federal Funding	147,327	157,053	157,053	-	0%	163,356	168,765	173,828	179,043
Other Revenue	123,552	113,530	115,419	1,889	2%	137,727	140,082	142,484	144,933
Transfers from Reserves	6,656	15,250	7,000	(8,250)	-118%	7,000	7,000	7,000	7,000
Total Revenues	277,535	285,833	279,472	(6,361)	-2%	308,083	315,847	323,312	330,976
Net Total (incl. debt)	271,260	246,542	298,060	51,519	21%	286,466	288,019	292,422	296,971
Debt Charges	-	-	-	-	0%	-	-	-	-
Net Total	271,260	246,542	298,060	51,519	21%	286,466	288,019	292,422	296,971

2020 Expenditure by Groupings



2020 Revenue by Groupings



Other - Garbage Collection and Disposal



2020 to 2024 Net Operating Budget by Cost Centre

Cost Centre	2018 Actual	2019 Budget	Budget	Change		Forecast			
			2020	\$	%	2021	2022	2023	2024
Garbage Collection and Disposal	-	-	-	-	0%	-	-	-	-
Total	-	-	-	-	0%	-	-	-	-

Graph Is Not Applicable Due to the Net Zero (Revenue = Expense) Nature of Garbage Collection and Disposal.

2020 to 2024 Operating Budget by Expense and Revenue Grouping

Grouping	2018 Actual	2019 Budget	Budget	Change		Forecast			
			2020	\$	%	2021	2022	2023	2024
Expenditures	-	-	-	-	0%	-	-	-	-
Personnel Expenses	-	-	-	-	0%	-	-	-	-
Supplies and Services	1,229,911	1,239,728	1,254,975	15,247	1%	1,270,424	1,286,071	1,286,071	1,286,071
Transfers to Reserves	2,258,672	1,563,991	1,606,911	42,920	3%	1,608,175	1,597,787	1,597,787	1,597,787
Utilities and Insurance	-	-	-	-	0%	-	-	-	-
Total Expenditures	3,488,583	2,803,719	2,861,886	58,167	2%	2,878,599	2,883,858	2,883,858	2,883,858
Revenues	-	-	-	-	0%	-	-	-	-
Property Taxation	2,244,092	1,275,728	1,310,975	35,247	3%	1,304,424	1,286,071	1,286,071	1,286,071
Provincial and Federal Funding	-	-	-	-	0%	-	-	-	-
Other Revenue	1,244,465	1,527,991	1,550,911	22,920	1%	1,574,175	1,597,787	1,597,787	1,597,787
Transfers from Reserves	26	-	-	-	0%	-	-	-	-
Total Revenues	3,488,583	2,803,719	2,861,886	58,167	2%	2,878,599	2,883,858	2,883,858	2,883,858
Net Total (incl. debt)	-	-	-	-	0%	-	-	-	-
Debt Charges	-	-	-	-	0%	-	-	-	-
Net Total	-	-	-	-	0%	-	-	-	-

2020 Expenditure by Groupings

▣ Supplies and Services

▣ Transfers to Reserves



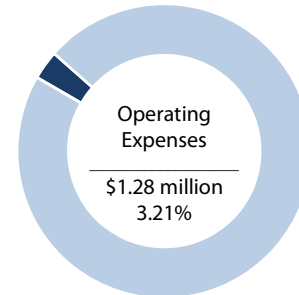
2020 Revenue by Groupings

▣ Other Revenue



Office of the Chief Administrative Officer (CAO)

The Office of the CAO falls under the portfolio of the CAO and acts as the leader of the Corporate Leadership Team who collectively manage the long-term strategic direction of the Town. The CAO is responsible for ensuring the timely and relevant delivery of services to the community, that are aligned with Council's strategic priorities and budget. In summary the CAO translates Council's vision into quality action.



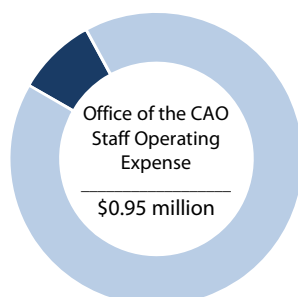
Legislative Services	Communications	Training and Development
<ul style="list-style-type: none"> Provides Council related services. In house legal counsel, expertise, and opinion. Oversees the delivery of various key services, including: animal control, cemeteries, board and committee appointments, meeting facilitation, freedom of information and protection of privacy, and by-law and Council minutes maintenance. 	<ul style="list-style-type: none"> Manages all external and internal communications, and media relations for the Town. Provides innovative means to get the message out, while engaging in meaningful two way communication. Provides strategic communications and marketing, public engagement, and digital communications. 	<ul style="list-style-type: none"> The Town of Essex offers a robust and comprehensive training tool for employees, to not only maintain existing skills, but to develop additional skills to help move the municipality forward. Based off a percentage of Total Payroll (locked at 2016 amount)



Staff Compliment

Cost Centre	2019			2020			Change		
	Full-time	Part-time	Student	Full-time	Part-time	Student	Full-time	Part-time	Student
CAO	1.3	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0
Legislative Services	4.0	9.0	1.0	4.0	9.0	1.0	0.0	0.0	0.0
Communications	1.0	0.0	1.0	1.0	0.0	1.0	0.0	0.0	0.0
Total - Office of the CAO	6.3	9.0	2.0	6.3	9.0	2.0	0.0	0.0	0.0

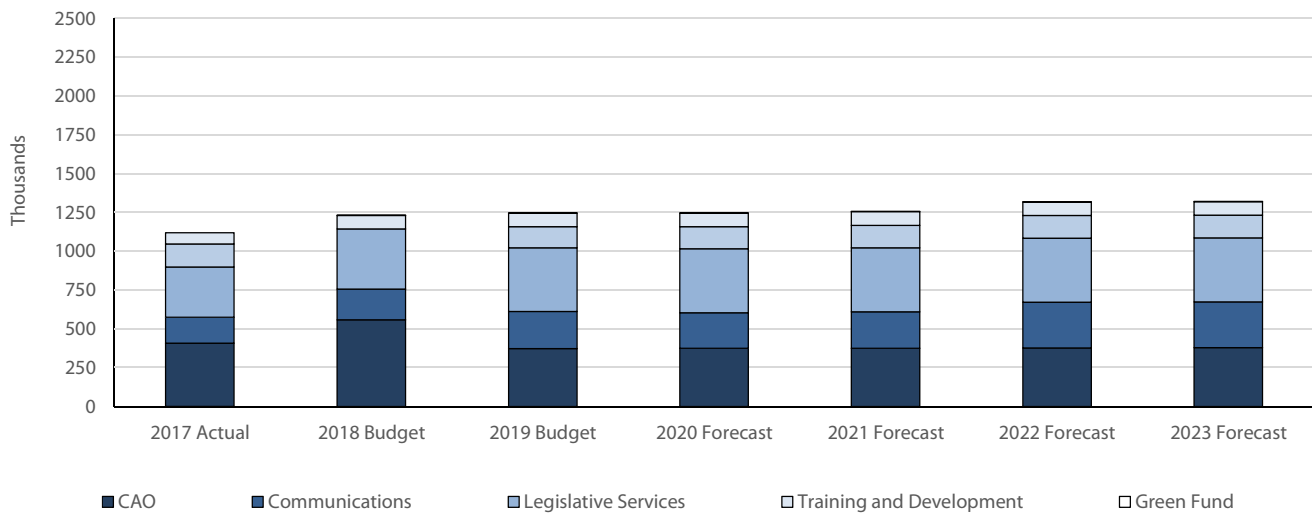
Summary of Changes to the Staff Compliment



There are no changes for 2020 to the Staff Compliment for Office of the CAO.

2020 to 2024 Net Operating Budget by Cost Centre

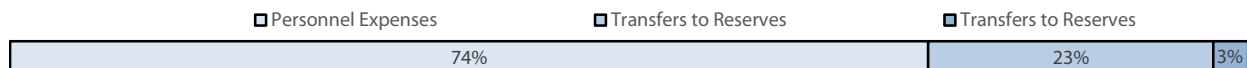
Cost Centre	2018 Actual	2019 Budget	Budget	Change		Forecast			
			2020	\$	%	2021	2022	2023	2024
CAO	835,529	295,332	409,952	114,620	39%	421,645	433,920	435,054	435,054
Communications	193,446	220,146	237,200	17,054	8%	211,515	272,683	272,683	272,683
Legislative Services	427,363	410,080	459,251	49,171	12%	458,876	458,493	458,103	457,706
Training and Development	73,524	89,293	86,721	(2,572)	-3%	86,721	86,721	86,721	86,721
Green Fund	(3,863)	701	684	(18)	-3%	684	684	684	684
Total	1,525,999	1,015,552	1,193,808	178,256	18%	1,179,440	1,252,501	1,253,245	1,252,847



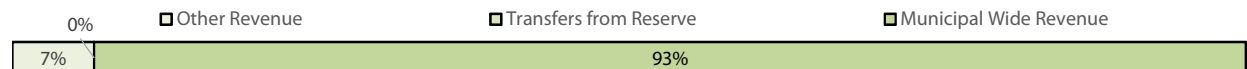
2020 to 2024 Operating Budget by Expense and Revenue Grouping

Grouping	2018 Actual	2019 Budget	Budget	Change		Forecast			
			2020	\$	%	2021	2022	2023	2024
Expenditures									
Personnel Expenses	880,034	908,302	948,162	39,860	4%	964,169	1,037,613	1,038,747	1,038,747
Supplies and Services	513,941	257,933	294,662	36,729	12%	264,662	264,662	264,662	264,662
Transfers to Reserves	250,005	36,000	36,000	-	0%	36,000	36,000	36,000	36,000
Utilities and Insurance	2,527	3,369	7	(3,362)	-48029%	7	7	7	8
Total Expenditures	1,646,507	1,205,603	1,278,831	73,227	6%	1,264,838	1,338,282	1,339,416	1,339,416
Revenues									
Property Taxation	-	-	-	-	0%	-	-	-	-
Provincial and Federal Funding	22,769	-	-	-	0%	-	-	-	-
Other Revenue	97,738	69,052	85,023	15,971	19%	85,398	85,781	86,171	86,569
Transfers from Reserves	-	121,000	-	(121,000)	0%	-	-	-	-
Total Revenues	120,507	190,052	85,023	(105,029)	-55%	85,398	85,781	86,171	86,569
Net Total (incl. debt)	1,525,999	1,015,552	1,193,808	178,256	18%	1,179,440	1,252,501	1,253,245	1,252,847
Debt Charges	-	-	-	-	0%	-	-	-	-
Net Total	1,525,999	1,015,552	1,193,808	178,256	18%	1,179,440	1,252,501	1,253,245	1,252,847

2020 Expenditure by Groupings



2020 Revenue by Groupings

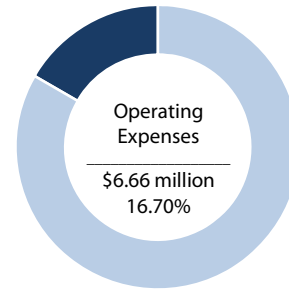


Department Overview



Corporate Services

The Corporate Services Department falls under the Director, Corporate Services and provides a complex portfolio of professional, administrative, technical, and financial services to both internal and external customers.



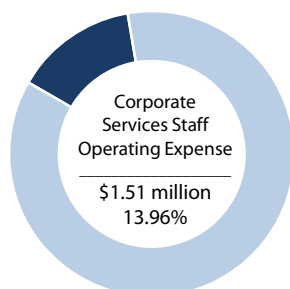
Finance & Business Services	Human Resources	Information Technology
<ul style="list-style-type: none"> Provides financial stewardship, leadership and safeguarding of assets. Manages property taxation, including the billing and collection of property taxes. Facilitates the procurement of goods and services. Oversees various financial activities, including the preparation of the annual budget and forecast, and annual year end audit. 	<ul style="list-style-type: none"> Manages the delivery of HR and Health and Safety services, ensuring delivery is responsive, effective, and that services are current and consistent with industry best practice. Plans, develops and implements programs, policies, and procedures to attract and retain talented employees. Ensures compliance with all applicable legislation. Provides strategic HR leadership, support and recommendations to the CAO, Directors, Managers/ Supervisors, employees and Council. 	<ul style="list-style-type: none"> Provides leadership for effective and efficient use of Information Technology (IT) and Geographical Information Systems (GIS). Provides products and services that meet the needs of both internal and external customers. Manages and supports a diverse and robust, reliable, and secure IT portfolio, that consists of both hardware and software, along with telecommunications architecture.



Staff Compliment

Cost Centre	2019			2020			Change		
	Full-time	Part-time	Student	Full-time	Part-time	Student	Full-time	Part-time	Student
Director, Corporate Services	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Finance & Business Services	9.0	0.0	1.0	9.0	0.0	1.0	0.0	0.0	0.0
Human Resources	1.7	0.0	0.0	1.7	0.0	1.0	0.0	0.0	1.0
Information Technology	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
Total - Corporate Services	14.7	0.0	1.0	14.7	0.0	2.0	0.0	0.0	1.0

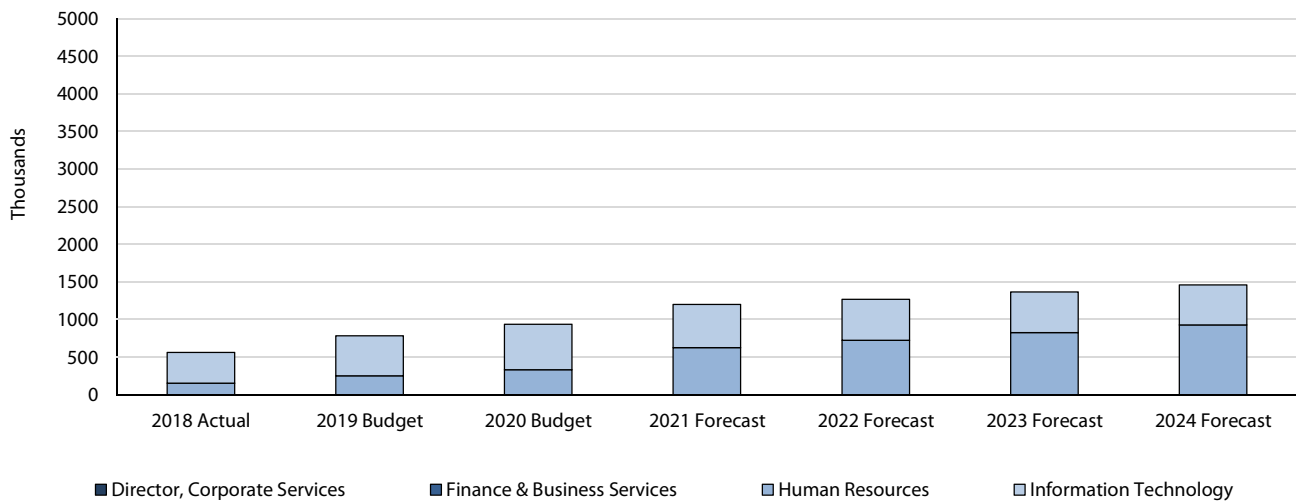
Summary of Changes to the Staff Compliment



Corporate Services has a change of one student under Human Resources. The student will assist the Manager, Human Resources with health and safety functions which may include various health and safety projects in addition to day-to-day administrative tasks. This student will have a focus on updating Town of Essex hazard assessments, and conducting an office ergonomic review.

2020 to 2024 Net Operating Budget by Cost Centre

Cost Centre	2018 Actual	2019 Budget	Budget	Change		Forecast			
			2020	\$	%	2021	2022	2023	2024
Director, Corporate Services	(3,746,854)	(3,099,880)	(3,467,916)	(368,036)	12%	(2,630,012)	(2,627,709)	(2,625,360)	(2,627,387)
Finance & Business Services	(13,946,490)	(14,633,339)	(14,946,882)	(313,542)	2%	(15,586,866)	(15,987,713)	(16,388,573)	(16,789,445)
Human Resources	154,382	253,320	333,599	80,279	32%	626,631	727,207	826,788	927,358
Information Technology	410,622	532,805	605,510	72,706	14%	576,107	541,331	538,462	533,812
Net Total	(17,128,341)	(16,947,095)	(17,475,688)	(528,593)	3%	(17,014,141)	(17,346,884)	(17,648,683)	(17,955,662)



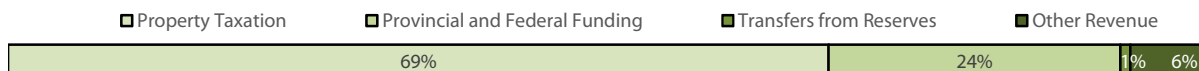
2020 to 2024 Operating Budget by Expense and Revenue Grouping

Grouping	2018 Actual	2019 Budget	Budget	Change		Forecast			
			2020	\$	%	2021	2022	2023	2024
Expenditures									
Personnel Expenses	1,299,805	1,450,273	1,511,000	60,727	4%	1,505,044	1,508,001	1,508,498	1,508,498
Supplies and Services	1,039,748	1,021,287	1,140,003	118,716	10%	1,203,779	1,263,801	1,361,871	1,457,307
Transfers to Reserves	2,338,624	3,690,923	3,842,840	151,917	4%	3,596,798	3,596,798	3,624,966	3,624,966
Utilities and Insurance	117,420	129,160	169,230	40,070	24%	172,014	176,890	177,134	179,764
Total Expenditures	4,795,597	6,291,643	6,663,073	371,430	6%	6,477,635	6,545,490	6,672,469	6,770,536
Revenues									
Property Taxation	15,343,561	15,971,430	16,606,569	635,139	4%	17,010,685	17,410,685	17,810,684	18,210,685
Provincial and Federal Funding	5,797,031	6,097,176	5,907,131	(190,045)	-3%	5,935,298	5,935,298	5,963,466	5,963,466
Other Revenue	628,991	1,003,979	1,433,909	429,930	30%	554,640	555,238	555,848	556,471
Transfers from Reserves	163,202	175,000	200,000	25,000	13%	-	-	-	-
Total Revenues	21,932,784	23,247,585	24,147,608	900,024	4%	23,500,623	23,901,221	24,329,999	24,730,621
Net Total (incl. debt)	(17,137,188)	(16,955,942)	(17,484,535)	(528,593)	3%	(17,022,988)	(17,355,731)	(17,657,530)	(17,960,086)
Debt Charges	8,847	8,847	8,847	-	0%	8,847	8,847	8,847	4,423
Net Total	(17,128,341)	(16,947,095)	(17,475,688)	(528,593)	3%	(17,014,141)	(17,346,884)	(17,648,683)	(17,955,662)

2020 Expenditure by Groupings



2020 Revenue by Groupings

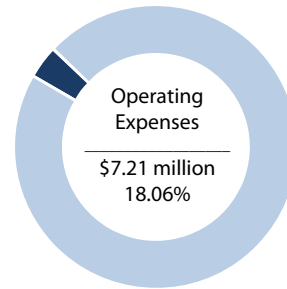


Department Overview



Community Services

The Community Services Department connects people with progressive places and positive experiences, while ensuring the safety of people through Fire Services. The department encourages all residents of Essex to embrace an active and healthy lifestyle through the delivery of quality recreation, parks and cultural services with a spirit of community.



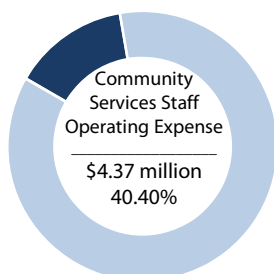
Recreation and Culture	Parks and Facilities	Fire
<ul style="list-style-type: none"> Plans, develops and implements programs throughout the Town, through direct delivery and in partnership with community organizations. Engages with community based organizations who provide services related to arts, culture, sport and recreation programs and events. Manages Town owned community centres, and the aquatic centre. 	<ul style="list-style-type: none"> Coordinates and manages the operations of all Town owned facilities. Provides energy management oversight. Provides input into the review of proposed developments as it pertains to parks and open space. 	<ul style="list-style-type: none"> Leads emergency management training, fire prevention training and public education. Burn permits. First responders to emergency calls for fire, carbon dioxide, accidents, and motor vehicle accidents.



Staff Compliment

Cost Centre	2019			2020			Change		
	Full-time	Part-time	Student	Full-time	Part-time	Student	Full-time	Part-time	Student
Director, Community Services	1.0	0.0	1.0	1.0	0.0	1.0	0.0	0.0	0.0
Recreation and Culture	5.0	2.0	45.0	5.0	2.0	45.0	0.0	0.0	0.0
Parks and Facilities	12.0	11.0	35.0	12.0	11.0	35.0	0.0	0.0	0.0
Fire	3.0	65.0	0.0	3.0	65.0	0.0	0.0	0.0	0.0
Total - Community Services	21.0	78.0	80.0	21.0	78.0	81.0	0.0	0.0	0.0

Summary of Changes to the Staff Compliment

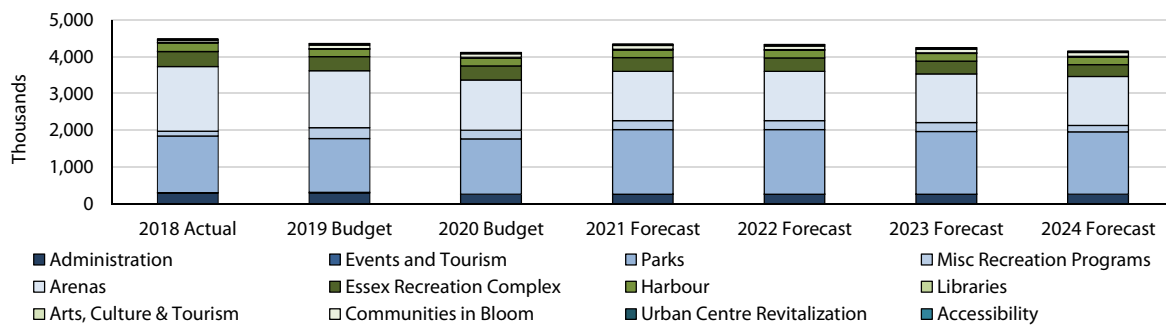


There are no changes for 2020 to the Staff Compliment for Community Services.

2020 to 2024 Net Operating Budget by Cost Centre

Cost Centre	2018 Actual	Budget	Budget	Change		Forecast			
			2020	\$	%	2021	2022	2023	2024
Administration	510,190	412,790	470,629	57,839	14%	470,909	471,196	408,988	409,285
Public Education, Prevention	174,298	169,828	171,375	1,546	1%	171,510	171,648	171,789	171,933
Station 1	506,331	588,285	598,470	10,185	2%	598,800	599,138	599,476	483,730
Station 2	278,371	311,254	283,782	(27,472)	-9%	498,956	499,799	500,652	457,834
Station 3	288,213	290,517	299,876	9,359	3%	368,173	369,095	370,035	380,146
Emergency Operations	36,894	27,955	28,555	600	2%	28,555	28,555	28,555	28,555
Administration	289,432	288,027	256,705	(31,322)	-11%	256,709	256,856	256,858	257,008
Events and Tourism	9,683	17,000	2,000	(15,000)	-88%	2,020	2,040	2,061	2,082
Parks	1,541,183	1,467,329	1,502,315	34,986	2%	1,759,159	1,758,091	1,702,575	1,693,139
Essex FunFest*	-	-	-	-	0%	-	-	-	-
Misc Recreation Programs	131,334	295,610	238,234	(57,376)	-19%	239,774	241,681	243,746	179,281
Arenas	1,759,765	1,550,734	1,366,687	(184,047)	-12%	1,347,905	1,348,955	1,330,982	1,331,169
Essex Recreation Complex	416,512	385,381	389,903	4,523	1%	374,487	358,797	342,826	325,751
Harbour	232,121	202,634	211,745	9,111	4%	211,822	211,269	210,704	210,130
Libraries	5,258	6,142	6,908	765	12%	6,964	7,218	7,478	7,742
Arts, Culture & Tourism	13,594	11,003	11,003	-	0%	11,103	11,205	11,309	11,415
Communities in Bloom	47,861	96,901	97,879	978	1%	97,895	98,661	97,928	97,945
Urban Centre Revitalization	30,009	30,000	30,000	-	0%	30,600	31,212	31,836	32,473
Accessibility	3,203	2,350	2,350	-	0%	1,500	1,500	1,500	1,500
Total	6,274,254	6,153,741	5,968,416	(185,325)	-3%	6,476,842	6,466,916	6,319,298	6,081,118

* Essex FunFest are not included in the chart below due to their net zero value (revenue = expense).



2020 to 2024 Operating Budget by Expense and Revenue Grouping

Grouping	2018 Actual	Budget	Budget	Change		Forecast			
			2020	\$	%	2021	2022	2023	2024
Expenditures				0					
Personnel Expenses	3,988,159	4,297,644	4,371,538	73,894	2%	4,376,356	4,380,881	4,385,476	4,388,370
Supplies and Services	1,587,758	1,667,168	1,746,878	79,711	5%	1,752,258	1,776,263	1,818,190	1,842,187
Transfers to Reserves	1,035,662	301,854	244,598	(57,256)	-23%	495,860	497,147	355,959	357,298
Utilities and Insurance	895,220	993,882	843,842	(150,040)	-18%	874,488	891,336	908,508	934,701
Total Expenditures	7,506,799	7,260,548	7,206,857	(53,691)	-1%	7,498,960	7,545,626	7,468,132	7,522,556
Revenues									
Property Taxation	-	-	-	-	0%	-	-	-	-
Provincial and Federal Funding	70,685	30,000	30,000	-	0%	30,000	30,000	30,000	30,000
Other Revenue	2,511,548	2,480,963	2,576,287	95,324	4%	2,625,924	2,676,357	2,727,799	2,780,269
Transfers from Reserves	170,440	335,825	162,410	(173,415)	-107%	162,410	162,410	162,410	162,410
Total Revenues	2,752,672	2,846,788	2,768,697	(78,091)	-3%	2,818,334	2,868,767	2,920,209	2,972,679
Net Total (incl. debt)	4,754,127	4,413,760	4,438,160	24,400	1%	4,680,627	4,676,859	4,547,924	4,549,877
Debt Charges	1,520,127	1,739,981	1,530,256	(209,726)	-14%	1,796,215	1,790,057	1,771,374	1,531,241
Net Total	6,274,254	6,153,741	5,968,416	(185,325)	-3%	6,476,842	6,466,916	6,319,298	6,081,118

2020 Expenditure by Groupings



2020 Revenue by Groupings

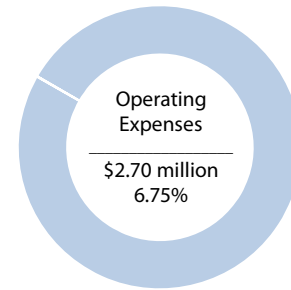


Department Overview

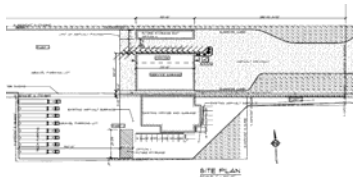


Development Services

Development Services provides advice to Council, Senior Administration, and the community as a whole with respect to development and planning through interpretation and application of effective policy and the evaluation of development opportunities, proposals and the issuance of building permits and enforcement of municipal by-laws including zoning compliance and property standards.



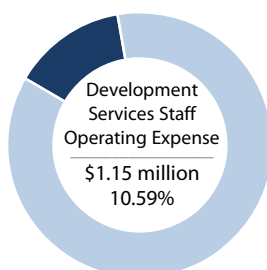
Economic Development	Planning Services	Building and By-Law
<ul style="list-style-type: none"> Identification and implementation of key initiatives that have the potential for economic impact and growth. Strategic focus on diversification and relationship development, to provide the resources and tools for a thriving economic base. Marketing tourism experiences that support cycling, wine, waterfront and culinary sectors. The goal is to encourage more visits by tourists to the Town of Essex while increasing spending at local businesses 	<ul style="list-style-type: none"> Provides professional planning advice and Municipal policies and procedures for land use. Initiates and develops studies and reports in support of new and updated plans, programs and regulations. Review and process development proposals. Provides information to the public regarding development regulations and projects Ensure compliance with the Planning 	<ul style="list-style-type: none"> Implement and regulate compliance with Provincial Statutes and Acts, including; the Ontario Building Code Act, and the Ontario Building Code. Review and approve plans for proposed construction and issue the appropriate permit. Conduct inspections and respond to internal and external customer inquiries. Implement and enforce various municipal by-laws, including property standards.



Staff Compliment

Cost Centre	2019			2020			Change		
	Full-time	Part-time	Student	Full-time	Part-time	Student	Full-time	Part-time	Student
Director, Development	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Economic Development	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Planning Services	4.0	1.0	1.0	4.0	1.0	1.0	0.0	0.0	0.0
Building and By-Law	4.4	0.0	0.0	4.4	0.0	0.0	0.0	0.0	0.0
Total - Development Services	10.4	1.0	1.0	10.4	1.0	1.0	0.0	0.0	0.0

Summary of Changes to the Staff Compliment

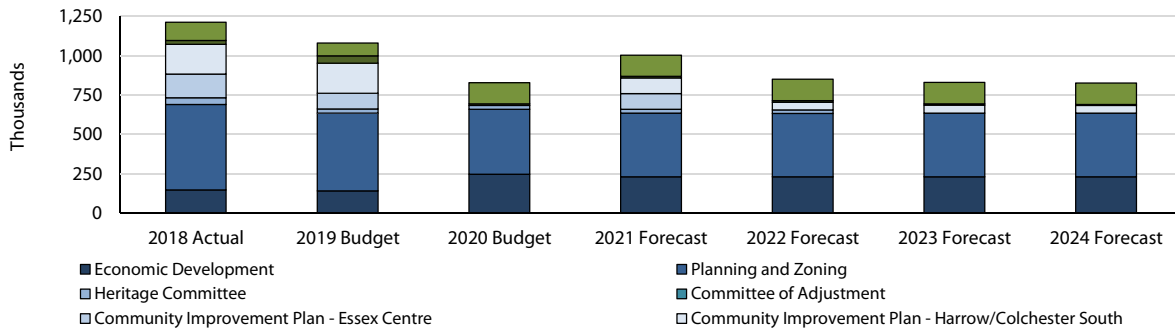


There are no changes for 2020 to the Staff Compliment for Development Services.

2020 to 2024 Net Operating Budget by Cost Centre

Cost Centre	2018 Actual	2019 Budget	Budget	Change		Forecast			
			2020	\$	%	2021	2022	2023	2024
Director of Development	-	-	-	-	0%	0	0	0	0
Economic Development	147,644	141,828	246,890	105,062	74%	231,018	231,049	231,080	231,112
Planning and Zoning	541,506	493,956	412,793	(81,163)	-16%	404,606	400,977	404,149	403,007
Heritage Committee	42,929	26,111	23,202	(2,909)	-11%	22,752	22,803	(2,145)	(2,092)
Committee of Adjustment	(40,071)	(33,669)	(34,426)	(757)	2%	(36,114)	(37,260)	(38,428)	(39,621)
Parkland Contributions*	-	-	-	-	0%	-	-	-	-
Business Improvement Area*	-	-	-	-	0%	-	-	-	-
Community Improvement Plan - Essex Centre	150,000	100,000	-	(100,000)	-100%	100,000	-	-	-
Community Improvement Plan - Harrow/Colchester South	190,000	190,000	-	(190,000)	-100%	100,000	50,000	50,000	50,000
Building	23,907	47,047	10,750	(36,297)	-77%	10,358	9,369	7,971	6,501
By-Law Enforcement	116,558	82,079	134,102	52,023	63%	135,151	135,915	136,054	136,196
Development Charges*	(36,630)	-	-	-	0%	-	-	-	-
Total	1,135,843	1,047,353	793,313	(254,040)	-24%	967,771	812,853	788,680	785,104

* Parkland Contributions, Business Improvement Area, and Development Charges are not included in the chart below due to their net zero value (revenue = expense).



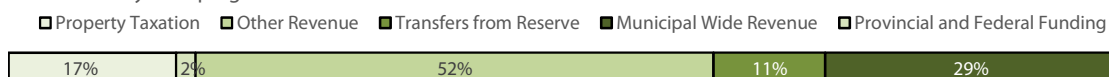
2020 to 2024 Operating Budget by Expense and Revenue Grouping

Grouping	2018 Actual	2019 Budget	Budget	Change		Forecast			
			2020	\$	%	2021	2022	2023	2024
Expenditures									
Personnel Expenses	825,071	1,239,019	1,145,670	(93,349)	-8%	1,100,218	1,100,825	1,105,117	1,105,117
Supplies and Services	737,135	814,006	822,502	8,496	1%	764,092	613,717	588,947	589,181
Transfers to Reserves	1,132,169	373,279	699,836	326,557	47%	481,507	494,900	510,256	526,705
Utilities and Insurance	27,289	27,825	26,062	(1,763)	-7%	26,537	27,022	27,516	28,021
Total Expenditures	2,721,664	2,454,129	2,694,070	239,941	10%	2,372,355	2,236,464	2,231,836	2,249,024
Revenues									
Property Taxation	137,379	132,000	134,166	2,166	2%	134,167	134,168	134,169	134,170
Provincial and Federal Funding	9,160	53,000	53,000	-	0%	-	-	-	-
Other Revenue	1,304,255	972,865	1,410,049	437,184	31%	1,204,415	1,227,397	1,252,533	1,278,958
Transfers from Reserves	135,457	249,340	303,971	54,631	18%	66,431	62,476	56,883	51,006
Total Revenues	1,586,251	1,407,205	1,901,187	493,982	35%	1,405,013	1,424,041	1,443,585	1,464,135
Net Total (incl. debt)	1,135,413	1,046,923	792,883	(254,040)	-24%	967,341	812,423	788,251	784,889
Debt Charges	430	430	430	-	0%	430	430	430	215
Net Total	1,135,843	1,047,353	793,313	(254,040)	-24%	967,771	812,853	788,680	785,104

2020 Expenditure by Groupings

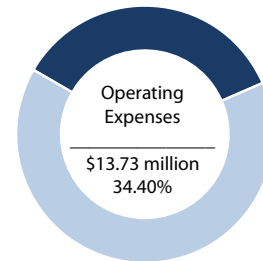


2020 Revenue by Groupings

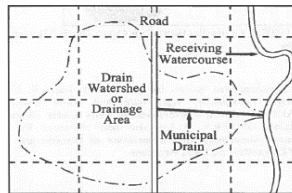


Infrastructure Services

Infrastructure describes the equipment and structures that we all use and benefit from daily. It helps us at work, at home and at play. It makes our Town safe, convenient and livable. It adds to the quality of our lives and contributes to our overall health and well-being. In addition, it makes our Town an attractive place to live and further makes businesses want to locate here. The Town is committed to investing in the maintenance, replacement, and upkeep of existing infrastructure to ensure it remains in a state of good repair and supports the residents of the Town.



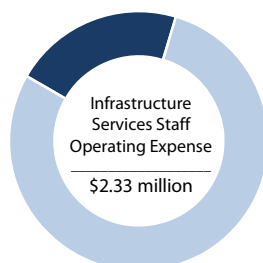
Public Works	Agriculture and Reforestation	Environmental Services
<ul style="list-style-type: none"> Maintain municipal street signage, patrol roads, right-of-way tree maintenance, traffic signals, streetlighting, street sweeping, roadside mowing, pedestrian corridors, road markings, asphalt surface repairs, gravel road maintenance, snow and ice control, sidewalks and active transportation. Operation and upkeep of storm sewer system (catch basins, sewers, manholes) and storm water management ponds / pumping stations. Maintain vehicle and equipment fleet that operates out of two Public work yards to provide complete municipal 	<ul style="list-style-type: none"> Oversee maintenance and construction of all municipal drains in accordance with the Ontario Drainage Act. Maintenance on municipal drains includes clearing of the drain, such as removal of beavers/dams, trees, repairing/replacing tile, silting and cleaning out tiles. Issue billings to construct and maintain Municipal Drains to benefitting lands and roads as specified in the Schedule of Assessment outlined in the Drain Report. 	<ul style="list-style-type: none"> Provide sustainable water and wastewater services. Support operation of water and wastewater treatment plants under contract with Ontario Clean Water Agency. Maintain current infrastructure such as pipes, manholes, hydrants, pumping stations. Ensure water and wastewater rates are sufficient to cover operating costs and the cost to the repair and replace existing infrastructure.



Staff Compliment

Cost Centre	2019			2020			Change		
	Full-time	Part-time	Student	Full-time	Part-time	Student	Full-time	Part-time	Student
Director, Infrastructure	1.60	0.00	0.00	1.60	0.00	0.00	0.00	0.00	0.00
Public Works	13.40	0.00	2.00	13.40	0.00	2.00	0.00	0.00	0.00
Agriculture and Reforestation	1.60	0.00	1.00	1.60	0.00	1.00	0.00	0.00	0.00
Environmental Services	5.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00
Total - Infrastructure	21.60	0.00	3.00	21.60	0.00	3.00	0.00	0.00	0.00

Summary of Changes to the Staff Compliment

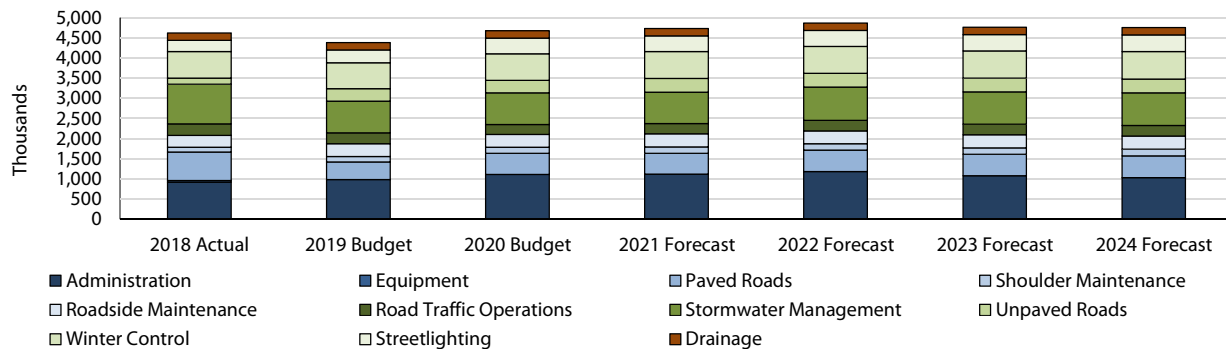


Infrastructure services has no change to their staff compliment for 2020

2020 to 2024 Net Operating Budget by Cost Centre

			Budget	Change		Forecast			
Cost Centre	2018 Actual	2019 Budget	2020	\$	%	2021	2022	2023	2024
Administration	917,167	980,187	1,106,642	126,455	13%	1,116,502	1,182,326	1,072,016	1,028,297
Infrastructure, Director	-	-	-	-	0%	-	-	-	-
Equipment	37,151	-	-	-	0%	-	-	-	-
Paved Roads	706,050	439,710	520,896	81,186	18%	516,289	525,064	533,913	542,627
Shoulder Maintenance	118,072	131,397	154,829	23,432	18%	158,010	159,073	160,156	161,111
Roadside Maintenance	294,750	317,582	313,977	(3,604)	-1%	320,601	323,098	325,641	327,928
Road Traffic Operations	284,703	266,585	252,333	(14,251)	-5%	255,709	256,892	258,098	259,227
Stormwater Management	988,725	788,122	782,384	(5,738)	-1%	781,073	824,401	801,934	812,584
Unpaved Roads	150,263	308,956	308,005	(951)	0%	339,245	340,978	342,743	344,441
Winter Control	661,098	648,055	662,511	14,456	2%	665,066	669,434	673,900	679,426
Streetlighting	273,820	312,256	389,094	76,838	25%	394,677	400,371	406,179	412,103
Drainage	182,503	183,680	180,594	(3,086)	-2%	180,683	180,774	180,867	180,872
Tile Drainage	-	-	-	-	0%	-	-	-	-
Shoreline Protection	-	-	-	-	0%	-	-	-	-
Shoreline Assistance	(1,721)	-	-	-	0%	-	-	-	-
Sanitary Sewer	90,130	-	-	-	0%	-	-	-	-
Water	-	-	-	-	0%	-	-	-	-
Total	4,702,711	4,376,530	4,671,266	294,736	7%	4,727,857	4,862,412	4,755,448	4,748,616

* Infrastructure Director, Equipment, Tile Drainage, Shoreline Protection, Shoreline Assistance, Sanitary Sewer, and Water are not included in the chart below due to their net zero value (revenue = expense).



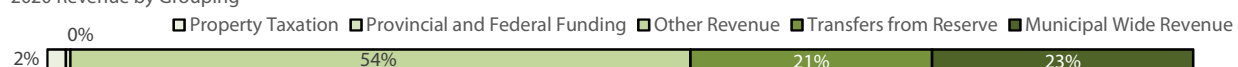
2020 to 2024 Operating Budget by Expense and Revenue Grouping

			Budget	Change		Forecast			
Grouping	2018 Actual	2019 Budget	2020	\$	%	2021	2022	2023	2024
Expenditures									
Personnel Expenses	2,003,133	2,353,427	2,328,195	(25,232)	-1%	2,335,689	2,397,554	2,398,996	2,398,996
Supplies and Services	5,881,388	5,429,460	5,513,662	84,202	2%	5,581,974	5,662,633	5,678,146	5,727,510
Transfers to Reserves	5,571,603	5,229,417	4,851,268	(378,149)	-8%	4,879,670	4,878,738	4,877,787	4,877,408
Utilities and Insurance	1,020,768	941,941	1,033,533	91,593	9%	1,053,414	1,073,692	1,094,377	1,115,459
Total Expenditures	14,476,891	13,954,244	13,726,658	(227,586)	-2%	13,850,748	14,012,617	14,049,305	14,119,374
Revenues									
Property Taxation	139,458	216,353	222,095	5,742	3%	195,796	166,848	166,847	71,199
Provincial and Federal									
Funding	50,378	53,320	53,320	-	0%	53,320	53,320	53,320	53,320
Other Revenue	7,828,450	7,413,237	7,429,183	15,946	0%	7,468,883	7,473,962	7,479,144	7,484,407
Transfers from Reserves	3,109,649	3,282,063	2,894,942	(387,121)	-13%	2,922,742	2,944,978	2,967,659	2,989,642
Total Revenues	11,127,935	10,964,973	10,599,540	(365,433)	-3%	10,640,741	10,639,108	10,666,970	10,598,569
Net Total (incl. debt)	3,348,956	2,989,271	3,127,118	137,846	5%	3,210,006	3,373,509	3,382,335	3,520,805
Debt Charges	1,353,756	1,387,259	1,544,148	156,889	10%	1,517,851	1,488,903	1,373,113	1,227,811
Net Total	4,702,711	4,376,530	4,671,266	294,736	7%	4,727,857	4,862,412	4,755,448	4,748,616

2020 Expenditure by Groupings



2020 Revenue by Grouping



"Manage responsible and viable growth while preserving and enhancing the unique rural and small town character of the community."

2019-2022 Corporate Strategic Plan

2020 Capital Budget and 4 Year Forecast



Department Capital Budgets and Forecast



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Capital Summary



The newly revised and updated 2020 Capital Budget document follows the flow and feel of the revisions completed to the 2019 Operating Budget document. Asset Management, planning and use of assets is a key characteristic of this years capital budget document.

"Manage, invest, and plan for sustainable municipal infrastructure which meets the current and future needs of the municipality and its citizens."

2019-2020 Corporate Strategic Plan

The 2020 Capital Budget includes **\$18.5 million** in projects.

The 2020 Capital Budget is funded through a combination of revenues with an operating budget surplus of \$705 thousand in 2020 which offsets 2020 capital expenditures related to New and Upgraded assets.

The 2020 Capital Budget includes in year projects with a budgeted costs of \$15,027,668 and prior year carry-forwards in the amount of \$3,440,644, for a Total 2020 Capital Budget of \$18,468,332.

Operating Summary

Grouping	2019 Budget	2020 Budget	Change		Forecast			
			\$	%	2021	2022	2023	2024
Total Operating Revenues	42,936,058	43,464,550	528,492	1%	42,671,240	43,147,836	43,686,937	44,113,301
Total Operating Expenses	42,531,039	42,759,024	227,984	1%	43,308,225	43,548,204	43,563,950	43,488,974
Operating Surplus/(Deficit)	405,019	705,527	300,508	74%	(636,985)	(400,368)	122,987	624,327

Capital Summary

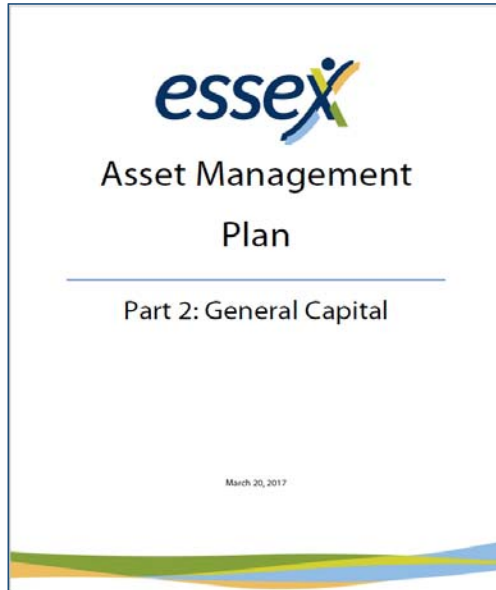
Grouping	2019 Budget	2020 Budget	Change		Forecast			
			\$	%	2021	2022	2023	2024
Capital Revenue								
Lifecycle Reserve	3,028,080	2,255,373	772,707	26%	6,427,752	5,770,087	6,193,471	4,766,151
Other Reserve	2,020,515	5,862,950	(3,842,435)	-190%	1,953,950	1,960,000	769,000	769,000
Grant Funding	1,984,944	2,897,299	(912,355)	-46%	2,038,947	-	-	-
Long Term Debt Financing	2,180,000	3,249,670	(1,069,670)	-49%	1,667,758	-	-	2,500,000
Other	340,196	56,869	283,327	0%	237,500	-	-	-
Prior Year Funding	439,000	3,440,644	(3,001,644)	-684%	7,671	-	4,500	-
Total Capital Revenue	9,992,735	17,762,805	(8,053,398)	-81%	12,333,579	7,730,087	6,966,971	8,035,151
Capital Expenses								
Property Tax Supported	9,077,654	14,693,331	(5,615,678)	-62%	12,912,158	6,664,163	7,595,411	7,691,018
User Rate Supported	1,320,100	3,775,000	(2,454,900)	-186%	1,281,000	1,935,000	744,000	744,000
Total Capital Expenses	10,397,754	18,468,331	(8,070,578)	-78%	14,193,158	8,599,163	8,339,411	8,435,018
Capital Surplus/(Deficit)	(405,019)	(705,527)	17,180	-4%	(1,859,580)	(869,076)	(1,372,440)	(399,867)
Net Surplus/(Deficit)	-	-	-	0%	(2,496,565)	(1,269,444)	(1,249,452)	224,460



Asset Management Implications



The Town is investing in the replacement, upgrade, and addition of new assets, but what's being done to ensure that we're saving for the future replacement of those assets?



With the updated requirement for Asset Management and the Town's implementation of both Part 1: Infrastructure Assets, and Part 2: General Capital, steps were recommended and approved by Council to ensure financial sustainability of the Town's capital assets. The replacement of capital assets that have reached their end of life, require replacement due to assessment or failure, or fall within an infrastructure corridor are funded through grant funding (Ontario Community Infrastructure Fund (OCIF), Gas Tax), long-term debt, and the Town's asset management reserve. Assets that are new and therefore increase the level of service being provided are funded through property taxation, grants, long-term debt, and Development Charges.

Assets that are classified as New or Upgrade and are funded in year from property taxation will have future implications to the Asset Management Lifecycle Reserve.

Both Part 1 and Part 2 of the Town's Asset Management Plan can be found on the Town's website at www.essex.ca/assetmanagement

"Ensure financial stability of current and new infrastructure"

2019-2022 Corporate Strategic Plan

The Town of Essex is responsible for managing approximately **\$420 million** worth of physical public assets.

Only **Property Tax Supported Assets** are included below as User Rate Supported Assets are subject to a rate and lifecycle study.

To ensure that the comparative data from the two parts of the Town's Asset Management Plan are relevant, the average annual requirement, average annual funding available (budget), and the funding surplus/(gap) have been forecasted to 2020 values using an average inflation rate of 1.75% and a period of 4 years for Part 1: infrastructure Assets (October to October Average 2015 to 2019), and 1.83% and a period of 3 years for Part 2: General Capital assets.

Asset Classification	Average Annual Requirement	Average Annual Funding Available					Funding Surplus / (Gap)
		Tax	Reserve	Grant / Other	Long-Term Debt	Total	
Infrastructure	4,297,285	918,127	1,945,724	512,088	4,970	3,380,909	(916,376)
General Capital	2,620,612	608,928	507,962	87,039	259,054	1,462,982	(1,157,629)
Total - Property Tax Supported	6,917,897	1,527,054	2,453,686	599,127	264,024	4,843,892	(2,074,006)

Average Annual Requirement

=

The **average annual amount** that the **Town should spend on the replacement of capital assets**

It is important to note that this amount can vary any given year, however the average (over a period of time) should reflect the Average Annual Requirement.

Funding Surplus / (Gap)

=

Funding **Surplus** is the **amount of spending above** the **Average Annual Requirement**. Funding **(Gap)** is the **amount of spending below** the **Average Annual Requirement**.

Asset Management Implications



The 2020 Capital Budget for Replacement assets and the Replacement portion of Upgraded assets funded through the Asset Management Lifecycle Reserve, excluding carry-forwards are:

Asset Classification	Average Annual Requirement	2020 Capital Budget Revenue Allocation					Funding Surplus / (Gap)
		Tax	Reserve	Grant / Other	Long-Term Debt	Total	
Replacement + Upgrade Lifecycle	6,917,897	-	3,261,717	2,916,168	1,624,835	7,802,720	884,822

In 2020 the Town of **Essex** is **spending \$3.6 million more on its capital** lifecycle program **than the average annual requirement** as identified in the Town's Asset Management Plans.

Assets included under the 2020 Capital Budget for New and the New portion of an Upgraded asset are not funded through the Asset Management Lifecycle Reserve. Projects identified as New excluding carry-forwards have the following funding allocation:

Asset Classification	Average Annual Requirement	2020 Capital Budget Revenue Allocation					Funding Surplus / (Gap)
		Tax	Reserve	Grant / Other	Long-Term Debt	Total	
New + Upgrade New	-	705,527	1,081,606	38,000	1,624,835	3,449,968	3,449,968

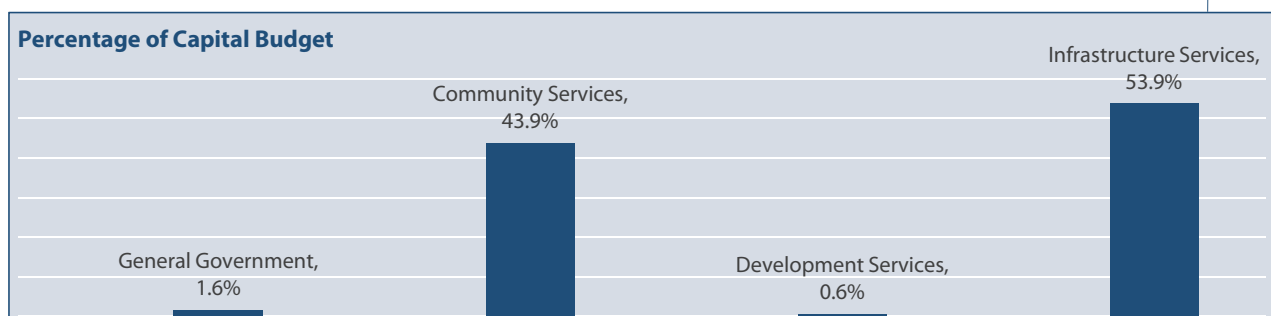
Lifecycle funding implications based a spend of **\$4.1 million on New** assets indicate that the Town should be putting aside the following amounts to ensure sustainability of New assets:

Estimated Useful Life	Average Annual Reserve Contribution	Annual Requirement as a Percentage Tax Increase
5	689,994	4.76%
10	344,997	2.38%
20	172,498	1.19%

Average annual reserve contributions for New and the new portion of Upgraded assets is not funded in the 2020 Budget or 2021 to 2024 Forecast. Future funding considerations will be presented for Council consideration under the Financial Strategy of the Town's next Asset Management Plan.

The **summary of the 2020 Capital Budget** as **compared to the Annual Requirement** identified in the Town's Asset Management Plan inflated to 2020 values by Departmental grouping (below). Corporate Services, Council, and Other Contracts are grouped as General Government.

Function / Department	Asset Management Plan	Average Annual Requirement	2020 Capital Budget	Less: 2019 Carry-forwards (cfwd)	2020 Capital Less Cfws	Reallocate Streetscape Project	2020 Capital Budget (Less cfws and reallocation of Streetscape)
General Government	Part 2: General Capital	184,237	4,789,170	(22,870)	4,766,300	(4,590,170)	176,130
Community Services	Part 2: General Capital	2,431,120	5,679,162	(2,237,074)	3,442,088	1,322,670	4,764,758
Development Services	Part 2: General Capital	5,256	202,200	(132,200)	70,000	-	70,000
Infrastructure Services	Part 1: Infrastructure	4,297,284	3,630,855	(1,048,500)	2,582,355	3,267,500	5,849,855
Total - All	All	6,917,896	14,301,387	(3,440,644)	10,860,743	-	10,860,743



Asset Management Snapshots

Administration Buildings & Assets 1

3 buildings,
17 vehicles,
64 machinery/equipment
\$4.4 million

Roads & Roadside 2

257km of paved roads,
40km unpaved roads,
50km of sidewalk,
1,333 streetlights,
505 street poles,
2,736 street signs
\$66 million

Bridges & Culverts 3

57 bridges,
35 culverts
\$33.1 million

Stormwater 4

89km of mains,
2,464 catch basins,
32km of curbs and gutters,
576 manholes
\$36.7 million

Water 5

302km of mains,
716 hydrants,
1 treatment plant,
1 building,
1 water tower,
4 vehicles,
12,419 machinery/equipment
\$103.8 million

Wastewater 6

3 forcemains,
88km of main,
1,086 manholes
11 pumping stations,
3 treatment plants
14 machinery/equipment,
1 vehicle
\$85.8 million



Management shot



Legend

- **General Capital**
\$93 million total
- **Infrastructure**
\$326 million total

- **10 Land Improvements**
21 units in Community Services,
1 unit in Protection to
Persons and Property
\$2 million

- **9 Machinery & Equipment**
903 in Community Services,
276 in General Government,
4 in Health Health Services
41 in Planning & Development,
1,715 in Protection to
Persons and Property
\$9.5 million

- **8 Vehicles**
12 in Community Services,
17 in Protection to
Persons and Property
\$4.6 million

- **7 Buildings**
16 in Community Services,
1 in General Government,
1 in Health Services
4 in Protection to
Persons and Property
\$55.3 million

Asset Management Lifecycle Reserve Forecast

		Asset Management Lifecycle Reserve Forecast
Description	Note	Beginning Balance
2019 Beginning Balance		2,745,787
Landfill Reserve Contribution	2018 Commitment	
Landfill Reserve Contribution	2019 Commitment	
Landfill Reserve Contribution Top-Up per Asset Management Financial Strategy	2018 Commitment	
Landfill Reserve Contribution Top-Up per Asset Management Financial Strategy	2019 Commitment	
Capital Levy per Asset Management Financial Strategy	Fixed Amount	
ELK Promissory Note Contribution per Asset Management Financial Strategy	2018 Commitment	
ELK Promissory Note Contribution per Asset Management Financial Strategy	2019 Commitment	
Annual Consolidated Lifecycle Capital Contribution from General Levy	Fixed Amount	
Interest Calculation	Estimated	
Funding for Capital per the 2019 Approved Capital Budget	Committed	
2019 Ending Balance		
2020 Beginning Balance		5,197,385
Landfill Reserve Contribution	60% of Prior Years Revenue	
Landfill Reserve Contribution Top-Up per Asset Management Financial Strategy	2018 to 2022 - 20% Top-Up	
Capital Levy per Asset Management Financial Strategy	Fixed Amount	
ELK Promissory Note Contribution per Asset Management Financial Strategy	2018 to 2022	
Annual Consolidated Lifecycle Capital Contribution from General Levy	Fixed Amount	
Interest Calculation	Estimated	
Funding for Capital	Proposed per 2020 Budget	
2020 Ending Balance		
2021 Beginning Balance		6,314,893
Landfill Reserve Contribution	60% of Prior Years Revenue	
Landfill Reserve Contribution Top-Up per Asset Management Financial Strategy	2018 to 2022 - 20% Top-Up	
Capital Levy per Asset Management Financial Strategy	Fixed Amount	
ELK Promissory Note Contribution per Asset Management Financial Strategy	2018 to 2022	
Annual Consolidated Lifecycle Capital Contribution from General Levy	Fixed Amount	
Interest Calculation	Estimated	
Funding for Capital (Annual Average)		
2021 Ending Balance		
2022 Beginning Balance		6,958,440
Landfill Reserve Contribution	Based on 60% of Prior Years Revenue	
Landfill Reserve Contribution Top-Up per Asset Management Financial Strategy	2018 to 2022 - 20% Top-Up	
Capital Levy per Asset Management Financial Strategy	Fixed Amount	
ELK Promissory Note Contribution per Asset Management Financial Strategy	2018 to 2022	
Annual Consolidated Lifecycle Capital Contribution from General Levy	Fixed Amount	
Interest Calculation	Estimated	
Funding for Capital (Annual Average)		
2022 Ending Balance		
2023 Beginning Balance		7,637,893
Landfill Reserve Contribution	60% of Prior Years Revenue	
Landfill Reserve Contribution Top-Up per Asset Management Financial Strategy	20% of Prior Years Revenue	
Capital Levy per Asset Management Financial Strategy	Fixed Amount	
Annual Consolidated Lifecycle Capital Contribution from General Levy	Fixed Amount	
Interest Calculation	Estimated	
Funding for Capital (Annual Average)		
2023 Ending Balance		
2024 Beginning Balance		8,071,821
Landfill Reserve Contribution	60% of Prior Years Revenue	
Landfill Reserve Contribution Top-Up per Asset Management Financial Strategy	20% of Prior Years Revenue	
Capital Levy per Asset Management Financial Strategy	Fixed Amount	
Annual Consolidated Lifecycle Capital Contribution from General Levy	Fixed Amount	
Interest Calculation	Estimated	
Funding for Capital (Annual Average)		
2024 Ending Balance		

Cycle Reserve Revenue and Expense Activity								
Revenue						Committed Expenses		Ending Balance
Asset Management Financial Strategy			Reserve Transfers	Operating Lifecycle Reserve Contributions	Interest	Asset Management Status		
Landfill Reserve Top-Up	Capital Levy	ELK Promissory Note				Replacement	Upgrade	
			1,292,727					
			1,292,727					
548,716								
548,716								
	277,089							
		282,285						
		282,285						
				900,000				
					55,133			
						(2,569,530)	(458,550)	
								5,197,385
			1,302,422					
548,716								
	277,089							
		282,285						
				900,000				
					62,369			
						(1,923,113)	(332,260)	
								6,314,893
			1,321,958					
556,947								
	277,089							
		282,285						
				900,000				
					75,779			
						(2,303,195)	(467,316)	
								6,958,440
			1,341,788					
565,301								
	277,089							
		282,285						
				900,000				
					83,501			
						(2,303,195)	(467,316)	
								7,637,893
			1,361,915					
573,780								
	277,089							
				900,000				
					91,655			
						(2,303,195)	(467,316)	
								8,071,821
			1,382,343					
582,387								
	277,089							
				900,000				
					96,862			
						(2,303,195)	(467,316)	
								8,539,991

"Provide every resident with access to parks, recreation, and cultural opportunities and improve quality of life through affordable, inclusive, and accessible programming and recreational facilities"

2019-2022 Corporate Strategic Plan

2020 Capital Budget

2020 Capital

				2020 Capital Budget		
Project Number	Project Name	Project Description	Asset Management Status	Project Cost	Lifecycle Reserve	Other Reserve
Property Tax Supported						
Council						
GG-20-0002	Council Contingency		New	50,000		28,721
GG-20-0008	Harrow Streetscaping	Harrow Streetscape Project	Upgrade	4,590,170		599,985
Total - Council				4,640,170	-	628,706
Division: Police						
PD-20-0001	Contingency		Upgrade	25,000		25,000
PD-20-0002	Roof Access Ladder Harrow OPP Station	Health and safety	New	30,000		30,000
Total - Police				55,000	-	55,000
Division: Cemeteries						
HS-20-0001	Columbarium		New	35,000		35,000
HS-20-0002	Signage at Cemeteries		New	5,000		
HS-20-0003	Colchester Memorial Road Expansion		New	20,000		
Total - Cemeteries				60,000	-	35,000
Department: Corporate Services						
Division: Information Technology						
GG-20-0003	Wireless Network Upgrade All Essex Locations (Pool\ Arena\ Fire\ Water Tower \ Gesto	Essex Wireless WAN\ back haul from water tower, new Wireless WAN for Harrow including remote management, UPS managed switch 500mb fiber back haul. This will support Harrow Water\ Harrow Arena\ Harrow Public Works.	Upgrade	50,000	25,000	19,385
GG-19-0012	Network Security Audit	Third party will identify and evaluate the network, determine any threats or weaknesses in the network and determine the necessary measures to protect against those threats.	New	27,000		
GG-19-0027	Server Room UPS Replacement	Replacement and additional server room and network backup batteries and power monitoring systems.	Replacement	12,000		
Total - Information Technology				89,000	25,000	19,385
Total - Corporate Services				89,000	25,000	19,385

Funding Sources				Funding	Funded from Taxation	Operating Impact						
Grant Funding	Long-Term Debt	Other	Prior Year Funding			Tab	Cost Centre	2020	2021	2022	2023	2024
				28,721	21,279							
1,548,515	2,441,670			4,590,170	-		100	-	230,000	230,000	230,000	230,000
1,548,515	2,441,670	-	-	4,618,891	21,279			-	230,000	230,000	230,000	230,000
				25,000	-							
				30,000	-							
-	-	-	-	55,000	-			-	-	-	-	-
				35,000	-							
				-	5,000							
				-	20,000							
-	-	-	-	35,000	25,000			-	-	-	-	-
				44,385	5,615							
			10,870	10,870	16,130							
			12,000	12,000	-							
-	-	-	22,870	67,255	21,745			-	-	-	-	-
-	-	-	22,870	67,255	21,745			-	-	-	-	-

2020 Capital

				2020 Capital Budget		
Project Number	Project Name	Project Description	Asset Management Status	Project Cost	Lifecycle Reserve	Other Reserve
Department: Community Services						
Division: Fire						
FD-20-0002	Hose Replacement Program	Replace a percentage of hoses annually.	Replacement	15,150	15,150	
FD-20-0003	Pager Replacement Program		Replacement	5,681	5,681	
FD-20-0005	Headset Replacement Program	3 sets replaced annually.	Replacement	3,600	3,600	
FD-20-0008	Personal Protective Equipment	Replace a percentage of bunker gear annually.	Replacement	35,421	35,421	
FD-19-0015	Station 2 Replacement		Upgrade	2,700,000		117,000
FD-20-0010	Replace Cutters Jaws of Life Station 3	Current equipment needs to be updated due to new vehicle designs and materials.	Replacement	18,500	18,500	
FD-20-0011	Ice Water Rescue Equipment (RIT Basket & PPE for Ice/Water Team)	Equipment approved by Council for an Ice Water Rescue Team.	New	12,100		
FD-20-0012	New Notebook computers Each Station (3)	All reporting is done on computers and need to provide firefighters tools to complete required reports.	New	20,000		
FD-20-0014	Firefighter Recruitment (6)	Cost of training and gear for new firefighters.	New	54,000		54,000
FD-19-0012	Replace Rescue 3 Station 3	Vehicle is 20 years old and insurance requirement for replacement.	Replacement	300,000		
Total - Fire				3,164,452	78,352	171,000
Division: Parks						
CS-19-0056	New Family washroom at the Essex Splash Pad Building	Cost includes demo of 2 ends and roof replacement, and men's women's and family washrooms.	Upgrade	219,983	69,855	
CS-20-0001	Ball Diamond Rehabilitation (Annual)	Annual cost to maintain baseball diamonds.	Replacement	15,000	15,000	
CS-20-0019	Unit 810-10 Ford F150 Replacement		Replacement	65,000	65,000	
CS-20-0020	Replace 2009 Kioti Tractor (Asset 24068)	Replace tractor.	Replacement	57,700	57,700	
CS-20-0042	Tennis Courts in Essex Centre	New Tennis courts in Essex Centre as per Parks and Rec Master Plan.	New	240,000		240,000
CS-20-0046	Top Dresser for Sports Fields	Different Unit	New	23,000		
CS-20-0053	Dog Park Agility Items	Dog park agility items	New	8,840		
CS-20-0056	Heritage Train Station landscaping	Continue to develop grounds around Essex Train station.	New	8,000		
CS-20-0059	Two (2) Main Road Closure signs for Events	To have signs in house for special events.	New	11,000		
CS-20-0065	Bridlewood Pavilion		Replacement	16,027	16,027	
CS-20-0066	Fence Around Harrow Tennis Court	Replace fence as needs replacement.	Replacement	11,300	11,300	
CS-20-0070	Replace Rubber at Colchester Playground	Replace Rubber at Colchester Playground.	Replacement	65,500	65,500	
CS-20-0075	Heritage Train Station and Caboose Upgrades	Heritage Train Station and Caboose Upgrades.	Upgrade	15,000	7,500	
CS-20-0085	Replace Toro Wide Area Mower 880 Parks (Harrow)	Parks Mower 880; Asset Management ID 24279; Fully Amortized May 2018.	Replacement	83,000	83,000	
CS-20-0090	Replace 4WD tractor , CK 27	Tires and snow blade for winter control.	Replacement	38,000	38,000	
CS-20-0099	Replace Sidewalks Sadlers Park	Replace path at Keown entrance as areas are severely deteriorating.	Replacement	34,000	34,000	
CS-20-0100	Replace Drop Salt Spreader	Replace drop salt spreader.	Replacement	10,000	10,000	
CS-20-0102	Replace Parks Small Equipment	Push mowers and weed whippers.	Replacement	7,000	7,000	
CS-20-0103	New Rototiller for Beds	Required to work flower beds throughout Town	New	2,000		
CS-20-0104	Areifier- Verti Quack	Sport field equipment required for turf maintenance.	Replacement	26,000	26,000	
CS-20-0106	New Bleachers for Ball Diamonds	Replace wooden bleachers.	Replacement	15,000	15,000	
Total - Parks				971,350	520,882	240,000
Division: Miscellaneous Recreation Programs						
CS-19-0060	New Signage Shared with Essex Library	Annual costs to maintain soccer fields.	Replacement	64,500	24,150	
CS-20-0002	Soccer Field Upgrades	Annual costs to maintain soccer fields.	Replacement	15,000	15,000	
CS-20-0067	Field Sprayer (Laser) Replacement for Harrow Soccer Complex	Field Sprayer (Laser) Replacement for Harrow Soccer Complex.	Replacement	2,600	2,600	
CS-20-0105	Carnegie Building Front Steps and Wall Repairs	Needed repairs as per Engineers	Upgrade	15,000	7,500	
CS-19-0046	New roof Top unit for ECC Gym - (CS-19-46)	New HVAC unit plus BAS hook up and removal of exiting unit heater, cap off water feeds.	Upgrade	75,000	11,600	
CS-20-0051	Painting, Interior Essex Community Centre	Painting, Interior Essex Community Centre.	New	10,000		
CS-20-0055	McGregor Flag Poles	Flag poles to be located at McGregor Community Centre.	New	6,000		
CS-20-0057	Install exterior ladders to gain access to the gymnasium roof at the Essex Community Centre	Install exterior ladders to gain access to the gymnasium roof at the Essex Community Centre as per Health and Safety.	New	26,364		
CS-20-0058	Remove the four unit heaters and the supply and return feed water lines in the gymnasium at the Essex Community Centre	Remove the four unit heaters and the supply and return feed water lines in the gymnasium at the ECC with new HVAC.	New	12,000		
CS-20-0062	FOBS at Colchester Com Centre	Install FOB building access system to match other community centres.	New	5,000		
CS-20-0089	Essex Community Centre, up grade BAS to Gymnasium Unit	Essex Community Centre, up grade BAS to Gymnasium Unit - system required to control new HVAC system remotely.	New	9,000		
CS-20-0091	Roof Restoration for the Essex Community Centre	Roof Restoration for the Essex Community Centre.	Replacement	200,000	200,000	
CS-20-0107	Replace Sidewalk McGregor Community Centre	Replace sidewalk around playground.	Replacement	9,900	9,900	
Total - Miscellaneous Recreation Programs				450,364	270,750	-

Funding Sources				Funding	Funded from Taxation	Operating Impact						
Grant Funding	Long-Term Debt	Other	Prior Year Funding			Tab	Cost Centre	2020	2021	2022	2023	2024
				15,150	-							
				5,681	-							
				3,600	-							
				35,421	-							
	808,000		1,775,000	2,700,000	-		227	-	213,471	213,471	213,471	213,471
				18,500	-							
				-	12,100							
				-	20,000							
				54,000	-							
			300,000	300,000	-		228		67,388	67,388	67,388	67,388
-	808,000	-	2,075,000	3,132,352	32,100			-	280,859	280,859	280,859	280,859
			80,274	150,129	69,855							
				15,000	-							
				65,000	-							
				57,700	-							
				240,000	-		520		4,000	4,000	4,000	4,000
				-	23,000							
				-	8,840							
				-	8,000							
				-	11,000							
				16,027	-							
				11,300	-							
				65,500	-							
				7,500	7,500							
				83,000	-							
				38,000	-							
				34,000	-							
				10,000	-							
				7,000	-							
				-	2,000							
				26,000	-							
				15,000	-							
-	-	-	80,274	841,156	130,195			-	4,000	4,000	4,000	4,000
		10,350	30,000	64,500	-							
				15,000	-							
				2,600	-							
				7,500	7,500							
			51,800	63,400	11,600							
				-	10,000							
				-	6,000							
				-	26,364							
				-	12,000							
				-	5,000							
				-	9,000							
				200,000	-							
				9,900	-							
-	-	10,350	81,800	362,900	87,464			-	-	-	-	-

2020 Capital

				2020 Capital Budget		
Project Number	Project Name	Project Description	Asset Management Status	Project Cost		
					Lifecycle Reserve	Other Reserve
Division: Arena						
CS-20-0043	Essex Centre Sports Complex Dressing Room Floor Upgrade	Essex Centre Sports Complex Dressing Room Floor Upgrade.	Replacement	77,000	77,000	
CS-20-0069	Sliding Accessible Entrance Doors at Essex Centre Sports Complex	Install sliding doors at ECSC entrances. Do 1 set per year for the next 4 years.	Upgrade	10,000	5,000	
CS-20-0083	Replace Ice Resurfacer 850-00 at Essex Centre Sports Complex	Replace Ice Resurfacer 850-00 at Essex Centre Sports Complex.	Replacement	92,000	92,000	
CS-20-0086	Shower/Dressing Room Upgrades - Harrow Arena	Shower/Dressing Room Upgrades - Harrow Arena.	Upgrade	30,000	15,000	
CS-20-0097	Landscaping New Islands Parking Lot	Beach stone and plant materials	New	7,500		
CS-20-0098	Burnishing Machine for Vinyl Floors	To burnish tile floors for Town facilities.	New	2,800		
CS-20-0113	Essex Arena Projection system in Barnett Room	Essex Arena Projection system in Barnett Room.	New	3,500		
CS-20-0114	Essex Arena Mortar and Block Repairs Essex Centre Sports Complex	Replace mortar that is loose , cracked and missing. Replace broken blocks.	Replacement	38,000	38,000	
CS-20-0116	Essex Arena Replace 4 condensing boilers	Moved from 2022 & 2023 to 2020, units are coming apart inside.	Replacement	63,200	63,200	
CS-20-0117	Therman Scan ,Torque Connections , Clean and Inspect all Internal Transformers and Main Switch	Main switch and all transformers at Essex Centre Sports Complex.	Upgrade	5,500	2,750	
CS-20-0118	Excavate Floor to Expose Heater Trench and Drainage	Floor heaving from ground water.	Upgrade	85,000	42,500	
CS-20-0038	Ice Resurfacer at Harrow Centre Sports Complex	Olympia Ice Resurfacer; Asset ID 24286; Fully Amortized Date October 2019. Replacement of Harrow Olympia. Takes 1 year to have made.	Replacement	90,900	90,900	
CS-20-0072	Sliding Accessible Doors to Dressing Rooms and Harrow Sports Complex	Sliding Accessible Doors to Dressing Rooms and Harrow Sports Complex.	Upgrade	10,000	5,000	
CS-20-0084	Replace HVCA unit Harrow Arena -5 ton unit	Daycare 2020 budget - Pre-Approved	Replacement	19,000	19,000	
CS-20-0092	Mid Roof Harrow Arena Replacement	Mid Roof Harrow Arena Replacement.	Replacement	175,000	175,000	
Total - Arenas				709,400	625,350	-
Division: Essex Recreation Complex						
CS-20-0024	Backup Filter Pump Motor Replacement at Essex Recreation Complex	Backup Filter Pump Motor Replacement at Essex Recreation Complex.	Replacement	2,910	1,455	
CS-20-0004	Acid wash lap pool deck, viewing area, and change room tiles at Essex Recreation Complex	Maintenance of floors and lap pool at ERC.	Replacement	6,627	3,314	
CS-20-0108	NEW - Cameras for ERC	Cameras removed with construction of new High School.	New	28,500		
CS-20-0109	Remove Vinyl Flooring and Replace Tiling - Alternate Change Room Floors	Remove vinyl floor/replace with tile Phase 2 of 2019 project.	Replacement	25,000	25,000	
CS-20-0110	Essex Recreation Complex General Painting - Lobby's/Change rooms	Interior painting has not been done in 15 years.	Upgrade	15,000	7,500	
Total - Essex Recreation Complex				78,037	37,269	-
Division: Harbour						
CS-20-0007	Float B - 30 Finger Docks Replacement	Replacement of B docks and fingers to provide full service.	Replacement	178,059		178,059
CS-20-0111	Replace Interlock Brick with Concrete at Gas Dock and Boat Launch Areas.	Replace Interlock Brick with Concrete at Gas Dock and Boat Launch Areas.	Upgrade	20,000	10,000	
Total - Harbour				198,059	10,000	178,059
Division: Arts, Culture and Tourism						
CS-20-0047	Mural/Sculpture	ACT committee budgeted for a new mural in 2020.	New	10,000		
Total - Arts, Culture and Tourism				10,000	-	-
Total - Community Services				5,581,662	1,542,602	589,059

Funding Sources				Funding	Funded from Taxation	Operating Impact						
Grant Funding	Long-Term Debt	Other	Prior Year Funding			Tab	Cost Centre	2020	2021	2022	2023	2024
				77,000	-							
				5,000	5,000							
				92,000	-							
				15,000	15,000							
				-	7,500							
				-	2,800							
				-	3,500							
				38,000	-							
				63,200	-							
				2,750	2,750							
				42,500	42,500							
				90,900	-							
				5,000	5,000							
				19,000	-							
				175,000	-							
-	-	-	-	625,350	84,050			-	-	-	-	-
		1,455		2,910	-							
		3,314		6,627	-							
		14,250		14,250	14,250							
				25,000	-							
		7,500		15,000	-							
-	-	26,519	-	63,787	14,250			-	-	-	-	-
				178,059	-							
				10,000	10,000							
-	-	-	-	188,059	10,000			-	-	-	-	-
				-	10,000							
-	-	-	-	-	10,000			-	-	-	-	-
-	808,000	36,869	2,237,074	5,213,604	368,059			-	284,859	284,859	284,859	284,859

2020 Capital

				2020 Capital Budget		
Project Number	Project Name	Project Description	Asset Management Status	Project Cost		
					Lifecycle Reserve	Other Reserve
Department - Development Services						
Division: Planning						
PZ-19-0007	New Development Standards Manual Update	Procurement of services to create an updated Development Standards Manual including desing standards for all related municipal assets.	New	70,000		
PZ-19-0009	CWATS - 2019	Two Bike Repair Stations, Essex participation in Bike Rodeo, Bike Valet, OPP Bike Helmet Program.	New	20,000		
PZ-20-0009	CWATS - 2020	Two Bike Repair Stations, Essex participation in Bike Rodeo, Bike Valet, OPP Bike Helmet Program.	New	20,000		
PZ-20-0002	Official Plan Review - Phase 1	Mandated under the PPS to be initiated in 2020; Colchester Secondary Plan Update to be included in OP Review; Completion date dependent on County OP completion date.	New	60,000		20,000
PZ-20-0008	Regional Community Energy Plan	ERCA-driven project with participation from all lower tier municipalities at \$15,000 each.	New	15,000		
Total - Planning				185,000	-	20,000
Division: Building						
BD-20-0001	2010 Dodge Ram 1/2 Pickup Replacement*	Asset ID 23532; Fully Amortized Date January 2020.	Replacement	42,500	8,500	34,000
Total - Building				42,500	8,500	34,000
Division: Economic Development						
GG-19-0016	Wayfinding Signage Project	Anticipated additional costs to complete the Wayfinding Signage Project	Upgrade	17,200	2,500	
Total - Economic Development				17,200	2,500	-
Total - Development Services				244,700	11,000	54,000

Funding Sources						Operating Impact						
Grant Funding	Long-Term Debt	Other	Prior Year Funding	Funding	Funded from Taxation	Tab	Cost Centre	2020	2021	2022	2023	2024
			70,000	70,000	-							
		10,000	10,000	20,000	-							
		10,000		10,000	10,000							
			40,000	60,000	-							
				-	15,000							
-	-	20,000	120,000	160,000	25,000			-	-	-	-	-
				42,500	-							
-	-	-	-	42,500	-			-	-	-	-	-
			12,200	14,700	2,500							
-	-	-	12,200	14,700	2,500			-	-	-	-	-
-	-	20,000	132,200	217,200	27,500			-	-	-	-	-

2020 Capital

				2020 Capital Budget		
Project Number	Project Name	Project Description	Asset Management Status	Project Cost		
					Lifecycle Reserve	Other Reserve
Department - Public Works						
Division: Equipment						
PW-19-0039	Grinder Replacement	With increased liability in trip and fall situations there is a requirement for a larger more rugged grinder to perform ongoing sidewalk and uplift issues	Replacement	11,000	8,500	
PW-20-0001	15-Ton Dump/Plow Unit #532	Asset ID 23208; Fully Amortized Date December 2019.	Replacement	280,000	280,000	
PW-20-0003	Minor Equipment	This consists of yearly minor equipment that is required that exceeds the procurement threshold for capital equipment and falls outside of small tools.	Replacement	15,000	15,000	
PW-20-0005	Annual Door Replacement Program	Regular replacement of a single overhead door yearly ensures proper maintenance of these facility doors. Furthermore we utilize adequate panels from old doors to improve any existing damaged doors to assist in extension of asset.	Replacement	10,000	10,000	
PW-20-0032	Light Duty Tandem Asphalt Roller	Currently we have been renting a roller to perform asphalt padding, profiling, shoulder work and preparation for capital roads projects.	New	50,000		50,000
PW-20-0036	Air compressor	End of useful life and requires replacement.	Replacement	5,500	5,500	
PW-20-0037	Air conditioner recharge unit	New vehicles have a different type of fluid that our old unit cannot run as a result we will require this unit to perform maintenance in our	Replacement	10,500	10,500	
PW-20-0039	Building Expansion and Washroom Upgrade	Due to level of service and growth, the existing facility no longer meets operational requirements. Building expansion will allow more effective and efficient operations, as well as protection of valuable assets.	Upgrade	500,000	37,500	462,500
PW-20-0038	Essex Operations Yard (Capital Equipment Stock)	To ensure more effective and efficient level of service, stocking the Essex Operations Yard with the necessary equipment will allow us to respond and operate better.	Replacement	20,000	20,000	
Total - Equipment and Administration				902,000	387,000	512,500
Division: Roads and Roadside						
PW-19-0006	Gore Road (Wright Road to CR13)	Recommended to continue with Cold Rolled recycled asphalt paving.	Replacement	376,000	-	
PW-19-0007	8th Concession (Ferris to CR23)	Recommended to continue with Cold Rolled recycled asphalt paving.	Replacement	365,000	-	
PW-19-0034	Gordon, Wilson and Station Street Area	A carry-forward project. The asphalt milling and resurfacing is being done jointly with watermain replacement.	Replacement	150,000	-	
PW-20-0011	Overlay 6km (Approximately \$25,000/km) (Maintenance)	Yearly perform maintenance overlay on select rural tar and chip roads to extend their useful life.	Replacement	150,000	-	
PW-20-0041	5th Concession (CR11 to Smith Road)	Recommend reconstruction utilizing pulverizing, base addition, regrade and profile and complete with tar and chip resurfacing.	Replacement	450,000	-	
PW-19-0004	Queen Street	construction increase	Replacement	185,000	-	
PW-20-0042	Yearly Sidewalk maintenance	Yearly renewal of various sidewalks within the municipality. This item was previously contained within the CWATS/trail capital budget.	Upgrade	50,000	-	
Total - Roads and Roadside				1,726,000	-	

Funding Sources				Funding	Funded from Taxation	Operating Impact						
Grant Funding	Long-Term Debt	Other	Prior Year Funding			Tab	Cost Centre	2020	2021	2022	2023	2024
			2,500	11,000	-							
				280,000	-							
				15,000	-							
				10,000	-							
				50,000	-							
				5,500	-							
				10,500	-							
				500,000	-							
				20,000	-							
-	-	-	2,500	902,000	-			-	-	-	-	-
35,000			341,000	376,000	-							
35,000			330,000	365,000	-							
			150,000	150,000	-							
150,000				150,000	-							
450,000				450,000	-							
110,000			75,000	185,000	-							
50,000				50,000	-							
830,000	-	-	896,000	1,726,000	-			-	-	-	-	-

2020 Capital

				2020 Capital Budget		
Project Number	Project Name	Project Description	Asset Management Status	Project Cost		
					Lifecycle Reserve	Other Reserve
Division: Stormwater Management						
PW-20-0021	Engineering for Various Bridges and Culverts	In order to be prepared for construction, engineering of select bridges and culverts are done a year in advance.	Replacement	40,000	40,000	
PW-20-0023	6th Concession and Marsh Bridge 200501	Bridge is in generally good condition, wearing surface requires replacement. Waterproofing top of structure at this time will extend the current good condition of this structure.	Replacement	35,000	-	
PW-20-0030	McCormick Sideroad and 14th Concession Culvert 208002	Bottom of pipe culvert has rusted through over most of the west end of pipe. Replace with precast concrete round culvert.	Replacement	260,000	71,016	
PW-20-0031	Coulter Sideroad and 9th Concession Culvert 102205	Culvert walls and floor have major corrosion and perforations. Concrete pipe or box culvert is recommended as replacement.	Replacement	294,800	-	
PW-20-0034	Richmond Drain Bank Stabilization	The existing Municipal drain has been experiencing slumping failure along the north bank causing the edge of gravel adjacent to the 5th Concession Road to displace down the side slopes.	Upgrade	275,000	83,055	
PW-19-0048	Stormwater Partnership Improvements	Storm water partnership improvements that occur as a result of development, such as the Harrow Junior School and Rush Drain (Essex Towne Center).	Upgrade	200,000		
PW-20-0044	Queen Street	Storm Sewer improvements along Queen	Replacement	290,000	95,700	194,300
Total - Stormwater Management				1,394,800	289,771	194,300
Total - Public Works				4,022,800	676,771	706,800
Total - Property Tax Supported				14,693,332	2,255,373	2,087,950

Funding Sources				Funding	Funded from Taxation	Operating Impact						
Grant Funding	Long-Term Debt	Other	Prior Year Funding			Tab	Cost Centre	2020	2021	2022	2023	2024
				40,000	-							
35,000				35,000	-							
188,984				260,000	-							
294,800				294,800	-							
				83,055	191,945							
			150,000	150,000	50,000							
				290,000	-							
518,784	-	-	150,000	1,152,855	241,945			-	-	-	-	-
1,348,784	-	-	1,048,500	3,780,855	241,945			-	-	-	-	-
2,897,299	3,249,670	56,869	3,440,644	13,987,805	705,527			-	514,859	514,859	514,859	514,859

2020 Capital

				2020 Capital Budget		
Project Number	Project Name	Project Description	Asset Management Status	Project Cost		
					Lifecycle Reserve	Other Reserve
User Rated Supported						
Department: Environmental Services						
Division: Water						
WW-20-0001	Equipment Contingency for Wards 1 and 2 Distribution and Transmission (50%)	Replacement of equipment, maintenance issues, design investigations with respect to the water distribution systems.	Upgrade	8,500		8,500
WW-20-0002	Equipment Contingency for Wards 3 and 4 Distribution and Transmission (50%)	Replacement of equipment, maintenance issues, design investigations with respect to the water distribution systems.	Upgrade	8,500		8,500
WW-20-0003	Harrow Colchester South Water Treatment Plant Contingency for Wards 3 and 4	Equipment, process, design considerations and facility replacements and improvements for the Harrow Colchester South Water Treatment Plant.	Upgrade	165,000		165,000
WW-20-0004	Gordon, Wilson, Station Street Phase 1 (Construction)	The watermain is at the end of its life expectancy and warrants replacement. Would look to pave in the following year.	Replacement	850,000		850,000
WW-20-0006	Backflow Prevention and Monitoring Program Wards 1/2 Maintenance	To help ensure the delivery of safe and clean drinking water to our residents, the Town of Essex has introduced a program which regulates how property owners connect to the Town's water supply. Ensuring the installation of backflow prevention devices can prevent the possible contamination of the Town's drinking water system.	Upgrade	5,000		5,000
WW-20-0007	Backflow Prevention and Monitoring Program Wards 3/4 Maintenance	To help ensure the delivery of safe and clean drinking water to our residents, the Town of Essex has introduced a program which regulates how property owners connect to the Town's water supply. Ensuring the installation of backflow prevention devices can prevent the possible contamination of the Town's drinking water system.	Replacement	5,000		5,000
WW-20-0008	Water Rate Financial Plan	This study extends off of those studies, updating the analysis for current capital and operating forecasts, costing for lifecycle cost requirements, current consumption and customer profiles. The results of this analysis provide updated water and wastewater base charges and volume rates for customers within the Town of Essex.	Upgrade	7,000		7,000
WW-20-0009	Pickup Truck Unit #607 Replacement	Truck is at useful life expectancy and requires replacement.	Replacement	45,000		45,000
WW-20-0010	OWCA Capital Recommendations	OCWA recommended capital improvements to Harrow Colchester South Water Treatment Plant.	Upgrade	540,000		540,000
WW-20-0013	Victor Watermain (ward 1)	The watermain is at the end of its life expectancy and warrants replacement. Would look to pave in the following year.	Replacement	140,000		140,000
WW-20-0014	Queen Watermain (Ward 4)	The watermain is at the end of its life expectancy and warrants replacement.	Replacement	340,000		340,000
WW-20-0012	Irwin Watermain (Ward 1)	The watermain is at the end of its life expectancy and warrants replacement but will only be replaced in conjunction with road reconstruction.	Replacement	335,000		335,000
Total - Water				2,449,000	-	2,449,000

Funding Sources				Funding	Funded from Taxation	Operating Impact						
Grant Funding	Long-Term Debt	Other	Prior Year Funding			Tab	Cost Centre	2020	2021	2022	2023	2024
				8,500	-							
				8,500	-							
				165,000	-							
				850,000	-							
				5,000	-							
				5,000	-							
				7,000	-							
				45,000	-							
				540,000	-							
				140,000	-							
				340,000	-							
				335,000	-							
-	-	-	-	2,449,000	-			-	-	-	-	-

2020 Capital

				2020 Capital Budget		
Project Number	Project Name	Project Description	Asset Management Status	Project Cost		
					Lifecycle Reserve	Other Reserve
Division:	Sanitary Sewer					
SS-20-0001	Treatment - Ward 1 Contingency	Equipment, process, facility replacements and improvements for the Essex Pollution Control Plant and North East Lagoons treatment facilities.	Upgrade	70,000		70,000
SS-20-0002	Treatment - Ward 3 Contingency	Equipment, process, facility replacements and improvements for the Colchester Lagoons treatment facility.	Upgrade	40,000		40,000
SS-20-0003	Treatment - Ward 4 Contingency	Equipment, process, facility replacements and improvements for the Harrow Sewage Works treatment facility.	Upgrade	40,000		40,000
SS-20-0004	Collection and Conveyance - Ward 1	Replacement of equipment, maintenance issues, design investigations with respect to the Essex Pollution Control Plant and North East Lagoon collection and conveyance systems.	Replacement	30,000		30,000
SS-20-0005	Collection and Conveyance - Ward 3	Replacement of equipment, maintenance issues, design investigations with respect to the Colchester Lagoon collection and conveyance system.	Replacement	32,500		32,500
SS-20-0006	Collection and Conveyance - Ward 4	Replacement of equipment, maintenance issues, design investigations with respect to the Harrow Lagoon collection and conveyance system.	Replacement	26,500		26,500
SS-20-0007	OWCA Capital Recommendations - Ward 1	OCWA recommended capital improvements to the Essex Pollution Control Plant and North East Lagoons.	Upgrade	75,000		75,000
SS-20-0008	OWCA Capital Recommendations - Ward 3	OCWA recommended capital improvements to the Colchester Lagoons.	Upgrade	262,000		262,000
SS-20-0009	OWCA Capital Recommendations - Ward 4	OCWA recommended capital improvements to the Harrow Lagoons.	Upgrade	750,000		750,000
Total - Sanitary Sewer				1,326,000	-	1,326,000
Total - Environmental Services				3,775,000	-	3,775,000
Total - User Rate Supported				3,775,000	-	3,775,000
TOTAL - Property Tax and User Rate Supported				18,468,332	2,255,373	5,862,950

Funding Sources				Funding	Funded from Taxation	Operating Impact						
Grant Funding	Long-Term Debt	Other	Prior Year Funding			Tab	Cost Centre	2020	2021	2022	2023	2024
				70,000	-							
				40,000	-							
				40,000	-							
				30,000	-							
				32,500	-							
				26,500	-							
				75,000	-							
				262,000	-							
				750,000	-							
-	-	-	-	1,326,000	-			-	-	-	-	-
-	-	-	-	3,775,000	-			-	-	-	-	-
-	-	-	-	3,775,000	-			-	-	-	-	-
2,897,299	3,249,670	56,869	3,440,644	17,762,805	705,527			-	514,859	514,859	514,859	514,859

"Provide fiscal stewardship and value for tax dollars to ensure the long-term financial health of the municipality."

2019-2022 Corporate Strategic Plan

Council and Administration Capital Budget Requests Outside of 2020 Budget

Proposed Projects Outside of 2020 Budget

				2020 Capital Budget		
Project Number	Project Name	Project Description	Asset Management Status	Project Cost	Lifecycle Reserve	Other Reserve
Administration Proposed Projects Removed from Budget						
AP-20-0001	Document Archiving Project		New	50,000		
AP-20-0002	Colchester Building Upper Parking Lot	Refurbish lot next to Colchester CC.	Replacement	200,000		
AP-20-0003	NEW- Pay and Display Parking Metre Systems	Add metres at 2 public lots in Colchester.	New	32,000		
AP-20-0004	Washrooms in Heritage Park	Washrooms in Heritage Park.	New	300,000		
AP-20-0005	Colchester Parking Along Jackson New area Along Fence	Pave current angle parking along Jackson Street in Colchester	New	120,000		
AP-20-0006	Colchester Splash Pad Lot		Replacement	105,000		
AP-20-0007	Shave/Pave road- Top of Hill to Lower Level - Colchester		Replacement	75,000		
AP-20-0008	Caboose repairs to stop water only. Unit out Front	Heritage Essex caboose needs repairs to be sustainable.	New	10,000		
AP-20-0009	Harrow Arena Cameras	Add camera system to Harrow Arena	New	25,000		
AP-20-0011	Victoria Street (Oxley Area)	Continuation of reconstruction of beach roads.	New	45,000		
AP-20-0012	Asphalt Mill and Pave (approx. 6km)	Program to mill and asphalt approximately 6 km of roadway.	Replacement	150,000		
AP-20-0013	Victor Avenue Reconstruction	Design and reconstruction of Victor Street from Victoria Avenue to Laird Avenue including water, storm, curbs, etc.	Replacement	600,000		
AP-20-0014	North Malden (CR15 to Brush Sideroad)	Continuation of full depth reconstruction of North Malden.	Replacement	600,000		
AP-20-0015	5 ton Dump/Plow	The current 3 Ton snow plow is not fit for today's needs and it is proposed to upgrade this vehicle to a 5 ton chassis role off system to complement the existing similar fleet equipment. This is a multi-purpose vehicle allowing efficient Operations. The increased capacity in this truck will increase our level of service.	Replacement	260,000		
Total				2,572,000	-	-
Council Proposed Projects Not Included in Budget						
CP-17-0001	Heritage Park Water Feature	Addition of passive water fountain.	New	250,000		
CP-17-0002	Outdoor Gym Equipment in Colchester	Outdoor fitness equipment.	New	75,000		
CP-17-0005	Accessible Paths in Heritage Park		New	60,000		
CP-17-0006	New Pylon Sign at Co-An Park	Replace current sign at Co-An Park.	Replacement	30,000		
CP-17-0007	New Land for Soccer at Co-An Park		New	300,000		
CP-17-0008	Pave Co-An Park Parking Lot		Upgrade	440,000		
CP-17-0009	Playground Structure at Co-An Park		Replacement	200,000		
CP-17-0010	Pave Old Car Wash Parking Lot	Harrow	Upgrade	204,445		
CP-20-0002	General Replacement at Co-An Park		Replacement	56,250		
CP-20-0003	Land Purchase/ Splash Pad at Co-An Park		New	300,000		
CP-20-0004	Sidewalk/Trail on Irwin between County Road 34 and Gosfield Townline	Previous Council request to place a sidewalk/trail on Irwin between CR34 and Gosfield Townline.	New	120,000		
CP-20-0005	4th Concession (CR23 to McCormick)	Reconstruction of the 4th Concession from CR23 to McCormick. Requires asphalt padding for wheel rutting and potential culvert replacements. Construction method to be determined.	Replacement	550,000		
CP-20-0006	Old Malden Road (14th Conc to 12th Conc)	Base stone was installed several years ago with the anticipation of tar and chip. Based on Council direction this has not happened. Estimate includes a top-up of base stone and two lifts of tar and chip.	Upgrade	210,000		
CP-20-0007	Water Access at Bell Park		Replacement	20,000		
CP-20-0009	Victoria Ave (Day St to Hwy #3)	Removal and replacement of asphalt surface, regrade and compact existing base.	Replacement	675,000		
CP-20-0010	Harrow Arena Parking Lot Refurbished		Replacement	630,000		
CP-20-0011	Co-An Park New Playground, Parking Lot, Soccer Field		New	615,000		
CP-20-0012	Co-an Park new Playground / Soccer Fields		New	175,000		
CP-20-0013	Co-An Park Soccer fields/ Splash pad		New	100,000		
CP-20-0014	Irwin St (Arthur to Gosfield)		Replacement	2,000,000		
CP-20-0015	Viscount Parkway (Victoria to Viscount Comm Centre)	Removal and replacement of asphalt surface, regrade and compact existing base. Enhance sub-drain and catch basin.	Upgrade	110,000		
CP-20-0016	Intersection (Maidstone-Townline-Arthur-Gosfield)	Reconstruction of intersection based on initial preferred solution of round-about. Dependent on property acquisition, etc. Currently investigating reduced scope options with the County Traffic Engineer.	Upgrade	4,000,000		
CP-20-0017	Walkway on Maidstone from Talbot to Tim Hortons	Active Transportation link between Talbot Street and South Talbot Street.	New	600,000		
CP-20-0018	3rd Concession paved sidewalk	Street (CR11) and Sellick Drive.	New	120,000		
CP-20-0019	Sidewalks (Thomas and Bell)	Continuation of Sidewalks on Thomas and Bell.	New	50,000		
Total				11,890,695	-	-

Funding Sources				Funding	Funded from Taxation	Operating Impact						
Grant Funding	Long-Term Debt	Other	Prior Year Funding			Tab	Cost Centre	2020	2021	2022	2023	2024
				-	50,000							
				-	200,000							
				-	32,000			20,000	20,000	20,000	20,000	20,000
				-	300,000							
				-	120,000							
				-	105,000							
				-	75,000							
				-	10,000							
				-	25,000							
				-	45,000							
				-	150,000							
				-	600,000							
				-	600,000							
				-	260,000							
-	-	-	-	-	2,572,000	-	-	20,000	20,000	20,000	20,000	20,000
				-	250,000							
				-	75,000							
				-	60,000							
		15,000		15,000	15,000							
		150,000		150,000	150,000							
		220,000		220,000	220,000							
		100,000		100,000	100,000							
				-	204,445							
		28,125		28,125	28,125							
		150,000		150,000	150,000							
				-	120,000							
				-	550,000							
				-	210,000							
				-	20,000							
				-	675,000							
				-	630,000							
		307,500		307,500	307,500							
		87,500		87,500	87,500							
		50,000		50,000	50,000							
				-	2,000,000							
				-	110,000							
				-	4,000,000							
				-	600,000							
				-	120,000							
				-	50,000							
-	-	1,108,125	-	1,108,125	10,782,570	-	-	-	-	-	-	-

"Improve the Town's capacity to meet the ongoing and future service needs of its citizens while ensuring the corporation is resilient in the face of unanticipated changes or disruptions."

2019-2022 Corporate Strategic Plan

Preliminary Draft

2021 to 2024 Capital Forecast

2018 and 2019 Approved Budget + 2020 Proposed Budget + 2021 to 2024 Capital Forecast

Project Number	Project Name	Project Description
Property Tax Supported		
Council		
2018	Council	
2019	Council	
GG-20-0002	Council Contingency	0
GG-20-0008	Harrow Streetscaping	Harrow Streetscape Project
GG-21-0002	Council Contingency	0
GG-21-0004	SAN Upgrade	0
GG-21-0001	Essex Streetscaping	Essex Streetscaping - inserting for discussion
GG-22-0001	Contingency (Council)	0
GG-23-0001	Contingency- Council	0
Total - Council		
Department: Other - Contracts / Special Levies		
Division: Police		
2018	Police	
2019	Police	
PD-20-0001	Contingency	0
PD-20-0002	Roof Access Ladder Harrow OPP Station	Health and safety
PD-21-0001	Contingency	0
PD-22-0001	Contingency	0
PD-23-0001	Police Contingency	0
PD-24-0001	Police Contingency	0
Total - Police		
Division: Cemeteries		
2018	Cemeteries	
2019	Cemeteries	
HS-20-0001	Columbarium	0
HS-20-0002	Signage at Cemeteries	0
HS-20-0003	Colchester Memorial Road Expansion	0
Total - Cemeteries		
Total - Other - Contracts / Special Levies		
Department: Corporate Services		
Division: Information Technology		
2018	Information Technology	
2019	Information Technology	
GG-20-0003	Wireless Network Upgrade All Essex Locations (Pool\ Arena\ Fire\ Water Tower \ Gesto	Essex Wireless WAN\ back haul from water tower, new Wireless WAN for Harrow including remote management, UPS managed switch 500mb fiber back haul. This will support Harrow Water\ Harrow Arena\ Harrow Public Works.
GG-19-0012	Network Security Audit	Third party will identify and evaluate the network, determine any threats or weaknesses in the network and determine the necessary measures to protect against those threats.
GG-19-0027	Server Room UPS Replacement	Replacement and additional server room and network backup batteries and power monitoring systems.
GG-20-0004	IT Strategic Plan	0
GG-19-0019	Video Surveillance Town Hall \ Gesto	0
Total - Information Technology		
Division: Corporate Services		
2018	Corporate Services	
2019	Corporate Services	
GG-20-0006	Roof Replacement at Town Hall	0
GG-20-0007	Widen the sidewalk on the west and east front areas at the Municipal Bldg	0
GG-24-0001	Fees and Charges Review	moved from 2022
Total - Corporate Services		
Total - Corporate Services		

Asset Management Status	Approved		Proposed	Forecast			
	2018 Project Costs	2019 Project Costs	2020 Project Costs	2021 Project Costs	2022 Project Costs	2023 Project Costs	2024 Project Costs
-	50,000						
-		50,000					
New			50,000				
Upgrade			4,590,170				
New				50,000			
Upgrade				45,000			
New				3,783,590			
New					50,000		
New						50,000	
	50,000	50,000	4,640,170	3,878,590	50,000	50,000	-
-	-						
-		25,000					
Upgrade			25,000				
New			30,000				
Replacement				25,000			
Replacement					25,000		
Replacement						25,000	
Replacement							25,000
	-	25,000	55,000	25,000	25,000	25,000	25,000
-	-						
-		10,600					
New			35,000				
New			5,000				
New			20,000				
	-	10,600	60,000	-	-	-	-
	-	35,600	115,000	25,000	25,000	25,000	25,000
-	25,500						
-		27,000					
Upgrade			50,000				
New			27,000				
Replacement			12,000				
New				40,000			
New						4,500	
	25,500	27,000	89,000	40,000	-	4,500	-
-	160,688						
-		222,000					
Replacement				63,000			
Upgrade					10,000		
New							36,700
	160,688	222,000	-	63,000	10,000	-	36,700
	186,188	249,000	89,000	103,000	10,000	4,500	36,700

2018 and 2019 Approved Budget + 2020 Proposed Budget + 2021 to 2024 Capital Fore

Project Number	Project Name	Project Description
Department: Community Services		
Division: Fire		
2018	Fire	
2019	Fire	
FD-20-0002	Hose Replacement Program	Replace a percentage of hoses annually.
FD-20-0003	Pager Replacement Program	0
FD-20-0005	Headset Replacement Program	3 sets replaced annually.
FD-20-0008	Personal Protective Equipment	Replace a percentage of bunker gear annually.
FD-19-0015	Station 2 Replacement	0
FD-20-0010	Replace Cutters Jaws of Life Station 3	Current equipment needs to be updated due to new vehicle designs and materials.
FD-20-0011	Ice Water Rescue Equipment (RIT Basket & PPE for Ice/Water Team)	Equipment approved by Council for an Ice Water Rescue Team.
FD-20-0012	New Notebook computers Each Station (3)	All reporting is done on computers and need to provide firefighters tools to complete required reports.
FD-20-0014	Firefighter Recruitment (6)	Cost of training and gear for new firefighters.
FD-19-0012	Replace Rescue 3 Station 3	Vehicle is 20 years old and insurance requirement for replacement.
FD-21-0002	Presonal Protective Equipment	0
FD-21-0003	Carbon Monoxide Detector Replacement	0
FD-21-0004	Replace Spreaders Jaws of Life Station 1	0
FD-21-0007	Hose Replacement Program	0
FD-21-0008	Pager Replacement Program	0
FD-21-0009	Replace Deputy Fire Chief's Vehicle	0
FD-21-0010	Replace Air Bag Kits at Each Station	0
FD-21-0011	Replace Fire Chief's Vehicle	0
FD-21-0013	Replace Portable Generator at Station 1	0
FD-20-0013	Emergency Management Training and Full Scale Exercise	0
FD-21-0015	Replace Engine 3A for Station 2	0
FD-21-0016	Ice Water Rescue Equipment (PPE for Ice/Water Team)	0
FD-22-0002	Presonal Protective Equipment	0
FD-22-0004	Hose Replacement Program	0
FD-22-0006	Replace Trucks 1 and 3 and Position New Truck at Station 2	0
FD-22-0007	Fire Station 3 Upgrades (Training and Washrooms)	0
FD-22-0008	Pager Replacement Program	0
FD-22-0009	Replace Rams Jaws of Life Station 2	0
FD-22-0010	Ice Water Rescue Equipment (RIT Basket & PPE for Ice/Water Team)	0
FD-23-0002	Presonal Protective Equipment	0
FD-23-0004	Hose Replacement Program	0
FD-23-0005	Pager Replacement Program	0
FD-23-0007	Replace Three (3) Notebook Computers	0
FD-23-0008	Replace Support 3 with a Squad (Pickup)	0
FD-23-0009	Fire Station 3 Upgrades (Training and Washrooms)	0
FD-23-0010	Ice Water Rescue Equipment Replacement Program	0
FD-23-0011	Radio System Upgrade	Require a upgrade to existing radio system by 2023
FD-24-0002	Presonal Protective Equipment	0
FD-24-0003	Helmet Replacement Program	0
FD-24-0005	Pager Replacement Program	0
FD-24-0006	Ice Water Rescue Equipment Replacement Program	0
FD-24-0007	Firefighter Recruitment (5)	0
FD-24-0008	Replace Thermal Imaging Camera's at Station's 1,2,& 3	0
FD-24-0009	Emergency Management Training and Full Scale Exercise	0
FD-24-0010	Station 3 Replacement	0
Total - Fire		

Asset Management Status	Approved		Proposed	Forecast			
	2018 Project Costs	2019 Project Costs	2020 Project Costs	2021 Project Costs	2022 Project Costs	2023 Project Costs	2024 Project Costs
-	452,815						
-		1,895,027					
Replacement			15,150				
Replacement			5,681				
Replacement			3,600				
Replacement			35,421				
Upgrade			2,700,000				
Replacement			18,500				
New			12,100				
New			20,000				
New			54,000				
Replacement			300,000				
Replacement				35,351			
Replacement				3,006			
Replacement				18,500			
Replacement				15,150			
Replacement				5,682			
Replacement				45,000			
Replacement				16,860			
Replacement				40,000			
Replacement				1,064			
New				13,000			
Replacement				600,000			
New				4,200			
Replacement					32,837		
Replacement					15,302		
Replacement					1,500,000		
Upgrade					125,000		
Replacement					5,738		
Replacement					18,500		
New					9,400		
Replacement						32,837	
Replacement						15,302	
Replacement						5,738	
Replacement						10,000	
Replacement						110,000	
Upgrade						125,000	
New						4,500	
Upgrade						500,000	
Replacement							25,707
Replacement							3,213
Replacement							5,738
Replacement							4,500
Replacement							45,000
Replacement							6,000
New							13,000
Upgrade							2,500,000
	452,815	1,895,027	3,164,452	797,813	1,706,777	803,377	2,603,158

2018 and 2019 Approved Budget + 2020 Proposed Budget + 2021 to 2024 Capital Fore

Project Number	Project Name	Project Description
Division: Parks		
2018	Community Services	All Community Services as it was all grouped prior to 2020 Budget.
2019	Community Services	All Community Services as it was all grouped prior to 2020 Budget.
CS-19-0056	New Family washroom at the Essex Splash Pad Building	Cost includes demo of 2 ends and roof replacement, and men's women's and family washrooms.
CS-20-0001	Ball Diamond Rehabilitation (Annual)	Annual cost to maintain baseball diamonds.
CS-20-0019	Unit 810-10 Ford F150 Replacement	0
CS-20-0020	Replace 2009 Kioti Tractor (Asset 24068)	Replace tractor.
CS-20-0042	Tennis Courts in Essex Centre	New Tennis courts in Essex Centre as per Parks and Rec Master Plan.
CS-20-0046	Top Dresser for Sports Fields	Different Unit
CS-20-0053	Dog Park Agility Items	Dog park agility items
CS-20-0056	Heritage Train Station landscaping	Continue to develop grounds around Essex Train station.
CS-20-0059	Two (2) Main Road Closure signs for Events	To have signs in house for special events.
CS-20-0065	Bridlewood Pavilion	0
CS-20-0066	Fence Around Harrow Tennis Court	Replace fence as needs replacement.
CS-20-0070	Replace Rubber at Colchester Playground	Replace Rubber at Colchester Playground.
CS-20-0075	Heritage Train Station and Caboose Upgrades	Heritage Train Station and Caboose Upgrades.
CS-20-0085	Replace Toro Wide Area Mower 880 Parks (Harrow)	Parks Mower 880; Asset Management ID 24279; Fully Amortized May 2018.
CS-20-0090	Replace 4WD tractor , CK 27	Tires and snow blade for winter control.
CS-20-0099	Replace Sidewalks Sadlers Park	Replace path at Keown entrance as areas are severely deteriorating.
CS-20-0100	Replace Drop Salt Spreader	Replace drop salt spreader.
CS-20-0102	Replace Parks Small Equipment	Push mowers and weed whippers.
CS-20-0103	New Rototiller for Beds	Required to work flower beds throughout Town
CS-20-0104	Areifier- Verti Quack	Sport field equipment required for turf maintenance.
CS-20-0106	New Bleachers for Ball Diamonds	Replace wooden bleachers.
CS-20-0039	Roof Restoration at Fieldhouse	0
CS-20-0040	Dugouts at Harrow Diamonds	0
CS-20-0049	Proper Garbage Cans in Spots	0
CS-21-0007	Replace Field Line Sprayer for Sports Fields in Essex	0
CS-21-0016	Replace 4 wheel tractor	0
CS-21-0019	Ball Diamond Rehabilitation (Annual)	0
CS-21-0020	Soccer Park Rehabilitation (Annual)	0
CS-21-0022	New Picnic Tables for Parks	0
CS-21-0026	Folding Tables for Jackson Park	0
CS-21-0038	Lights on Towers at Co-An Park	need new lights but need approval from Amherstburg for 1/2
CS-21-0045	Parks Outdoor Tools and Equipment	0
CS-21-0046	Parks Equipment Upgrades	0
CS-21-0036	Skateboard Ramp Replacement in Harrow	0
CS-21-0037	Skateboard Ramp Replacement in Essex	0
CS-21-0039	Upgrade Outdoor Washrooms at Fieldhouse (Accessible)	0
CS-21-0043	New Public Washrooms/Change Room at Harrow Splashpad	0
CS-21-0051	New garbage enclosures across municipality (1 per year at min)	0
CS-21-0053	Irrigation Heritage Gardens Train Station	0
CS-21-0056	Pickup Truck	0
CS-21-0058	Parking Lot Upgrades at Sadler's Park	Inflation costs
CS-21-0059	Water Feature at Heritage Park	0
CS-21-0060	Ampitheatre in Heritage Park	0
CS-21-0064	Electrical to Heritage Gardens	Increase for engineer and ELK Design
CS-21-0065	Hunter Park Replace Playground Equipment	0
CS-21-0066	NEW - Harrow Park Fence along Walnut	0
CS-21-0067	NEW - Replace 1984 John Deere 955 Tractor #879	0
CS-21-0068	Infielder for Harrow and Essex Parks	0
CS-21-0069	New Leaf and Turf Vacuum	inflation
CS-21-0070	New Cedar Shingles Train Station Shed	Will be needed
CS-21-0071	Sidewalk to playset at Hunter Park	0
CS-22-0012	New garbage enclosures across municipality (1 per year at min)	0
CS-22-0016	Ball Diamond Rehabilitation (Annual) in Essex and Harrow	0
CS-22-0017	Soccer Field Upgrades in Essex and Harrow	0
CS-22-0023	Tennis Court Rehabilitation in Harrow Centre	0
CS-22-0025	Paved Driveway at Co-An Park	Storm Water Plan and Engineering Only
CS-22-0026	Irrigation at Tot Park and Town Hall	0

Asset Management Status	Approved		Proposed	Forecast			
	2018 Project Costs	2019 Project Costs	2020 Project Costs	2021 Project Costs	2022 Project Costs	2023 Project Costs	2024 Project Costs
-	1,366,262						
-		1,922,027					
Upgrade			219,983				
Replacement			15,000				
Replacement			65,000				
Replacement			57,700				
New			240,000				
New			23,000				
New			8,840				
New			8,000				
New			11,000				
Replacement			16,027				
Replacement			11,300				
Replacement			65,500				
Upgrade			15,000				
Replacement			83,000				
Replacement			38,000				
Replacement			34,000				
Replacement			10,000				
Replacement			7,000				
New			2,000				
Replacement			26,000				
Replacement			15,000				
Replacement				50,180			
New				15,000			
New				14,878			
New				4,500			
Replacement				52,700			
Replacement				15,000			
Replacement				15,000			
Replacement				15,000			
New				8,000			
Replacement				60,000			
New				13,000			
Upgrade				45,150			
Replacement				43,781			
Replacement				43,511			
Upgrade				40,000			
New				150,000			
New				4,478			
New				20,000			
Replacement				45,000			
Upgrade				108,707			
New				120,000			
New				250,000			
New				92,100			
Replacement				200,000			
Replacement				25,000			
Replacement				35,000			
New				29,300			
New				22,527			
Replacement				7,000			
New				15,000			
New					4,478		
Replacement					15,000		
Replacement					15,000		
Replacement					97,080		
Upgrade					43,796		
New					20,000		

2018 and 2019 Approved Budget + 2020 Proposed Budget + 2021 to 2024 Capital Fore

Project Number	Project Name	Project Description
CS-22-0027	Parking Lot Upgrades at Sadler's Park	Cement curbs, asphalt and drainage
CS-22-0028	Replace 2 sets of Soccer Goals Essex	deteriorating
CS-23-0003	Pavilion at Colchester Park	
CS-23-0004	Ball Diamond Rehabilitation (Annual) in Essex and Harrow	
CS-23-0005	Replace Pick-up 867	
CS-23-0014	New Fencing Fairview Ave Max Miller Way West	
CS-23-0018	New garbage Enclosures	
CS-23-0019	Replace Bleachers Sports Field Essex	
CS-23-0020	Soccer Field Upgrades in Essex and Harrow	
CS-23-0022	Replace Fencing in Parks	
CS-23-0027	Replace Lights at Essex Diamond 1	
CS-23-0028	Relocate Pavilion at Sadler's Park	replace with new
CS-23-0029	Replace Kubota ATV with plough, sweeper and salter	replacing unit 878
CS-23-0030	Replace Furnace Train Station	life cycle
CS-23-0031	New Playset Stanton Park	upgrade required.
CS-23-0032	Cement Walkway into Stanton park	moved from 2021
CS-23-0033	Sadler's Park Power Pedestals	increase to allow for mechanical engineer for requirement to ELK and design
CS-23-0034	2 New Lights on Path from McKeown to Sadler's Park	moved from 2021
CS-23-0035	Co An Park Parkinglot Asphalt	New base asphalt and catchbasins.
CS-24-0001	NEW - Replace Pirate Ship Playground Equipment Colchester Park	
CS-24-0002	Ball Diamond Rehabilitation (Annual) in Essex and Harrow	annual
CS-24-0003	Soccer Field Upgrades in Essex and Harrow	annual
CS-24-0004	Upgrade Warning Track Diamond #1	warning track upgrades
Total - Parks		
Division:	Miscellaneous Recreation Programs	
CS-19-0060	New Signage Shared with Essex Library	Annual costs to maintain soccer fields.
CS-20-0067	Field Sprayer (Laser) Replacement for Harrow Soccer Complex	Field Sprayer (Laser) Replacement for Harrow Soccer Complex.
CS-20-0105	Carnegie Building Front Steps and Wall Repairs	Needed repairs as per Engineers
CS-19-0046	New roof Top unit for ECC Gym - (CS-19-46)	New HVAC unit plus BAS hook up and removal of exiting unit heater, cap off water feeds.
CS-20-0051	Painting, Interior Essex Community Centre	Painting, Interior Essex Community Centre.
CS-20-0057	Install exterior ladders to gain access to the gymnasium roof at the Essex Community Centre	Install exterior ladders to gain access to the gymnasium roof at the Essex Community Centre as per Health and Safety.
CS-20-0058	Remove the four unit heaters and the supply and return feed water lines in the gymnasium	Remove the four unit heaters and the supply and return feed water lines in the gymnasium at the ECC with new HVAC.
CS-20-0089	Essex Community Centre, up grade BAS to Gymnasium Unit	Essex Community Centre, up grade BAS to Gymnasium Unit - system required to control new HVAC system remotely.
CS-20-0091	Roof Restoration for the Essex Community Centre	Roof Restoration for the Essex Community Centre.
CS-20-0062	FOBS at Colchester Com Centre	Install FOB building access system to match other community centres.
CS-20-0055	McGregor Flag Poles	Flag poles to be located at McGregor Community Centre.
CS-20-0107	Replace Sidewalk McGregor Community Centre	Replace sidewalk around playground.
CS-21-0008	Replace Chair Lift at McGregor Community Centre	
CS-21-0009	Wireless Upgrade at McGregor Community Centre	
CS-21-0030	Replace Dishwasher at McGregor Community Centre	
CS-21-0073	New Dustless Air Conditioning Units for Three Program Room & OPP Satellite Office at ECC	upgrade from window units
CS-21-0074	Paint Interior MCC	interior freshen up
CS-21-0075	New Ceiling Lights in Four Program Rooms, OPP Offices and Halls ECC	for a more modern appearance.
CS-22-0009	Ventilation in Mechanical Room at McGregor Community Centre	
CS-22-0031	Painting Various Programs Rooms at the Essex Community Centre	program rooms and halls
CS-23-0037	Mid Roof Replacement at the Essex Community Centre	Required
CS-23-0038	Paint Gym Essex Community Centre	Upgrade scissor lift required
CS-24-0006	New Windows at ECC	Upgrade windows in program rooms required engineers specs
Total - Miscellaneous Recreation Programs		

Asset Management Status	Approved		Proposed	Forecast			
	2018 Project Costs	2019 Project Costs	2020 Project Costs	2021 Project Costs	2022 Project Costs	2023 Project Costs	2024 Project Costs
New					100,000		
Replacement					8,000		
New						350,000	
Replacement						15,000	
Replacement						50,000	
Replacement						58,000	
New						4,478	
Replacement						15,000	
Replacement						15,000	
Replacement						10,000	
Replacement						315,700	
Upgrade						23,000	
Replacement						35,000	
Replacement						9,000	
Upgrade						225,000	
New						31,000	
New						70,000	
New						30,000	
Replacement						266,857	
Replacement							300,000
Replacement							15,000
Replacement							15,000
Replacement							41,000
	1,366,262	1,922,027	971,350	1,559,812	303,354	1,523,035	371,000
Replacement			64,500				
Replacement			2,600				
Upgrade			15,000				
Upgrade			75,000				
New			10,000				
New			26,364				
New			12,000				
New			9,000				
Replacement			200,000				
New			5,000				
New			6,000				
Replacement			9,900				
Replacement				1,654			
Upgrade				13,441			
Replacement				3,640			
New				43,000			
Upgrade				10,000			
Upgrade				20,000			
Upgrade					3,500		
Upgrade					25,000		
Replacement						160,000	
Upgrade						15,000	
Upgrade							65,000
	-	-	435,364	91,735	28,500	175,000	65,000

2018 and 2019 Approved Budget + 2020 Proposed Budget + 2021 to 2024 Capital Fore

Project Number	Project Name	Project Description
Division: Arenas		
CS-20-0043	Essex Centre Sports Complex Dressing Room Floor Upgrade	Essex Centre Sports Complex Dressing Room Floor Upgrade.
CS-20-0069	Sliding Accessible Entrance Doors at Essex Centre Sports Complex	Install sliding doors at ECSC entrances. Do 1 set per year for the next 4 years.
CS-20-0083	Replace Ice Resurfacer 850-00 at Essex Centre Sports Complex	Replace Ice Resurfacer 850-00 at Essex Centre Sports Complex.
CS-20-0086	Shower/Dressing Room Upgrades - Harrow Arena	Shower/Dressing Room Upgrades - Harrow Arena.
CS-20-0097	Landscaping New Islands Parking Lot	Beach stone and plant materials
CS-20-0098	Burnishing Machine for Vinyl Floors	To burnish tile floors for Town facilities.
CS-20-0113	Essex Arena Projection system in Barnett Room	Essex Arena Projection system in Barnett Room.
CS-20-0114	Essex Arena Mortar and Block Repairs Essex Centre Sports Complex	Replace mortar that is loose , cracked and missing. Replace broken blocks.
CS-20-0116	Essex Arena Replace 4 condensing boilers	Moved from 2022 & 2023 to 2020, units are coming apart inside.
CS-20-0117	Therman Scan ,Torque Connections , Clean and Inspect all Internal Transformers and Main	Main switch and all transformers at Essex Centre Sports Complex.
CS-20-0118	Excavate Floor to Expose Heater Trench and Drainage	Floor heaving from ground water.
CS-20-0038	Ice Resurfacer at Harrow Centre Sports Complex	Olympia Ice Resurfacer; Asset ID 24286; Fully Amortized Date October 2019. Replacement of Harrow Olympia. Takes 1 year to have made.
CS-20-0072	Sliding Accessible Doors to Dressing Rooms and Harrow Sports Complex	Sliding Accessible Doors to Dressing Rooms and Harrow Sports Complex.
CS-20-0084	Replace HVCA unit Harrow Arena -5 ton unit	Daycare 2020 budget - Pre-Approved
CS-20-0092	Mid Roof Harrow Arena Replacement	Mid Roof Harrow Arena Replacement.
CS-19-0103	Harrow Arena Spectator Netting	0
CS-20-0069	Sliding Accessible Entrance Doors at Essex Centre Sports Complex	\$9,000/door x 4
CS-21-0001	Replace Ice Resurfacer 850-00 at Essex Centre Sports Complex	0
CS-21-0002	Replace Skate Sharpener at Harrow Centre Sports Complex	0
CS-21-0003	Replace Battery Operated Ice Edger at Harrow Centre Sports Complex	0
CS-21-0004	Replace Rink Netting at Essex Centre Sports Complex	0
CS-21-0005	Replace Ice Edger at Essex Centre Sports Complex	0
CS-21-0021	Painting ceiling in dressing rooms and , high wall areas at Essex Centre Sports Complex	0
CS-21-0028	Replace PC for the Eco Chill Systems controls	0
CS-21-0029	Projector Replacement at Essex Centre Sports Complex	0
CS-21-0035	Automatic Door Replacement at Essex Centre Sports Complex	0
CS-21-0041	Condensor Replacement at Harrow Arena	0
CS-21-0042	Ice Maintenance Level Laser	Inflation
CS-21-0044	Replace Rubber Tiles in Two dressing rooms and the Main Hall of Libro Rink	0
CS-21-0057	Two New Screw Compressor and Motor for the Compressor Room in Twin Pad Arenas	Actual costs
CS-21-0062	Fencing at Back of the Essex Centre Sports Complex	0
CS-21-0076	Replace the Eco Chill Main Control Panel	Outdated no longer have parts available for repairs. Ew Unit
CS-20-0069	Sliding Accessible Entrance Doors at Essex Centre Sports Complex	\$9,000/door x 4
CS-22-0002	Dressing Room Floor Upgrade (2 Rooms) at Essex Centre Sports Complex	0
CS-22-0003	Upgrade Lights to LED on Libro Rink at Essex Centre Sports Complex	0
CS-22-0006	Parking Lot Upgrades at Essex Centre Sports Complex	0
CS-22-0007	Roof Upgrades at Essex Centre Sports Complex	0
CS-22-0011	Puck Boards & Dasher Boards	0
CS-22-0013	Canteen Equipment Upgrades	0
CS-22-0032	New Screw Compressor and Motor	Moved from 2020
CS-22-0018	Painting Essex Centre Sports Complex, Interior	0
CS-22-0019	Replace the walking track mat	0
CS-22-0021	Replace the Rubber Floor in dressing rooms	0
CS-22-0022	Replace the Pakinglot Lights at the Essex Center Sports Complex to LED	Inflation
CS-22-0033	Replace the stall partitons in the dressing rooms at the Essex Centre Sports Complex	moved from 2021
CS-22-0034	Replace HVAC unit 4- office	This unit runs 12 months of the year. BAS is part of the replacement
CS-20-0069	Sliding Accessible Entrance Doors at Essex Centre Sports Complex	\$9,000/door x 4
CS-23-0006	Stand on Floor Scrubber	0
CS-23-0008	Replace Domestic Hot Water Tank	0
CS-23-0009	Puck Board on Shaheen Rink	0
CS-23-0010	Replace the Washroom Stall Partitions at ECSC	0
CS-23-0011	New Lights Drop ceiling Shaheen Rink	Mech Eng specs required to change duct work
CS-23-0012	New LED Lights Shaheen Rink	0
CS-23-0015	New HVAC units at Essex Centre Sports Complex	Inflation
CS-23-0016	Upgrades to heat Recovery Unit	Upgrade major components only
CS-23-0017	Exhaust Fan Unit Canteen	0
CS-23-0025	New tables and Chairs for Shaheen Room	0
CS-23-0026	Replace the Rubber Floor in dressing rooms	0

Asset Management Status	Approved		Proposed	Forecast			
	2018 Project Costs	2019 Project Costs	2020 Project Costs	2021 Project Costs	2022 Project Costs	2023 Project Costs	2024 Project Costs
Replacement			77,000				
Upgrade			10,000				
Replacement			92,000				
Upgrade			30,000				
New			7,500				
New			2,800				
New			3,500				
Replacement			38,000				
Replacement			63,200				
Upgrade			5,500				
Upgrade			85,000				
Replacement			90,900				
Upgrade			10,000				
Replacement			19,000				
Replacement			175,000				
Replacement				16,500			
Upgrade				10,000			
Replacement				92,000			
Upgrade				10,875			
Replacement				5,147			
Replacement				35,000			
Replacement				5,217			
Replacement				15,000			
Replacement				5,000			
Replacement				4,344			
Replacement				30,432			
Replacement				57,792			
Replacement				12,000			
Replacement				66,700			
New				86,000			
New				9,100			
Replacement				57,000			
Upgrade					10,000		
Replacement					48,000		
Upgrade					66,000		
Upgrade					60,000		
Upgrade					10,000		
Replacement					15,000		
Upgrade					20,000		
Replacement					44,150		
Replacement					15,000		
Replacement					50,000		
Replacement					60,000		
Replacement					22,000		
Replacement					17,951		
Replacement					21,000		
Upgrade						10,000	
Replacement						9,000	
Replacement						8,500	
Replacement						8,000	
Replacement						27,247	
Upgrade						60,589	
New						68,000	
Replacement						146,000	
Upgrade						55,000	
Replacement						8,000	
New						10,000	
Replacement						60,000	

2018 and 2019 Approved Budget + 2020 Proposed Budget + 2021 to 2024 Capital Fore

Project Number	Project Name	Project Description
CS-23-0039	New Screw Compressor and Motor for the Compressor Room	0
CS-24-0005	Stainless Steel Railing Replacement at Essex Recreation Complex	Moved from 2020
CS-24-0007	Painting Ceiling Both Rinks	paint beams
Total - Arenas		
Division: Essex Recreation Complex		
CS-20-0024	Backup Filter Pump Motor Replacement at Essex Recreation Complex	Backup Filter Pump Motor Replacement at Essex Recreation Complex.
CS-20-0004	Acid wash lap pool deck, viewing area, and change room tiles at Essex Recreation Complex	Maintenance of floors and lap pool at ERC.
CS-20-0108	NEW - Cameras for ERC	Cameras removed with construction of new High School.
CS-20-0109	Remove Vinyl Flooring and Replace Tiling - Alternate Change Room Floors	Remove vinyl floor/replace with tile Phase 2 of 2019 project.
CS-20-0110	Essex Recreation Complex General Painting - Lobby's/Change rooms	Interior painting has not been done in 15 years.
CS-20-0016	Canopy Roof Restoration at Essex Recreation Complex	0
CS-21-0010	Replace Tilt Shower Commode at Essex Recreation Complex	0
CS-21-0012	Exterior Signage at Essex Recreation Complex	0
CS-21-0013	Replace Pump for lap pool at Essex Recreation Complex	0
CS-21-0014	Replace Intercom/PA System at Essex Recreation Complex	0
CS-21-0015	New Tile in Showers at Essex Recreation Complex	0
CS-21-0072	Dehumidifier Replacement at Essex Recreation Complex	actual replacement cost comparisons
CS-22-0001	Replace Fence in All-Purpose Room at Essex Recreation Complex	0
CS-22-0004	Replace the Main burners and heat wheels in both de humidifier units at the Twin Pad	0
CS-23-0036	Exterior Signage at Essex Recreation Complex	Moved from 2021
Total - Essex Recreation Complex		
Division: Harbour		
CS-20-0007	Float B - 30 Finger Docks Replacement	Replacement of B docks and fingers to provide full service.
CS-20-0111	Replace Interlock Brick with Concrete at Gas Dock and Boat Launch Areas.	Replace Interlock Brick with Concrete at Gas Dock and Boat Launch Areas.
CS-20-0009	Upgrade Lighting at Harbour	0
CS-20-0014	Retaining Wall	0
CS-20-0041	Pave Parking Lot Next to Wreck	0
CS-20-0061	Gate at Colchester Harbour road way	0
CS-20-0081	Install gates and FOBS at each Colchester Dock entrance	0
CS-20-0082	Colchester Parking Town Lot Phase 2 of 2 (Dunn and Cty Rd 50)	0
CS-21-0023	Buoys for Harbour	0
CS-21-0024	Replace Pump Out Station	0
CS-21-0048	Replace Gas Pump at Harbour	0
CS-21-0049	Replace Beach Groomer Colchester Beach	0
CS-22-0008	Dock Scrubber Replacement	0
CS-22-0029	Repairs to Boat Launch - Concrete Pad	0
CS-22-0030	2 Lane Turnaround at bottom of Hill	0
CS-23-0002	C-Dock Replacement	0
Total - Harbour		
Division: Arts, Culture and Tourism		
CS-20-0047	Mural/Sculpture	ACT committee budgeted for a new mural in 2020.
CS-21-0050	Mural/Sculpture	0
CS-22-0010	Mural/Sculpture	0
CS-23-0001	Mural/Sculpture	0
Total - Arts, Culture and Tourism		
Total - Community Services		

Asset Management Status	Approved		Proposed	Forecast			
	2018 Project Costs	2019 Project Costs	2020 Project Costs	2021 Project Costs	2022 Project Costs	2023 Project Costs	2024 Project Costs
Replacement						43,000	
Replacement							4,826
Upgrade							60,000
	-	-	709,400	518,107	459,101	513,336	64,826
Replacement			2,910				
Replacement			6,627				
New			28,500				
Replacement			25,000				
Upgrade			15,000				
Replacement				15,000			
Replacement				1,628			
Replacement				3,828			
Replacement				3,049			
Replacement				2,386			
Replacement				6,609			
Replacement				400,000			
Replacement					1,759		
Upgrade					37,100		
Replacement						3,829	
	-	-	78,037	432,500	38,859	3,829	-
Replacement			178,059				
Upgrade			20,000				
Upgrade				14,288			
Upgrade				38,533			
New				160,000			
New				10,000			
New				40,000			
New				215,000			
Replacement				3,396			
Replacement				5,500			
Replacement				8,884			
Replacement				50,000			
Replacement					2,355		
Upgrade					50,000		
Upgrade					250,000		
Replacement						30,000	
	-	-	198,059	545,601	302,355	30,000	-
New			10,000				
New				10,000			
New					10,000		
New						10,000	
	-	-	10,000	10,000	10,000	10,000	-
	1,819,077	3,817,054	5,566,662	3,955,568	2,848,946	3,058,577	3,103,984

2018 and 2019 Approved Budget + 2020 Proposed Budget + 2021 to 2024 Capital Forecast

Project Number	Project Name	Project Description
Department - Development Services		
Division:	Planning	
2018	Planning	
2019	Planning	
PZ-19-0007	New Development Standards Manual Update	Procurement of services to create an updated Development Standards Manual including desing standards for all related municipal assets.
PZ-19-0009	CWATS - 2019	Two Bike Repair Stations, Essex participation in Bike Rodeo, Bike Valet, OPP Bike Helmet Program.
PZ-20-0009	CWATS - 2020	Two Bike Repair Stations, Essex participation in Bike Rodeo, Bike Valet, OPP Bike Helmet Program.
PZ-20-0002	Official Plan Review - Phase 1	Mandated under the PPS to be initiated in 2020; Colchester Secondary Plan Update to be included in OP Review; Completion date dependent on County OP completion date.
PZ-20-0008	Regional Community Energy Plan	ERCA-driven project with participation from all lower tier municipalities at \$15,000 each.
PZ-20-0005	Official Plan Review - Phase 2	Study to be completed in 2020 following in-house Zoning Amendments, related to OP Review
PZ-22-0001	Specialty Crop Area Study	Study to be completed in 2021 following County OP Update
PZ-20-0006	Archaeological Master Plan	Mandated under the PPS, related to the OP Review, to map out our potential archaeologically significant sites
Total - Planning		
Division:	Building	
2018	Building	
2019	Building	
BD-20-0001	2010 Dodge Ram 1/2 Pickup Replacement*	Asset ID 23532; Fully Amortized Date January 2020.
BD-22-0001	2014 Dodge Ram Pick Up Replacement*	0
Total - Building		
Division:	Economic Development	
GG-19-0016	Wayfinding Signage Project	Anticipated additional costs to complete the Wayfinding Signage Project
PZ-22-0002	Economic Development Strategy	Consultant to provide overview of Ec Dev opportunities in the Town and to make recommendations on stimulating the local economy
Total - Economic Development		
Total - Development Services		

Asset Management Status	Approved		Proposed	Forecast			
	2018 Project Costs	2019 Project Costs	2020 Project Costs	2021 Project Costs	2022 Project Costs	2023 Project Costs	2024 Project Costs
-	105,000						
-		-					
New			70,000				
New			20,000				
New			20,000				
New			60,000				
New			15,000				
New				20,000			
New					60,000		
New							50,000
	105,000	-	185,000	20,000	60,000	-	50,000
-	65,000						
-		-					
Replacement			42,500				
Replacement					44,217		
	65,000	-	42,500	-	44,217	-	-
Upgrade			17,200				
New					35,000		
	-	-	17,200	-	35,000	-	-
	170,000	-	244,700	20,000	139,217	-	50,000

2018 and 2019 Approved Budget + 2020 Proposed Budget + 2021 to 2024 Capital Fore

Project Number	Project Name	Project Description
Department - Public Works		
Division:	Equipment	
2018	Equipment	
2019	Equipment	
PW-19-0039	Grinder Replacement	With increased liability in trip and fall situations there is a requirement for a larger more rugged grinder to perform ongoing sidewalk and uplift issues
PW-20-0001	15-Ton Dump/Plow Unit #532	Asset ID 23208; Fully Amortized Date December 2019.
PW-20-0003	Minor Equipment	This consists of yearly minor equipment that is required that exceeds the procurement threshold for capital equipment and falls outside of small tools.
PW-20-0005	Annual Door Replacement Program	Regular replacement of a single overhead door yearly ensures proper maintenance of these facility doors. Furthermore we utilize adequate panels from old doors to improve any existing damaged doors to assist in extension of asset.
PW-20-0032	Light Duty Tandem Asphalt Roller	Currently we have been renting a roller to perform asphalt padding, profiling, shoulder work and preparation for capital roads projects.
PW-20-0036	Air compressor	End of useful life and requires replacement.
PW-20-0037	Air conditioner recharge unit	New vehicles have a different type of fluid that our old unit cannot run as a result we will require this unit to perform maintenance in our shop.
PW-20-0039	Building Expansion and Washroom Upgrade	Due to level of service and growth, the existing facility no longer meets operational requirements. Building expansion will allow more effective and efficient operations, as well as protection of valuable assets.
PW-20-0038	Essex Operations Yard (Capital Equipment Stock)	To ensure more effective and efficient level of service, stocking the Essex Operations Yard with the necessary equipment will allow us to respond and operate better.
PW-21-0001	Pickup Truck	0
PW-20-0002	3 Ton Unit #531	Asset ID 1655; Fully Amortized Date October 2030.
PW-21-0002	Minor Equipment	0
PW-21-0003	Annual Door Replacement Program	0
PW-21-0004	Batwig Mower	0
PW-21-0005	Grade Unit 505	0
PW-22-0005	Cat Backhoe	0
PW-22-0015	Road Widener	0
PW-22-0016	Sweeper Broom	0
PW-22-0017	5 Ton Dump Unit 508	0
PW-22-0018	Minor Equipment	0
PW-22-0019	Annual Door Replacement	0
PW-23-0006	John Deere Backhoe	0
PW-23-0007	Vermmer Wood Chipper	0
PW-23-0008	5 Ton Unit 534	0
PW-23-0009	Pick-Up 4x4 Unit 536	0
PW-23-0014	Minor Equipment	0
PW-23-0015	Annual Door Replacement	0
PW-24-0001	Misc Equipment	0
Total - Equipment		

Asset Management Status	Approved		Proposed	Forecast			
	2018 Project Costs	2019 Project Costs	2020 Project Costs	2021 Project Costs	2022 Project Costs	2023 Project Costs	2024 Project Costs
-	530,000						
-		551,500					
Replacement			11,000				
Replacement			280,000				
Replacement			15,000				
Replacement			10,000				
New			50,000				
Replacement			5,500				
Replacement			10,500				
Upgrade			500,000				
Replacement			20,000				
Replacement				45,000			
Replacement				200,000			
Replacement				15,000			
Replacement				10,000			
Replacement				30,000			
Replacement				400,000			
Replacement					175,000		
Replacement					65,000		
Replacement					10,000		
Replacement					220,000		
Replacement					20,000		
Replacement					12,000		
Replacement						200,000	
Replacement						80,000	
Replacement						275,000	
Replacement						45,000	
Replacement						20,000	
Replacement						12,000	
Replacement							650,000
	530,000	551,500	902,000	700,000	502,000	632,000	650,000

2018 and 2019 Approved Budget + 2020 Proposed Budget + 2021 to 2024 Capital Fore

Project Number	Project Name	Project Description
Division: Roads and Roadside		
2018	Roads and Roadside	
2019	Roads and Roadside	
PW-19-0006	Gore Road (Wright Road to CR13)	Recommended to continue with Cold Rolled recycled asphalt paving.
PW-19-0007	8th Concession (Ferris to CR23)	Recommended to continue with Cold Rolled recycled asphalt paving.
PW-19-0034	Gordon, Wilson and Station Street Area	A carry-forward project. The asphalt milling and resurfacing is being done jointly with watermain replacement.
PW-20-0011	Overlay 6km (Approximately \$25,000/km) (Maintenance)	Yearly perform maintenance overlay on select rural tar and chip roads to extend their useful life.
PW-20-0041	5th Concession (CR11 to Smith Road)	Recommend reconstruction utilizing pulverizing, base addition, regrade and profile and complete with tar and chip resurfacing.
PW-19-0004	Queen Street	construction increase
PW-20-0042	Yearly Sidewalk maintenance	Yearly renewal of various sidewalks within the municipality. This item was previously contained within the CWATS/trail capital budget.
PW-21-0007	Sidewalks/Trails	0
PW-20-0009	North Malden Road between County Road 15 and Brush Sideroad	reduced scope to Brush
PW-20-0010	Shave and Pave Miscellaneous Roads	0
PW-20-0040	Victor (from Victoria to Laird)	0
PW-21-0009	North Malden Road between County Road 15 and Walker Sideroad	0
PW-21-0013	Overlay 6km (Approximately \$25,000/km) (Maintenance)	0
PW-21-0014	Shave and Pave Miscellaneous Roads	0
PW-21-0023	Road Work	0
PW-22-0004	North Malden Road between Trembley and County Road 11 (Maintenance)	0
PW-22-0006	Overlay 6km	0
PW-22-0008	Shave and Pave Miscellaneous Road (Maintenance)	0
PW-22-0009	Miscellaneous Roadwork (Maintenance)	0
PW-22-0011	Sidewalks/Trails	0
PW-23-0010	Various Roads Projects	0
PW-23-0011	Various Trails Projects	0
PW-23-0012	Shave and Pave Misc. Roads	0
PW-23-0013	Overlay 6km (Approx. \$30,000/km)	0
PW-24-0002	Various Roads Projects	0
PW-24-0003	Various Trails Projects	0
PW-24-0004	Shave and Pave Misc. Roads	0
PW-24-0005	Overlay 6km (Approx. \$30,000/km)	0
Total - Roads and Roadside		

Asset Management Status	Approved		Proposed	Forecast			
	2018 Project Costs	2019 Project Costs	2020 Project Costs	2021 Project Costs	2022 Project Costs	2023 Project Costs	2024 Project Costs
-	3,597,500						
-		3,596,500					
Replacement			376,000				
Replacement			365,000				
Replacement			150,000				
Replacement			150,000				
Replacement			450,000				
Replacement			185,000				
Upgrade			50,000				
Upgrade				450,000			
Replacement				600,000			
Replacement				150,000			
Replacement				380,000			
Replacement				440,000			
Replacement				150,000			
Replacement				150,000			
Replacement				860,000			
Replacement					264,000		
Replacement					150,000		
Replacement					200,000		
Replacement					1,190,000		
Upgrade					450,000		
Replacement						2,090,000	
Upgrade						475,334	
Replacement						250,000	
Replacement						180,000	
Replacement							2,090,000
Upgrade							475,334
Replacement							250,000
Replacement							180,000
	3,597,500	3,596,500	1,726,000	3,180,000	2,254,000	2,995,334	2,995,334

2018 and 2019 Approved Budget + 2020 Proposed Budget + 2021 to 2024 Capital Fore

Project Number	Project Name	Project Description
Division: Stormwater Management		
2018	Stormwater Management	\$4.5million Ward 1 Storm Improvements
2019	Stormwater Management	
PW-20-0021	Engineering for Various Bridges and Culverts	In order to be prepared for construction, engineering of select bridges and culverts are done a year in advance.
PW-20-0023	6th Concession and Marsh Bridge 200501	Bridge is in generally good condition, wearing surface requires replacement. Waterproofing top of structure at this time will extend the current good condition of this structure.
PW-20-0030	McCormick Sideroad and 14th Concession Culvert 208002	Bottom of pipe culvert has rusted through over most of the west end of pipe. Replace with precast concrete round culvert.
PW-20-0031	Coulter Sideroad and 9th Concession Culvert 102205	Culvert walls and floor have major corrosion and perforations. Concrete pipe or box culvert is recommended as replacement.
PW-20-0034	Richmond Drain Bank Stabilization	The existing Municipal drain has been experiencing slumping failure along the north bank causing the edge of gravel adjacent to the 5th Concession Road to displace down the side slopes.
PW-19-0048	Stormwater Partnership Improvements	Storm water partnership improvements that occur as a result of development, such as the Harrow Junior School and Rush Drain (Essex Towne Center).
PW-20-0044	Queen Street	Storm Sewer improvements along Queen Street, north of the Richmond Drain that fall outside of the scope of the Harrow Streetscape project.
PW-21-0011	Engineering for Various Bridges and Culverts	0
PW-20-0043	Victor (from Victoria to Laird)	0
PW-21-0018	3rd Concession and County Road 23 Bridge 200204	0
PW-21-0025	South Malden Rd and Mole Sideroad Bridge 103904	0
PW-21-0026	Walker Sideroad/North Malden 106101	0
PW-21-0028	Rizzo Nicola Rd. Guiderail	0
PW-21-0029	Stormwater Improvements	0
PW-22-0001	4th Concession and McLean Bridge 200303	0
PW-22-0003	Engineering for Various Bridges and Culverts	0
PW-22-0013	South Malden Rd/County Road 11 103901	0
PW-22-0014	Ferris Sideroad/4th Concession 200404	0
PW-22-0022	Stormwater Improvements	0
PW-23-0001	3rd Concession/Roseborough Road 200201	0
PW-23-0002	5th Concession/McComick Sideroad 200403	0
PW-23-0003	12th Concession/County Road 11 100302	0
PW-23-0004	Engineering for Various Bridges and Culverts	0
PW-23-0016	Stormwater Improvements	0
PW-24-0006	Misc Projects	0
Total - Stormwater Management		
Total - Public Works		
Total - Property Tax Supported		

Asset Management Status	Approved		Proposed	Forecast			
	2018 Project Costs	2019 Project Costs	2020 Project Costs	2021 Project Costs	2022 Project Costs	2023 Project Costs	2024 Project Costs
-	5,129,912						
-		778,000					
Replacement			40,000				
Replacement			35,000				
Replacement			260,000				
Replacement			294,800				
Upgrade			275,000				
Upgrade			200,000				
Replacement			290,000				
Replacement				50,000			
Replacement				235,000			
Replacement				30,000			
Replacement				305,000			
Replacement				195,000			
Replacement				35,000			
Replacement				200,000			
Replacement					300,000		
Replacement					50,000		
Replacement					55,000		
Replacement					205,000		
Replacement					225,000		
Replacement						185,000	
Replacement						320,000	
Replacement						50,000	
Replacement						50,000	
Replacement						225,000	
Replacement							830,000
	5,129,912	778,000	1,394,800	1,050,000	835,000	830,000	830,000
	9,257,412	4,926,000	4,022,800	4,930,000	3,591,000	4,457,334	4,475,334
	11,482,677	9,077,654	14,678,332	12,912,158	6,664,163	7,595,411	7,691,018

2018 and 2019 Approved Budget + 2020 Proposed Budget + 2021 to 2024 Capital Fore

Project Number	Project Name	Project Description
User Rate Supported		
Department: Environmental Services		
Division: Water		
2018	Water	
2019	Water	
WW-20-0001	Equipment Contingency for Wards 1 and 2 Distribution and Transmission (50%)	Replacement of equipment, maintenance issues, design investigations with respect to the water distribution systems.
WW-20-0002	Equipment Contingency for Wards 3 and 4 Distribution and Transmission (50%)	Replacement of equipment, maintenance issues, design investigations with respect to the water distribution systems.
WW-20-0003	Harrow Colchester South Water Treatment Plant Contingency for Wards 3 and 4	Equipment, process, design considerations and facility replacements and improvements for the Harrow Colchester South Water Treatment Plant.
WW-20-0004	Gordon, Wilson, Station Street Phase 1 (Construction)	The watermain is at the end of its life expectancy and warrants replacement. Would look to pave in the following year.
WW-20-0006	Backflow Prevention and Monitoring Program Wards 1/2 Maintenance	To help ensure the delivery of safe and clean drinking water to our residents, the Town of Essex has introduced a program which regulates how property owners connect to the Town's water supply. Ensuring the installation of backflow prevention devices can prevent the possible contamination of the Town's drinking water system.
WW-20-0007	Backflow Prevention and Monitoring Program Wards 3/4 Maintenance	To help ensure the delivery of safe and clean drinking water to our residents, the Town of Essex has introduced a program which regulates how property owners connect to the Town's water supply. Ensuring the installation of backflow prevention devices can prevent the possible contamination of the Town's drinking water system.
WW-20-0008	Water Rate Financial Plan	This study extends off of those studies, updating the analysis for current capital and operating forecasts, costing for lifecycle cost requirements, current consumption and customer profiles. The results of this analysis provide updated water and wastewater base charges and volume rates for customers within the Town of Essex.
WW-20-0009	Pickup Truck Unit #607 Replacement	Truck is at useful life expectancy and requires replacement.
WW-20-0010	OWCA Capital Recommendations	OCWA recommended capital improvements to Harrow Colchester South Water Treatment Plant.
WW-20-0013	Victor Watermain (ward 1)	The watermain is at the end of its life expectancy and warrants replacement. Would look to pave in the following year.
WW-20-0014	Queen Watermain (Ward 4)	The watermain is at the end of its life expectancy and warrants replacement.
WW-20-0012	Irwin Watermain (Ward 1)	The watermain is at the end of its life expectancy and warrants replacement but will only be replaced in conjunction with road reconstruction.
WW-21-0001	Equipment Contingency Wards 1 and 2 Distribution and Transmission (50%)	0
WW-21-0002	Equipment Contingency Wards 3 and 4 Distribution and Transmission (50%)	0
WW-21-0003	Harrow Colchester South Water Treatment Plant Congtinency Wards 3 and 4	0
WW-21-0004	Replace Truck	0
WW-21-0005	Backflow Prevention and Monitoring Program Wards 1/2 (Maintennace)	0
WW-21-0006	Backflow Prevention and Monitoring Program Wards 3/4 (Maintenance)	0
WW-21-0007	OWCA Capital Recommendations	0
WW-22-0001	Backflow Prevention and Monitoring Program Wards 1/2 (Maintennace)	0
WW-22-0002	Backflow Prevention and Monitoring Program Wards 3/4 (Maintennace)	0
WW-22-0003	Equipment Contingency Wards 1 and 2	0

Asset Management Status	Approved		Proposed	Forecast			
	2018 Project Costs	2019 Project Costs	2020 Project Costs	2021 Project Costs	2022 Project Costs	2023 Project Costs	2024 Project Costs
-	721,000						
-		467,100					
Upgrade			8,500				
Upgrade			8,500				
Upgrade			165,000				
Replacement			850,000				
Upgrade			5,000				
Replacement			5,000				
Upgrade			7,000				
Replacement			45,000				
Upgrade			540,000				
Replacement			140,000				
Replacement			340,000				
Replacement			335,000				
New				8,500			
New				8,500			
New				177,500			
Replacement				45,000			
Replacement				5,000			
Replacement				5,000			
Upgrade				662,000			
Replacement					5,000		
Replacement					5,000		
New					10,000		

2018 and 2019 Approved Budget + 2020 Proposed Budget + 2021 to 2024 Capital Fore

Project Number	Project Name	Project Description
WW-22-0004	Equipment Contingency Wards 3 and 4	0
WW-22-0005	Harrow Colchester South Water Treatment Plant Contingency Wards 3 and 4	0
WW-22-0006	Replace Truck	0
WW-22-0007	OWCA Capital Recommendations	0
WW-23-0001	Backflow Prevention and Monitoring Program Wards 1/2 (Maintennace)	0
WW-23-0002	Backflow Prevention and Monitoring Program Wards 3/4 (Maintennace)	0
WW-23-0003	Equipment Contingency Wards 1 and 2	0
WW-23-0004	Equipment Contingency Wards 3 and 4	0
WW-23-0005	Harrow Colchester South Water Treatment Plant Contingency Wards 3 and 4	0
WW-23-0006	OWCA Capital Recommendations	0
WW-24-0001	Backflow Prevention and Monitoring Program Wards 1/2 (Maintennace)	0
WW-24-0002	Backflow Prevention and Monitoring Program Wards 3/4 (Maintennace)	0
WW-24-0003	Equipment Contingency Wards 1 and 2	0
WW-24-0004	Equipment Contingency Wards 3 and 4	0
WW-24-0005	Harrow Colchester South Water Treatment Plant Contingency Wards 3 and 4	0
WW-24-0006	OWCA Capital Recommendations	0
Total - Water		
Division:	Sanitary Sewer	
2018	Sanitary Sewer	
2019	Sanitary Sewer	
SS-20-0001	Treatment - Ward 1 Contingency	Equipment, process, facility replacements and improvements for the Essex Pollution Control Plant and North East Lagoons treatment facilities.
SS-20-0002	Treatment - Ward 3 Contingency	Equipment, process, facility replacements and improvements for the Colchester Lagoons treatment facility.
SS-20-0003	Treatment - Ward 4 Contingency	Equipment, process, facility replacements and improvements for the Harrow Sewage Works treatment facility.
SS-20-0004	Collection and Conveyance - Ward 1	Replacement of equipment, maintenance issues, design investigations with respect to the Essex Pollution Control Plant and North East Lagoon collection and conveyance systems.
SS-20-0005	Collection and Conveyance - Ward 3	Replacement of equipment, maintenance issues, design investigations with respect to the Colchester Lagoon collection and conveyance system.
SS-20-0006	Collection and Conveyance - Ward 4	Replacement of equipment, maintenance issues, design investigations with respect to the Harrow Lagoon collection and conveyance system.
SS-20-0007	OWCA Capital Recommendations - Ward 1	OCWA recommended capital improvements to the Essex Pollution Control Plant and North East Lagoons.
SS-20-0008	OWCA Capital Recommendations - Ward 3	OCWA recommended capital improvements to the Colchester Lagoons.
SS-20-0009	OWCA Capital Recommendations - Ward 4	OCWA recommended capital improvements to the Harrow Lagoons.
SS-21-0001	Treatment - Ward 1 Contingency	0
SS-21-0002	Treatment - Ward 3 Contingency	0
SS-21-0003	Treatment - Ward 4 Contingency	0
SS-21-0004	Collection and Conveyance - Ward 1	0
SS-21-0005	Collection and Conveyance - Ward 3	0
SS-21-0008	Collection and Conveyance - Ward 4	0
SS-21-0009	OWCA Capital Recommendations - Ward 1	0
SS-21-0010	OWCA Capital Recommendations - Ward 3	0
SS-22-0001	Treatment - Ward 1 Contingency	0
SS-22-0002	Treatment - Ward 3 Contingency	0
SS-22-0003	Treatment - Ward 4 Contingency	0
SS-22-0004	Collection and Conveyance - Ward 1	0
SS-22-0005	Collection and Conveyance - Ward 3	0
SS-22-0006	Collection and Conveyance - Ward 4	0
SS-22-0007	OWCA Capital Recommendations - Ward 1	0
SS-22-0008	OWCA Capital Recommendations - Ward 3	0
SS-22-0009	OWCA Capital Recommendations - Ward 4	0

Asset Management Status	Approved		Proposed	Forecast			
	2018 Project Costs	2019 Project Costs	2020 Project Costs	2021 Project Costs	2022 Project Costs	2023 Project Costs	2024 Project Costs
New					10,000		
New					195,000		
Replacement					47,500		
Upgrade					40,000		
Replacement						5,000	
Replacement						5,000	
Replacement						10,000	
Replacement						10,000	
New						205,000	
Upgrade						22,000	
Replacement							5,000
Replacement							5,000
Replacement							10,000
Replacement							10,000
New							205,000
Upgrade							22,000
	721,000	467,100	2,449,000	911,500	312,500	257,000	257,000
-	642,000						
-		853,000					
Upgrade			70,000				
Upgrade			40,000				
Upgrade			40,000				
Replacement			30,000				
Replacement			32,500				
Replacement			26,500				
Upgrade			75,000				
Upgrade			262,000				
Upgrade			750,000				
New				77,500			
New				42,500			
New				42,500			
Replacement				40,000			
Replacement				42,500			
Replacement				37,500			
New				55,000			
New				32,000			
New					87,500		
New					52,500		
New					52,500		
Replacement					50,000		
Replacement					52,500		
Replacement					47,500		
New					200,000		
New					80,000		
New					1,000,000		

2018 and 2019 Approved Budget + 2020 Proposed Budget + 2021 to 2024 Capital Forecast

Project Number	Project Name	Project Description
SS-23-0001	Treatment - Ward 1 Contingency	0
SS-23-0002	Treatment - Ward 3 Contingency	0
SS-23-0003	Treatment - Ward 4 Contingency	0
SS-23-0004	Collection and Conveyance - Ward 1	0
SS-23-0005	Collection and Conveyance - Ward 3	0
SS-23-0006	Collection and Conveyance - Ward 4	0
SS-23-0007	OWCA Capital Recommendations - Ward 1	0
SS-23-0008	OWCA Capital Recommendations - Ward 3	0
SS-24-0001	Treatment - Ward 1 Contingency	0
SS-24-0002	Treatment - Ward 3 Contingency	0
SS-24-0003	Treatment - Ward 4 Contingency	0
SS-24-0004	Collection and Conveyance - Ward 1	0
SS-24-0005	Collection and Conveyance - Ward 3	0
SS-24-0006	Collection and Conveyance - Ward 4	0
SS-24-0007	OWCA Capital Recommendations - Ward 1	0
SS-24-0008	OWCA Capital Recommendations - Ward 3	0
Total - Wastewater		
Total - Environmental Services		
Total - User Rate Supported		
Total - Property Tax and User Rate Supported		

Asset Management Status	Approved		Proposed	Forecast			
	2018 Project Costs	2019 Project Costs	2020 Project Costs	2021 Project Costs	2022 Project Costs	2023 Project Costs	2024 Project Costs
New						90,000	
New						55,000	
New						55,000	
Replacement						60,000	
Replacement						62,500	
Replacement						57,500	
New						75,000	
New						32,000	
New							90,000
New							55,000
New							55,000
Replacement							60,000
Replacement							62,500
Replacement							57,500
New							75,000
New							32,000
	642,000	853,000	1,326,000	369,500	1,622,500	487,000	487,000
	1,363,000	1,320,100	3,775,000	1,281,000	1,935,000	744,000	744,000
	1,363,000	1,320,100	3,775,000	1,281,000	1,935,000	744,000	744,000
	12,845,677	10,397,754	18,453,332	14,193,158	8,599,163	8,339,411	8,435,018



Report to Council

Department: Infrastructure Services
Division: Drainage
Date: December 16, 2019
Prepared by: Norm Nussio, C.E.T., CRS
Report Number: Drainage-2019-06
Subject: Appointment of an engineer to prepare a report under section 78 to replace an existing access culvert
Number of Pages: 6

Recommendation(s)

It is recommended that:

1. Report Municipal Drainage D-2019-06 entitled appointment of an engineer to prepare a report under section 78 to replace an existing access culvert is accepted; and
2. Council appoint engineering firm Rood Engineering Incorporated to develop a report replacing an existing culvert over the South Townline Drain.

Purpose

Town of Essex drainage department has received a request to replace an existing access culvert over the South Townline Drain to serve the agricultural lands of

Richard Dubniac. The access culvert is an old concrete span bridge with no design detail to be replaced therefore a report must be prepared under section 78 of the drainage act.

Background and Discussion

Town of Essex drainage department has received a request to replace an existing access culvert over the South Townline Drain to serve the agricultural lands of Richard Dubniac. The access culvert is an old concrete span bridge with no design detail to be replaced therefore a report must be prepared under section 78 of the drainage act.

Background

The South Townline Drain commences at the northwest corner of Coulter side road and travels in westerly direction on the north side of county Rd 18 to its outlet in the Mclean Drain located at the northwest corner of Briton Rd. Latest drainage report on file prepared by La Fontaine Cowie, Buratto & Associates Limited 1991.

According to Section 78 of the Drainage Act Revised Statutes of Ontario 1990 Improving, upon examination and Report of Engineer

78. (1) If a drainage works has been constructed under a by-law passed under this Act or any predecessor of this Act, and the council of the municipality that is responsible for maintaining and repairing the drainage works considers it

appropriate to undertake one or more of the projects listed in subsection (1.1) for the better use, maintenance or repair of the drainage works or of lands or roads, the municipality may undertake and complete the project in accordance with the report of an engineer appointed by it and without the petition required by section 4. 2010, chapter 16, Schedule 1, section 2 (27).

Projects

(1.1) The projects referred to in subsection (1) are:

1. Changing the course of the drainage works.
2. Making a new outlet for the whole or any part of the drainage works.
3. Constructing a tile drain under the bed of the whole or any part of the drainage works.
4. Constructing, reconstructing or extending embankments, walls, dykes, dams, reservoirs, bridges, pumping stations or other protective works in connection with the drainage works.
5. Otherwise improving, extending to an outlet or altering the drainage works.
6. Covering all or part of the drainage works.
7. Consolidating two or more drainage works. 2010, chapter 16, Schedule 1, section 2 (27).

Notice to Conservation Authority

(2) An engineer shall not be appointed under subsection (1) until thirty days after a notice advising of the proposed drainage works has been sent to the Secretary-Treasurer of each Conservation Authority that has jurisdiction over any of the

lands that would be affected. Revised Statutes of Ontario 1990, chapter D.17, section 78 (2); 2010, chapter 16, Schedule 1, section 2 (28).

Powers and Duties of Engineer

(3) The engineer has all the powers and shall perform all the duties of an engineer appointed with respect to the construction of a drainage works under this Act. Revised Statutes of Ontario 1990, chapter D.17, section 78 (3).

Proceedings

(4) All proceedings, including appeals, under this section shall be the same as on a report for the construction of a drainage works. Revised Statutes of Ontario 1990, chapter D.17, section 78 (4).

The Drainage Act prescribes the process and timelines that must be followed for a report, under Section 4 of the Drainage Act, for a municipal drain. In brief, the process includes:

- Consideration of the Report by Council; and the appointment of an Engineer to prepare a preliminary report;
- Conduct an on-site meeting with affected landowners to review their drainage requirements;
- Conduct a meeting to consider the preliminary report and recommendation whether or not to proceed with the preparation of an Engineer's Report
- Council approval of the Committee recommendation;

Schedule

Should Council approve to proceed with the maintenance report and appoint an Engineer, the estimated schedule will be as follows:

- Council approval and appointment of Engineer – January 2020
- On Site Meeting – February 2020
- Preparation of the Report –May 2020
- Submission of Report and notification period –June 2020
- Consideration of the Report by Council –July 2020
- Preparation of Provisional By-law – July 2020
- Court of Revision –August 2020
- Construction- September 2020

Financial Impact

Cost associated with the preparation of said report and construction will be shared amongst the upstream lands and roads.

Consultations

Link to Strategic Priorities

- ☒ Manage, invest and plan for sustainable municipal infrastructure which meets current and future needs of the municipality and its citizens.
- ☐ Create a safe, friendly and inclusive community which encourages healthy, active living for people of all ages and abilities.
- ☐ Provide a fiscal stewardship and value for tax dollars to ensure long-term financial health to the municipality.
- ☐ Manage responsible and viable growth while preserving and enhancing the unique rural and small town character of the community.
- ☐ Improve the experiences of individuals, as both citizens and customers, in their interactions with the Town of Essex.



Report to Council

Department: Development Services

Division: Planning

Date: December 16, 2019

Prepared by: Rita Jabbour, Manager, Planning Services

Report Number: Planning-2019-58

Subject: 2019 Community Improvement Plan (CIP) Annual Update

Number of Pages: 19

Recommendation(s)

It is recommended that:

1. Planning report Planning2019-58 entitled "2019 Community Improvement Plan (CIP) Annual Update" be received; and,
2. That the Economic Development Officer, or the Manager of Planning Services in His or Her absence, be delegated authority for the administration of the Harrow, Essex Centre and Colchester and County Road 50 CIP, and the execution of agreements on applications submitted under the individual Programs; and,
3. That Council direct administration to prepare a Bylaw to amend the Community Improvement Project Area and Implementation Strategy for the Essex Centre CIP; and,
4. That Council direct administration to prepare a Bylaw to the Implementation Strategy for the Harrow CIP and Colchester and County Road 50 CIP

Purpose

To provide Council with an update on the success of the Community Improvement Plan (CIP) for Essex Centre, Harrow and Colchester and County Road 50 and to recommend changes to the CIP Implementation program with respects to individual grants, the delegated approval authority, and the program implementation period.

Background and Discussion

A Community Improvement Plan (CIP) provides municipal funding incentives to property owners within a defined geographical area ("Community Improvement Project Area" or "CIPA"). Through municipal tax incentives, grants and loans, a CIP stimulates the development or redevelopment, construction or re-construction, and rehabilitation of residential, commercial, industrial, public, recreational and charitable land uses, buildings or structures. To date, the Town of Essex has adopted a CIP for Harrow (2012), Essex Centre (2014), and Colchester and County Road 50 (2018).

Under the CIP, an eligible property owner has access to one or more of the following financial incentive programs:

Development Grant Programs

- Development Permit Fee Grant: provides a grant to rebate the cost of Planning Act applications or construction permits;
- Development Charges Grant: provides a grant to rebate the cost of the municipal wide services component of the development charges fee;
- Tax Increment Equivalent Grant: provides a grant to rebate the municipality's annual incremental tax increase from an eligible development project that increases the assessed value of the property;
- Parks Levy Equivalent Grant: provides a grant to rebate the parks levy applied to the property as a direct result of works set out in the grant application.

Revitalization Grant Programs

- Façade Improvement Grant: offers assistance to property owners undertaking commercial building façade improvements;
- Outdoor Café, Patio and Commercial Outdoor Space Grant: offers assistance to property owners who are undertaking the construction of outdoor cafes, patios or other commercial open space that is accessory and complimentary to a commercial use;
- Conversion Grant: offers assistance to property owners who are creating a bed and breakfast operation or who intend to utilize existing above the ground floor commercial building space or an existing low density residential dwelling to create a new affordable rental dwelling unit(s), hotel rooms or suites or bed and breakfast rooms or suites;
- Rehabilitation Grant: offers assistance to property owners who are undertaking works to bring existing affordable rental dwelling units up to the minimum standards of energy efficiency; or, for the reconstruction of an existing public entrance to make it handicap accessible; or, for aesthetic and buffering improvements; or, for the complete or partial demolition of a building;
- Professional Design Services Grant: offers financial incentive to help offset the cost of professional design services required or encouraged by the Town.

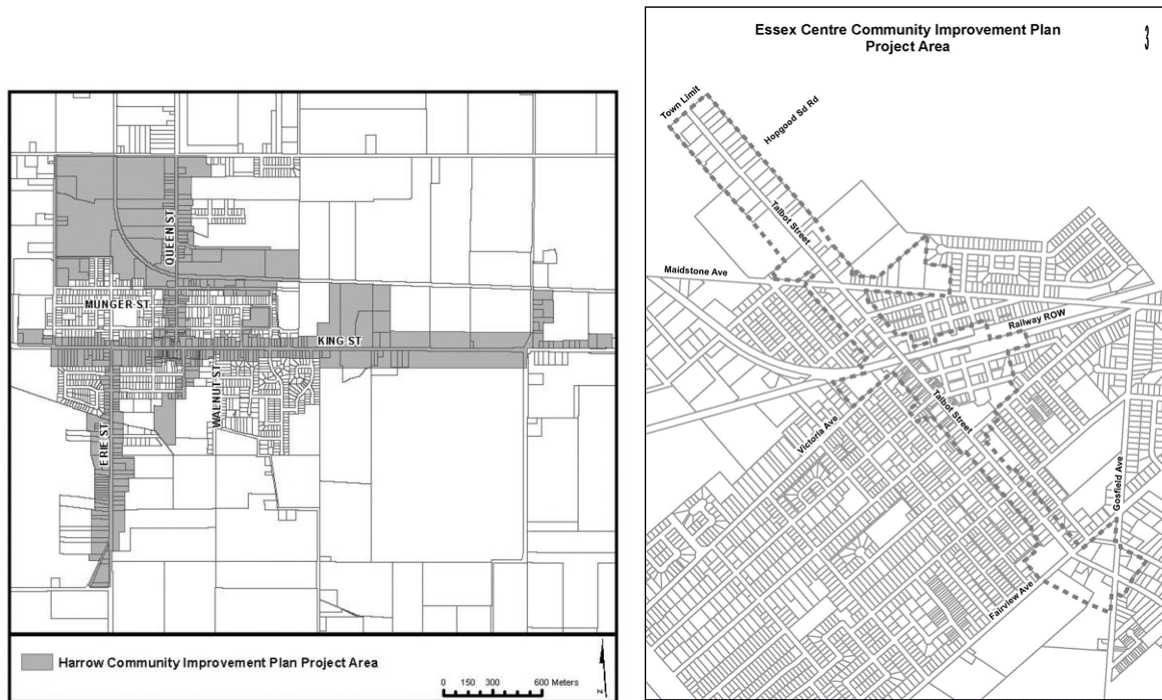
In accordance with section 6.0 “Monitoring and Assessment” of the Harrow, Essex Centre and Colchester and County Road 50 CIP Implementation Strategy, Staff will conduct periodic reviews of the individual CIP programs and, on an annual basis, report to Council on the effectiveness of the program and whether modifications to a program or the future level of funding are necessary. The report will also provide an annual recommendation on the merits of continuation, expansion or cessation of the CIPs and their programs.

Harrow and Essex Centre

Community Improvement Plans (CIP) for Harrow and Essex Centre were born out of the development of the Harrow Community Strategic Plan and the Downtown Essex Centre

Streetscape and Silo District Plan initiated by Council in 2011 and 2013, respectively. Community participation for both strategic plans identified the need to commit to the rejuvenation and revitalization of the downtown cores of Harrow and Essex Centre.

The designated Community Improvement Project Areas (CIPA) for the Harrow and Essex Centre CIP are identified below:



In 2019, nine (9) new applications were filed under the Harrow CIP and eight (8) new applications were filed under the Essex Centre CIP. As of November 29, \$72, 287.95 in grant money was disbursed under the Harrow CIP and \$84, 728.47 was disbursed under the Essex Centre CIP. (Note: Monies spent in 2019 include grant money for applications received in past years).

Figure1 provides an overview of the number of new applications received since 2017 under the Harrow and Essex Centre CIP

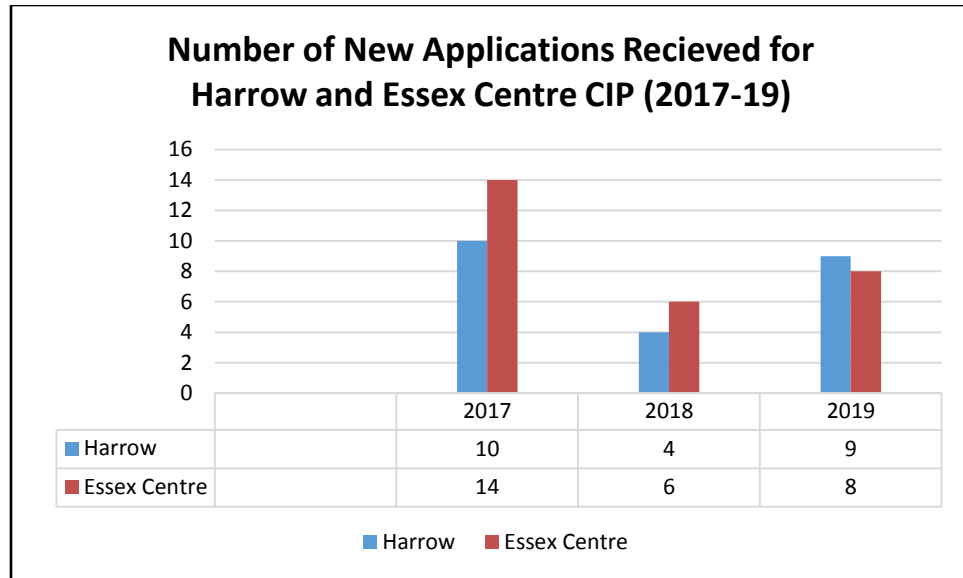
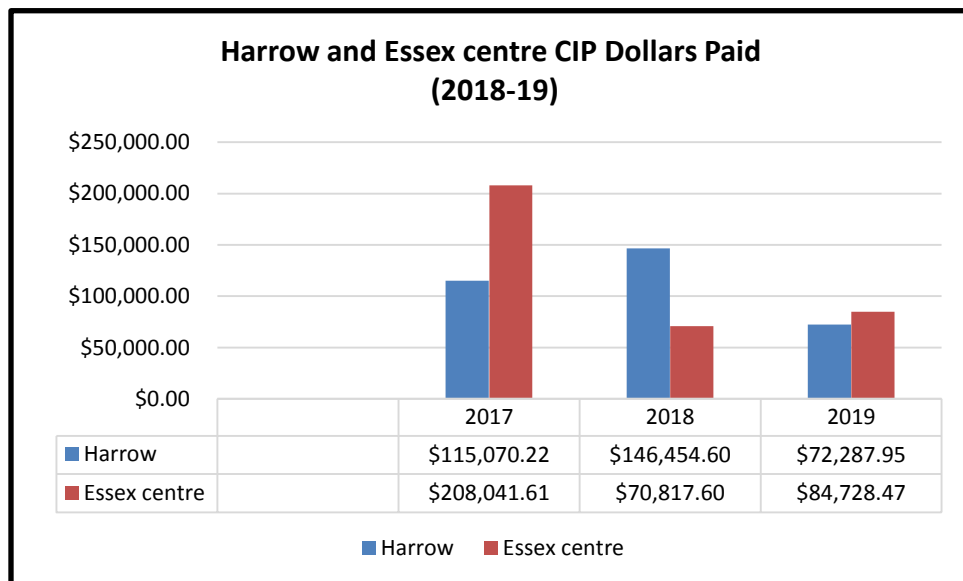


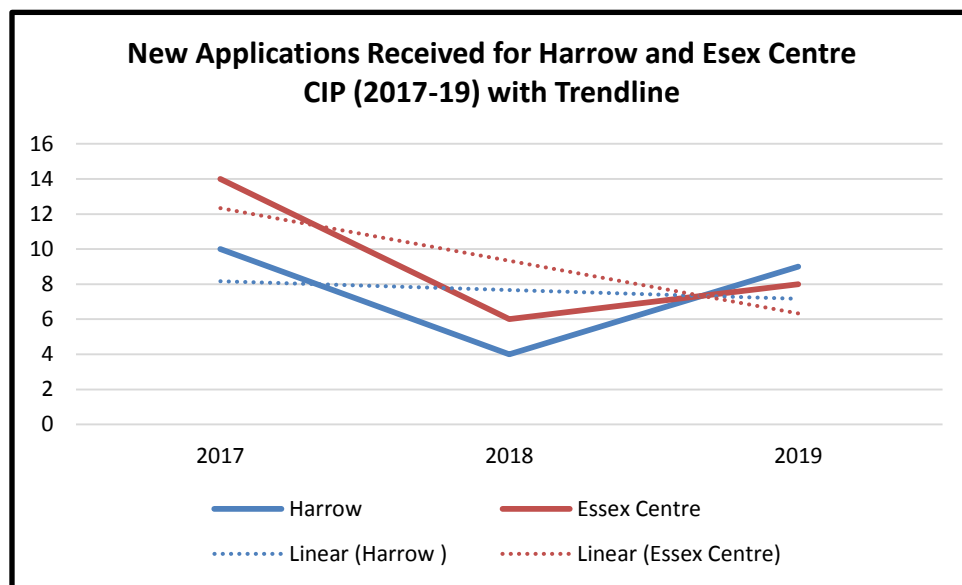
Figure 2 provides an overview of dollars paid under the Essex Centre and Harrow CIP from 2017-2019



Although the number of new applications filed for Harrow and Essex Centre in 2019 are less than the number of applications filed in 2017, the figures depict a 125 percent (%) increase in new applications filed for Harrow since 2018, and a 33 percent (%) increase in new applications filed for Essex Centre since 2018. Based on the percentage increase of new applications received under the Harrow CIP in 2019, it is predicted that the uptake of new applications in

Harrow will remain consistent, and the number of new applications filed for Essex Centre will decrease.

Figure 3 compares the volume of new applications received in both Harrow and Essex Centre between 2017 and 2019 with trend lines depicting a decrease in applications for Essex Centre



The most popular **Revitalization Grant Program** utilized under the Harrow and Essex Centre CIP in 2019 was the Façade Improvement Grant. Overall, the Façade Improvement Grant has been the most utilized Revitalization Grant in both Harrow and Essex Centre from 2017-2019. The Demolition Grant, however, has been utilized more in Harrow than in Essex Centre during the same period, and the Landscaping and Buffering Grant and Professional Design Services Grant has been utilized more in Essex Centre.

The most popular **Development Grant Program** utilized under the Harrow and Essex Centre CIP in 2019 was the Development Permit Fee Grant. It comprises all the development grant programs utilized in Harrow in 2019. Overall, the Development Permit Fee Grant has been the most utilized Development Grant in both Harrow and Essex Centre from 2017-2019. The Tax Increment Grant, however, has only been utilized in Harrow, and the Development Charges grant has only been utilized in Essex Centre for the period 2017-2019.

The Tax Increment Grant works with new commercial and industrial development or significant expansions to existing commercial and industrial buildings. The Harrow CIP has more vacant industrial land within its Project Area, resulting in a better uptake in Harrow. No development charges have been applicable in Harrow for residential developments since 2017. The Town subsequently waived development charges for commercial development throughout the Town in 2018. This may explain why the Development Charges Grant has been better utilized in Essex Centre over Harrow from 2017-2019.

Figure 4 outlines the percentage of Revitalization Grant programs Utilized in Harrow from 2017-2019

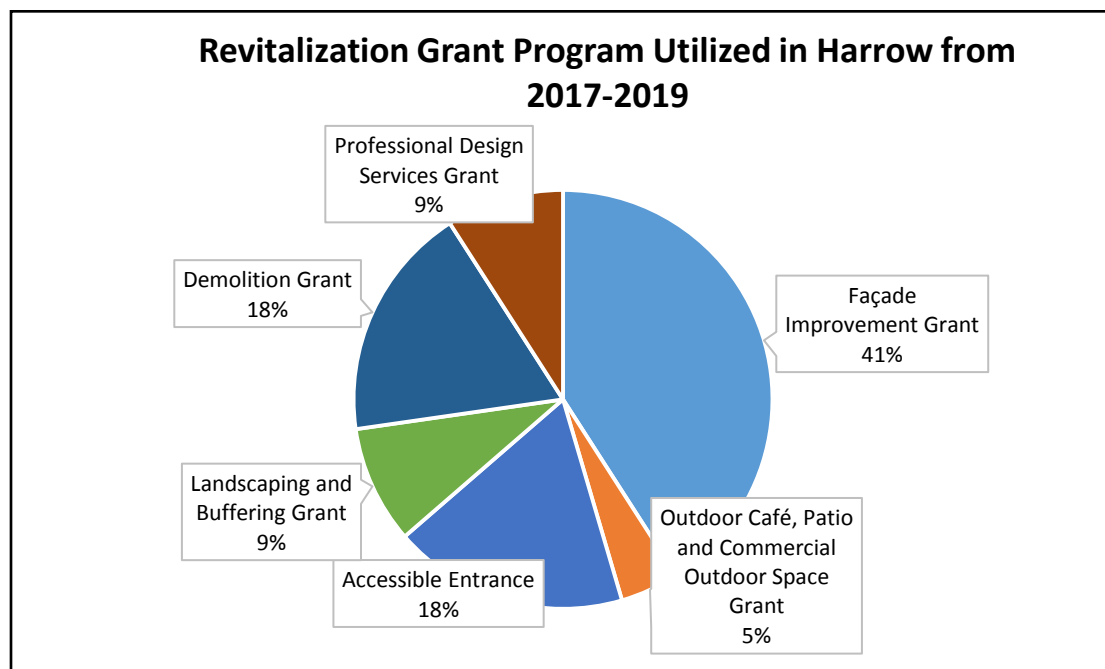


Figure 5 outlines the percentage of Development Grant programs Utilized in Essex Centre from 2017-2019

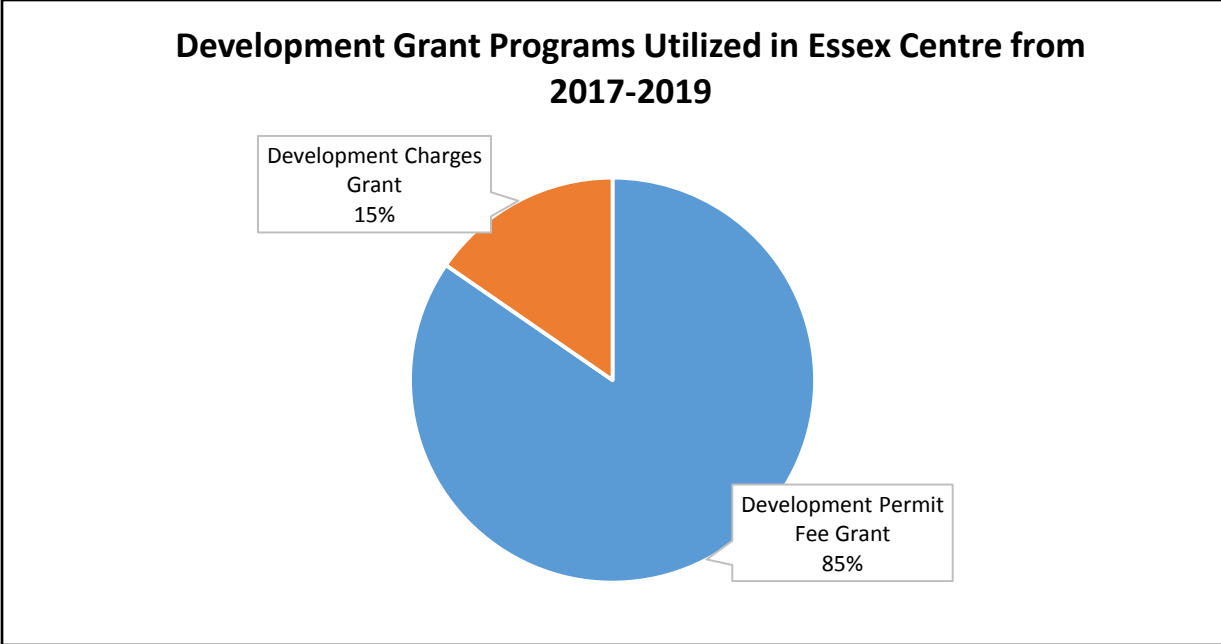
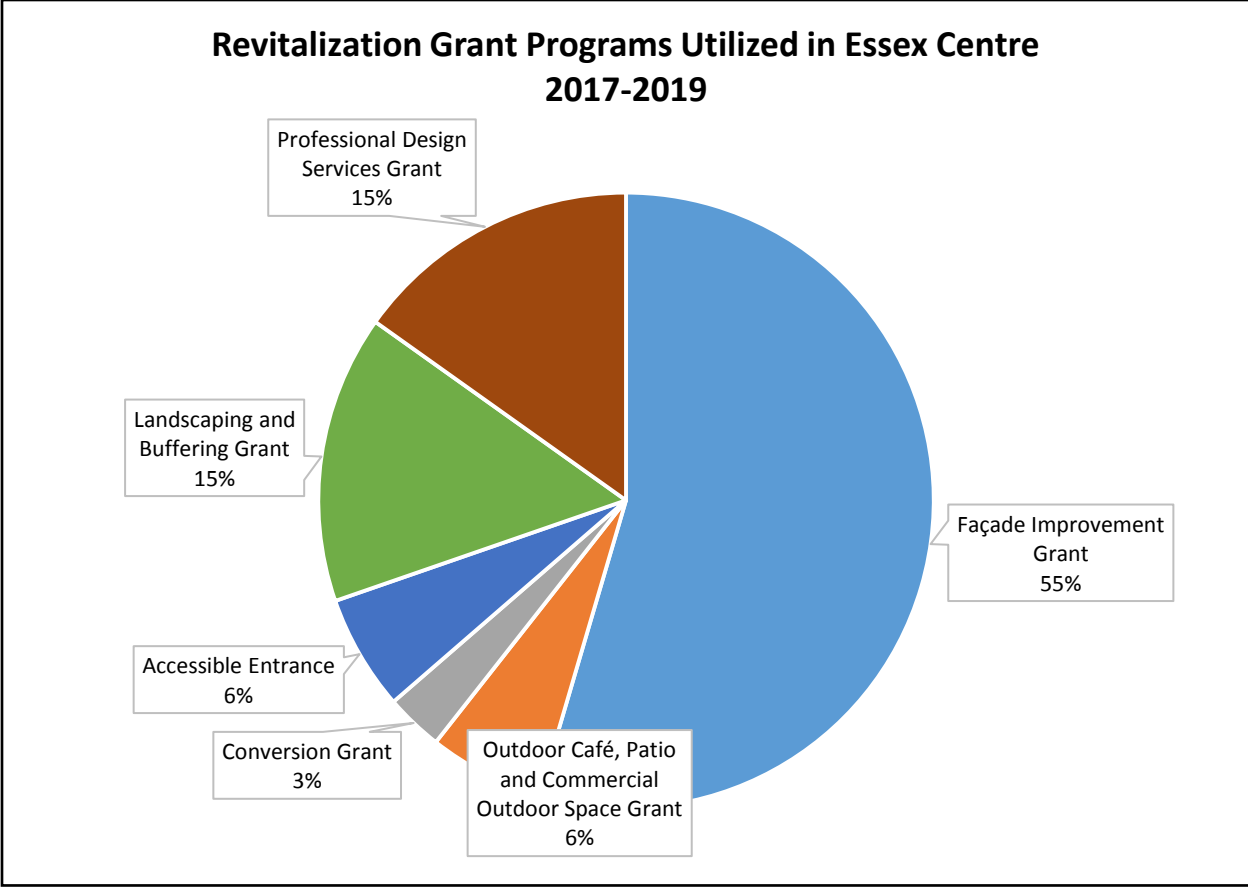


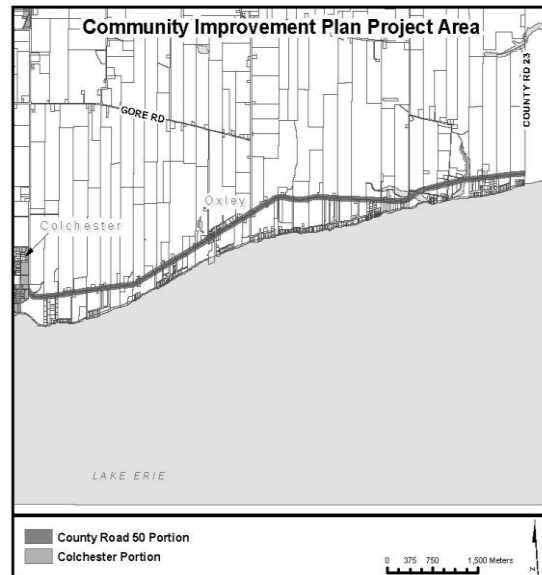
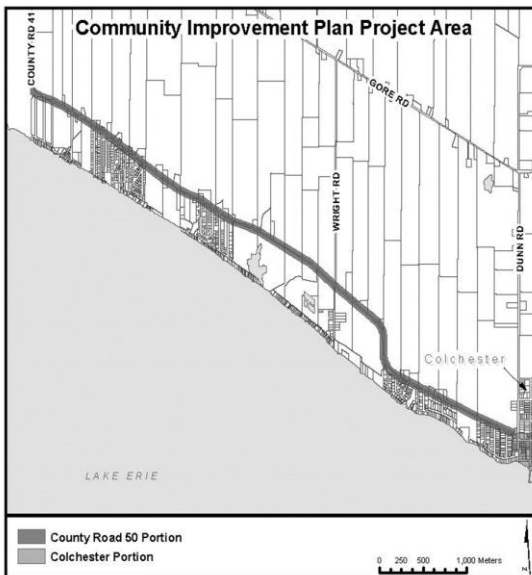
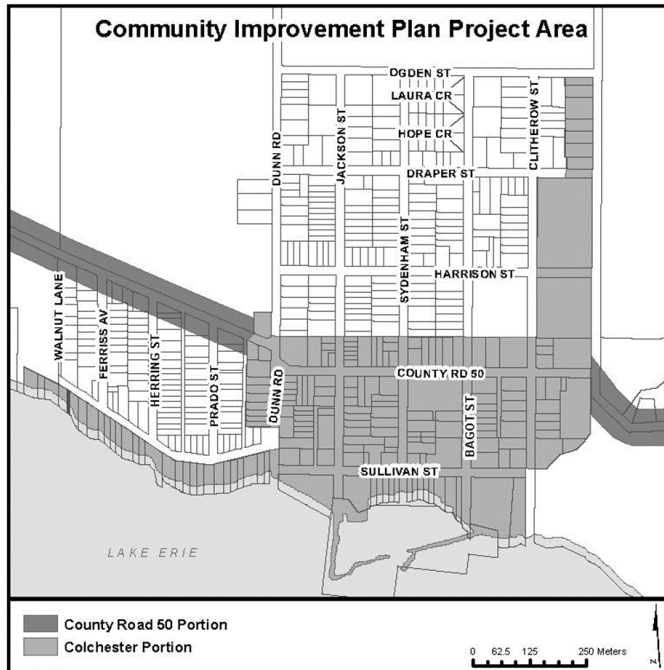
Figure 6 outlines the percentage of Revitalization Grant programs Utilized in Essex Centre from 2017-2019



The Colchester and County Road 50 Community Improvement Plan

The Colchester and County Road 50 CIP (CCCIP) was established to encompass and encourage revitalization and investment in the Town’s unique lakeshore-related settlement which is renowned for its sport fishing, active transportation routes, picturesque Lake Erie waterfront and beachfront Park. The Colchester Community Improvement Project Area (CIPA) was subsequently amended to include County Road 50 to help encourage and support the establishment and maintenance of value-added, on-farm diversified uses and agricultural related land use activities to keep a strong, resilient and productive rural economy.

The designated Community Improvement Project Areas for the Colchester and County Road 50 CIP are identified below:



In 2019, four (4) new applications were filed under the CCCIP and \$8000 has been disbursed as of November 29. The figures indicate a 33 percent increase overall in new applications filed in 2019. Staff expect monies paid out in 2019 will meet or exceed the value paid out in 2018 as they anticipate the continued submission of invoices before the end of the year.

Figure 7 provides an overview of the number of new applications received under the Colchester and County Road 50 CIP since 2018

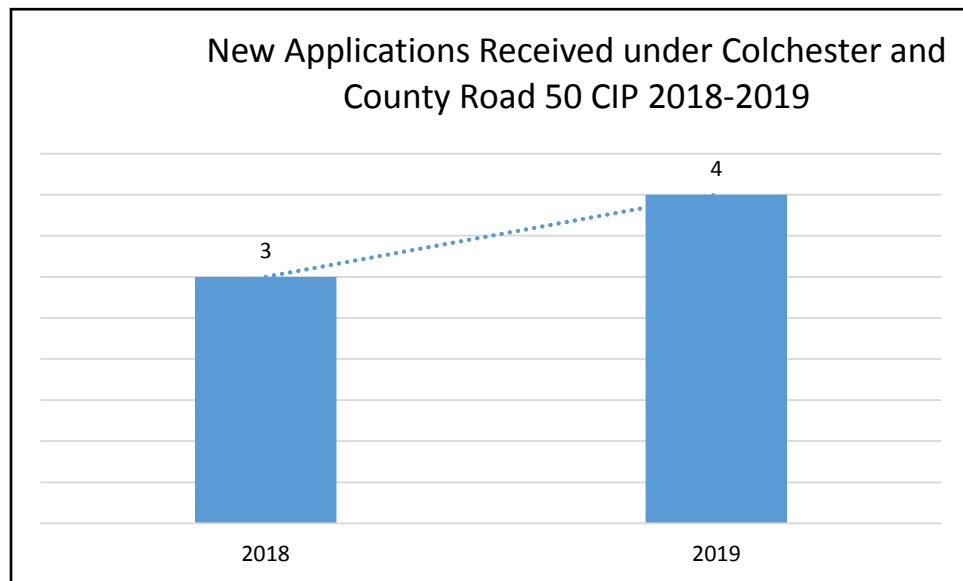
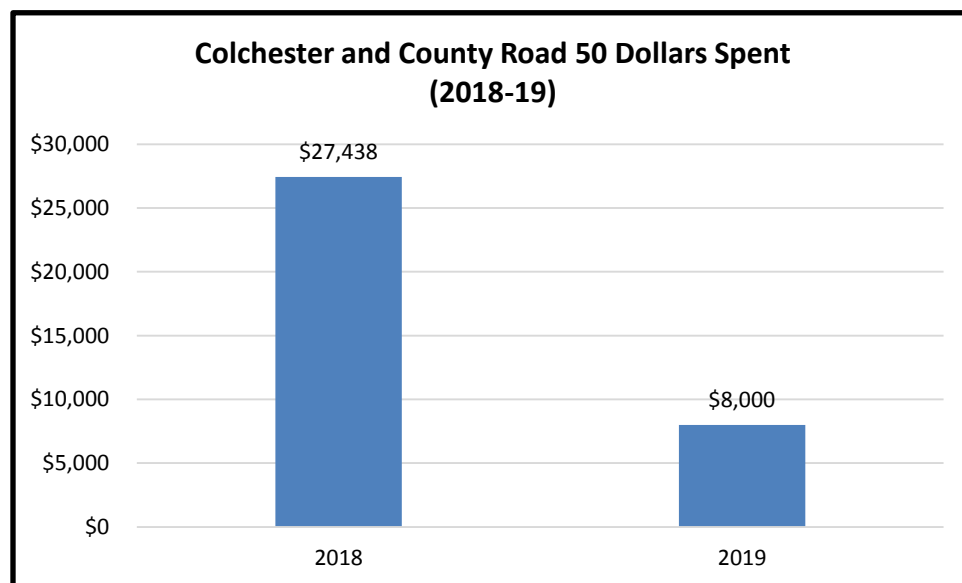


Figure 8 provides an overview of dollars paid under the Colchester and County Road 50 CIP from 2018-2019 as of November 29, 2019



The most popular **Revitalization Grant Program** utilized under the CCCIP from 2018-2019 was the Façade Improvement Grant. The most popular **Development Grant Program** utilized under the CCCIP in 2018-2019 was the Development Permit Fee Grant. Due to the volume of existing wineries and opportunities for the development of on-farm diversified uses along County Road 50, it is anticipated that the Outdoor Café, Patio and Commercial Outdoor Space grant; Landscaping and Buffering Grant; and, Tax Increment Grant will have a greater uptake in the future.

Notable Projects in 2019

The CIPs have assisted with many notable projects in 2019. In Harrow, the CIP has assisted with financial incentives for façade improvements at 41-45 King Street, and the installment of new landscaping at the Harrow Feed Store. It has also assisted with the redevelopment of the former site of the Harrow Junior School by providing funds to assist with the cost of demolition. The CIP also assisted with the cost of façade improvements at the former Shep's building at 71 King Street West.

In Essex Centre, the CIP has assisted with financial incentives for façade improvements at the new location of Stepping Out, a popular local fashion store, located at 19-21 Talbot Street North. The CIP has also assisted with the cost of design and install of a new sign to mark the location of a new health and fitness facility at 31 Arthur Avenue. Significant façade improvements at 41 Talbot Street North are also being undertaken with the support of CIP financial incentives and are anticipated to be completed before the New Year.



In Colchester and along County Road 50, the CIP has assisted with façade improvements at the Garfields restaurant at 1 County Road 50 West; the development of five (5) new tourist accommodations at 230 Jackson Street; and, the rejuvenation of the façade at 220 Jackson Street. The CCCIP also assisted with financial incentives for the development of the new CREW Winery along County Road 50, with the installation of new landscaping at the Oxley Estate Winery, and future enhancement of the outdoor patio at the Paglione Estate Winery.



Proposed Changes to the Community Improvement Plan Programs

It is anticipated that the Community Improvement Plan (CIP) programs will be implemented over a 10 year time period. The implementation period for the Harrow CIP would thus expire in 2022, and the Essex Centre CIP would expire in 2024. Council can however, at any time, elect to discontinue a grant program or dissolve a community improvement project area by bylaw when the Council is satisfied that the community improvement plan has been carried out.

The Harrow and Essex Centre Streetscape project has a combined total estimated cost of \$8.4 million. In order to finance the debt related to the streetscape projects, it is being proposed that the allotment of \$150, 000 from the Community Improvement Plan program beginning in 2022 be allocated towards servicing the debt. Thus, it is proposed that the Harrow and Essex Centre Implementation period be amended to expire at the end of 2021. Since the Colchester and County Road 50 CIP (CCCIP) was introduced in 2018, it has only been implemented for a period of two (2) years and has not been carried out to its full potential. It is thus recommended that the CCCIP continue to be implemented over a ten year period, or until such time Council is satisfied that the CCCIP has been carried out.

In the interim, Planning is proposing a number of changes to the Harrow, Essex Centre and Colchester Community Improvement Plan and its individual grant programs. A summary of the changes are attached to this report alongside the amended implementation strategies. The following, however, are notable revisions:

- Delegation of approval authority on CIP applications from Planning to the Economic Development Officer (EDO);
- The cessation of the Parks Levy Equivalent Grant Program;
- The extension of the CIP project area for the Essex Centre;
- The removal of employment generation as a qualifier for the tax increment grant; and,
- The removal of the affordability qualifier for the allocation of funds under the Conversion Grant Program to assist with the creation of new rental dwelling units.

Delegation of Approval Authority to Economic Development Officer (EDO)

The grant programs offered under the CIPs focus on community revitalization and beautification, and the provision of tourist accommodation by confining project areas to the downtown cores or tourist gateways. In order to achieve these goals, the Town must work with the business community which comprises individual land owners, business operators and related associations.

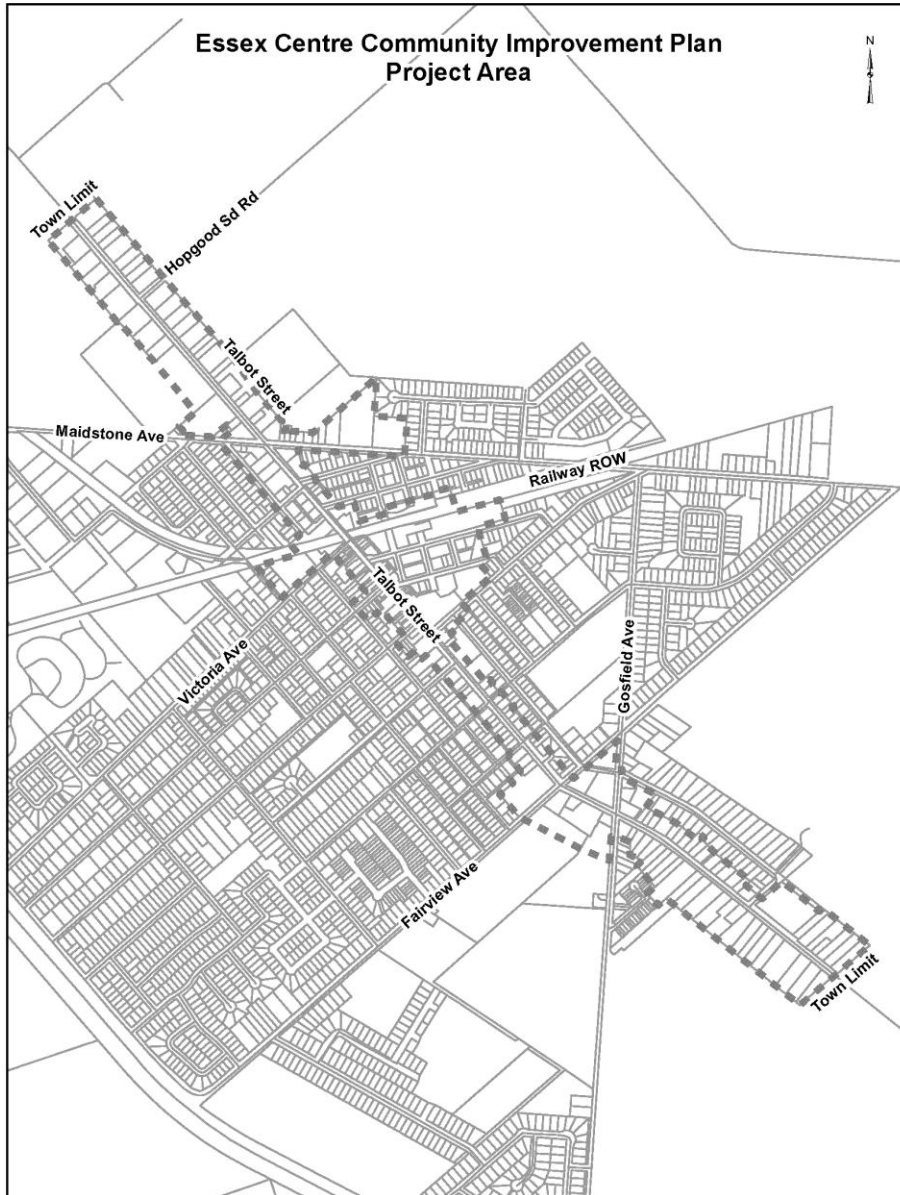
The EDO is the primary contact between the business community, potential investors and the Town. Delegating the administration and approval authority of the CIPs to the EDO will optimize the marketing of the program and enhance the customer service experience. Planning will continue to work with the EDO with respects to reviewing applications for consistency with the Town's Official Plan and Zoning Bylaw, and provide administrative support as needed.

Cessation of the Parks Levy Equivalent Grant Program

The Parks Levy Equivalent Grant program has never been utilized in either community improvement project area, nor has any interest been expressed for the program by program participants. The program applies to vacant brownfield land to which a parks levy equal to 2 or 5 percent of the predevelopment value of the property applies for the development of new affordable rental dwelling units and new commercial and industrial development exclusively to property owners undertaking works that increase energy efficiency in new buildings above the related minimum standards applicable under the Ontario Building Code or who provide Leadership in Energy and Environmental Design certified or other Town approved green technologies to new developments.

Expansion of the Essex Centre CIP Area

Any substantive changes to the project area boundaries or the introduction of new programs will require an amendment to the Plan by by-law. No formal public consultation is required. It is recommended that the Essex Centre CIP project area be extended to encompass properties along the east and west sides of Talbot Street from the intersection of Gosfield Avenue and Talbot Street to the southern limit of Talbot Street. The proposed extension is identified below:



Similar to the North limit of Talbot Street, Talbot Street South is also a gateway into the Essex Centre community. The southern limit of Talbot Street includes two institutional buildings and a commercial building who would merit from financial assistance for the rejuvenation or expansion of their facilities.

Changes to Eligibility Requirements for the Tax Increment and Conversion Grant

In order to qualify for the Tax Increment Grant, applicants must demonstrate that the proposed works directly result in a net increase in employment opportunities on the lands

which are the subject of a tax increment equivalent grant application. The generation of employment as a qualifier and can be difficult to ascertain. Rather, the Grant program better qualifies the applicants by stipulating the development must result in an increase of a minimum of \$500,000 in the assessed value of the property.

The Conversion Grant is currently only applicable to the development of affordable rental dwelling units, with the exception of hotel rooms and bed and breakfast rooms. Affordable is defined as a dwelling unit having a monthly all-inclusive rental rate of \$1000 or less or such other level established by Council on an individual application basis. This can be difficult to guarantee, as rental prices may rise following the disbursement of funds. Rental dwelling units should be encouraged regardless of price points to support the development of a mix of housing within the Town of Essex, and especially in the commercial districts, to meet housing targets identified in the Provincial Policy Statement and support a safe and walkable community.

Financial Impact

Since it is proposed that the Harrow and Essex Centre CIP implementation period be amended to expire at the end of 2021, \$150,000.00 is proposed to be reallocated in 2022 to fund the debt associated with the Essex Streetscaping Project.

With the proposed expiration of the Harrow and Essex Centre CIP at the end of 2021, new commercial and industrial developments within the CIP areas that qualify for the tax increment grant would continue receiving reimbursement as per their respective agreements, however new commercial and industrial developments within the CIP areas beyond 2021 would no longer be eligible for reimbursement.

Consultations

Lori Chadwick, Director, Development Services

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Link to Strategic Priorities

- ☐ Manage, invest and plan for sustainable municipal infrastructure which meets current and future needs of the municipality and its citizens.
- ☐ Create a safe, friendly and inclusive community which encourages healthy, active living for people of all ages and abilities.
- ☐ Provide a fiscal stewardship and value for tax dollars to ensure long-term financial health to the municipality.
- ☒ Manage responsible and viable growth while preserving and enhancing the unique rural and small town character of the community.
- ☐ Improve the experiences of individuals, as both citizens and customers, in their interactions with the Town of Essex.

Summary of Changes to Community Improvement Plan Programs (CIP)

Section 2.1 Clarifications:

- Addition of the following definitions:
 - Alley
 - Combined Use Building
 - Dwelling
 - Highway
 - Public Parking Area
- Elimination of the following definitions:
 - Façade Improvements
 - New Affordable Residential Rental Unit

Section 4.1 Resource Implications

- Change Planning Staff to Development Services Staff;
- Eliminate requirement to pre-consult with the Ministry of Municipal Affairs and Housing when any substantive changes to the project area boundaries, or the introduction of new programs, is proposed.

Section 5.0 Program Details

- Change approval authority for the execution of an Agreement from Town Planner to the Economic Development Officer or Manager of Planning Services in his or her absence

Section 5.2.1 Development Permit Fee Grant Program

- Only allow granting of the Development Permit Fee Grant Program when in combination with an executed development agreement

Section 5.2.3 Tax Increment Equivalent Grant Program

- Eliminate employment qualifier from Tax Increment Grant Program provisions

Section 5.2.4 Parks Levy Equivalent Grant program

- Eliminate Parks Levy Equivalent Grant Program

Section 5.2.5 Façade Improvement Grant Program

- Only allow funds for the removal of inappropriate or out dated signage and installation of a new sign structure when used in combination with any façade improvement works eligible under the Façade Improvement Grant;
- Limit eligibility for mini façade improvement grant to only those works that are \$2000 or less; and
- Make eligible side and rear façade improvements that face and abut an alley or highway or public parking area.

Section 5.2.6 Outdoor Café, Patio and Commercial Outdoor Space Grant Program

- Amend program to allow funds for the addition of new accessible entrances to and from the designated outdoor area, new identification and directional signage and facilities or structures or parking of bicycles only when in combination with hardscaping and landscaping works that define, shelter, delineate or otherwise enhance the outdoor space

Section 5.2.7

Conversion Grant Component

- Removal of affordability qualifier for construction of new rental dwelling units

Rehabilitation Grant

- removal of affordability qualifier

Demolition Grant

- Include provision regarding complete demolitions. Proposals must now be accompanied by an executed development agreement

Section 6.0 Monitoring and Assessment

- Remove mention of the CIP Plan's anticipated Implementation period;
- Amended Essex Centre CIP area to include the south limit of the Town of Essex.



Harrow Community Improvement Plan Implementation Strategy

July 2015

(Revised January 2020)



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Harrow Community Improvement Plan Implementation Strategy

1.0 Community Improvement Plan Background

1.1 Harrow Community Strategic Plan

The Harrow Community Strategic Plan was initiated by Council in January 2011 to develop 'Pride of Place' for Harrow as a distinctive urban centre within the municipality and a prosperous and sustainable member of the larger community, the Town of Essex. It establishes a strategic direction for Harrow that sets goals and objectives for the community and Council to work towards. It incorporates a policy framework to be ultimately included in the Town of Essex Official Plan.

The development of the strategic plan engaged the general public, business operators, service agencies and other stakeholders in a pro-active and positive exercise to establish a vision for Harrow based on its historical roots and its association with the other urban centres in the Town, its large rural hinterland and the region.

Through the development of the strategic plan, the community identified the need to commit to the rejuvenation and revitalization of the downtown core of Harrow.

The business community and cultural organizations, in particular, desired improved communication amongst various agencies and organizations, heritage preservation, new economic stimuli and tourism promotion and greater efforts to develop the downtown as a destination for commerce and culture, as well as for more residential accommodation, as important priorities.

1.2 Harrow Community Strategic Plan Background

Under Section 28 of The Planning Act of Ontario (1990), municipalities are given authority to create community improvement plans with supporting programs for identified community improvement plan project areas. In accordance with Section 28, a municipality may use any

of the following strategies in administering the community improvement plan, hereby referred to as the Plan:

- Acquire, hold, clear, grade or otherwise prepare land for community improvement;
- Construct, repair, rehabilitate or improve buildings on land acquired or held by it in the community project area;
- Sell, lease or otherwise dispose of any such buildings and the land associated with it in the community project area;
- Sell, lease or otherwise dispose of any lands acquired or held by it in the community improvement project area for use in conformity with the community improvement plan;
- Make grants or loans in conformity with the community improvement project area for eligible costs associated with a project within the community improvement plan project area in conformity with the community improvement plan;
- Fund the costs of an environmental site assessment, environmental remediation, development or redevelopment, construction and reconstruction of lands and buildings for rehabilitation purposes or for the provision of energy efficient uses, buildings, structures, works, improvements or facilities.

Further Section 365.1 of the Municipal Act of Ontario (2001) permits municipalities to pass a by-law providing tax assistance to eligible properties in the form of deferral or cancellation of all or part of the municipal taxes levied on new assessment for a specified period of time. It works in partnership with the provisions of Section 28 of the Planning Act and its provisions are incorporated into it.

In July, 2011 Council for the Town of Essex adopted the Harrow Community Strategic Plan. Within the Strategic Plan was a draft plan outlining the following **Goals** for the Harrow Community Improvement Plan:

- Implement the Official Plan objectives for community improvement, redevelopment and revitalization, as stated in Section 7.1 of the Town of Essex Official Plan;
- Where feasible implement other Harrow Community Strategic Plan, Council and Official Plan policies and directives related to community health and prosperity;

- Achieve the community's vision of a prosperous and active downtown where residents and visitors live, work, shop and play;
- Foster an environment to promote and support the economic rejuvenation of the downtown and other project areas;
- Establish an implementation strategy, inclusive of financial incentive programs, to complement and assist private sector investment in the revitalization of the downtown, as defined in the Implementation Plan and forming part of this Plan.

From a planning perspective, the Harrow Community Improvement Plan, developed to help implement the objectives of the Strategic Plan and the wishes of residents and the business community, is a proven municipal tool that will assist the business operators and building owners of Harrow as well as the Town of Essex Council in achieving the principle goals set out above.

Within the Plan are the following **objectives** for the Town of Essex to be an active partner in supporting and providing financial incentives to those projects that will achieve the Goals of the Strategic Plan and the Official Plan:

- To provide for rehabilitation or improvement of existing buildings and properties, building facades, signage, landscaping, parking and other physical resources, through the use of municipal assisted programs and funding sources;
- To provide for development, redevelopment and adaptive re-use of older buildings and vacant and underutilized lands through the use of municipal assisted programs and funding sources;
- To complement private initiatives, the Town is committed to improving the walkability, amenities and attractiveness of local streetscapes and to develop safe streets that meet the needs of pedestrians, non-motorized and motorized traffic, in accordance with the goals of the Provincial Policy Statement for safe and healthy communities;
- To stimulate private investment in rehabilitation and community improvement in the downtown and elsewhere to support downtown sustainability and community health and prosperity;

- For property owners, investors and community organizations to undertake projects, programs and activities consistent with the Goals of the Strategic Plan and the Official Plan;
- To preserve, conserve and enhance the heritage and historical structures and streetscape of Harrow.

1.3 Harrow Community Improvement Plan Expansion

The boundaries of the Harrow Community Improvement Plan Project Areas are shown on the maps accompanying this Plan. The policies and programs set out in this Plan are applicable to this plan's project areas exclusively.

The implementation of the Harrow Community Improvement Plan is helping to address physical deterioration in the central core by providing grants and other financial incentives to stimulate private investment in building façade renewal and other physical improvements to make the downtown more attractive to residents and visitors. It also encourages investment in new and expanded land uses that complement existing activities downtown.

More recently, Council set out to further strengthen and support the downtown and to effect a good balance of employment opportunities, varied residential accommodation and local services to benefit the entire community, in a compact urban form. In other words the aim is to achieve a balanced, healthy and sustainable community. Incentives have been adopted to stimulate new economic development downtown and elsewhere in the community. This is directed particularly to the goal of generating new and expanded industrial and commercial uses that would provide employment opportunities and the economic spin-offs so critical for the continued health and prosperity of the community.

Harrow has small infill vacant industrially zoned lands and several highway commercial properties that have not been developed to their full potential. The industrially designated and zoned parcels, in particular, have limited visibility from a main road, are unserviced (but serviceable), may require environmental remediation and are bounded by mixed use development such that landscape buffering may be required, depending on the potential

uses. As such, they have limited appeal without some form of stimuli to help mitigate their physical limitations. As well, current business operators on older industrial and commercial lands should be given comparable incentives to expand and enhance their facilities and businesses. Many would benefit from property beautification, more efficient use of space, better accessibility and enhanced support facilities.

Currently Harrow has no tourist accommodation. New and expanded program incentives will encourage boutique hotel and bed and breakfast uses within the project areas. Harrow's location in the centre of increasingly popular cycle tourism routes, wine and black history trails and other tourist related activities makes the provision of visitor accommodation a priority.

Affordable rental housing is needed. Currently, Harrow has only a very small percentage of its housing stock in the form of rental accommodation. What is offered is of modest size and configuration. In response to the mandates of the Planning Act, the Town's general zoning by-law was amended to permit second dwelling units in single-detached, semi-detached and townhome dwellings, subject to compliance with zoning regulations regarding second dwelling units.

Harrow has also experienced recent school closings rendering the school buildings and or site redundant for institutional purposes. They are suitable for redevelopment or re-use, particularly for mixed residential land uses. Harrow lacks a range of housing options and such sites provide the opportunity for addressing this deficiency.

Grant incentives have been adopted to encourage such residential accommodation in suitable underutilized commercial building space and in low density residential areas within the community improvement project areas.

Overall, the expanded goals are intended to encourage and stimulate new investment in employment activities in Harrow. Recent beautification efforts in the downtown through civic streetscape improvements, the efforts of the Chamber of Commerce, Communities in Bloom and other active Harrow supporters, as well as several community improvement grants for façade treatments, have helped to maintain the attractiveness of the downtown.

But there is a need to attract new employment activities, to re-energize existing businesses and to provide varied accommodation for residents and visitors. Consequently, the Harrow Community Improvement Plan project area has been enlarged to meet these goals. As well, existing programs have been amended and new programs have been introduced to make the overall community improvement plan more attractive and relevant to the needs of businesses, visitors and residents of Harrow.

2.0 Harrow Community Improvement Plan Program Strategy

2.1 Clarifications:

Accessible means a barrier free entrance that permits a person with a disability full access to a building, in accordance with the Ontarians with Disabilities Act.

Acknowledgement Agreement means that all property owners making application(s) for grants are required to enter into a grant agreement with the Town of Essex. The grant agreement will specify such items as, but not be limited to, the specific purpose and amount of the grant applicable, the duration of the grant, if of the type spread out over time, and, in the event of a default of the agreement, the owner's obligation to repay through taxes or in such payment acceptable to the Town of Essex any monies received. The agreement is intended to encapsulate all of the terms and conditions included in the specified grant guidelines. It may be registered on title and applicable to present and subsequent owners of the property should the property be sold within a stated period of time.

Alley means a highway, having a maximum width of less than 7 metres (23 feet), providing a means of access to a lot.

Combined Use Building refers to a building having, as a main uses, both a dwelling unit(s) and a non-residential use(s).

Consistent with the Goals of the Plan refers to the overall goals of the Harrow Centre Community Improvement Plan, as described in the Plan.

Conversion means to create a new rental dwelling unit(s) or hotel or bed and breakfast accommodation in a dwelling or a combined use building by the addition of new building space to an existing building or the conversion of space within the existing building, in a manner acceptable to the Town and in compliance with the general zoning by-law, By-law 1037, and the Ontario Building Code.

Dwelling means a building or structure or part of a building or structure that is occupied, in whole or in part, for the purposes of human habitation, but does not include a hotel, motel or mobile home.

Facade means the exterior walls of a building directly visible from a street or public area.

Final Inspection and Approval means that the work as described in the Acknowledgment Agreement has been completed in the manner approved by the Town of Essex and has received final inspection and approval from the Town.

Highway means all roads dedicated for public use.

Municipal Wide Services Component of Development Charges means the municipal wide service component of the development charges fees, as set out in the Town of Essex Development Charges By-law for current rates and fees.

Project Area means the geographic area of the Harrow Community Improvement Plan delineated by by-law, as may be amended from time to time.

Property Owner means the owner of the land and or building, located in a Harrow Community Improvement Plan Project Area, which is the subject of a program application within this plan. A person having signing authority and lawfully designated by the owner to make a program application on behalf of the property owner will also be deemed to be the property owner for the purposes of this Plan.

Public Parking Area refers to a free standing parking area available to the public or a shared parking area in which public and private use is available.

Rehabilitation means functional or aesthetic site improvements to the property approved by the Town, including for example: new information or identity signage; parking lot striping and sealing; public benches; landscaping and screening and accessible pedestrian entrances.

Urban Design Guidelines means the architectural and functional guidelines and objectives set out in subsection 5.3, Downtown Urban Design Guidelines, of the Harrow Community Improvement Plan.

2.2 Program Start Date

For all Grant programs dealing with financial commitments, the program start date is based upon the annual Council approval of budget funding for the Plan.

2.3 Retroactivity

Program funding is only available after Town of Essex approval of the program(s) and the site specific application. The grant programs or architectural services will not be retroactively applied to works started prior to commencement of the program, unless otherwise authorized by Council.

2.4 Allocation Grants and Architectural Services

Grants: Unless otherwise specifically stated, all grants will be paid to the property owner after the application is approved by the Town and the approved work is successfully completed to the satisfaction of the Town.

3.0 Qualification Criteria for All Programs

All owners of properties within the Harrow Community Improvement Plan Project Area are eligible to apply for funding, subject to meeting the following eligibility criteria, and the availability of funding as approved by Council. When an applicant is applying for a grant or architectural design service under the Plan, the following criteria must be met to the satisfaction of the Town of Essex.

The following terms and conditions apply to all programs:

- Each of the programs outlined are application based, with review, evaluation and decision-making to be done by the Town on a site specific basis.
- The applicant must be the registered owner of the property for which the application is being made or an agent authorized by the registered owner.
- A property owner who is in arrears of property tax or any other municipal financial obligation cannot participate in a program.
- Any outstanding orders against the subject property must be satisfied prior to the grant application being made or other services rendered under this Plan, unless fulfillment of the order is part of the proposed work.
- Only one application can be made for a property under each applicable grant program, unless the project is phased in a manner satisfactory to the Town of Essex or the Town determines that a further application is merited.
- Proposed work will conform to all municipal policies, standards and procedures of the Town including: its current applicable Official Plan policies, relevant zoning, design guidelines and development manual policies and the necessary planning and development approvals and building permits pursuant to the Ontario Building Code.
- A grant program application must be submitted to the Town of Essex prior to the commencement of any works and prior to application for a building permit directly related to program funding, unless otherwise permitted by Council.

- Such program application will include plans, estimates, contracts and other details as may be required to satisfy the Town with respect to the costs of the project and conformity of the project to the Plan.
- A property owner may be requested to provide a business or development plan for the proposed work, as part of the program application.
- As a condition of approval, the Town of Essex may also require the submission of professional design and architectural drawings, which satisfy the applicable Urban Design Guidelines of the Plan, as well as, impact studies or mitigation criteria, such as a traffic impact study or an environmental screening report.
- The Town of Essex will require the applicant to provide information on CIP program grants previously received for the subject property from all sources and the amount of the grants will be taken into account in consideration of an application.
- The total value of all grants and services received from the Town of Essex for a subject property shall not exceed the total value of the project or such other minimum level established in the respective program(s), whichever is less.
- All property owners participating in any program will be required to enter into an Acknowledgement Agreement with the Town of Essex. The Council of the Town of Essex will be the approval authority for the execution of an agreement. The agreement will be registered on title and will specify the terms of the grant or services.
- All completed works must comply with the description of the works set out in the related Acknowledgment Agreement.
- Where applicable, when a grant is to be given, the owner will submit, for final approval, a copy of all paid invoices for work that is completed. Grants will be made upon successful completion of the approved work and acceptance of all documentation of the costs associated with the work, in accordance with the provisions of the program.

- The Town of Essex may undertake an audit of work done and associated costs if it deems it necessary. The cost of the audit will be deducted from the approved grant amount.
- Unless the Town deems it appropriate to enter into an agreement with a subsequent owner or transferee for continuation of the grant, if a building, erected or improved with the assistance of a program grant or services, is demolished, sold or its ownership transferred prior to the expiry of the grant or service agreement period, stated in the Acknowledgement Agreement, at the discretion of the Town, the grant or services are forfeited and monies will be recovered by the Town either through posting the fees on the property taxes or by the owner paying a lump sum payment to the Town of Essex.
- The Town may at any time discontinue a program; however, any participants in the program, who have an Acknowledgment Agreement executed prior to program discontinuation, will continue to receive grants or services as approved for their property, in accordance with the provisions of the program and acknowledgment agreement.

4.0 Administration

The following general steps will guide Town of Essex staff in review, evaluation and administration of applications:

- Applicants will be required to have a pre-consultation meeting with appropriate Town of Essex staff in order to determine program eligibility, proposed scope of work, project timing and compliance with the Urban Design Guidelines.
- The Town may request that applications be accompanied by one or more of the following supporting documentation:
 - a site plan and professional design or architectural drawings;
 - specification of the proposed works, and if requested, any construction drawings;
 - estimated project construction costs, including a breakdown of said costs;
 - impact studies such as traffic and parking impact assessments;
 - environmental reports or a record of site condition;
 - incorporation documents;
 - financial information or a market feasibility study, including, but not necessarily limited to:
 - sources and uses of funds;
 - financial statements;
 - purchase price of property;
 - appraised value of property;
 - owner equity;
 - registered mortgages;
 - details of primary construction lending and secondary financing; and,
 - projected unit sale prices and/or rental rates
 - projected employment levels.
- Before accepting an application, Town staff will screen the application. If the lot affected is outside of a Harrow Community Improvement Plan Project Area or the

application clearly does not meet the program eligibility criteria, the application will not be accepted. Acceptance of the application by the Town does not imply approval under the Plan.

- Town staff will perform an initial site visit and inspection of the building or property, if deemed necessary.
- The owner must provide evidence of financial capability to develop the property according to the terms of the program.
- If all criteria are met, the Town of Essex will approve the Program Application request, and an Acknowledgement Agreement between the Town of Essex and the property owner will be prepared for execution.
- Once the Town has approved the Program Application request and Acknowledgement Agreement, the Agreement will first be executed by the property owner and then by the Town of Essex.
- Preparation for the release of grants will be processed after:
 - the Agreement has been executed and registered on title;
 - staff have inspected the property and documented the pre-development state and/or completion of the approved works;
 - staff are satisfied with all reports and documentation submitted;
 - a building permit has been issued, if required for the approved works.
- The monies or services will be advanced to the property owner on satisfactory completion of the project in accordance with the terms of the program and, if required, proof of payment of all related invoices and a copy of the invoice(s) have been presented to the Town.

4.1 Resource Implications

The allocation of grant and staff resources towards the programs included in the Harrow Community Improvement Plan will be at the sole discretion of the Council for The Corporation of the Town of Essex and:

- It is anticipated that the Harrow Community Improvement Plan will be implemented over a 10 year time period. Town of Essex Council may elect to extend the implementation period, discontinue or amend the Plan, as it deems appropriate or necessary.
- The Plan and its Implementation Strategy will be reviewed and assessed by Development Services Staff annually and may be amended from time to time by Council resolution and/or by-law amendment to the Plan, at Council's discretion.
- Council has adopted Urban Design Guidelines to provide guidance to the property owner as well as staff and Council to ensure, where applicable, that all applications conform to desired design concepts and strategies for the development of lands within the boundaries of the Plan.
- The Implementation Strategy establishes the details of and obligations under each program available. Please refer below to Section 5.2 Program Descriptions.
- Council will establish the level of incentives offered and will, as part of its annual budget process, determine if changes in the incentive levels are necessary, desirable or warranted.
- Any substantive changes to the project area boundaries or the introduction of new programs will require an amendment to the Plan by by-law. .
- Based on the program package described above, the resource requirements are:
 - Staff and professional resources to administer the program package;
 - Marketing, advertising and other delivery costs for the Plan;
 - Town approval to grant monies under the following programs.

5.0 Program Details

A description of each of the Plan programs is provided in this section. The allocation of resources toward all programs and to each program in the Harrow Community Improvement Plan will be entirely at the discretion of Council for the Town of Essex.

A property owner may make application for a grant or services under one or more programs, subject to eligibility. Only one application can be made for a property under any program, unless development is phased in a manner acceptable to the Town. Owners must make application in writing to the Town and meet all of the information requirements set out in the application package or as required by the Town.

All property owners participating in any program will be required to enter into an Acknowledgement Agreement with the Town of Essex. The Economic Development Officer for the Town of Essex or the Manager of Planning Services in his or her absence will be the approval authority for the execution of an Agreement. The Agreement will specify the terms of the grant and services and set out a description of the works approved. Depending on the program, the Agreement will be registered on title. All completed works must comply with the description of the works set out in the related Agreement and the terms and conditions therein.

5.1 Program Groups

Exclusively for lands within a Harrow Community Improvement Plan Project Area, an eligible property owner has access to one or more of the following eight financial incentive programs:

Development Grant Programs

- Development Permit Fee Grant Program
- Development Charges Grant Program
- Tax Increment Equivalent Grant Program

- Parks Levy Equivalent Grant Program

Revitalization Grant Programs

- Façade Improvement Grant Program
- Outdoor Cafe, Patio, and Commercial Outdoor Space Grant Program
- Conversion and Rehabilitation Grant Program
- Professional Design Services Grant Program

5.2 Program Descriptions:

5.2.1 Development Permit Fee Grant Program

The **Development Permit Fee Grant Program** provides a grant to property owners undertaking works that require approval under the Planning Act or the Building Code Act or both. This program applies to Planning Act applications or construction permits to which fees, hereby referred to as development permit fees, apply.

Program Specific Provisions:

- Owners of a dwelling or other building to be converted to a bed and breakfast dwelling or to which a rental dwelling unit is to be added or of an institutional, a commercial or industrial property or a redundant institutional building which is intended to be re-purposed, which is the subject of this grant application, and when in combination with an executed development agreement, are eligible to participate in this program.
- Eligible development permits are applications for any one or more of: an Official Plan Amendment; a Zoning By-Law Amendment; a Minor Variance; a Site Plan Control Agreement; Consent or Plan of Subdivision Approval; Removal of the Holding (h) designation; a Demolition Permit; a Building Permit; a Plumbing Permit; a Sign Permit and/or a Driveway Permit.

- The property owner will receive the grant equivalent of the development permit fee or combination of fees charged by the Town for the approved project.
- The grant payment is normally made to the property owner within 30 working days following final inspection and approval of the completed works.

5.2.2 Development Charges Grant Program

The **Development Charges Grant Program** provides a grant up to the equivalent of the municipal wide services component of the development charges fee applicable to the property owner undertaking works to which Development Charges apply.

Program Specific Provisions:

- Where development charges are applicable, eligible works include:
new rental dwelling units; development and redevelopment of commercial, Industrial or Institutional zoned lands or the expansion of existing commercial, Industrial or Institutional buildings and facilities; development and redevelopment of industrially zoned lands or the expansion of existing industrial buildings and facilities and redevelopment of an institutional building formally declared to be redundant and intended to be re-purposed;
- The municipal wide services component of development charges paid by the property owner is returned by means of a grant equivalent to the lesser of 100 percent of that component or the agreed upon and subsequently verified costs of development or redevelopment accepted by the Town;
- The grant payment is normally made to the property owner within 30 working days following final inspection and approval of the completed works.

5.2.3 Tax Increment Equivalent Grant Program

The **Tax Increment Equivalent Grant Program** provides a grant equivalent to the municipality's annual incremental tax increase from a development that increases the assessed value of the property. This program does not apply to Greenfield lands, namely, farmed lands that require an

Official Plan amendment and rezoning to permit an intended principal use or uses **Program Specific Provisions:**

- The Tax Increment Equivalent Grant Program applies to:
new commercial and industrial development and the expansion of existing commercial and industrial buildings, and new industrial development and the expansion of existing industrial buildings and facilities.
- Grants will only be made to property owners undertaking work consistent with the Urban Design Guidelines, where applicable.
- Development of the land must result in an increase of a minimum of \$500,000 in the assessed value of the property.
- The pre-approved assessed value of the land will be the value of the land on the date of application for a building permit.
- The municipal grant amount is determined by the incremental property tax increase applied to the property as a direct result of the works set out in the grant application approved by the Town of Essex.
- A maximum grant equal to 100 percent of the incremental property tax increase payable to the Town is given for each of the first 5 years. Another period of time and payment schedule may be set by Council; however, the total amount of the grant will not exceed the total grant equivalent of 100 percent of the incremental property tax increase payable to the Town for the first 5 years, nor will it be less than 100 percent of the incremental tax increase for the first year.
- Council will determine the total amount of the grant based on, the employment generation potential of the project within the community, the level of investment, the costs of construction and land preparation, and, where applicable, the cost of building rehabilitation.
- The grant is paid annually to the property owner at such time and in such manner as approved by the Town of Essex for the time period set out in the agreement; however, the date of the first payment shall be one year after the Town, upon confirmation that all taxes owing have been paid by the owner, has received the

Notice of Reassessment and, in subsequent years, after confirmation that the taxes owing for each year have been paid in full by the owner.

- If the use of the property changes while the acknowledgement agreement grant time period is in effect, such that the purpose and intent of the grant is declared by the Town to be null and void, the grant is immediately cancelled and any grant monies received will be recovered by the Town in such manner available to it, unless the Town deems it appropriate to enter into a new agreement with the property owner for continuation of the grant.

5.2.5 Façade Improvement Grant Program

The **Facade Improvement Grant Program** offers assistance to property owners who are undertaking institutional, commercial or industrial building façade improvements.

Program Specific Provisions:

- Eligible works include:
any repairs or rehabilitation of a building front façade, as approved by the Town, including the repairing, repainting or cleaning for the façade, restoring a facade with masonry, brickwork, wood and metal cladding, replacing cornices, eaves, parapets and other architectural features, repairing and replacing windows, entranceway modifications for accessibility, redesigning the store front restoring the original facade appearance, replacing or repairing canopies and awnings, installing exterior lighting and installing energy-efficient fixtures or cladding.
The removal of inappropriate or out dated signage and installation of a new sign structure are eligible works under this grant when used in combination with any of the works described above.
- Grants will be made to property owners undertaking façade improvements consistent with the Urban Design Guidelines of the Plan.
- The grant amount is 50 percent of the total cost of the approved works to a maximum grant of \$12,000 per building.

- Notwithstanding the provisions for the payment of grant monies under the Façade Improvement Grant set out immediately above, a 100 percent refurbishing grant amount of up to \$2,000 per building is available for any of the above-listed actions. Only works that are \$2000 or less will be eligible for this grant. Payment of this grant does not prejudice a subsequent application for the larger façade improvement grant above at the end of a twelve month interim period before such application will be accepted. The twelve month interim period may be reduced if, in that period, there is a change of ownership of the property or a new business replaces the business for which the grant was given. A property for which a Façade Improvement Grant was given or approved is not eligible for this refurbishing grant.
- Side and rear façade improvements are eligible, if the façade faces and abuts an alley or highway or a public parking area or there is direct public access to outdoor facilities accessory and complementary to the main use of the building, such as an outdoor patio or dining area.
- The grant payment is normally made to the property owner within 30 working days following final inspection and approval of the completed works.

5.2.6 Outdoor Café, Patio and Commercial Outdoor Space Grant Program

The **Outdoor Café, Patio and Commercial Open Space Grant Program** offers assistance to property owners who are undertaking the construction of outdoor cafes, patios or other commercial open space, that is accessory and complementary to a commercial use within a building on the same lot.

Program Specific Provisions:

- Eligible works include: hardscaping and landscaping and other features to define, shelter, delineate and otherwise enhance the outdoor space.
- The following works are also eligible when used in combination with the items above: new accessible entrances to and from the designated outdoor area, new identification and directional signage, and facilities or structures for the storage or parking of

bicycles. Furniture or other facilities that are not fixed in place are not eligible for this grant

- Grants will be made to institutional property owners undertaking work consistent with the goals of the Harrow Community Improvement Plan and the Urban Design Guidelines therein.
- The grant amount is 50 percent of the total cost of the approved works to a maximum grant of \$4,000.
- If the use of the property changes within 5 years after the giving of the grant, such that the purpose and intent of the grant is declared by the Town to be null and void, the grant is immediately cancelled and any grant monies received will be recovered by the Town in such manner available to it, unless the Town deems it appropriate to enter into a new agreement with the property owner for continuation of the grant.
- Where the improvements encroach onto municipal property or a public right of way, the property owner and business operator must enter into an Encroachment Agreement with the Town. The property owner and business operator must indemnify and save the Corporation harmless from all claims for damages sustained by any person, by reason of the permission granted in the encroachment agreement. The property owner and business operator must maintain public liability and property damage coverage in the said encroachment area structure with the Corporation as a named insured and to provide proof thereof annually to the Town.
- The grant payment is normally made to the property owner within 30 working days following final inspection and approval of the completed works.

5.2.7 Conversion, Rehabilitation and Enhancement and Building Demolition Grant Program

Conversion Grant Component

The **conversion component of this Program** offers assistance to property owners who are:

- creating a bed and breakfast operation;

- intending to utilize existing above the ground floor commercial building space or an existing dwelling to create a new rental dwelling unit(s), hotel rooms or suites or bed and breakfast rooms, where permitted by the general zoning by-law;
- converting an institutional building in whole or in part to accommodate multiple dwelling units and or a residential care facility.

When related to these conversions, grant monies may also be made available for the provision of additional on-site parking, exterior security lighting and other external safety features mandated by the works required to complete the conversion approved under this application.

Program Specific Provisions:

- The grant amount for conversion is 50 percent of the total cost of the approved conversion to a maximum grant of \$5,000 per rental dwelling unit or per hotel unit or suite of rooms to a maximum total grant of \$50,000 and
- \$1000 for a bed and breakfast bedroom or suite of rooms to a maximum total grant of \$5,000 in a converted dwelling and
- \$1000 per bed in a residential care facility to a maximum total grant of \$50,000.
- The grant payment is normally made to the property owner within 30 working days following final inspection and approval of the completed works.

Rehabilitation Grant Component

Dwelling Unit Rehabilitation:

The **rehabilitation component of this Program** offers assistance to property owners to bring existing rental dwelling units in a combined use building or dwelling up to the current minimum standards of energy efficiency under the Ontario Building Code.

- The grant amount for the rehabilitation of existing rental dwelling units is 50 percent of the total cost of the approved rehabilitation works to a maximum grant of \$2,000 per rental dwelling unit.

Accessible Entrance:

- A grant is available for the reconstruction of an existing public entrance to make it accessible at an amount equal to 50 percent of the total cost to a maximum of \$6,000.
- The grant payment is normally made to the property owner within 30 working days following final inspection and approval of the completed works.

Landscaping and Buffering;

Grant monies can also be used by business operators for new landscaping, the screening and buffering of parking areas, the erection of a ground identification sign with peripheral landscaping and other works that are specifically intended to improve the aesthetic

appearance of the property from the street or to mitigate nuisances impacting an adjacent residential areas.

- For aesthetic and buffering improvements to commercial, institutional or industrial properties, the grant amount is 50 percent of the total cost of the approved rehabilitation to a maximum of \$6,000 for the property. If the use of the building changes within 5 years after the giving of the grant, such that the purpose and intent of the grant is declared by the Town to be null and void, the grant is immediately cancelled and any grant monies received will be recovered by the Town in such manner available to it, unless the Town deems it appropriate to enter into a new agreement with the property owner for continuation of the grant.
- The grant payment is normally made to the property owner within 30 working days following final inspection and approval of the completed works.

Demolition Grant Component

Grant monies are available for the complete or partial demolition of an institutional, commercial or industrial building, including external components, such as storage facilities, steps or a vestibule, which are integral to the functioning of the building. Proposals for a complete demolition must be accompanied by an executed development agreement. Partial demolition is subject to approval by the Chief Building Official who must determine that demolition is necessary for public safety or that the demolition is necessary to permit the reconstruction of a principal component of the building.

- The grant amount equal to 50 percent of the cost of demolition for the first \$12,000.00 in total demolition costs plus 15 percent of the cost of demolition thereafter to a maximum grant of \$25,000.
- Grant approval will be conditional upon acceptance of a redevelopment plan for the site, if substantial or complete demolition is proposed. Council may also consider the giving of a larger grant of up to \$25,000 when the cost of demolition exceeds \$250,000, upon acceptance of a redevelopment plan for the re-use of the site and or building.

- The grant payment is normally made to the property owner within 30 working days following final inspection and approval of the completed works.

5.2.8 Professional Design Services Grant Program

The Professional Design Services Grant Program is intended to provide a financial incentive in the form of a grant to help offset the cost of professional design services required or encouraged by the Town.

The Town may provide a grant for the services of an architect, landscape architect or similar design professional to property owners for the preparation of a conceptual design for the building facade and exterior restoration, including heritage restoration, and for improvements to the property's grounds, including new landscaping and the addition of outdoor facilities that enhance the business operation and the streetscape.

The professional service provided must be consistent with the Town's Urban Design Guidelines and utilized in combination with one of the following grant programs: Facade Improvement Grant Program, Outdoor Café, Patio and Commercial Outdoor Space Grant Program or the Conversion and Rehabilitation Grant Program.

Program Specific Provisions:

- Grants will only be made on behalf of property owners undertaking work consistent with the goals of the Town of Essex Urban Design Guidelines.
- This program offers reimbursement for professional design services to a maximum fee for service of \$2,000 per property for the development of a conceptual design plan or plans.
- The property owner must sign an Acknowledgement Agreement form at the time that the grant is approved.

6.o Monitoring and Assessment

The Town will conduct periodic reviews of the programs being implemented under the Harrow Community Strategic Plan and, on an annual basis, determine their effectiveness and whether modifications to a program should be made. Development Services staff for the Town of Essex will provide Council with a regular status report for grant applications received under the Harrow Community Improvement Plan. Planning staff for the Town of Essex will also monitor the HCIP program and report to Council on an annual basis each year with a recommendation on the future level of funding to ensure funding sources are considered with each annual budget.

Development Services staff will maintain a database to include the following:

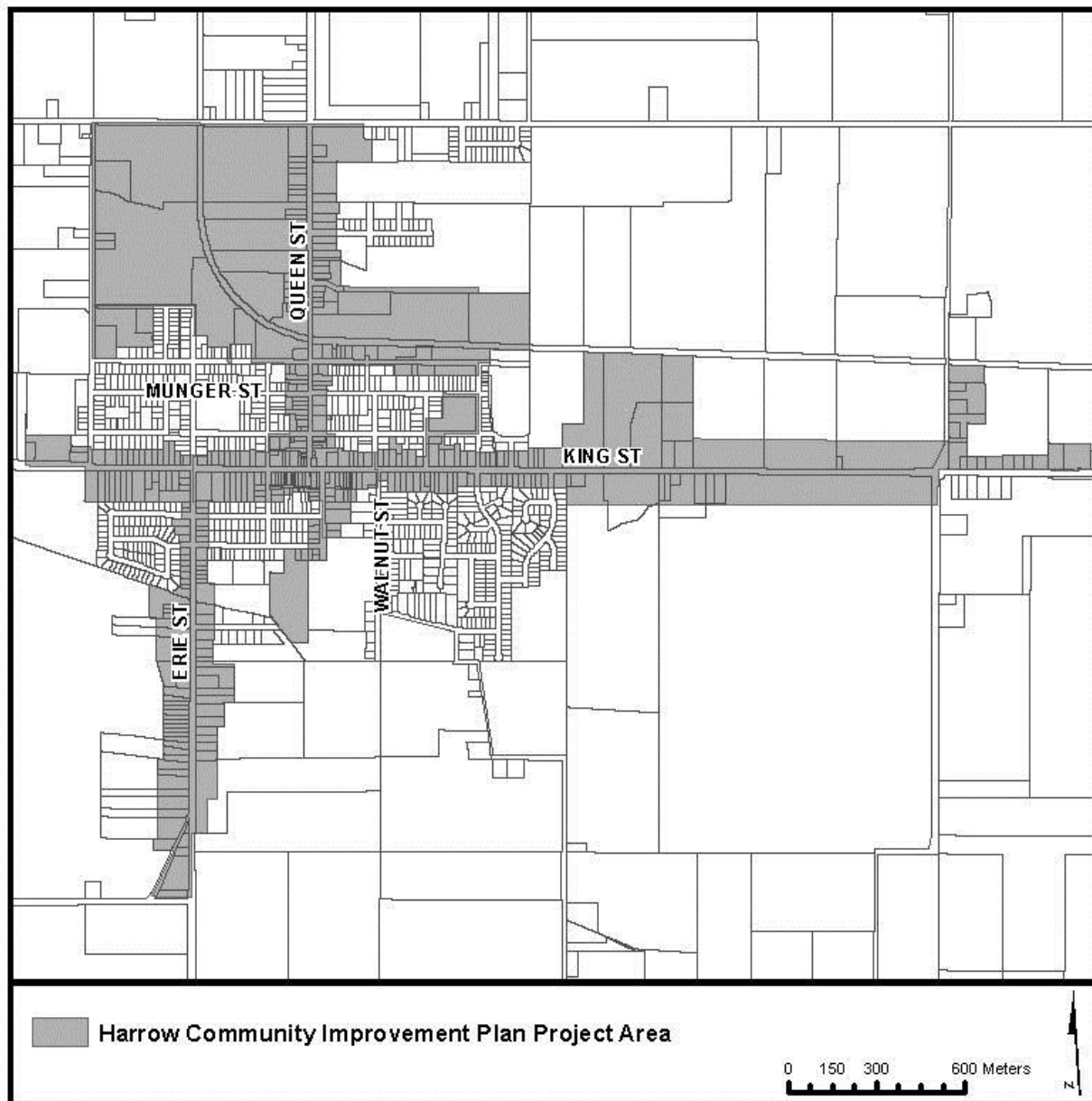
- number of approved applications and completed works for the year;
- the program utilized for each application;
- the amount of grant money provided for each program;
- the financial implications to the Town and budget for the above;
- recommendations for the next years' budget requirements.

Development Services staff report will provide an annual recommendation on the merits of continuation, expansion or cessation of the Plan and its programs. Significant changes to the Plan proposed by staff or Council will require an amendment by by-law approved by Council. Administrative, technical changes and minor adjustments can be made without amendment.

7.0 Harrow Community Improvement Plan Project Area Maps

Map 1

Boundary Map of the Harrow Community improvement Plan Project Area





Essex Centre Community Improvement Plan Implementation Strategy

July 2014
(Revised January 2020)

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Essex Centre Community Plan Implementation Strategy

1.0 Community Improvement Plan Background and Direction

The Essex Centre Community Improvement Plan builds on the Downtown Essex Centre Streetscape and Silo District Plan approved by Council in the summer of 2013. The streetscape plan introduced a design scheme for the long term reconstruction of Talbot Street and adjacent streets in the downtown core under the theme, ``Essex Centre, the Hub of the County``. It also established a land use plan for the Silo District, a large town owned property in the urban centre, which is currently occupied by the former railway station, now used as a tourist information centre, large grain silos, now vacant, and the former rail corridor for the Michigan Central Railway. The rail corridor will be improved as part of the county wide active transportation system and this, in turn, will help to stimulate development of the Silo District for other active community recreational purposes.

Community participation in the development of the streetscape plan revealed that there was a need to stimulate and assist with downtown revitalization efforts on the part of the business community. A community improvement plan establishes programs for public private partnerships and for property improvements through municipal tax incentives, grants and loans within a community improvement project area.

According to Section 28(1) of the Planning Act, a "community improvement project area" is defined as a municipality or an area within a municipality, the community improvement of which in the opinion of the council is desirable because of age, dilapidation, overcrowding, faulty arrangement, unsuitability of buildings or for any other environmental, social or community economic development reason.

Section 28(1) of the Planning Act defines community improvement as the planning or re-planning, design or redesign, re-subdivision, clearance, development or redevelopment, construction, reconstruction and rehabilitation, improvement of energy efficiency, or any

of them, of a community improvement project area, and the provision of such residential, commercial, industrial, public, recreational, institutional, religious, charitable, or other uses, buildings, structures, works, improvements or facilities, or spaces therefore, as may be appropriate or necessary.

The Town may:

- acquire, hold, clear, grade or otherwise prepare land for community improvement;
- construct, repair, rehabilitate or improve buildings on land acquired or held by it in conformity with the community improvement plan;
- sell, lease, or otherwise dispose of any land and buildings acquired or held by it in conformity with the community improvement plan;
- make grants or loans, in conformity with the community improvement plan, to registered owners, assessed owners and tenants of land and buildings within the community improvement project area, and to any person to whom such an owner or tenant has assigned the right to receive a grant or loan, to pay for the whole or any part of the eligible costs of the community improvement plan, and
- fund the costs of an environmental site assessment, environmental remediation, development or redevelopment, construction and reconstruction of lands and buildings for rehabilitation purposes or for the provision of energy efficient uses, buildings, structures, works, improvements or facilities.

Accordingly, for the designated Community Improvement Plan Project Area (CIPPA), shown on Map 1, in Section 7, of this Plan, a variety of programs to stimulate development, redevelopment and revitalization in the downtown core have been implemented.

As shown on the map, the CIPPA is located along the east and west sides of Talbot Street from the north to the south limit of the Town of Essex . The first block of Center and Victoria Streets and Fox Street are also included in the project area.

Eligible property owners and business operators may take advantage of one or more of the grant programs offered, in accordance with the opportunities and incentives set out in this implementation strategy, subject to the limitations and rules established for the administration of this plan.

The programs offered focus on community revitalization and beautification, energy efficient rehabilitation, tourist accommodation, affordable rental housing and the achievement of a better mix of land uses. The Town will work closely with the Essex Center Business Improvement Association, land owners and business operators to help make the downtown a healthy, prosperous and sustainable part of the community.

There are eight incentive programs, which are divided into two general categories:

Development Grant Programs:

- Development Permit Fees Grant Program;
- Development Charges Grant Program
- Tax Increment Equivalent Grant Program;
- Parks Levy Equivalent Grant Program;

Revitalization Grant programs:

- Façade Improvement Grant Program;
- Outdoor Café, Patio and Commercial Outdoor Space Grant Program;
- Conversion and Rehabilitation Grant Program;
- Architectural Design Services Grant Program.

2.0 Essex Centre Community Improvement Plan Program Strategy

2.1 Clarifications:

Accessible means a barrier free entrance that permits a person with a disability full access to a building, in accordance with the Ontarians with Disabilities Act.

Acknowledgement Agreement means that all property owners making application(s) for grants are required to enter into a grant agreement with the Town of Essex. The grant agreement will specify such items as, but not be limited to, the specific purpose and amount of the grant applicable, the duration of the grant, if of the type spread out over time, and, in the event of a default of the agreement, the owner's obligation to repay through taxes or in such payment acceptable to the Town of Essex any monies received. The agreement is intended to encapsulate all of the terms and conditions included in the specified grant guidelines. It may be registered on title and applicable to present and subsequent owners of the property should the property be sold within a stated period of time.

Alley means a highway, having a maximum width of less than 7 meters (23 feet), providing a means of access to a lot.

Combined Use Building refers to a building having, as main uses, both a dwelling unit(s) and a non-residential use(s).

Consistent with the Goals of the Plan refers to the overall goals of the Town of Essex Official Plan regarding Community Improvement Plans.

Conversion means to create a new rental dwelling unit(s) or hotel or bed and breakfast accommodation in a dwelling or a combined use building by the addition of new building space to an existing building or the conversion of space within the existing building, in a manner acceptable to the Town and in compliance with the general zoning by-law, By-law 1037, and the Ontario Building Code.

Dwelling means a building or structure or part of a building or structure that is occupied, in whole or in part, for the purpose of human habitation, but does not include a hotel, motel or mobile home.

Facade means the exterior walls of a building directly visible from a street or public area.

Final Inspection and Approval means that the work as described in the Acknowledgment Agreement has been completed in the manner approved by Council and has received final inspection and formal approval from the Town of Essex.

Highway means all roads dedicated for public use.

Municipal Wide Services Component of Development Charges means the municipal wide service component of the development charges fees, as set out in the Town of Essex Development Charges By-law for current rates and fees.

Project Area means the geographic area of the Essex Centre Community Improvement Plan delineated by by-law, as may be amended from time to time.

Property Owner means the owner of the land and or building, located in a Community Improvement Plan Project Area, which is the subject of a program application within this plan. A person having signing authority and lawfully designated by the owner to make a program application on behalf of the property owner will also be deemed to be the property owner for the purposes of this Plan.

Public Parking Area refers to a free standing parking area available to the public or a shared parking area in which public and private use is available. **Rehabilitation** means functional or aesthetic site improvements to the property approved by the Town, including for example: new information or identity signage; parking lot striping and sealing; public benches; landscaping and screening and accessible pedestrian entrances.

Urban Design Guidelines means the architectural and functional guidelines and objectives set out in subsection 5.3, Town of Essex Urban Design Guidelines.

2.2 Program Start Date

For all Grant programs dealing with financial commitments, the program start date is based upon the annual Council approval of budget funding for the Plan.

2.3 Retroactivity

Program funding is only available after Town of Essex approval of the program(s) and the site specific application. The grant programs or architectural services will not be retroactively applied to works started prior to commencement of the program, unless otherwise authorized by Council.

2.4 Allocation Grants and Architectural Services

Grants: Unless otherwise specifically stated, all grants will be paid to the property owner after the application is approved by the Town council and the approved work is successfully completed to the satisfaction of the Town.

3.0 Qualification Criteria for all Programs

All owners of properties within the Essex Centre Community Improvement Plan Project Area are eligible to apply for funding, subject to meeting the following eligibility criteria, and the availability of funding as approved by Council. When an applicant is applying for a grant or architectural design service under the Plan, the following criteria must be met to the satisfaction of the Town of Essex.

The following terms and conditions apply to all programs:

- Each of the programs outlined are application based with Town of Essex staff recommending direction to the Town on a site specific basis.
- The applicant must be the registered owner of the property for which the application is being made or an agent authorized by the registered owner.
- A property owner who is in arrears of property tax or any other municipal financial obligation cannot participate in a program.
- Any outstanding orders against the subject property must be satisfied prior to the grant application being made or other services rendered under this Plan, unless fulfillment of the order is part of the proposed work.
- Only one application can be made for a property under each applicable program, unless the project is phased in a manner satisfactory to the Town of Essex or the Town determines that a further application is merited.
- Proposed work will conform to all municipal policies, standards and procedures of the Town including: its current applicable Official Plan policies, relevant zoning, design guidelines and development manual policies and the necessary planning and development approvals and building permits pursuant to the Ontario Building Code.
- A grant program application must be submitted to the Town of Essex prior to the commencement of any works and prior to application for a building permit directly related to program funding, unless otherwise permitted by Council.

- Such program application will include plans, estimates, contracts and other details as may be required to satisfy the Town with respect to the costs of the project and conformity of the project to the Plan.
- A property owner may be requested to provide a business plan for the proposed work, as part of the program application.
- As a condition of approval, the Town may also require the submission of professional design and architectural drawings, which satisfy the applicable Town of Essex Urban Design Guidelines, as well as, impact studies or mitigation criteria, such as a traffic impact study or an environmental screening report.
- The Town of Essex will require the applicant to provide information on CIP program grants previously received for the subject property from all sources and the amount of the grants will be taken into account in consideration of an application.
- The total value of all grants and services received from the Town of Essex for a subject property shall not exceed the total value of the project or such other minimum level established in the respective program(s), whichever is less.
- All property owners participating in any program will be required to enter into an Acknowledgement Agreement with the Town of Essex. The Council of the Town of Essex will be the approval authority for the execution of an agreement. The agreement will be registered on title and will specify the terms of the grant or services.
- All completed works must comply with the description of the works set out in the related Acknowledgment Agreement.
- Where applicable, when a grant is to be given, the owner will submit, for final approval, a copy of all paid invoices for work that is completed. Grants will be made upon successful completion of the approved work and acceptance of all documentation of the costs associated with the work, in accordance with the provisions of the program.

- The Town of Essex may undertake an audit of work done and associated costs if it deems it necessary. The cost of the audit will be deducted from the approved grant amount.
- Unless the Town deems it appropriate to enter into an agreement with a subsequent owner or transferee for continuation of the grant, if a building, erected or improved with the assistance of a program grant or services, is demolished, sold or its ownership transferred prior to the expiry of the grant or service agreement period, stated in the Acknowledgement Agreement, at the discretion of the Town, the grant or services are forfeited and monies will be recovered by the Town either through posting the fees on the property taxes or by the owner paying a lump sum payment to the Town of Essex.
- The Town may at any time discontinue a program; however, any participants in the program, who have an Acknowledgment Agreement executed prior to program discontinuation, will continue to receive grants or services as approved for their property, in accordance with the provisions of the program and acknowledgment agreement.

4.0 Administration

The following general steps will guide Town of Essex staff in review, evaluation and administration of applications:

- Applicants will be required to have a pre-consultation meeting with appropriate Town of Essex staff in order to determine program eligibility, proposed scope of work, project timing and compliance with the Urban Design Guidelines.
- The Town may request that applications be accompanied by one or more of the following supporting documentation:
 - a site plan and professional design or architectural drawings;
 - specification of the proposed works, and if requested, any construction drawings;
 - estimated project construction costs, including a breakdown of said costs;
 - impact studies such as traffic and parking impact assessments;
 - environmental reports or a record of site condition;
 - incorporation documents;
 - financial information or a market feasibility study, including, but not necessarily limited to:
 - sources and uses of funds;
 - financial statements;
 - purchase price of property;
 - appraised value of property;
 - owner equity;
 - registered mortgages;
 - details of primary construction lending and secondary financing; and,
 - projected unit sale prices and/or rental rates
 - projected employment levels.

- Before accepting an application, Town staff will screen the application. If the lot affected is outside of the Essex Centre Community Improvement Plan Project Area(s) or the application clearly does not meet the program eligibility criteria, the application will not be accepted. Acceptance of the application by the Town does not imply approval under the Plan.
- Town staff will perform an initial site visit and inspection of the building or property, if deemed necessary.
- The owner must provide evidence of financial capability to develop the property according to the terms of the program.
- If all criteria are met, staff will provide a recommendation regarding the Program Application and the execution of an Acknowledgement Agreement to Town of Essex Council or Council's designate for consideration.
- Once Council or Council's designate has approved the Program Application request and Acknowledgement Agreement, the Agreement will first be executed by the owner and then by the Town of Essex.
- Preparation for the release of grants will be processed after:
 - the Agreement has been executed and registered on title;
 - staff inspect the property and document the pre-development state;
 - staff are satisfied with all reports and documentation submitted;
 - a building permit has been issued.
- The monies or services will be advanced to the property owner on satisfactory completion of the project in accordance with the terms of the program and, if required, proof of payment of all related invoices and a copy of the invoice(s) have been presented to the Town.

4.1 Resource Implications

The allocation of grant and staff resources towards the programs included in the Essex Centre Community Improvement Plan will be at the sole discretion of the Council for The Corporation of the Town of Essex and:

- It is anticipated that the Plan will be implemented over a 10 year time period. Town of Essex Council may elect to extend the implementation period, discontinue or amend the Plan, as it deems appropriate or necessary.
- The Plan and its Implementation Strategy will be reviewed and assessed by Development Services Staff annually and may be amended from time to time by a by-law amendment to the Plan, at Council's discretion.
- Council has adopted Urban Design Guidelines to provide guidance to the property owner as well as staff and Council to ensure, where applicable, that all applications conform to desired design concepts and strategies for the development of lands within the boundaries of the Plan.
- The Implementation Strategy establishes the details of and obligations under each program available. Please refer below to Section 5.2 Program Descriptions.
- Council will establish the level of incentives offered and will, as part of its annual budget process, determine if changes in the incentive levels are necessary, desirable or warranted.
- Any substantive changes to the project area boundaries or the introduction of new programs will require an amendment to the Plan by by-law.
- Based on the program package described above, the resource requirements are:
 - Staff and professional resources to administer the program package;
 - Professional architectural services to be contracted and provided by the Town;
 - Marketing, advertising and other delivery costs for the Plan;
 - Council approval to grant monies under the following programs.

5.0 Program Details

A description of each of the Plan programs is provided in this section. The allocation of resources toward all programs and to each program in the Essex Centre Community Improvement Plan will be entirely at the discretion of Council for the Town of Essex.

A property owner may make application for a grant or services under one or more programs, subject to eligibility. Only one application can be made for a property under any program, unless development is phased in a manner acceptable to Council. Owners must make application in writing to the Town and meet all of the information requirements set out in the application package or as required by the Town.

All property owners participating in any program will be required to enter into an Acknowledgement Agreement with the Town of Essex. The Economic Development Officer for the Town of Essex or the Manager of Planning Services in his or her absence, will be the approval authority for the execution of an Agreement. The Agreement will specify the terms of the grant and services and set out a description of the works approved. Depending on the program, the Agreement will be registered on title. All completed works must comply with the description of the works set out in the related Agreement and the terms and conditions therein.

5.1 Program Groups

Exclusively for lands within the Essex Centre Community Improvement Plan Project Area, an eligible property owner has access to one or more of the following eight financial incentive programs:

Development Grant Programs

- Development Permit Fee Grant Program
- Development Charges Grant Program
- Tax Increment Equivalent Grant Program
- Parks Levy Equivalent Grant Program

Revitalization Grant Programs

- Façade Improvement Grant Program
- Outdoor Cafe, Patio, and Commercial Outdoor Space Grant Program
- Conversion and Rehabilitation Grant Program
- Professional Design Services Grant Program

5.2 Program Descriptions:

5.2.1 Development Permit Fee Grant Program

The **Development Permit Fee Grant Program** provides a grant to property owners undertaking works that require approval under the Planning Act or the Building Code Act or both. This program applies to Planning Act applications or construction permits to which fees, hereby referred to as development permit fees, apply.

Program Specific Provisions:

- Owners of a dwelling or other building to be converted to a bed and breakfast dwelling or to which a rental dwelling unit is to be added or of a commercial, institutional or industrial property which is the subject of this grant application, and when in combination with an executed development agreement, are eligible to participate in this program.
- Eligible development permits are applications for any one or more of: an Official Plan Amendment; a Zoning By-Law Amendment; a Minor Variance; a Site Plan Control Agreement; Consent or Plan of Subdivision Approval; Removal of the Holding (h) designation; a Demolition Permit; a Building Permit; a Plumbing Permit; a Sign Permit and a Driveway Permit.
- The property owner will receive the grant equivalent of the development permit fee or combination of fees charged by the Town for the approved project.
- The grant payment is normally made to the property owner within 30 working days following final inspection and approval of the completed works.

5.2.2 Development Charges Grant Program

The **Development Charges Grant Program** provides a grant up to the equivalent of the municipal wide services component of the development charges fee applicable to the property owner undertaking works to which Development Charges apply.

Program Specific Provisions:

- Where development charges are applicable, eligible works include:
new rental dwelling units; development and redevelopment of commercial, Industrial or Institutional zoned lands or the expansion of existing commercial, Industrial or Institutional buildings and facilities.
- The municipal wide services component of development charges paid by the property owner is returned by means of a grant equivalent to the lesser of 100 percent of that component or the agreed upon and subsequently verified costs of development or redevelopment accepted by Council.
- The grant payment is normally made to the property owner within 30 working days following final inspection and approval of the completed works.

5.2.3 Tax Increment Equivalent Grant Program

The **Tax Increment Equivalent Grant Program** provides a grant equivalent to the municipality's annual incremental tax increase from an eligible development project that increases the assessed value of the property. This program does not apply to Greenfield lands, namely, farmed lands that require an Official Plan amendment and rezoning to permit an intended principal use or uses.

Program Specific Provisions:

- The Tax Increment Equivalent Grant Program applies to:

new commercial and industrial development and the expansion of existing commercial and industrial buildings.

- Grants will only be made to property owners undertaking work consistent with the Town of Essex Urban Design Guidelines., where applicable.
- Development of the land must result in an increase of a minimum of \$500,000 in the assessed value of the property.
- The pre-approved assessed value of the land will be the value of the land on the date of application for a building permit.
- The municipal grant amount is determined by the incremental property tax increase applied to the property as a direct result of the works set out in the grant application approved by the Town of Essex.
- A maximum grant equal to 100 percent of the incremental property tax increase payable to the Town is given for each of the first 5 years. Another period of time and payment schedule may be set by Council; however, the total amount of the grant will not exceed the total grant equivalent of 100 percent of the incremental property tax increase payable to the Town for the first 5 years, nor will it be less than 100 percent of the incremental tax increase for the first year.
- Council will determine the total amount of the grant based on the employment generation potential of the project within the community, the level of investment, the costs of construction and land preparation, and, where applicable, the cost of building rehabilitation.
- The grant is paid annually to the property owner at such time and in such manner as approved by Council for the time period set out in the agreement; however, the date of the first payment shall be one year after the Town, upon confirmation that all taxes owing have been paid by the owner, has received the Notice of Reassessment and, in subsequent years, after confirmation that the taxes owing for each year have been paid in full by the owner.
- If the use of the property changes while the acknowledgement agreement grant time period is in effect, such that the purpose and intent of the grant is declared

by the Town to be null and void, the grant is immediately cancelled and any grant monies received will be recovered by the Town in such manner available to it, unless the Town deems it appropriate to enter into a new agreement with the property owner for continuation of the grant.

5.2.5 Façade Improvement Grant Program

The **Facade Improvement Grant Program** offers assistance to property owners who are undertaking commercial, industrial or institutional building façade improvements.

Program Specific Provisions:

- Eligible works include:
Any repairs or rehabilitation of a building front façade, as approved by the Town, including the repairing, repainting or cleaning for the façade, restoring a facade with masonry, brickwork, wood and metal cladding, replacing cornices, eaves, parapets and other architectural features, repairing and replacing windows, entranceway modifications for accessibility, redesigning the store front, , restoring the original facade appearance, replacing or repairing canopies and awnings, installing exterior lighting and installing energy-efficient fixtures or cladding.
The removal of inappropriate or out dated signage and installation of a new sign structure are eligible works under this grant when used in combination with any of the works described above.
- Grants will be made to property owners undertaking façade improvements consistent with the Town of Essex Urban Design Guidelines.
- The grant amount is 50 percent of the total cost of the approved works to a maximum grant of \$12,000 per building.
- Notwithstanding the provisions for the payment of grant monies under the Façade Improvement Grant set out immediately above, a 100 percent refurbishing grant amount of up to \$2,000 per building is available for any of the above-listed actions Only works that are \$2000 or less will be eligible for this

grant. Payment of this grant does not prejudice a subsequent application for the large façade improvement grant above at the end of a twelve month interim period before such application will be accepted. The twelve month interim period may be reduced if, in that period, there is a change of ownership of the property or a new business replaces the business for which the grant was given. A property for which a Façade Improvement Grant was given or approved is not eligible for this refurbishing grant.

- Side and rear façade improvements are eligible, if the façade faces and abuts an alley or highway or a public parking area or there is direct public access to outdoor facilities accessory and complementary to the main use of the building, such as an outdoor patio or dining area.
- The grant payment is normally made to the property owner within 30 working days following final inspection and approval of the completed works.

5.2.6 Outdoor Café, Patio and Commercial Outdoor Space Grant Program

The **Outdoor Café, Patio and Commercial Open Space Grant Program** offers assistance to property owners who are undertaking the construction of outdoor cafes, patios or other commercial open space, that is accessory and complementary to a commercial use within a building on the same lot.

Program Specific Provisions:

- Eligible works include: hardscaping and landscaping and other features to define, shelter, delineate and otherwise enhance the outdoor space.
- The following works are also eligible when used in combination with the items above: new accessible entrances to and from the designated outdoor area, new identification and directional signage, and facilities or structures for the storage or parking of bicycles. Furniture or other facilities that are not fixed in place are not eligible for this grant.
- Grants will be made to property owners undertaking work consistent with the goals of the Town of Essex Urban Design Guidelines.

- The grant amount is 50 percent of the total cost of the approved works to a maximum grant of \$4,000.
- If the use of the property changes within 5 years after the giving of the grant, such that the purpose and intent of the grant is declared by the Town to be null and void, the grant is immediately cancelled and any grant monies received will be recovered by the Town in such manner available to it, unless the Town deems it appropriate to enter into a new agreement with the property owner for continuation of the grant.
- Where the improvements encroach onto municipal property or a public right of way, the property owner and business operator must enter into an Encroachment Agreement with the Town. The property owner and business operator must indemnify and save the Corporation harmless from all claims for damages sustained by any person, by reason of the permission granted in the encroachment agreement. The property owner and business operator must maintain public liability and property damage coverage in the said encroachment area structure with the Corporation as a named insured and to provide proof thereof annually to the Town.
- The grant payment is normally made to the property owner within 30 working days following final inspection and approval of the completed works.

5.2.7 Conversion, Rehabilitation and Enhancement and Building Demolition Grant Program

Conversion Grant Component

The **conversion component of this Program** offers assistance to property owners who are creating a bed and breakfast operation or who intend to utilize existing above the ground floor commercial building space or an existing dwelling to create a new rental dwelling unit(s), hotel rooms or suites or bed and breakfast rooms or suites, where permitted by the general zoning by-law. When related to these conversions, grant monies may also be made available for the provision of additional on-site parking,

exterior security lighting and other external safety features mandated by the works required to complete the conversion approved under this application.

Program Specific Provisions:

- The grant amount for conversion is 50 percent of the total cost of the approved conversion to a maximum grant of \$5000 per rental dwelling unit or per hotel unit or suite of rooms and \$1000 for a bed and breakfast bedroom or suite of rooms.
- The grant payment is normally made to the property owner within 30 working days following final inspection and approval of the completed works.

Rehabilitation Grant Component

Dwelling Unit Rehabilitation:

The **rehabilitation component of this Program** offers assistance to property owners to bring existing rental dwelling units in a combined use building or dwelling up to the current minimum standards of energy efficiency under the Ontario Building Code.

- The grant amount for the rehabilitation of existing rental dwelling units is 50 percent of the total cost of the approved rehabilitation works to a maximum grant of \$2,000 per rental dwelling unit.

Accessible Entrance

- A grant is available for the reconstruction of an existing public entrance to make it accessible at an amount equal to 50 percent of the total cost to a maximum of \$6,000.
- The grant money is normally made to the property owner with 30 working days following final inspection and approval of the completed works.

Landscaping and Buffering;

Grant monies can also be used by business operators for new landscaping, the screening and buffering of parking areas, the erection of a ground identification sign with peripheral landscaping and other works that are specifically intended to improve

the aesthetic appearance of the property from the street or to mitigate nuisances impacting an adjacent residential areas.

- For aesthetic and buffering improvements to commercial, institutional or industrial properties, the grant amount is 50 percent of the total cost of the approved rehabilitation to a maximum of \$6,000 for the property. If the use of the building changes within 5 years after the giving of the grant, such that the purpose and intent of the grant is declared by the Town to be null and void, the grant is immediately cancelled and any grant monies received will be recovered by the Town in such manner available to it, unless the Town deems it appropriate to enter into a new agreement with the property owner for continuation of the grant. The grant payment is normally made to the property owner within 30 working days following final inspection and approval of the completed works.

Demolition Grant Component

Grant monies are available for the complete or partial demolition of a commercial, institutional or industrial building, including external components, such as storage facilities, steps or a vestibule, which are integral to the functioning of the building. Proposals for a complete demolition must be accompanied by an executed development agreement. Partial demolition is subject to approval by the Chief Building Official who must determine that demolition is necessary for public safety or that the demolition is necessary to permit the reconstruction of a principal component of the building.

- The grant amount equal to 50 percent of the cost of demolition for the first \$12,000.00 in total demolition costs plus 15 percent of the cost of demolition thereafter to a maximum grant of \$25,000.
- Grant approval will be conditional upon acceptance of a redevelopment plan for the site, if substantial or complete demolition is proposed. Council may consider

the giving of the grant where a redevelopment plan is not in place but a temporary use of the site is proposed and accepted by Council.

- The grant payment is normally made to the property owner within 30 working days following final inspection and approval of the completed works.

5.2.8 Professional Design Services Grant Program

The Professional Design Services Grant Program is intended to provide a financial incentive in the form of a grant to help offset the cost of professional design services required or encouraged by the Town.

The Town may provide a grant for the services of an architect, landscape architect or similar design professional to property owners for the preparation of a conceptual design for the building facade and exterior restoration, including heritage restoration, and for improvements to the property's grounds, including new landscaping and the addition of outdoor facilities that enhance the business operation and the streetscape.

The professional service provided must be consistent with the Town's Urban Design Guidelines and utilized in combination with one of the following grant programs: Facade Improvement Grant Program, Outdoor Café, Patio and Commercial Outdoor Space Grant Program or the Conversion and Rehabilitation Grant Program.

Program Specific Provisions:

- Grants will only be made on behalf of property owners undertaking work consistent with the goals of the Town of Essex Urban Design Guidelines.
- This program offers reimbursement for professional design services to a maximum fee for service of \$2,000 per property for the development of a conceptual design plan or plans.
- The property owner must sign an Acknowledgement Agreement form at the time that the grant is approved.

6.o Monitoring and Assessment

The Town will conduct periodic reviews of the programs being implemented under the Essex Center Community Improvement Plan and, on an annual basis, determine their effectiveness and whether modifications to a program should be made.

Development Services staff for the Town of Essex will monitor the ECCIP programs and report to Council on an annual basis each December with a recommendation on the future level of funding to ensure funding sources are considered with each annual budget.

Development Services staff will maintain a database to include the following:

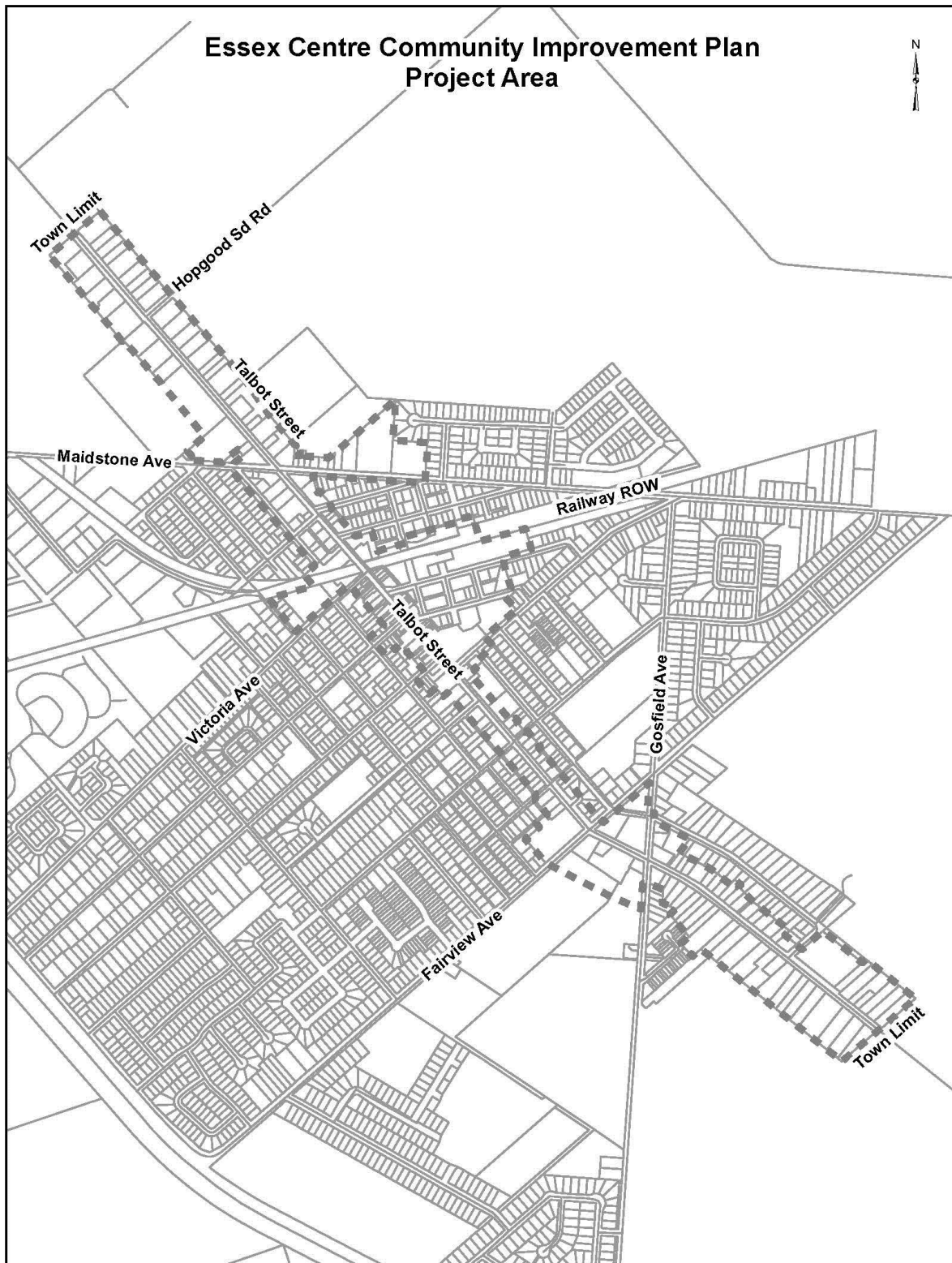
- number of approved applications and completed works for the year;
- the program utilized for each application;
- the amount of grant money provided for each program;
- the financial implications to the Town and budget for the above;
- recommendations for the next years' budget requirements.

Development Services Staff report will provide an annual recommendation on the merits of continuation, expansion or cessation of the Plan and its programs. Significant changes proposed by staff or Council to the Plan will require an amendment by by-law approved by Council. Administrative, technical changes and minor adjustments can be made without amendment.

7.0 Essex Centre Community Improvement Plan Project Area Map

Map 1

Boundary Map of the Essex Center Community improvement Plan Project Area



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Colchester and County Road 50

Community Improvement Plan

Implementation Strategy

(Revised January 2020)



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Colchester Community Improvement Plan Implementation Strategy

1.0 Community Improvement Plan Background

1.1 Colchester Hamlet Guideline Plan 2008

Colchester and the adjacent Lake Erie shoreline encompass the Town's unique lakeshore-related settlements and surrounding agricultural community. The Colchester Harbour Marina is known for its sport fishing, picturesque Lake Erie waterfront and beachfront park. The lakeshore areas to the east and west of Colchester accommodate waterfront cottages, nestled along the shoreline, in addition to numerous permanent residences, traditional farms, a burgeoning wine industry and active transportation routes.

This Guideline Plan, which is incorporated into the Town of Essex Official Plan, establishes a cohesive vision and planning framework for Colchester for balanced and sustainable future growth.

The following strategic directions will guide and direct future change within the Colchester Hamlet.

- Direct most growth and development to the Colchester Hamlet through appropriate infill and redevelopment;
- Preserve the unique character of Colchester and identify a discernable main street area to provide a focal point for commercial, retail, entertainment and tourism-related activities which also support the waterfront;
- Direct private investment by developing a cohesive vision for the main street area;
- Improve the public amenities within the Hamlet, particularly in the Colchester Harbour, Colchester Park and the beach area to promote tourism and recreational use by local residents;
- Promote support uses and incentives which will enhance visitor accommodation and encourage new businesses benefitting visitors and residents;

- Promote public access to the lakeshore through the provision of parks, trails and waterfront access to add recreational opportunities.

1.2 County Road 50

County Road 50 is part of a circular waterfront transportation corridor linking Lakes St. Clair and Erie and the Detroit River and the waterfront communities that historically took advantage of opportunities for water transportation and regional resource development.

In the early days of settlement, road construction and maintenance fell to the pioneers, not government. Around 1837, settlers began to construct a road, named Front Road, from Henry Lypps' farm to Iler's Creek. A map from 1842 shows Wright's Inn on the west end of the Front Road. A map of Oxley dated 1853 marks the road as "Road to St. Thomas." Travellers using the Front Road could stop at Oxley Hotel for rest and refreshments on this route. This road is known today as County Road 50.

Today the principle economic activity along County Road 50 is farming on its north side and mixed farming and residential development on its south side to Lake Erie. More recently, 6 wineries have been established along County Road 50 within the limits of the Town of Essex. Other activities include the Oxley Beach Golf Course, the John R Park Homestead Conservation Area and bed and breakfast establishments. There are various designated historic properties.

The Town is committed to the provision and enhancement of active transportation facilities along County Road 50. It forms part of the Carolinian Corridor Trail and the Lake Erie Waterfront Trail connecting to the Trans Canada Trail and the Green Verte trail system in the Province of Quebec.

The road is notable for its farmland and waterfront vistas, the preservation and the protection of which are established as policy in the Town's Official Plan.

In 2014, the Ministry of Agriculture, Food and Rural Affairs (OMAFRA), published "Guidelines on the Permitted Uses in Ontario's Prime Agricultural Areas". It sets out

parameters for rural development, while recognizing that prime farmland is a finite, non-renewable resource that shall be protected for long term agricultural use as a matter of provincial policy.

Ensuring that farm viability is resilient is enshrined in the OMAFRA policies and guidelines, which are incorporated into the Town's Official Plan. It is recognized that supplemental farm income is necessary to support a thriving rural economy and that support uses must also be accommodated close to and within agricultural areas.

Consequently, the OMAFRA guidelines are focussed on value-added agricultural uses, on-farm diversified uses and agriculture related land uses to support farm uses.

Examples of value-added or value-retaining facilities are on farm food processing, bulk storage and packaging. Examples of on-farm diversified uses are the preparation and retail sale of products made from produce from the farm or surrounding agricultural area, home occupations, home industries and small scale retail, service and other agri-tourism activities. Agriculture related uses include for example education and research facilities, farm input suppliers, farm equipment repair and sales or a farmers market.

County Road 50 is directly associated with farm production, agri-tourism and active transportation and that portion extending through the Town is part of a larger integrated regional network of like activities. The adoption of the County Road 50 Community Improvement Project Area (CIPA), complementary to and in combination with the Colchester CIP, will help to encourage and support the establishment and maintenance of value-added, on-farm diversified and agriculture related land use activities to keep our rural economy strong, resilient and productive.

1.3 Municipal Authority

Under Section 28 of The Planning Act of Ontario (1990), municipalities are given authority to create community improvement plans with supporting programs for identified community improvement plan project areas. In accordance with Section 28, a municipality may use any of the following strategies in administering the community improvement plan, hereby referred to as the Plan:

- Acquire, hold, clear, grade or otherwise prepare land for community improvement;
- Construct, repair, rehabilitate or improve buildings on land acquired or held by it in the community project area;
- Sell, lease or otherwise dispose of any such buildings and the land associated with it in the community project area;
- Sell, lease or otherwise dispose of any lands acquired or held by it in the community improvement project area for use in conformity with the community improvement plan;
- Make grants or loans for eligible costs associated with a project within the community improvement plan project area in conformity with the community improvement plan;
- Fund the costs of an environmental site assessment, environmental remediation, development or redevelopment, construction and reconstruction of lands and buildings for rehabilitation purposes or for the provision of energy efficient uses, buildings, structures, works, improvements or facilities.

Further Section 365.1 of the Municipal Act of Ontario (2001) permits municipalities to pass a by-law providing tax assistance to eligible properties in the form of deferral or cancellation of all or part of the municipal taxes levied on new assessment for a specified period of time. It works in partnership with the provisions of Section 28 of the Planning Act and its provisions are incorporated into it.

The Town will:

- implement the Official Plan objectives for community improvement, development and revitalization, as stated in Section 7.1 of the Town of Essex Official Plan;
- follow Official Plan policies and directives related to community health and prosperity;
- foster an environment to promote and support the economic rejuvenation and enhancement;

- utilize the CIP implementation strategy, inclusive of financial incentive programs, to complement and assist private sector investment with the goal of achieving a complete community.

The Town will be an active partner in supporting private revitalization and development efforts by providing financial incentives to those projects that will achieve these goals:

- To provide for rehabilitation or improvement of existing buildings and properties, building facades, signage, landscaping, parking and other physical resources, through the use of municipal assisted programs and funding sources;
- To provide for development, redevelopment and adaptive re-use of older buildings and vacant and underutilized lands through the use of municipal assisted programs and funding sources;
- To complement private initiatives, the Town is committed to improving the walkability, amenities and attractiveness of local streetscapes and to develop safe streets that meet the needs of pedestrians, non-motorized and motorized traffic, in accordance with the goals of the Official Plan and Provincial Policy Statement for safe and healthy communities;
- To stimulate private investment in rehabilitation and community improvement in Colchester to support sustainability, community health and prosperity and to develop a complete community;
- To stimulate private investment in value-added farm activities and the establishment and maintenance of on-farm diversified and agriculture-related uses in accordance with OMAFRA's "Guidelines on Permitted Uses in Ontario's Prime Agricultural Areas" and the Town of Essex Official Plan.
- For property owners, investors and community organizations to undertake projects, programs and activities consistent with the Official Plan, the Provincial Policy Statement and relevant Provincial guidelines;
- To preserve, conserve and enhance the heritage and historical structures of Colchester and along County Road 50.

1.4 Colchester Community Improvement Plan Project Area Expansion

- The boundaries of the Colchester CIPA are expanded to include the lands fronting on the north and south sides of County Road 50 west of Colchester to the Town of Essex municipal boundary at County Road 41 and the lands fronting on the north and south sides of County Road 50 to the municipal boundary at County Road 23.
- The policies and programs set out in this Plan are applicable to this plan's project areas exclusively.

2.0 Colchester and County Road 50 Community Improvement Plan Program Strategy

2.1 Clarifications:

Accessible means a barrier free entrance that permits a person with a disability full access to a building, in accordance with the Ontarians with Disabilities Act.

Acknowledgement Agreement means that all property owners making application(s) for grants are required to enter into a grant agreement with the Town of Essex. The grant agreement will specify such items as, but not be limited to, the specific purpose and amount of the grant applicable, the duration of the grant, if of the type spread out over time, and, in the event of a default of the agreement, the owner's obligation to repay through taxes or in such payment acceptable to the Town of Essex any monies received. The agreement is intended to encapsulate all of the terms and conditions included in the specified grant guidelines. It may be registered on title and applicable to present and subsequent owners of the property should the property be sold within a stated period of time.

Agri-tourism uses means ancillary farm related uses which promote the enjoyment, education or activities related to farm life and agricultural production and operations.

Agriculture-related uses means commercial and industrial activities that are directly related to farm operations on the farm or in the agricultural area. They support

agriculture production, benefit from being in close proximity to farm operations and they provide direct products or services to farm operators as a primary activity.

Alley means a highway, having a maximum width of less than 7 metres (23 feet), providing a means of access to a lot. **Combined Use Building** refers to a building having, as a main uses, both a dwelling unit(s) and a non-residential use(s).

Consistent with the Goals of the Plan refers to the overall goals of the Colchester and County Road 50 Community Improvement Plan, as described in the Plan.

Conversion means to create a new rental dwelling unit(s) or hotel or bed and breakfast accommodation in a dwelling or a combined use building by the addition of new building space to an existing building or the conversion of space within the existing building, in a manner acceptable to the Town and in compliance with the general zoning by-law, By-law 1037, and the Ontario Building Code.

Dwelling means a building or structure or part of a building or structure that is occupied, in whole or in part, for the purposes of human habitation, but does not include a hotel, motel or mobile home.

Facade means the exterior walls of a building directly visible from a street or public area.

Final Inspection and Approval means that the work as described in the Acknowledgment Agreement has been completed in the manner approved by the Town of Essex and has received final inspection and approval from the Town.

Highway means all roads dedicated for public use.

Municipal Wide Services Component of Development Charges means the municipal wide service component of the development charges fees, as set out in the Town of Essex Development Charges By-law for current rates and fees.

On-farm Diversified Uses means uses that are secondary to the principle agricultural use of the property and are limited in area. They include but are not limited to home occupations, home industries, agri-tourism uses and other uses that produce value-added agricultural products from on farm production.

Project Area means the geographic area of the Colchester and County Road 50 Community Improvement Plan delineated by by-law, as may be amended from time to time.

Property Owner means the owner of the land and or building, located in a Colchester and County Road 50 Community Improvement Plan Project Area, which is the subject of a program application within this plan. A person having signing authority and lawfully designated by the owner to make a program application on behalf of the property owner will also be deemed to be the property owner for the purposes of this Plan.

Public Parking Area refers to a free standing parking area available to the public or a shared parking area in which public and private use is available.

Rehabilitation means functional or aesthetic site improvements to the property approved by the Town, including for example: new information or identity signage; parking lot striping and sealing; public benches; landscaping and screening and accessible pedestrian entrances.

Urban Design Guidelines means the architectural and functional guidelines and objectives set out in the Colchester hamlet Guideline Plan.

2.2 Program Start Date

For all Grant programs dealing with financial commitments, the program start date is based upon the annual Council approval of budget funding for the Plan.

2.3 Retroactivity

Program funding is only available after Town of Essex approval of the program(s) and the site specific application. The grant programs or architectural services will not be retroactively applied to works started prior to commencement of the program, unless otherwise authorized by Council.

2.4 Allocation Grants and Architectural Services

Grants: Unless otherwise specifically stated, all grants will be paid to the property owner after the application is approved by the Town and the approved work is successfully completed to the satisfaction of the Town.

3.0 Qualification Criteria for All Programs

All owners of properties within the Colchester and County Road 50 Community Improvement Plan Project Area are eligible to apply for funding, subject to meeting the following eligibility criteria, and the availability of funding as approved by Council.

When an applicant is applying for a grant or architectural design service under the Plan, the following criteria must be met to the satisfaction of the Town of Essex.

The following terms and conditions apply to all programs:

- Each of the programs outlined are application based, with review, evaluation and decision-making to be done by the Town on a site specific basis.
- The applicant must be the registered owner of the property for which the application is being made or an agent authorized by the registered owner.
- A property owner who is in arrears of property tax or any other municipal financial obligation cannot participate in a program.
- Any outstanding orders against the subject property must be satisfied prior to the grant application being made or other services rendered under this Plan, unless fulfillment of the order is part of the proposed work.
- Only one application can be made for a property under each applicable grant program, unless the project is phased in a manner satisfactory to the Town of Essex or the Town determines that a further application is merited.
- Proposed work will conform to all municipal policies, standards and procedures of the Town including: its current applicable Official Plan policies, relevant zoning, design guidelines and development manual policies and the necessary planning and development approvals and building permits pursuant to the Ontario Building Code.
- A grant program application must be submitted to the Town of Essex prior to the commencement of any works and prior to application for a building permit directly related to program funding, unless otherwise permitted by Council.

- Such program application will include plans, estimates, contracts and other details as may be required to satisfy the Town with respect to the costs of the project and conformity of the project to the Plan.
- A property owner may be requested to provide a business plan for the proposed work, as part of the program application.
- As a condition of approval, the Town of Essex may also require the submission of professional design and architectural drawings, which satisfy the applicable Urban Design Guidelines of the Plan, as well as, impact studies or mitigation criteria, such as a traffic impact study or an environmental screening report.
- The Town of Essex will require the applicant to provide information on CIP program grants previously received for the subject property from all sources and the amount of the grants will be taken into account in consideration of an application.
- The total value of all grants and services received from the Town of Essex for a subject property shall not exceed the total value of the project or such other minimum level established in the respective program(s), whichever is less.
- All property owners participating in any program will be required to enter into an Acknowledgement Agreement with the Town of Essex. The Council of the Town of Essex will be the approval authority for the execution of an agreement. The agreement will be registered on title and will specify the terms of the grant or services.
- All completed works must comply with the description of the works set out in the related Acknowledgment Agreement.
- Where applicable, when a grant is to be given, the owner will submit, for final approval, a copy of all paid invoices for work that is completed. Grants will be made upon successful completion of the approved work and acceptance of all documentation of the costs associated with the work, in accordance with the provisions of the program.

- The Town of Essex may undertake an audit of work done and associated costs if it deems it necessary. The cost of the audit will be deducted from the approved grant amount.
- Unless the Town deems it appropriate to enter into an agreement with a subsequent owner or transferee for continuation of the grant, if a building, erected or improved with the assistance of a program grant or services, is demolished, sold or its ownership transferred prior to the expiry of the grant or service agreement period, stated in the Acknowledgement Agreement, at the discretion of the Town, the grant or services are forfeited and monies will be recovered by the Town either through posting the fees on the property taxes or by the owner paying a lump sum payment to the Town of Essex.
- The Town may at any time discontinue a program; however, any participants in the program, who have an Acknowledgment Agreement executed prior to program discontinuation, will continue to receive grants or services as approved for their property, in accordance with the provisions of the program and acknowledgment agreement.

4.0 Administration

The following general steps will guide Town of Essex staff in review, evaluation and administration of applications:

- Applicants will be required to have a pre-consultation meeting with appropriate Town of Essex staff in order to determine program eligibility, proposed scope of work, project timing and compliance with the Urban Design Guidelines.
- The Town may request that applications be accompanied by one or more of the following supporting documentation:
 - a site plan and professional design or architectural drawings;
 - specification of the proposed works, and if requested, any construction drawings;
 - estimated project construction costs, including a breakdown of said costs;
 - impact studies such as traffic and parking impact assessments;
 - environmental reports or a record of site condition;
 - incorporation documents;
 - financial information or a market feasibility study, including, but not necessarily limited to:
 - sources and uses of funds;
 - financial statements;
 - purchase price of property;
 - appraised value of property;
 - owner equity;
 - registered mortgages;
 - details of primary construction lending and secondary financing; and,
 - projected unit sale prices and/or rental rates
 - projected employment levels.

- Before accepting an application, Town staff will screen the application. If the lot affected is outside of a Colchester and County Road 50 Community Improvement Plan Project Area or the application clearly does not meet the program eligibility criteria, the application will not be accepted. Acceptance of the application by the Town does not imply approval under the Plan.
- Town staff will perform an initial site visit and inspection of the building or property, if deemed necessary.
- The owner must provide evidence of financial capability to develop the property according to the terms of the program.
- If all criteria are met, the Town of Essex will approve the Program Application request, and an Acknowledgement Agreement between the Town of Essex and the property owner will be prepared for execution.
- Once the Town has approved the Program Application request and Acknowledgement Agreement, the Agreement will first be executed by the property owner and then by the Town of Essex.
- Preparation for the release of grants will be processed after:
 - the Agreement has been executed and registered on title;
 - staff have inspected the property and documented the pre-development state and/or completion of the approved works;
 - staff are satisfied with all reports and documentation submitted;
 - a building permit has been issued, if required for the approved works.
- The monies or services will be advanced to the property owner on satisfactory completion of the project in accordance with the terms of the program and, if required, proof of payment of all related invoices and a copy of the invoice(s) have been presented to the Town.

4.1 Resource Implications

The allocation of grant and staff resources towards the programs included in the Colchester and County Road 50 Community Improvement Plan will be at the sole discretion of the Council for The Corporation of the Town of Essex and:

- It is anticipated that the Colchester and County Road 50 Community Improvement Plan will be implemented over a 10 year time period. Town of Essex Council may elect to extend the implementation period, discontinue or amend the Plan, as it deems appropriate or necessary.
- The Plan and its Implementation Strategy will be reviewed and assessed by Development Services Staff annually and may be amended from time to time by Council resolution and/or by-law amendment to the Plan, at Council's discretion.
- Council has adopted Urban Design Guidelines to provide guidance to the property owner as well as staff and Council to ensure, where applicable, that all applications conform to desired design concepts and strategies for the development of lands within the boundaries of the Plan.
- The Implementation Strategy establishes the details of and obligations under each program available. Please refer below to Section 5.2 Program Descriptions.
- Council will establish the level of incentives offered and will, as part of its annual budget process, determine if changes in the incentive levels are necessary, desirable or warranted.
- Any substantive changes to the project area boundaries or the introduction of new programs will require an amendment to the Plan by by-law.
- Based on the program package described above, the resource requirements are:
 - Staff and professional resources to administer the program package;
 - Marketing, advertising and other delivery costs for the Plan;
 - Town approval to grant monies under the following programs.

5.0 Program Details

A description of each of the Plan programs is provided in this section. The allocation of resources toward all programs and to each program in the Colchester and County Road 50 Community Improvement Plan will be entirely at the discretion of Council for the Town of Essex.

A property owner may make application for a grant or services under one or more programs, subject to eligibility. Only one application can be made for a property under any program, unless development is phased in a manner acceptable to the Town.

Owners must make application in writing to the Town and meet all of the information requirements set out in the application package or as required by the Town.

All property owners participating in any program will be required to enter into an Acknowledgement Agreement with the Town of Essex. The Economic Development Officer for the Town of Essex or the Manager of Planning Services in his or her absence for the Town of Essex will be the approval authority for the execution of an Agreement. The Agreement will specify the terms of the grant and services and set out a description of the works approved. Depending on the program, the Agreement will be registered on title. All completed works must comply with the description of the works set out in the related Agreement and the terms and conditions therein.

5.1 Program Groups

Exclusively for lands within the Colchester and County Road 50 Community Improvement Plan Project Area, an eligible property owner has access to one or more of the following eight financial incentive programs:

Development Grant Programs

- Development Permit Fee Grant Program
- Development Charges Grant Program
- Tax Increment Equivalent Grant Program
- Parks Levy Equivalent Grant Program

Revitalization Grant Programs

- Façade Improvement Grant Program
- Outdoor Cafe, Patio, and Commercial Outdoor Space Grant Program
- Conversion and Rehabilitation Grant Program
- Professional Design Services Grant Program

5.2 Program Descriptions:

5.2.1 Development Permit Fee Grant Program

The **Development Permit Fee Grant Program** provides a grant to property owners undertaking works that require approval under the Planning Act or the Building Code Act or both. This program applies to Planning Act applications or construction permits to which fees, hereby referred to as development permit fees, apply to the following uses: a bed and breakfast conversion; the addition of a rental dwelling unit in a settlement area; the construction of a commercial or industrial building in a settlement area; the establishment of an on-farm diversified use or an agriculture related use.

Program Specific Provisions:

- A property owner intending to establish and operate one of the uses set out above are eligible to participate in this program.
- Eligible development permits are applications for any one or more of: an Official Plan Amendment; a Zoning By-Law Amendment; a Minor Variance; a Site Plan Control Agreement; Consent or Plan of Subdivision Approval; Removal of the Holding (h) designation; a Demolition Permit; a Building Permit; a Plumbing Permit; a Sign Permit and/or a Driveway Permit.
- The property owner will receive the grant equivalent of the development permit fee or combination of fees charged by the Town for the approved project.
- The grant payment is normally made to the property owner within 30 working days following final inspection and approval of the completed works.

5.2.2 Development Charges Grant Program

The **Development Charges Grant Program** provides a grant up to the equivalent of the municipal wide services component of the development charges fee applicable to the property owner undertaking works to which Development Charges apply.

Program Specific Provisions:

- Where development charges are applicable, eligible works include:
new rental dwelling units; development and redevelopment of commercial, Industrial or Institutional zoned lands or the expansion of existing commercial, Industrial or Institutional buildings and facilities; development and redevelopment of industrially zoned lands or the expansion of existing industrial buildings and facilities;
- The municipal wide services component of development charges paid by the property owner is returned by means of a grant equivalent to the lesser of 100 percent of that component or the agreed upon and subsequently verified costs of development or redevelopment accepted by the Town;
- The grant payment is normally made to the property owner within 30 working days following final inspection and approval of the completed works.

5.2.3 Tax Increment Equivalent Grant Program

The **Tax Increment Equivalent Grant Program** provides a grant equivalent to the municipality's annual incremental tax increase from a development that increases the assessed value of the property. This program does not apply to Greenfield lands, namely, farmed lands that require an Official Plan amendment and rezoning to permit an intended principal use or uses.

Program Specific Provisions:

- The Tax Increment Equivalent Grant Program applies to:
new commercial development and the expansion of existing commercial buildings, new industrial development and the expansion of existing industrial

buildings and facilities and the establishment of an on-farm diversified or agricultural-related use, .

- Grants will only be made to property owners undertaking work consistent with the Urban Design Guidelines, where applicable.
- Development of the land must result in an increase of a minimum of \$500,000 in the assessed value of the property.
- The pre-approved assessed value of the land will be the value of the land on the date of application for a building permit.
- The municipal grant amount is determined by the incremental property tax increase applied to the property as a direct result of the works set out in the grant application approved by the Town of Essex.
- A maximum grant equal to 100 percent of the incremental property tax increase payable to the Town is given for each of the first 5 years. Another period of time and payment schedule may be set by Council; however, the total amount of the grant will not exceed the total grant equivalent of 100 percent of the incremental property tax increase payable to the Town for the first 5 years, nor will it be less than 100 percent of the incremental tax increase for the first year.
- Council will determine the total amount of the grant based on, the employment generation potential of the project within the community, the level of investment, the costs of construction and land preparation, and, where applicable, the cost of building rehabilitation.
- The grant is paid annually to the property owner at such time and in such manner as approved by the Town of Essex for the time period set out in the agreement; however, the date of the first payment shall be one year after the Town, upon confirmation that all taxes owing have been paid by the owner, has received the Notice of Reassessment and, in subsequent years, after confirmation that the taxes owing for each year have been paid in full by the owner.

- If the use of the property changes while the acknowledgement agreement grant time period is in effect, such that the purpose and intent of the grant is declared by the Town to be null and void, the grant is immediately cancelled and any grant monies received will be recovered by the Town in such manner available to it, unless the Town deems it appropriate to enter into a new agreement with the property owner for continuation of the grant.

5.2.4 Façade Improvement Grant Program

The **Facade Improvement Grant Program** offers assistance to property owners who are undertaking commercial or industrial building façade improvements in settlement areas or who intend to renovate and use an existing farm building(s) for the establishment of an on-farm diversified use or an agriculture related use.

Program Specific Provisions:

- Eligible works include:
any repairs or rehabilitation of a building front façade, as approved by the Town, including the repairing, repainting or cleaning for the façade, restoring a facade with masonry, brickwork, wood and metal cladding, replacing cornices, eaves, parapets and other architectural features, repairing and replacing windows, entranceway modifications for accessibility, redesigning the store front, restoring the original facade appearance, replacing or repairing canopies and awnings, installing exterior lighting and installing energy-efficient fixtures or cladding.
The removal of inappropriate or out dated signage and installation of a new sign structure are eligible works under this grant when used in combination with any of the works described above.

- Grants will be made to property owners undertaking façade improvements consistent with the Urban Design Guidelines of the Plan, where applicable.
- The grant amount is 50 percent of the total cost of the approved works to a maximum grant of \$12,000 per building.
- Notwithstanding the provisions for the payment of grant monies under the Façade Improvement Grant set out immediately above, a 100 percent refurbishing grant amount of up to \$2,000 per building is available for any of the above-listed actions. Only works that are \$2000 or less will be eligible for this grant. Payment of this grant does not prejudice a subsequent application for the larger façade improvement grant above at the end of a twelve month interim period before such application will be accepted. The twelve month interim period may be reduced if, in that period, there is a change of ownership of the property or a new business replaces the business for which the grant was given. A property for which a Façade Improvement Grant was given or approved is not eligible for this refurbishing grant.
- Side and rear façade improvements are eligible, if the façade faces and abuts an alley or highway or a public parking area or there is direct public access to outdoor facilities accessory and complementary to the main use of the building, such as an outdoor patio or dining area.
- The grant payment is normally made to the property owner within 30 working days following final inspection and approval of the completed works.

5.2.6 Outdoor Café, Patio and Commercial Outdoor Space Grant Program

The **Outdoor Café, Patio and Commercial Open Space Grant Program** offers assistance to property owners who are undertaking the construction of outdoor cafes, patios or other commercial open space, that is accessory and complementary to a commercial use or an on-farm diversified or agriculture-related use within a building on the same lot.

Program Specific Provisions:

- Eligible works include: hardscaping and landscaping and other features to define, shelter, delineate and otherwise enhance the outdoor space.
- The following works are also eligible when used in combination with the items above: new accessible entrances to and from the designated outdoor area, new identification and directional signage, and facilities or structures for the storage or parking of bicycles. Furniture or other facilities that are not fixed in place are not eligible for this grant
- Grants will be made to property owners undertaking work consistent with the goals of the Colchester and County Road 50 Community Improvement Plan and the applicable Urban Design Guidelines therein.
- The grant amount is 50 percent of the total cost of the approved works to a maximum grant of \$4,000.
- If the use of the property changes within 5 years after the giving of the grant, such that the purpose and intent of the grant is declared by the Town to be null and void, the grant is immediately cancelled and any grant monies received will be recovered by the Town in such manner available to it, unless the Town deems it appropriate to enter into a new agreement with the property owner for continuation of the grant.
- Where the improvements encroach onto municipal property or a public right of way, the property owner and business operator must enter into an Encroachment Agreement with the Town. The property owner and business operator must indemnify and save the Corporation harmless from all claims for damages sustained by any person, by reason of the permission granted in the encroachment agreement. The property owner and business operator must maintain public liability and property damage coverage in the said encroachment area structure with the Corporation as a named insured and to provide proof thereof annually to the Town.
- The grant payment is normally made to the property owner within 30 working days following final inspection and approval of the completed works.

5.2.7 Conversion, Rehabilitation and Enhancement and Building Demolition Grant Program

Conversion Grant Component:

The **conversion component of this Program** offers assistance to property owners who are creating a bed and breakfast operation or who intend to utilize existing above the ground floor commercial building space or an existing dwelling to create a new rental dwelling unit(s), hotel rooms or suites or bed and breakfast rooms or suites, where permitted by the general zoning by-law. When related to these conversions, grant monies may also be made available for the provision of additional on-site parking, exterior security lighting and other external safety features mandated by the works required to complete the conversion approved under this application.

Program Specific Provisions:

- The grant amount for conversion is 50 percent of the total cost of the approved conversion to a maximum grant of \$5,000 per rental dwelling unit or per hotel unit or suite of rooms and \$1000 for a bed and breakfast bedroom or suite of rooms.
- The grant payment is normally made to the property owner within 30 working days following final inspection and approval of the completed works.

Rehabilitation Grant Component:

Dwelling Unit Rehabilitation:

The **rehabilitation component of this Program** offers assistance to property owners to bring existing rental dwelling units in a combined use building or dwelling up to the current minimum standards of energy efficiency under the Ontario Building Code.

- The grant amount for the rehabilitation of existing affordable rental dwelling units is 50 percent of the total cost of the approved rehabilitation works to a maximum grant of \$2,000 per rental dwelling unit.

Accessible Entrance:

- A grant is available for the reconstruction of an existing public entrance to make it accessible at an amount equal to 50 percent of the total cost to a maximum of \$6,000.
- The grant payment is normally made to the property owner within 30 working days following final inspection and approval of the completed works.

Landscaping and Buffering:

Grant monies can also be used by business operators for new landscaping, the screening and buffering of parking areas and other works that are specifically intended to improve the aesthetic appearance of the property from the street or to mitigate nuisances impacting an adjacent residential area.

- For aesthetic and buffering improvements to commercial, institutional or industrial properties, the grant amount is 50 percent of the total cost of the approved rehabilitation to a maximum of \$6,000 for the property. If the use of the building changes within 5 years after the giving of the grant, such that the purpose and intent of the grant is declared by the Town to be null and void, the grant is immediately cancelled and any grant monies received will be recovered by the Town in such manner available to it, unless the Town deems it appropriate to enter into a new agreement with the property owner for continuation of the grant.
- The grant payment is normally made to the property owner within 30 working days following final inspection and approval of the completed works.

Demolition Grant Component

Grant monies are available for the complete or partial demolition of a commercial or industrial building, including external components, such as storage facilities, steps or a vestibule, which are integral to the functioning of the building. Proposals for a complete demolition must be accompanied by an executed development agreement. Partial demolition is subject to approval by the Chief Building Official who must determine that

demolition is necessary for public safety or that the demolition is necessary to permit the reconstruction of a principal component of the building.

- The grant amount is 50 percent of the cost of demolition to a maximum of \$6,000.
- Grant approval will be conditional upon acceptance of a redevelopment plan for the site, if substantial or complete demolition is proposed. Council may consider the giving of the grant where a redevelopment plan is not in place but a temporary use of the site is proposed and accepted by Council.
- The grant payment is normally made to the property owner within 30 working days following final inspection and approval of the completed works.

5.2.8 Professional Design Services Grant Program

The Professional Design Services Grant Program is intended to provide a financial incentive in the form of a grant to help offset the cost of professional design services required or encouraged by the Town.

The Town may provide a grant for the services of an architect, landscape architect or similar design professional to property owners for the preparation of a conceptual design for the building facade and exterior restoration, including heritage restoration, and for improvements to the property's grounds, including new landscaping and the addition of outdoor facilities that enhance the business operation and the streetscape.

The professional service provided must be consistent with the Town's Urban Design Guidelines and utilized in combination with one of the following grant programs: Facade Improvement Grant Program, Outdoor Café, Patio and Commercial Outdoor Space Grant Program or the Conversion and Rehabilitation Grant Program.

Program Specific Provisions:

- Grants will only be made on behalf of property owners undertaking work consistent with the goals of the Town of Essex Urban Design Guidelines.

- This program offers reimbursement for professional design services to a maximum fee for service of \$2,000 per property for the development of a conceptual design plan or plans.
- The property owner must sign an Acknowledgement Agreement form at the time that the grant is approved.

6.o Monitoring and Assessment

The Town will conduct periodic reviews of the programs being implemented under the Colchester and County Road 50 Community Strategic Plan and, on an annual basis, determine their effectiveness and whether modifications to a program should be made.

Development Services staff for the Town of Essex will provide Council with a regular status report for grant applications received under the Colchester and County Road 50 Community Improvement Plan. Planning staff for the Town of Essex will also monitor the CCIP program and report to Council on an annual basis each year with a recommendation on the future level of funding to ensure funding sources are considered with each annual budget.

Development Services staff will maintain a database to include the following:

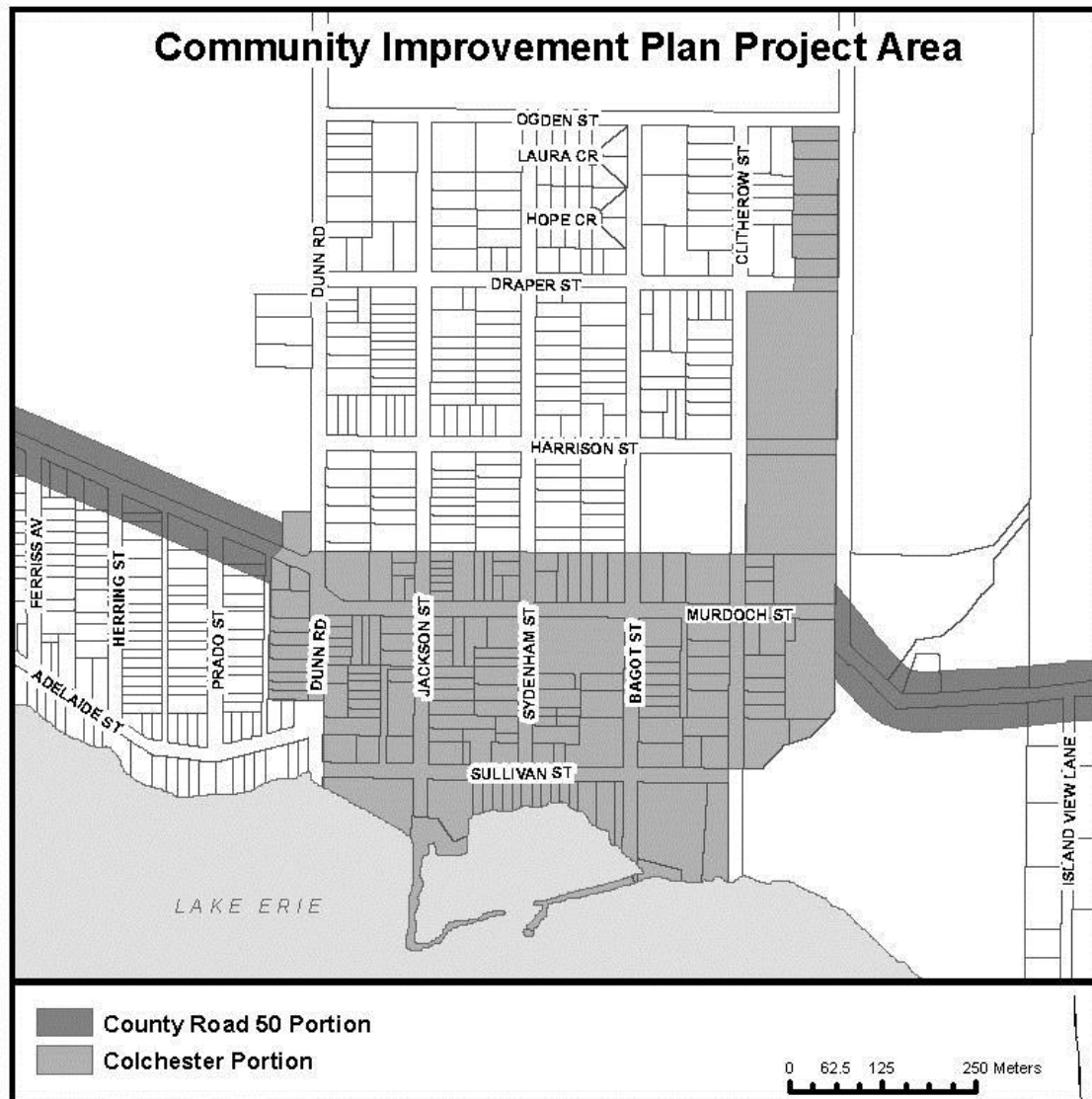
- number of approved applications and completed works for the year;
- the program utilized for each application;
- the amount of grant money provided for each program;
- the financial implications to the Town and budget for the above;
- recommendations for the next years' budget requirements.

Development Services staff report will provide an annual recommendation on the merits of continuation, expansion or cessation of the Plan and its programs. Significant changes to the Plan proposed by staff or Council will require an amendment by by-law approved by Council. Administrative, technical changes and minor adjustments can be made without amendment.

7.0 Colchester and County Road 50 Community Improvement Plan Project Area Maps

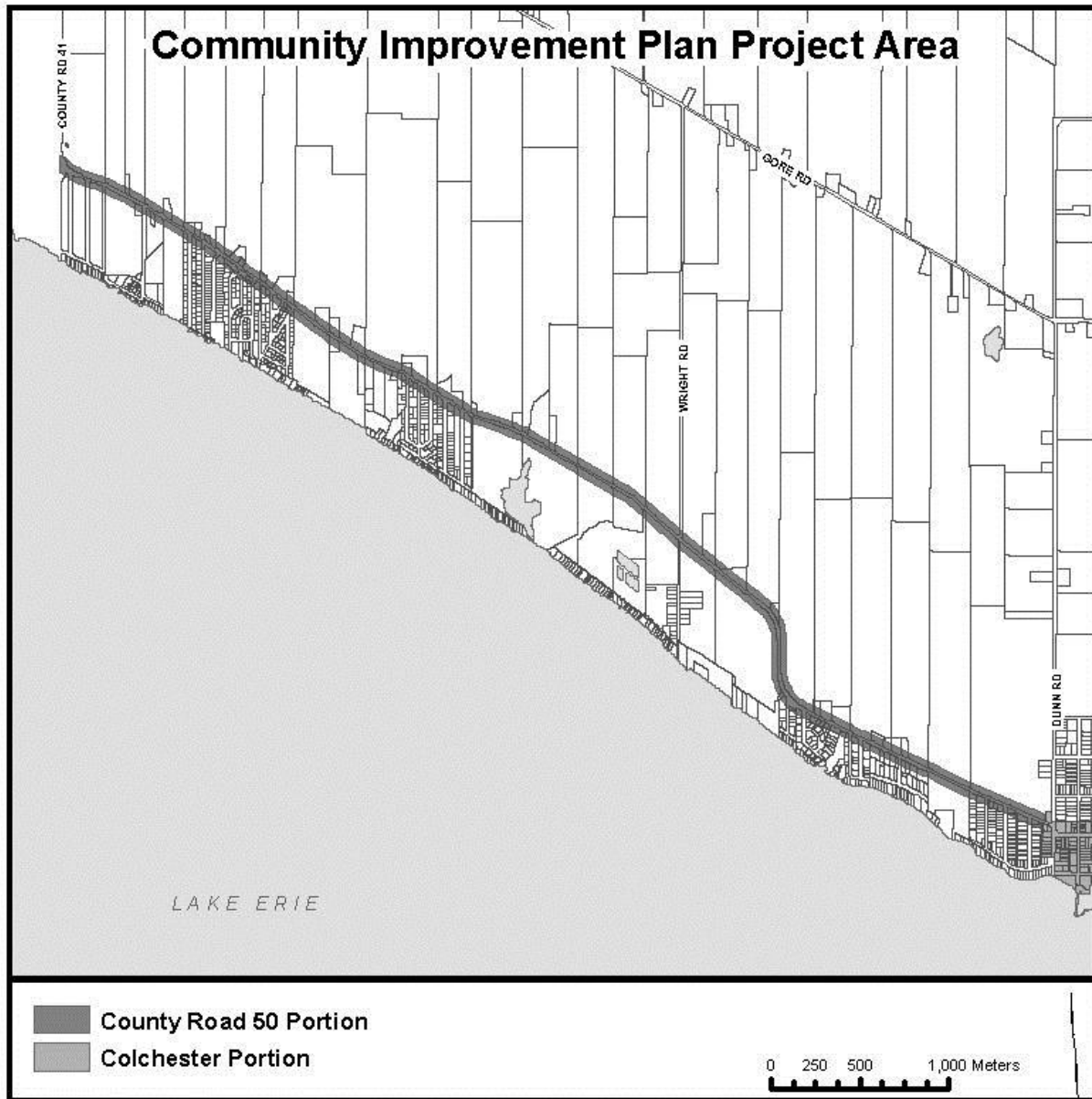
Map 1

Boundary Map of the Colchester Portion of the Community Improvement Plan Project Area



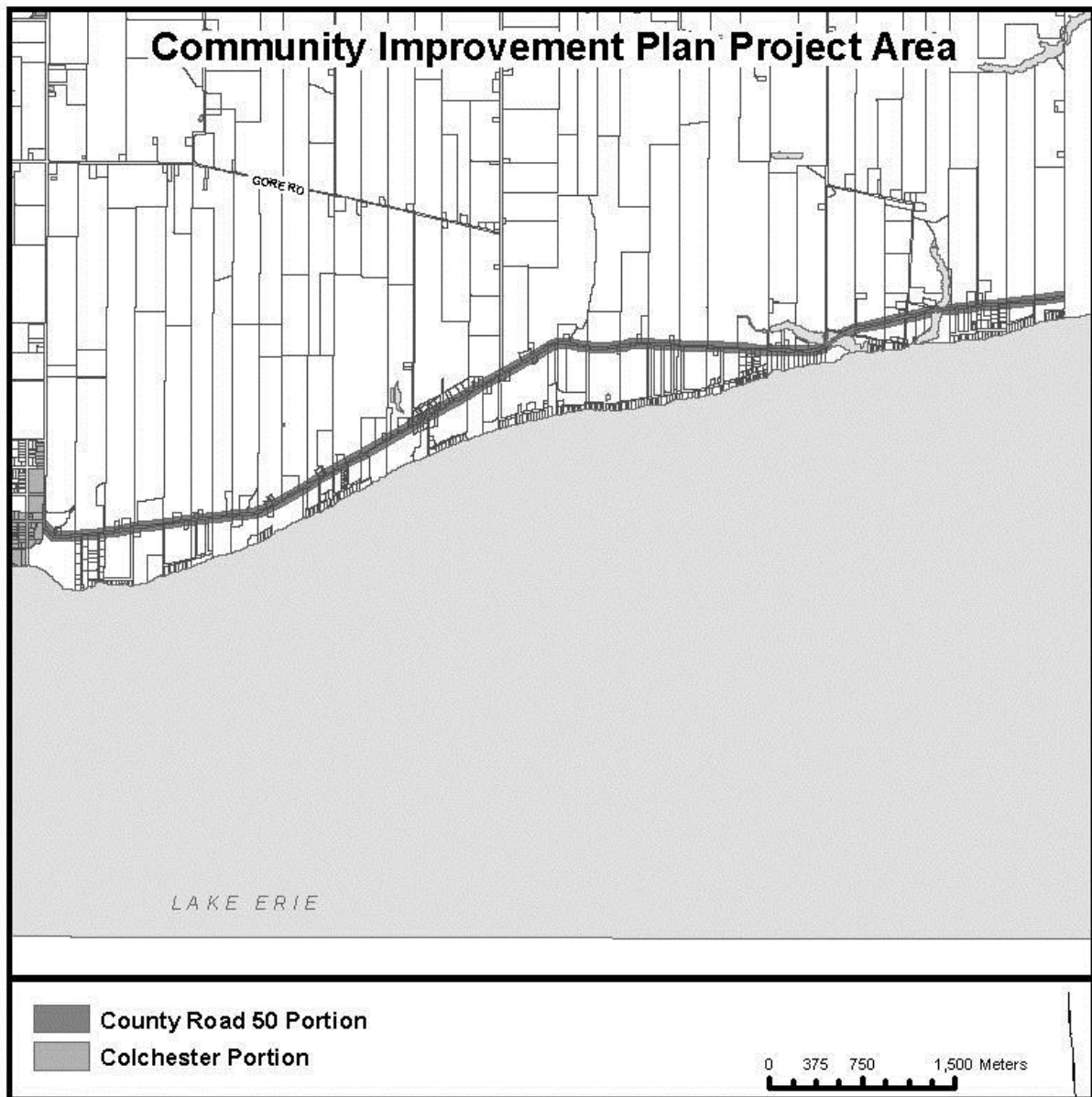
Map 2

Boundary Map of the County Road 50 Portions of the Community Improvement Plan Project Area



Map 3

Boundary Map of the County Road 50 Portions of the Community improvement Plan Project Area





Report to Council

Department: Development Services
Division: Planning
Date: December 16, 2019
Prepared by: Jeff Watson, Planner
Report Number: Planning-2019-60
Subject: M. Skipper Request for By-law Repeal
Number of Pages: 3

Recommendation(s)

It is recommended that;

1. Planning Report 2019-60, entitled "M. Skipper Request for By-law Repeal" be received and;
2. That Council support Administration's report that By-laws 430 and 1449 are now redundant site plan control by-laws for the properties located at 186-190 Talbot Street South and;
3. That By-law 1873 being a by-law to repeal By-laws 430 and 1449 receive three readings and be hereby adopted by Council.

Purpose

Mark Skipper, solicitor for 1544867 Ontario Incorporated and Brady's and Vella's Pharmacy Professional Corporation, has requested the repeal of two site plan control by-laws related to the properties at 186-190 Talbot Street South for the purpose of re-financing.

Background and Discussion

The affected properties are the St. Michael's professional complex and the adjacent BDO Insurance offices. The St. Michael's complex was the subject of site plan approval by Council in 2015 when the building was converted into a pharmacy, a restaurant and professional offices. The site plan agreement was approved under By-law 1449. The BDO offices were the subject of site plan approval in 2002 under By-law 430. All works required under the related agreements have been satisfied, such that the by-laws are now redundant. As such there is no objection to the repeal of the by-laws.

Financial Impact

N/A

Consultations

Link to Strategic Priorities

- ☐ Manage, invest and plan for sustainable municipal infrastructure which meets current and future needs of the municipality and its citizens.
- ☐ Create a safe, friendly and inclusive community which encourages healthy, active living for people of all ages and abilities.
- ☒ Provide a fiscal stewardship and value for tax dollars to ensure long-term financial health to the municipality.
- ☐ Manage responsible and viable growth while preserving and enhancing the unique rural and small town character of the community.
- ☐ Improve the experiences of individuals, as both citizens and customers, in their interactions with the Town of Essex.

The Corporation of the Town of Essex

By-Law Number 1873

Being a By-Law to Repeal By-law 430 and By-law 1449

Whereas the Town of Essex did on July 15, 2002 pass By-law Number 430 being a by-law to enter into a Site Plan Control Agreement between the Town and Phillip Burton in trust;

And whereas the Town of Essex did on October 5, 2015 pass By-law Number 1449 being a by-law to enter into a Site Plan Control Agreement between the Town and Brady's and Vella's Pharmacy Professional Corporation

And whereas 1544867 Ontario Incorporated and Brady's and Vella's Pharmacy Professional Corporation are desirous of having Council repeal by-laws 430 and 1449, both being site plan control approval by-laws that apply to the properties at 186 to 190 Talbot Street South

And whereas the Council of the town of Essex is in agreement that both by-laws 430 and 1449 have accomplished their purposes in accordance with the applicable site plan control agreements and are deemed therefore to be redundant;

Now therefore be it resolved that the Council of the Town of Essex enacts as follows:

1. That By-Law Numbers 430 and 1449 be hereby repealed; and
2. That this By-Law shall come into full force upon the final passing thereof.

Read a first, a second and a third time and finally passed on December 16th, 2019.

Mayor

Clerk



Report to Council

Department: Corporate Services

Division: Finance and Business Services

Date: December 16, 2019

Prepared by: Jeffrey R. Morrison, CPA, CGA, Director, Corporate Services

Report Number: Finance and Business Services-2019-07

Subject: Revised Schedules to By-Laws 1186, 1331, and 1850

Number of Pages: [Click here to enter Number of Pages including attachments](#)

Recommendation(s)

It is recommended that:

- a) Corporate Services Report 2019-07 entitled "Revised Schedules to By-Laws 1186, 1331 and 1850" be received; and
- b) The following three schedules be revised effective January 1, 2019:
 - I. Schedule "C" to By-Law Number 1186, being a by-law respecting the maintenance, management, regulation and control of any cemetery owned by The Corporation of the Town of Essex,
 - II. Schedule "A" to By-Law Number 1331, being a by-law to establish a schedule of miscellaneous fees and charges, and
 - III. Schedule "B-1" and "B-2" to By-Law Number 1850, being a by-law for the imposition of Development Charges.

Purpose

A By-Law and revisions to a by-law, including any related schedules, must be adopted by Council.

Background and Discussion

1. Schedule C to By-Law Number 1186

Schedule C to By-Law Number 1186, being a by-law respecting the maintenance, management, regulation and control of any cemetery owned by the Town, provides the tariff of rates related to cemetery lot sales, interment, headstone moving, markers. Annually, the tariff of rates is updated to reflect the change in the Consumer Price Index. A revised Schedule C to By-Law Number 1186 is attached and has been updated to reflect the year over year change in the Consumer Price Index of 1.9% as at September 2019.

2. Schedule A to By-Law Number 1331

By-Law Number 1331, being a by-law to establish a schedule of miscellaneous fees and charges, provides that miscellaneous fees and charges shall be adjusted annually, on January 1 in any given year by the year over year change in the Consumer Price Index as published for the third quarter of the prior year. Accordingly, Schedule "A" to By-Law Number 1331 attached has been revised to reflect the year over year change of 1.9% for all fees except lottery licences, which are provincially regulated.

3. Schedule B-1 and B-2 to By-Law Number 1850

The Development Charges Act, 1997 (the "Act") requires that Development Charges shall be adjusted annually, on the first day of every year based on the Statistics Canada Quarterly, Construction Price Statistics. The change in the Construction Price Statistics

reported for the third quarter of 2019 is 3.3% and the attached Schedule B to By-Law Number 1850 has been revised to reflect this change.

Financial Impact

The new rates for miscellaneous fees and charges will provide for increased revenues to offset an increase in expenses resulting from changes in the Consumer Price Index, and in the case of the Development Charges, the Construction Price Statistics.

Consultations

Watson and Associates for the Development Charge index.

Link to Strategic Priorities

- ☐ Manage, invest and plan for sustainable municipal infrastructure which meets current and future needs of the municipality and its citizens.
- ☐ Create a safe, friendly and inclusive community which encourages healthy, active living for people of all ages and abilities.
- ☒ Provide a fiscal stewardship and value for tax dollars to ensure long-term financial health to the municipality.
- ☐ Manage responsible and viable growth while preserving and enhancing the unique rural and small town character of the community.
- ☐ Improve the experiences of individuals, as both citizens and customers, in their interactions with the Town of Essex.

Schedule "A" to By-Law Number 1331					
(Effective January 1, 2020)					
Department	Description of Fee or Charge	Unit	Fee or Charge	Subject to Applicable Taxes	
Finance	Tax Certificate or Statement per Section 352(1) of the Municipal Act (Note 1)	Each	\$ 74.67	No	
	Payment Dishonoured or Returned as Non-Sufficient Funds	Each	\$ 28.18	No	
	Tax Certificate or Statement Rush (required within 3 business days) per Section 352(1) of the <i>Municipal Act, 2001</i>	Each	\$ 146.17		
	Tax Receipt/Account Information/Duplicate/Reprint ¹	Per property	\$ 10.80	No	
	Refund of Credit on Account	Each	\$ 26.95	No	
	Misposting of Payment	Each	\$ 27.00	No	
	Accounts Receivable - Invoices outstanding over 30 days	Per month	1.25%	No	
	Financing Administration	Per property	\$ 107.82	No	
	Research (for Tax, Accounting for Financial Information more than 3 years)	Per property	\$ 53.92	No	
	Photocopy (letter, legal, 11 x 17)	Each	\$ 0.44	No	
Legislative Services (Clerk)					
	Lottery Licences:				
	Bingo	Percentage of prizes	2% of prizes for bingo	No	
	Raffle	Percentage of prizes	2% of prizes for raffle	No	
	Break Open Ticket	Percentage of prizes	2% of prizes for break open ticket	No	
	Marriage Licence	Each	\$ 140.44	No	
	Burial Permit	Each	\$ 16.84	No	
	Administering Oaths or Declarations - Resident	Each	No charge	No	
	Administering Oaths or Declarations - Non-Resident	Each	\$ 11.23	Yes	
Geographic Information System					
	Standard Map Products:				
	1) 8.5 x 11 inches selected area specified by customer (colour)	Each	\$ 2.23	Yes	
	2) 8.5 x 11 inches selected area specified by customer (black and white)	Each	\$ 1.16	Yes	
	3) 11 x 17 inches selected are specified by customer (colour)	Each	\$ 3.38	Yes	
	4) 11 x 17 inches selected area specified by customer (black and white)	Each	\$ 2.23	Yes	
	5) 11 x 17 inches digital aerial photography (colour)	Each	\$ 8.90	Yes	
	Standard Products - Wide Format:				
	1) Selected area or digital file (black and white) - maximum 42 inches wide	Per square foot	\$ 2.75	Yes	
	2) Selected area or digital file (colour) - maximum 42 inches wide (per square foot)	Per square foot	\$ 3.38	Yes	

Schedule "A" to By-Law Number 1331

(Effective January 1, 2020)

Department	Description of Fee or Charge	Unit	Fee or Charge	Subject to Applicable Taxes
	3) Slected area specified by customer with aerial photography - 42 inches wide	Per square foot	\$ 4.55	Yes
	Wide Format Scans:			
	Size 22 x 34 inches or 24 x 36	Per scan	\$ 5.08	Yes
	Size 34 x 44 inches or 36 x 48	Per scan	\$ 6.04	Yes
	Other:			
	Custom mapping	Per hour	\$ 61.74	Yes
	Drawing format printing	Per square foot	\$ 0.53	Yes
	Compact Disk (CD)/Digital Video Disk (DVD)	Per burn	\$ 11.23	Yes
Business or Other Licensing	Transient Trader or Vendor's Licence	Per unit	\$ 337.12	No
Other Miscellaneous Fees and Charges	Fire Report/Inspection Report/Certificate	Per report	\$ 56.14	Yes
	Tile Drainage Loan Inspection	Per inspection	\$ 112.37	Yes
	Entrance Permit	Each	\$ 168.61	No
	Driveway Apron Improments	Per address	\$ 56.14	No
	Weed Lot Cutting	Per hour	\$ 114.60	Yes
	Telecommunications Agreement	Each	\$ 2,472.74	Yes
	Incident Report	Each	\$ -	Yes

¹ Fee will be eliminated up to two times per year for customers whos tax bills are paid by their mortgage company as per Finance and Business Services Report 2017-05.

Schedule "B-1"								
to By-Law Number 1850								
Schedule of Development Charges for "Hard Services"								
(Effective January 1, 2020)								
Service	Residential - Single and Semi- Detached Dwelling	Residential - Apartments - 2 Bedrooms +	Residential - Apartments - Bachelor and 1 Bedroom	Residential - Other Multiples	Special Care/ Special Dwelling Units	Non- Residential - (per square foot of Gross Floor Are)	Wind Turbines and Telecommun- ication Towers	Solar Farms (per square foot)
Municipal Wide Services								
Roads and Related	\$ 1,603	\$ 809	\$ 675	\$ 971	\$ 572	\$ 0.75	\$ 1,603	\$ 0.75
Fire Protection Services	\$ 1,011	\$ 510	\$ 426	\$ 613	\$ 361	\$ 0.48	\$ 1,011	\$ 0.48
Police Services	\$ 441	\$ 222	\$ 186	\$ 268	\$ 157	\$ 0.20	\$ 441	\$ 0.20
Administration	\$ 93	\$ 46	\$ 39	\$ 57	\$ 33	\$ 0.04	\$ 93	\$ 0.04
Total Municipal Wide Services (hard services)	\$ 3,149	\$ 1,588	\$ 1,325	\$ 1,908	\$ 1,123	\$ 1.47	\$ 3,149	\$ 1.47
Area Specific Charges - Wastewater								
Ward 1	\$ 3,462	\$ 1,746	\$ 1,455	\$ 2,096	\$ 1,234	\$ 2.10	\$ -	\$ -
Ward 2	\$ 901	\$ 455	\$ 379	\$ 545	\$ 321	\$ -	\$ -	\$ -
Ward 3	\$ 2,135	\$ 1,077	\$ 898	\$ 1,293	\$ 761	\$ 1.22	\$ -	\$ -
Ward 4	\$ 2,566	\$ 1,294	\$ 1,079	\$ 1,555	\$ 915	\$ 1.48	\$ -	\$ -

Schedule "B-2"								
to By-Law Number 1850								
Schedule of Development Charges for "Soft Services"								
(Effective January 1, 2020)								
Service	Residential - Single and Semi- Detached Dwelling	Residential - Apartments - 2 Bedrooms +	Residential - Apartments - Bachelor and 1 Bedroom	Residential - Other Multiples	Special Care/ Special Dwelling Units	Non- Residential - (per square foot of Gross Floor Are)	Wind Turbines and Telecommun- ication Towers	Solar Farms (per square foot)
Ourdoor Recreation Services	\$ 1,522	\$ 768	\$ 639	\$ 921	\$ 542	\$ 0.06	\$ -	\$ -
Indoor Recreation Services	\$ 3,355	\$ 1,693	\$ 1,411	\$ 2,032	\$ 1,196	\$ 0.11	\$ -	\$ -
Library Services	\$ 232	\$ 118	\$ 98	\$ 140	\$ 83	\$ 0.01	\$ -	\$ -
Administration	\$ 104	\$ 53	\$ 43	\$ 63	\$ 37	\$ 0.05	\$ -	\$ -
Total Municipal Wide Services (soft services)	\$ 5,214	\$ 2,631	\$ 2,192	\$ 3,157	\$ 1,858	\$ 0.24	\$ -	\$ -

Description	Amount
By-Law Number 1186	
Schedule C	
Tariff of Rates	
(effective January 1, 2020)	
Lot Sales - Resident ¹	
Burial Rights	\$ 637.18
Perpetual Care	\$ 424.41
Total	<u>\$ 1,061.59</u>
Lot Sales - Non-Resident ¹	
Burial Rights	\$ 955.11
Perpetual Care	\$ 636.88
Total	<u>\$ 1,591.99</u>
Interment - Casket	\$ 1,003.51
Interment - Cremated Remains	\$ 858.30
Interment - Infants	\$ 536.61
Headstone Moving	\$ 498.39
Lot Transfer	\$ 152.95
Markers	
Flat Marker less than 173 square inches ¹	\$ -
Flat Marker greater than 173 square inches ¹	\$ 50.00
Upright Monument up to 4 feet in height/width ¹	\$ 100.00
Upright Monument greater than 4 feet in height/width	\$ 200.00
Lots purchased prior to January 1, 1955 where no previous care and maintenance has been paid - Resident	\$ 425.23
Lots purchased prior to January 1, 1955 where no previous care and maintenance has been paid - Non-Resident	\$ 639.12
¹ Maximum permitted under Cemeteries Act, Ontario Regulation 132/92	



Report to Council

Department: Development Services
Division: Planning
Date: December 16, 2019
Prepared by: Jeff Watson, Planner
Report Number: Planning 2019-61
Subject: 1627015 Ontario Limited Site Plan Control approval, W. Mills, agent
Number of Pages: 9

Recommendation(s)

It is recommended that:

1. Planning report Planning 2019-61, entitled "1627015 Ontario Limited Site Plan Control approval" be received and
2. That By-law 1874, regarding site plan approval for 1627015 Ontario Limited for the development of a bus repair facility at 337 Maidstone Avenue East, be adopted and the related site plan agreement be executed and registered.

Purpose

An application for site plan approval has been submitted by 1627015 Ontario Limited for the construction of a bus repair facility at 337 Maidstone Avenue East, requiring Council's authorization to execute a site plan agreement.

Background and Discussion



The lands affected are located to the rear of the Ives Insurance offices on the north side of Maidstone Avenue East at the boundary between the Towns of Essex and Lakeshore. The proponents have acquired the Ives property and consolidated it with their holdings to the rear. With reference to the site plan attached as Appendix A, the proponents are to construct a three bay bus repair facility and accessory office, in accordance with the provisions of the M1.1, light industrial zoning, of Zoning By-law 1037. Most of the lands affected will be paved for the movement and temporary storage of buses to be repaired and for required parking. Bus and employee parking will be along the north and east limits of the site. Provision has been made for two accessible parking spaces opposite the office entrance to the satisfaction of the Accessibility Committee.

Of note the Ives Insurance offices are in C3.1, highway commercial zoning, while the back one half (the subject lands) are zoned for light industrial uses. To the immediate west are residentially zoned lands occupied by single detached dwellings with deep rear yards. In order to access the repair facility, a new 7.5 meter driveway will be constructed along the west side of the Ives portion as shown on the site plan. To buffer the driveway from the adjacent residential property, it is proposed that a 1.8 meter wooden screening fence be erected along the west limit of the driveway. It is recommended that the fence be extended to end in line with the front wall of the building. Beyond that and on the north and west sides of the site and along the north limit of the landscaped area, concrete barrier curbs should be placed to limit intrusions onto adjacent properties and the landscaped area.

The property is serviced by municipal services on Maidstone Avenue. The extension of services to the site and the provision of storm water management facilities will be to the satisfaction of the Town. If a storm water management pond is required, as per the draft

servicing plan, it may be located in the landscaped area, between the repair facility and the Ives Insurance offices, as landscaping element.

It is recommended that the site plan be approved. The proposed use conforms with the land use provisions of the Official Plan and the zoning by-law. Full municipal services are available and efforts have been made to buffer the facility from the dwelling next west.

Financial Impact

N/A

Consultations

Link to Strategic Priorities

- ☐ Manage, invest and plan for sustainable municipal infrastructure which meets current and future needs of the municipality and its citizens.
- ☐ Create a safe, friendly and inclusive community which encourages healthy, active living for people of all ages and abilities.
- ☐ Provide a fiscal stewardship and value for tax dollars to ensure long-term financial health to the municipality.
- ☒ Manage responsible and viable growth while preserving and enhancing the unique rural and small town character of the community.
- ☐ Improve the experiences of individuals, as both citizens and customers, in their interactions with the Town of Essex.

REFERENCE : PART LOT 282 CONCESSION NORTH
TALBOT ROAD, COUNTY OF ESSEX, PLAN FILE 2019DAT3
FILE : L-MAID- STR-282 DATED 24 JULY 2019
BY CLARKE SURVEYOR'S INCORPORATION

AREA :
LOT AREA : 5,372.92 sq.m (57,833.6 sq.f)
BUILDING AREA : 668.9 sq.m (7,200.0 sq.f)

ZONING : M 1.1 (HEAVY REPAIR SHOP)

CLASSIFICATION : GROUP F, DIVISION 2 (3.2.2.70)

SETBACK:	REQUIRED	PROVIDED
FRONT SETBACK :	7.5 m (25 f)	45.2 m (150 f)
REAR SETBACK :	----	VARIABLE 18.3 m (60 f)
SIDE SETBACK (WEST) :	3.0 m (10 f)	5.5 m (18 f)
SIDE SETBACK (EAST) :	3.0 m (10 f)	17.5 m (59 f)
MAX. HEIGHT OF BUILDING	12.0 m (39 f)	9.5 m (31 f)
MIN. LOT FRONTAGE	24.0 m (80 f)	54.5 m (178.5 f)
MAX. LOT COVERAGE	15%	12%
MIN. LANDSCAPE OPEN SPACE	15%	24%

REQUIRED PARKING SPACE (1 space / 484 sq.f @ 18'-0" x 9'-0")	15	18
ACCESSIBLE PARKING SPACE		
TYPE A	1	1
TYPE B	1	1
LOADING SPACE (< 29,602 sq.f)	0	0
BICYCLE PARKING SPACE	1	2

SCOPE OF WORK
CONSTRUCT NEW HEAVY REPAIR SHOP INCLUDING OFFICES, WASHROOMS,
REQUIRED PARKING, FENCING, CURBS AT PROPERTY LINE, AND REFUSE ENCLOSURE

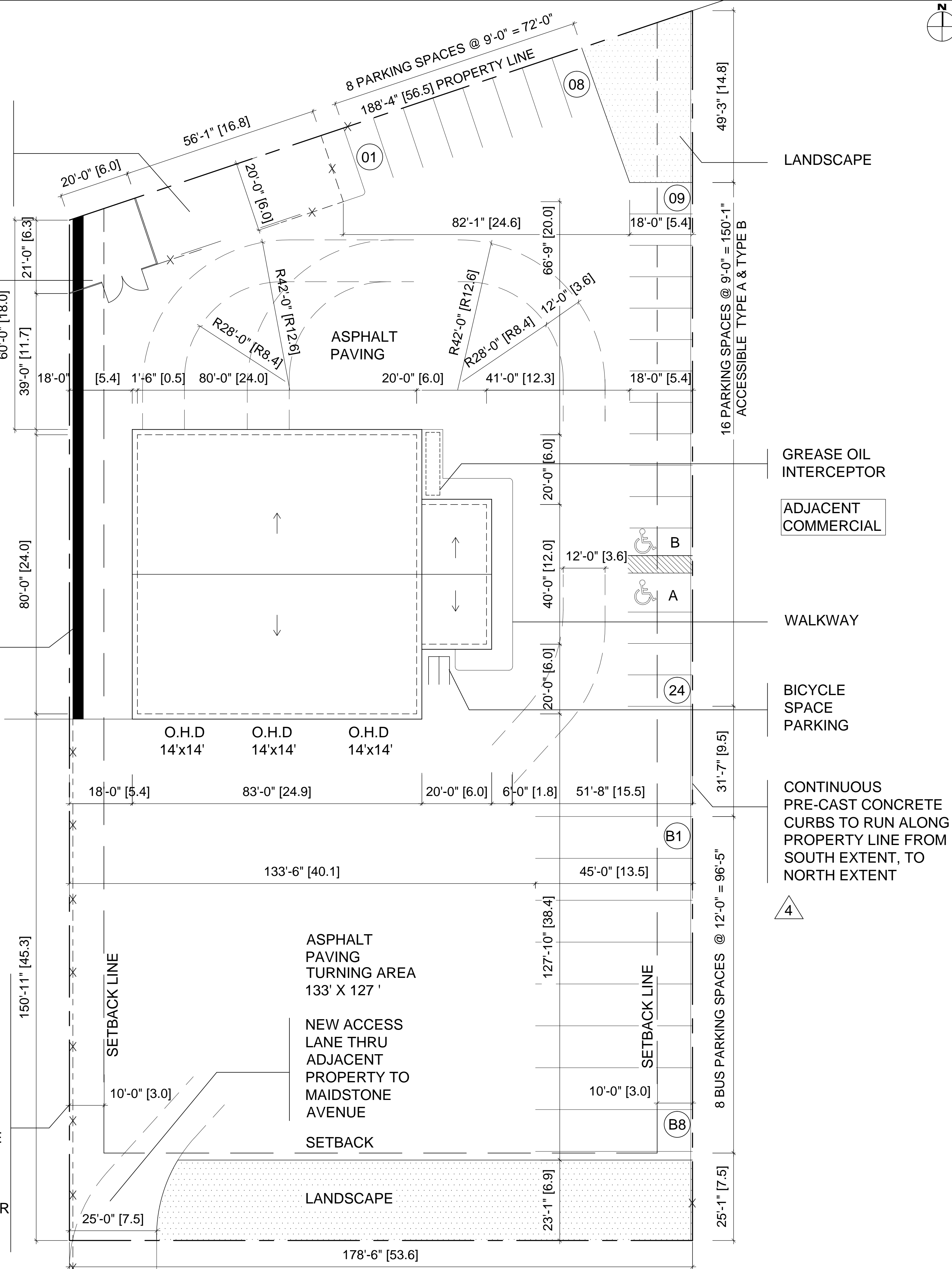
STORAGE W/
6'-0"
HIGH SECURITY
FENCE
COMPLETE
W/ SLIDING
DOOR
REFUSE
20'X20' BINS
W/ 6'-0"
HIGH WOOD
FENCE
ENCLOSURE

ADJACENT
SINGLE
FAMILY
RESIDENCE

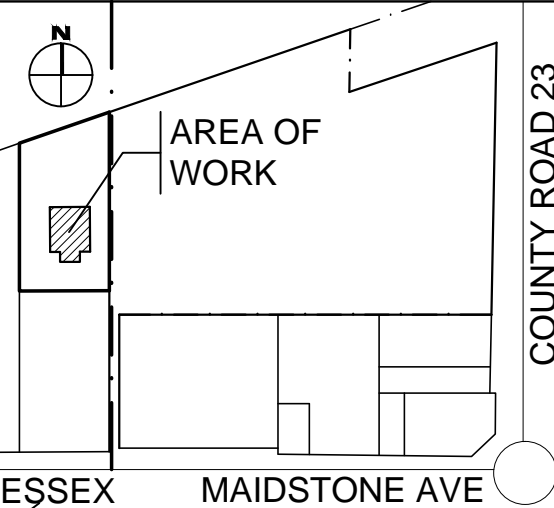
CONTINUOUS
PRE-CAST
CONCRETE
FOX-BLOCKS
CURBS ON
PROPERTY
LINE FROM
ADJACENT
SOUTH FACE
OF NEW
BUILDING, TO
NORTH PROP-
ERTY LINE
ADJACENT
RAILROAD
CORRIDOR
AT NORTH

CONTINUOUS
PRESSURE-
TREATED 6'
HIGH WOOD
FENCE, ON
PROPERTY
LINE, FROM
ADJACENT
NORTH FACE
OF RESIDENCE
TO WEST, TO
ADJACENT
SOUTH FACE
OF NEW REPAIR
BUILDING

1 NEW DEVELOPMENT SITE PLAN
SP-1r3 1/16"=1'-0"



MMA
Architect Inc.
2885 LAUZON PARKWAY S. Suite 101F,
WINDSOR, ON. N8T 3H5 (519) 973-9044
Fax: 973-9052 Email: mmaarch@mmsi.net



KEY PLAN
N.T.S.

GENERAL NOTES:
1) DO NOT SCALE DRAWINGS.
2) VERIFY ALL DIMENSIONS AND EXISTING
CONDITIONS AS REQUIRED PRIOR TO
BIDDING AND COMMENCEMENT OF WORK.
3) COORDINATE ARCHITECTURAL,
STRUCTURAL, MECHANICAL AND ELECTRICAL
DRAWINGS PRIOR TO COMMENCEMENT OF
WORK.
4) SHOULD ANY CONFLICTS AND/OR
DISCREPANCIES ARISE, NOTIFY THE
ARCHITECT / ENGINEER IMMEDIATELY, IN
WRITING PRIOR TO PROCEEDING WITH ANY
WORK.
5) ALL WORK SHALL COMPLY OR EXCEED THE
REQUIREMENTS OF THE ONTARIO BUILDING
CODE, FIRE CODE, PLUMBING CODE,
ELECTRICAL CODE AND LOCAL BY-LAWS.

03 DEC. '19	4	SPA REVISION
14 NOV. '19	3	RESUBMISSION
14 NOV. '19	3	RESUBMISSION
13 NOV. '19		CLIENT REVIEW
22 OCT. '19	2	COORDINATION
30 SEPT. '19	1	COORDINATION
11 SEPT. '19		SITE PLAN CONTROL
20 AUG. '19		COORDINATION

DATE	NO.	ISSUED FOR
------	-----	------------

PROJECT
TRANSPORT
TERMINAL

337 MAIDSTONE AVE.
ESSEX, ONTARIO

DWG. TITLE
SITE PLAN

DATE	: APRIL '19
SCALE	: AS NOTED
DESIGNED BY	: SM
DRAWN BY	: MH
CHECKED BY	: SM
APPROVED BY	: SM
PROJECT NO.:	19-121
DWG. NO.	

SP-1r4

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2 AREA SITE PLAN
SP-1r3 1/128"=1'-0"

The Corporation of the Town of Essex

By-Law Number 1874

Being a By-Law to enter into a Site Plan Control Agreement between:

The Corporation of the Town of Essex and

1627015 Ontario Limited

1627015 Ontario Limited is desirous of creating a bus repair facility located on lands north of Maidstone Avenue East, west of Gosfield Avenue, and as such is required to enter into a Site Plan Control Agreement with the Town of Essex;

And Whereas the subject lands are designated as a site plan control area pursuant to Section 41 of the Planning Act, R.S.O. 1990 and Amendments thereto;

And Whereas pursuant to Section 41 of the Planning Act, R.S.O. 1990 and Amendments thereto, municipalities may enter into such agreements;

Now therefore be it resolved that the Council of the Town of Essex enacts as follows:

That the Mayor and Clerk be directed to affix their signatures, on behalf of the Corporation of the Town of Essex, to Schedule 1 attached hereto and forming part of this By-law, for the purpose of executing the Site Plan Control Agreement.

Read a first, a second and a third time and finally passed on December 16th, 2019.

Mayor

Clerk

Schedule 1

The Corporation of the Town of Essex

Site Plan Control Agreement

This agreement made in triplicate, on December 16th, 2019

Between: 1627015 Ontario Limited

hereinafter called

The Owner of the First Part

And The Corporation of the Town of Essex

hereinafter called

The Corporation of the Second Part

Whereas an application has been made by the Owner for approval of a development within the limits of the Town of Essex which lands are more particularly described as Part of Lot 282, Concession North Talbot Road, County of Essex, on the north side of Maidstone Avenue East, west of Gosfield Road, in the Town of Essex, County of Essex, Ontario.

And Whereas the proposed development is in accordance with the Official Plan of the Corporation as amended from time to time;

And Whereas the Corporation has enacted by-laws being by-laws designating the said lands as a site plan control area, pursuant to Section 41(2) of the Planning Act, R.S.O. 1990, as amended;

And Whereas where site plan control is in effect, Section 41 of the Planning Act, R.S.O. 1990, as amended requires the approval of plans and drawings by the Corporation prior to development and the Corporation may require the Owner to enter into an agreement respecting certain prescribed matters;

And Whereas the Owner wishes to undertake a development on the subject lands, in accordance with the site plan, prepared by MMA Architect Incorporated, Project Number 19-121;

Now Therefore This Agreement Witnesseth that in consideration of the aforesaid of the sum of Five Dollars (\$5.00) now paid by the Owner to the Corporation (the receipt of which is hereby expressly acknowledged), the parties hereto covenant and agree one with the other as follows:

1. The Owner hereby agrees to construct, provide, install and maintain for the life of the proposed development, to the satisfaction of and at no expense to the Corporation, all buildings, structures, landscaping, screening and security fencing, light standards, walkways, vehicular and bicycle parking and access areas, garbage disposal facilities, grading and provision for storm, surface and waste water, and other facilities in accordance with the site plan and in accordance with all the applicable provisions of the Corporation's Zoning By-law and such other relevant by-laws, as amended, and to the satisfaction of the Corporation;
2. The Owner hereby agrees to construct and install all entrances, driveways, perimeter curbing, including as well pavement markings and identification and directional signs in accordance with the approved site plan on file with the Town's Clerk and Town Planner and in a manner satisfactory to the Corporation. The Owner further agrees to maintain all parking and driveway areas to the satisfaction of the Corporation as shown on the site plan;
3. The Owner hereby agrees to provide off-street parking spaces in accordance with the Town's Comprehensive Zoning By-law Number 1037 in the locations depicted on the site plan. Once required parking spaces and manoeuvring aisles are paved with a hard surface, the Owner further agrees to delineate all required parking spaces by pavement markings to the satisfaction of the Corporation;
4. The Owner hereby agrees to prepare a landscaping and planting plan, which may include a phasing plan and a storm water management pond, to the satisfaction of the Corporation. All such landscaping must be installed in accordance with the said landscaping and planting plan and to the satisfaction of the Corporation in accordance with the plan. The owner agrees that all landscaped areas shall be maintained in good practice exclusively for landscaping purposes save and except for permitted signage and such other facilities permitted or required by the Town or utility provider;
5. The Owner hereby agrees to complete an engineering analysis, prepared by a professional engineer registered by the Association of Professional Engineers of Ontario, to determine the effect of increased runoff due to the development of the site and to identify storm water management measures as necessary to control any increases in flows in downstream watercourses, up to and including the 1:100 year design storm. The storm water management plan shall be completed to the satisfaction of the Corporation of the Town of Essex;
6. The Owner hereby agrees to obtain approval from the Town's Chief Building Official before installing any signage on the Subject Lands. As part of his approval, the Chief Building Official, in consultation with the Town Planner, will review the size, location, type and design of any signage proposed, to ensure that the signs are in accordance with

the approved site plan, landscape plan and signage plans and or with the municipal sign bylaw.

7. The Owner agrees to pay all outstanding Realty Taxes to the Corporation in advance of any building permit being issued for the proposed commercial building; The Owner hereby agrees to remove at no expense to the Corporation all snow from all driveways, parking and access areas and to remove and dispose of all refuse from the Subject Lands;
8. The Owner shall keep the municipal roads adjacent to the Subject Lands free from dirt and debris caused by the construction on the Subject Lands;
9. The Owner shall, at its entire expense, restore any curbs, gutters, pavements, sidewalks, drains or landscaped areas on the municipal roads which are damaged during construction and construct any new curbs, gutters, pavements, sidewalks, drains and landscaped areas on the municipal roads abutting the Subject Lands, all to the satisfaction of the Corporation;
10. The Owner hereby agrees to notify all local, provincial or federal authorities having jurisdiction as to their proposed program of work and shall obtain all necessary permits and/or approvals which may be required from any authority having jurisdiction;
11. The Owner shall satisfy the Chief Building Official that all required works as set out in this agreement have been completed and any deficiencies corrected to the satisfaction of the Corporation and are in compliance with any applicable federal, provincial or municipal statute, by-law or regulation;
12. The Owner agrees to commence and complete construction of the buildings, parking, landscaping and all other facilities required under this agreement and zoning by-law within two (2) years of the date of execution of this agreement, all to the satisfaction of the Town, unless otherwise dictated by this agreement, or this agreement may, at the option of the Corporation, be deemed to be null and void;
13. The Owner hereby agrees to pay to the Corporation the applicable development charges, in accordance with the Town's Development Charges Bylaw, as may be amended from time to time, in advance of any building permit being issued by the Corporation;
14. The Owner hereby agrees to pay all costs incurred by the Corporation with respect to this Agreement, and without limiting the generality of the foregoing, shall include legal, planning, engineering and administrative costs;
15. The Owner acknowledges and agrees that pursuant to subsection (11) of Section 41 of the Planning Act, R.S.O. 1990, as amended, Section 325 of the Municipal Act applies to all requirements of this agreement. If the Owner neglects to undertake any matter or thing required to be done by this agreement and such default continues, in addition to

other remedies available to it, the Corporation may direct that such matter or thing shall be done at the expense of the Owner and the Corporation may recover the expense incurred in doing it and the Owner hereby authorizes the Corporation to enter upon the said land and do such matter or thing;

16. This agreement may be amended at any time with the consent of the Corporation and the registered Owner of the said lands at the time of such amendment;
17. The Corporation shall not be required to issue a building permit for the said development until all the preconstruction provisions of this Agreement have been complied with;
18. If any term, covenant or condition of this agreement shall, to any extent, be declared invalid or unenforceable, the remainder of this Agreement shall not be affected thereby and each term, covenant or condition of this agreement shall be valid and be enforced to the fullest extent permitted by law;
19. The Owner hereby agrees to the registration of the within agreement in the Land Registry Office for the County of Essex (No. 12) by the Corporation's solicitor and at the entire expense of the Owner;
20. This Agreement is not assignable by the Owner (or any person claiming through or under the Owner) unless the assignee thereof shall first in writing covenant and agree with the Corporation to assume the burdens and obligations imposed upon the Owner under this Agreement and to undertake with the Corporation to observe and perform the obligations herein imposed upon the Owner;
21. This agreement shall inure to the benefit of the Corporation and shall be binding upon the Owners and their respective heirs, executors, administrators, successors and authorized agents.

In Witnesseth Whereof, the said parties hereunto affixed their signatures and corporate seals attested to by the hands of their proper officers, duly authorized in that behalf.

Signed, sealed and delivered in the presence of:

The Corporation of the Town Of Essex

Per: _____

Mayor

Per: _____

Clerk

Per: _____

I have the authority to sign on behalf of



Year-end Municipal-wide Development Update

Department of Development Services

December 16, 2019



Essex Centre

Major Developments:

- Essex Town Centre
- Townsview Subdivision
- Weston Apartments
- Jakana Subdivision
- Gianni Estates
- Woodsvie Estates



Harrow Centre

Major Developments:

- Dalla Bonna Subdivision
- DaSilva Subdivision
- Sunset Gardens
- Former Harrow Junior School Site



McGregor Centre

Major Developments:

- Masaccio Drive
- Parnell Street
- Former Home Hardware Site



Colchester South

Major Developments:

- Parkland Estates
- Levergood
- Liberato



Development-Ready Lands & Policies

- Secondary Dwelling Units
 - Permitted by right in Singles, Semis, Towns
 - Investigating in Residential Accessory Buildings
- Tiny Homes
 - Investigating Minimum Sizes & Lands
 - Permanent & Tourist-related
- Pre-zoned Residential Holding Lands
- Reviewing Pre-Zoning Options for Colchester Secondary Plan Area
- Infill Residential Development



Questions?

Ontario's Special Advisor on Flooding Report to Government

An Independent Review of the 2019 Flood Events in Ontario

A Report to the Hon. John Yakabuski, Minister of Natural Resources and Forestry

Douglas McNeil, P.Eng.
McNeil Consulting Inc. – Winnipeg, Manitoba

An Independent Review of the 2019 Flood Events in Ontario



October 31, 2019



Professional Engineers
Ontario

Temporary Licensee

Name: Douglas Duncan McNeil
Number: 100546746-01
Limitations: Provide recommendations on changing or enhancing flood protection governance and administrative or technical processes and on potential conceptual works throughout Ontario.
Collaborator: Exempt
Expiry Date: October 31, 2020
Association of Professional Engineers of Ontario

Douglas McNeil, P.Eng.
McNeil Consulting Inc. – Winnipeg, Manitoba

Executive Summary

Ontario has a long history of taking actions to keep people and property safe from the impacts of flooding through land use planning policies and mitigative activities. The development of the modern floodplain policy in Ontario, the watershed approach, the conservation authority model, and the flood standards have been extremely effective at reducing flood risks, especially in new greenfield development areas.

However, during the spring of 2019, heavy rains paired with melting snow and a sudden temperature increase led to devastating flooding across many areas throughout northern and southern Ontario. Emergency declarations were made by 23 municipalities and one First Nation, with significant flooding impacting households, commercial properties, roads and other key infrastructure, such as bridges. Emergencies were first declared starting in early April and lasted through July in many cases. Even through the fall and heading into winter, the Great Lakes continue to experience high-water levels that have been underway since early 2017, and many people and properties continue to be at risk.

In response to these flood events, the provincial government announced that it would undertake consultation on the province's current flood mitigation and land use planning policies. Their first step was to host three regional listening sessions held by provincial leaders with municipal, Indigenous and industry leaders in Muskoka, Pembroke and Ottawa in May 2019. These sessions allowed the Province to hear directly from areas most devastated by the spring floods. Acknowledging that these sessions did not cover all areas that experienced flooding, nor provided the public with an opportunity to engage on the topic, the Province invited comments regarding flooding and suggestions to make Ontario more resilient to flooding through an online survey from May 16 to June 28, 2019.

Following this initial engagement in the spring, I was appointed by the Minister of Natural Resources and Forestry, the Honourable John Yakabuski, on July 18, 2019, to review the province's current flood management framework. In addition to considering policies and activities which influenced spring flooding, I was also asked to consider both Great Lakes and urban flooding.

As Special Advisor on Flooding, I was appointed by the government to provide expert advice to the Minister, and to make recommendations to the government on opportunities to improve the existing flood policy framework.

Despite having worked in Manitoba on flooding issues throughout my career, I was unfamiliar with the complex policy framework for flood management in Ontario.

Understanding the various roles of agencies involved, including the federal government, municipalities, conservation authorities and individual provincial ministries, along with the policies and technical guidance, was of utmost importance to the review process. The Ministry provided a number of documents to enable an understanding of the current policy framework for flood management in Ontario and a listing of the documents is included in Appendix A.

While information provided by the Ministry was helpful in providing context for my evaluation, further engagement was warranted to ensure a full review.

I first met with Minister Yakabuski to ensure a clear understanding of my mandate and the importance of this review to the people of Ontario. He underscored the devastating impacts being felt across the province from flooding and the need for the Province to help citizens and ensure their safety in the future.

Working with the Ministry, a nine-day community tour over two weeks in early September 2019 was developed to highlight the variance in issues, geographies and responsibilities. Tour stops included a mix of provincial department meetings; agency meetings; municipal and conservation authority roundtables; and guided tours of locally impacted areas. The first set of community tours took place in the Ottawa, Pembroke and North Bay areas. During the second week of my community tours, I visited Toronto, Muskoka, Cambridge and London.

I have segmented my report into six chapters: 1) Introduction; 2) The Review Process; 3) Background and the 2019 Flooding in Ontario; 4) Region Specific Situations; 5) Ontario's Approach to Managing Flood Risk; and 6) Challenges and Opportunities to Managing Flood Risk.

In Chapter 3, I wanted to set the stage and explain all of the reasons behind the 2019 flooding, such as the above average snowfall in winter 2018/19, above average snow water equivalent, low temperatures going well into the spring, and significant rainfall during snow melt.

I prepared Chapter 4 to try to provide the reader with explanations as to what happened during the flooding in each of the watersheds that I visited or heard about. Too often I heard people say they didn't understand how systems worked, or if they did, they felt that operations could have been done differently for a better result. I asked for and am grateful for the significant amount of detailed information from the various conservation authorities, municipalities, agencies and provincial departments. A lot of this information is included in this report, but was first reviewed and edited by me.

In Chapter 5, I talk about the core components of emergency management—prevention, mitigation, preparedness, response and recovery. I also identify the Acts, regulations, policies and technical guidelines regarding floods. Lastly, I write about the roles and responsibilities of provincial ministries, municipalities, conservation authorities, the federal government, and other agencies involved in flood management.

It is not hard to see that flooding, whether it is as a result of spring freshet, urban flooding or high Great Lakes water levels, is having a growing effect on Ontarians, and has reminded us that there is always room to improve. In Chapter 6, I write about the challenges and opportunities to managing flood risk, and include my numerous recommendations to the Ontario Government and recommendations to the other parties discussed in Chapter 5.

Based on an analysis of the information available for all of the systems that experienced flooding in 2019, nothing points to human error or the negligent operation of water control structures as the cause of the flooding. The sheer amount of water (snow and rainfall) on the landscape directly contributed to the flooding. Measures taken by water managers everywhere were effective in reducing the magnitude of flooding and associated damages throughout the drainage basins.

My work was supported by, and I am very much indebted to, the Ministry of Natural Resources and Forestry, which provided background materials, logistic support for meetings and tours, and facilitated the transfer of information and correspondence from the public and stakeholders related to my review.

Recommendations

Author's note: Implementation of many of the recommendations in this report are focused on agencies outside the jurisdiction or control of the Ministry of Natural Resources and Forestry (MNRF). In those cases, I would expect that the MNRF can initiate discussions with the particular agency to try and seek agreement for implementation, in full or in part.

Recommendation #1	That the MNRF proceed as expeditiously as possible to finalize its proposed regulation under the <i>Conservation Authorities Act</i> and submit it to Cabinet for approval.
Recommendation #2	That the MNRF consult with the conservation authorities on their application of the hazards-based approach and the risk-based approach to managing flooding.
Recommendation #3	<p>That the following be incorporated into the Provincial Policy Statement:</p> <ul style="list-style-type: none">• The reference to “impacts of a changing climate” throughout the Provincial Policy Statement helps to bring it to everyone’s attention and should be included in the Preamble as well.• Either in the body of the PPS or in the definitions section, reference should be made specifically to the requirement for conservation authorities to regulate development activities in hazardous lands as required in the <i>Conservation Authorities Act</i>.• That “d) Transportation and Infrastructure Corridors, Airports, Solid and Liquid Waste Management” be added to Section 3.1.5 of the Provincial Policy Statement.
Recommendation #4	That the MNRF update floodplain mapping technical and implementation guidelines recognizing new technology and approaches for flood hazard and flood risk mapping, and that the MNRF collaborate with conservation authorities on this initiative.

Recommendation #5	That the Province update its technical guides pertaining to floods and natural hazards. This should include undertaking a review of the flood event standards (e.g. 1%, Timmins storm, Hurricane Hazel), with a view to providing for current science and climate change, such as a specified minimum freeboard. This should also include reviewing the floodplain areas (floodway, floodway fringe, shoreline setbacks) as well as reviewing and updating, where appropriate, Great Lakes flood level values and shoreline erosion hazard methodologies and allowances.
Recommendation #6	That the Province establish a working group with provincial departments, conservation authorities and municipalities to prepare a multi-year approach to floodplain mapping.
Recommendation #7	That the federal government be encouraged to extend the National Disaster Mitigation Program or develop a successor program, so that municipalities, conservation authorities, and Ontario and Quebec (in consideration of the Ottawa River) can undertake or update floodplain mapping in all critical areas.
Recommendation #8	That the Province consider the establishment of a provincial Elevation Mapping Program and commit to the annual funding requirements.
Recommendation #9	That the Province consider establishing a provincial custodian for floodplain mapping information and make the necessary updates to policies, regulations and legislation.
Recommendation #10	That the Ministry of the Solicitor General implement the Auditor General's recommendations regarding a governance framework for emergency management and updating continuity of operations programs as soon as possible.
Recommendation #11	That the Province consider whether the <i>Emergency Management and Civil Protection Act</i> needs to be amended with a view to clarifying roles and responsibilities of identifying hazardous areas.

Recommendation #12	That the MNRF consider working with Conservation Ontario and the Association of Municipalities of Ontario to determine how the experience and information developed by municipalities and conservation authorities of identifying hazardous areas can be transferred to municipalities without a conservation authority.
Recommendation #13	That the Province consider legislative amendments that clarify the permissions under the <i>Conservation Authority Act</i> and the land use approvals in accordance with the <i>Planning Act</i> as they relate to development in hazardous areas.
Recommendation #14	That the Province consider new legislation to improve the existing flood policy framework by having a lead minister responsible for all flood-related policy, standards, regulations and legislation.
Recommendation #15	That the Province consider adopting legislation that will require flood risk properties to be identified in some way that is publicly accessible, at the very least on the property title, to ensure that prospective buyers are aware.
Recommendation #16	That municipalities consider utilizing local improvement charges to help finance and install (or upgrade) shoreline protection works, and if necessary, that the Province provide municipalities with enhanced authority to do so.
Recommendation #17	That the Province support municipalities and conservation authorities to ensure the conservation, restoration and creation of natural green infrastructure (i.e. wetlands, forest cover, pervious surfaces) during land use planning to reduce runoff and mitigate the impacts of flooding.
Recommendation #18	That the MNRF North Bay District facilitate a meeting between the Sturgeon-Nipissing-French watershed group and the Upper Ottawa River Watershed group to help the latter group establish a collaborative arrangement for future flood events. It is important that all parties involved in the flood be present at the meeting.

Recommendation #19	That the City of North Bay in particular, and any other municipalities in a similar situation, install appropriate treatment plant bypass piping to improve resiliency of key infrastructure and limit the impacts of flooding on this infrastructure and associated impacts to public health and safety.
Recommendation #20	That the Province, the federal government (Public Service and Procurement Canada) and the North Bay-Mattawa Conservation Authority review the Lake Nipissing Operational Guidelines.
Recommendation #21	That the MNR establish a communication protocol to inform and involve key stakeholders (i.e. municipalities) on watershed conditions and operations throughout the fall and winter leading into and throughout the spring freshet, commencing in early 2020.
Recommendation #22	That the Ministry of Environment, Conservation and Parks (MECP) use the results of the Muskoka Watershed Conservation and Management Initiative to inform any potential future amendments to the Muskoka River Water Management Plan by working with the Ministry of Natural Resources and Forestry, and in the meantime, that the MECP consider whether to encourage the municipalities to establish a conservation authority or request the Ministry of Municipal Affairs and Housing to restrict development in the floodplains (e.g. Ministerial Order).
Recommendation #23	That Haliburton County document how their collaborative model worked for the 2019 flood and share this information with, and for the benefit of, other counties, municipalities and conservation authorities.
Recommendation #24	That provincial, federal and municipal governments work with the Essex Region Conservation Authority and the Lower Thames Valley Conservation Authority to undertake a coordinated short- and long-term strategy to address the existing and expected impacts to Chatham-Kent, Windsor-Essex and Pelee Island as a result of current and future water

	levels, flood and erosion hazards, and climate change on Lake Erie, Lake St. Clair and the Detroit River.
Recommendation #25	That the MNRF review and update the appropriate technical guides, with consideration of a new category permitting development in hazardous lands along large inland lakes, rivers and streams, and along the Great Lakes/St. Lawrence River, utilizing flood protection land forms and/or other forms of flood protection and floodproofing methods with very strict requirements and conditions. Further, consideration should be given to enshrining this concept in legislation or in a regulation along with other structural methods that are now permitted in non-hazard lands or Special Policy Areas.
Recommendation #26	That, due to the increased use of the regional flood control facilities, the MNRF review whether the Province should take steps to regulate the use of these structures or let municipalities decide their use.
Recommendation #27	That the Province create a working group of all pertinent ministries to define their respective roles as they pertain to pluvial flooding.
Recommendation #28	That the Province consider whether it should take steps to regulate drainage standards in urban areas, such as the requirement to restrict runoff flows to pre-development rates and flood protection measures for private property, and if so, what is the most appropriate legislation.
Recommendation #29	That the Ministry of Environment, Conservation and Parks reach out to the Intact Centre on Climate Adaptation, as part of their commitment to consult with the insurance and real estate industry under the 2018 Environment Plan, to work collaboratively to raise awareness among homeowners about the increasing risk of flooding and to disseminate the basement flooding protection information to homeowners.
Recommendation #30	That the Ministry of Infrastructure ensure that the Ontario Community Infrastructure Fund supports municipalities in enhancing and implementing asset management plans (which includes stormwater management and consideration of climate change adaptation and mitigation activities), which will

	help municipalities make the best possible investment decisions for their infrastructure assets.
Recommendation #31	That the Ministry of Infrastructure work specifically with the MNRF on the design of future intakes of the Green stream of the Investing in Canada Infrastructure Program to ensure flood-related projects are eligible.
Recommendation #32	That the Province continue to fund the Water Erosion Control Infrastructure program and consider adopting a multi-year budget.
Recommendation #33	That the Province continue to issue Green Bonds in 2020 and beyond to help finance extreme-weather resistant infrastructure.
Recommendation #34	That the Province continue its financial commitment and partnership arrangement with the federal government through the hydrometric network agreement.
Recommendation #35	That the Province continue to monitor the effectiveness and location of gauges to ensure that there is appropriate coverage and consider repositioning gauges if necessary.
Recommendation #36	That, where appropriate and where funding permits, the Province consider the installation of GOES telemetry at key locations where more frequent access to information is required (areas of higher risk/watersheds that react quickly to changes in precipitation or snowmelt) and where current landline telecommunication technology is less secure and not as reliable in transmitting information.
Recommendation #37	That, where appropriate and where funding permits, the Province consider the use of automated alarms at those stations in watersheds of higher risk/quick response to precipitation and snowmelt to alert when water levels have exceeded a threshold of concern.
Recommendation #38	That the Province explore whether there would be value toward additional manual snow course locations in those watersheds where snow cover and snow water content are

	factors in spring flooding, and seek to involve the citizens in the collection and reporting of that data.
Recommendation #39	That the Province explore the feasibility of remote sensing products to better estimate the spatial distribution of snow and snow patterns.
Recommendation #40	That the MNRF work with federal, provincial and local partners as well as industry toward an Open Data model where information is shared and consolidated into the existing Surface Water Monitoring Centre hydrometric monitoring database.
Recommendation #41	That the Province investigate the return on investment of utilizing the new satellite imagery and resourcing with the necessary staff additions to provide better flood forecasting and monitoring.
Recommendation #42	That the Province update the flood forecasting and warning guidelines, providing clarity on roles and responsibilities (conservation authorities, MNRF district offices, municipalities) and provide examples of the systems, from simple to complex, with recognition that each system should be designed to reflect the local watershed characteristics and resources.
Recommendation #43	That the Ministry of the Solicitor General implement emergency operations initiatives in response to the recommendations of the Auditor General as soon as possible.
Recommendation #44	That Emergency Management Ontario improve its processes for interacting with municipalities and clearly lay out the processes on their website.
Recommendation #45	That Emergency Management Ontario clearly lay out the process for municipalities to request assistance during emergencies and provide field support to help determine the assistance that is required.
Recommendation #46	That the Province have a central website for flooding issues that provides answers (for conservation authorities, municipalities and the public) to a myriad of typical and

	frequent questions, or at the very least, a link to the agency (provincial department, power company, etc.) that provides the answers to the questions.
Recommendation #47	That the Province review the funding formula for eligibility of municipalities under the Municipal Disaster Recovery Assistance program.
Recommendation #48	That the “build back better” pilot under the Municipal Disaster Recovery Assistance program move from a “pilot” to a full program. The Province should consider raising the 15% cap where it makes economic sense. The program should be tied to legislated flood protection levels and floodproofing criteria. For example, a bridge damaged by a flood can only be replaced if it is raised to the design flood.
Recommendation #49	That the Province consider including a “build back better” component under the Disaster Recovery Assistance for Ontarians program.
Recommendation #50	That the Province approach Indigenous Services Canada about expanding their disaster assistance program to include houses that are leased on First Nation reserve land by non-status individuals.
Recommendation #51	That the Disaster Recovery Assistance for Ontarians program be flexible enough to allow for removal of the structure from the floodplain (buyout) if it is the only technically and financially feasible option.
Recommendation #52	That the Province continue the dialogue with the Insurance Bureau of Canada and the federal government on the steps needed to make flood insurance more available to more Ontarians.
Recommendation #53	That the Province ensure that municipalities have all the information regarding eligible items under the Municipal Disaster Recovery Assistance program, including costs for disposal of waste materials from a flood.

Recommendation #54	That the Province consider special or expedited approvals for new or expanded landfills if significant capacity is used up from the disposal of flood-related waste materials.
Recommendation #55	That the International Joint Commission, the Ottawa River Regulation Planning Board, and Ontario Power Generation make their detailed information about their flood operations readily available on their respective websites.
Recommendation #56	That the International Joint Commission consider meeting with interested stakeholder groups and individuals to explain in considerable detail how their structures are operated.
Recommendation #57	That the International Joint Commission consider creating specific “2017 Flood” and “2019 Flood” buttons for their home webpage and populating those pages with detailed information on the floods and their operations, as well as providing direct links to related reports.
Recommendation #58	That the supporting agencies of the Ottawa River Regulation Planning Board (Canada, Ontario, Quebec and the dam operators) consider reviewing the original agreement, recommendations and guiding principles, and board policies given they are almost 40 years old.
Recommendation #59	That the supporting agencies of the Ottawa River Regulation Planning Board (Canada, Ontario, Quebec and the dam operators) consider removing “Regulation” from the title, as it implies that the Board can actually manage large floods when, in fact, they cannot because of the limited storage capacity of the generating station reservoirs, which were designed for electric power generation and not flood control.

Recommendation #60	That a communications officer be assigned to the Ottawa River Regulation Planning Board to help with messaging during flood events or any public meetings and free up the staff engineers to concentrate on their duties. At least two communications officers should be assigned as needed and well trained in the technical operations. The officers should be from another government department as opposed to Ontario Power Generation or another non-government dam owner, since the public believes the dam owners only care about generating electricity.
Recommendation #61	That a communications person with marketing experience work with the Ottawa River Regulation Planning Board to prepare more easily understood materials for publication. The approach to managing the Ottawa River by the Board is not well understood by the public or government officials. Also, the materials should not be confusing. In one example I saw, a line graph showed a water level difference of 1.0 metres but the text below it stated "> 50 cm or 20 in."
Recommendation #62	That the Ottawa River Regulation Planning Board work with Ontario Power Generation and consider installing staff gauges at critical settled locations along the river, and engage residents to read and report on these gauges. These residents have a vested interest in getting accurate information and so their "buy-in" could be to volunteer their time to provide the data.
Recommendation #63	That two municipal officials, one from the Association of Municipalities of Ontario and one from the Quebec counterpart, sit on the Ottawa River Regulation Planning Board. The intent is to provide contact persons on the Board trusted by municipalities in both provinces, and for the municipal representatives on the Board to help disseminate correct and accurate information back to municipalities. Consideration could also be given to adding municipal representatives to the Ottawa River Regulating Committee, in addition to or instead of the Board. It is recognized that the three signatories to the Agreement (Canada, Ontario and

	Quebec) would have to agree to amending the Agreement for this purpose.
Recommendation #64	That Ontario Power Generation create a dynamic illustration regarding the dry section at Deux-Rivieres that “walks” the observer through the changes in water levels during low to normal to high flows, with voice-over explanation of water level changes, and that this video be included on their website.
Recommendation #65	That Ontario Power Generation identify options to address their concern about refill dates and provide greater flexibility on how refill is determined, taking into consideration the range of potential impacts, to support potential amendment proposals to relevant Water Management Plans.
Recommendation #66	That the Province maintain, at a minimum, the current level of funding in departmental budgets and programs related to everything flood (i.e. existing approval processes and associated policies and technical requirements, floodplain mapping, maintenance of flood infrastructure, satellite imagery, etc.).

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Chapter 1

Introduction

1.1 Preface

Flooding is a natural phenomenon. In the scientific context, a natural phenomenon is something that is observed to occur or to exist without human input. But of course, there is human input in the form of activities, such as deforestation, rapid drainage of rural land, urbanization, and the existence of structures and the operational procedures of those structures. The problem with a year like 2019 is that the natural events (snow, rain, melting, wind) that caused the flooding were so much larger than what we have measured to be average, that the human inputs have had very little impact, positive or negative. The most ideal human input has been ensuring people and property are out of harm's way.

As a natural phenomenon, major storm events that contribute to significant flood events will happen again, but with climate change we can expect that they will be more frequent and/or more significant. There is no one level of government that can be expected to deal with floods before, during and after they happen, but rather every level of government (federal, provincial, municipal, county), agencies of government (conservation authorities), and every individual, has a role and responsibility.

Ontario has a long history of trying to keep people and property safe from the impacts of flooding through land use planning policies and mitigative activities.

The development of the modern floodplain policy in Ontario, the watershed approach, the conservation authority model, and the flood standards have been extremely effective at reducing flood risks, especially in new greenfield development areas. Strong provincial legislation and policy, including the *Planning Act* and the Provincial Policy Statement, the *Conservation Authorities Act*, *Lakes and Rivers Improvement Act*, and natural hazard technical guides, have collectively gone a long way to reducing and mitigating flood risks in Ontario. Historic investment in flood mitigation infrastructure, such as dams, dikes, flood channels and shoreline protection, has delivered structural solutions to reduce flood risk to existing and new developments in floodplains. This broad approach has served the province well.

While these policies and mitigative activities have made Ontario a leader across Canada, it is clear that Ontarians continue to be significantly impacted by flood events and the costs associated with these impacts continue to mount.

During the spring of 2019, heavy rains paired with melting snow and a sudden temperature increase led to devastating flooding across many areas throughout northern and southern Ontario. Emergency declarations were made by 23 municipalities and one First Nation with significant flooding impacting households, commercial properties, roads and other key infrastructure such as bridges. Emergencies were first declared starting in early April and lasting through July in many cases. Homeowners, municipal and provincial emergency response personnel, and countless volunteers including the Canadian Forces worked tirelessly for weeks defending against the high water, reminiscent of a similar scene only two years earlier.

In response to these flood events, the provincial government announced that it would be undertaking consultation on the province's current flood mitigation and land use planning policies. Their first step was to host three regional listening sessions held by provincial leaders with municipal, Indigenous and industry leaders in Muskoka, Pembroke and Ottawa, in May. These sessions allowed the Province to hear directly from areas most devastated by the spring floods. Acknowledging that these sessions did not cover all areas that experienced flooding, nor provided the public with an opportunity to engage on the topic, the Province invited comments regarding flooding and suggestions to make Ontario more resilient to flooding through an online survey from May 16 to June 28.

Following this initial engagement in the spring, I was appointed by the Minister of Natural Resources and Forestry, the Honourable John Yakabuski (Minister) on July 18, 2019, to review the Province's current flood management framework. In addition to considering policies and activities which influenced spring flooding, I was also asked to consider both Great Lakes and urban flooding.

Throughout the Great Lakes, a period of high-water levels has been underway since early 2017. Businesses, resource management, recreational activities and shipping have all been affected by unprecedented high-water levels, and many residents have been displaced from their homes, as shoreline erosion and road access affect public safety. Agricultural centres along the shore of Lake Erie have been threatened and emergency declarations continue to plague shoreline communities, in some cases built below current lake levels.

Urban flooding is becoming a more frequently occurring public safety hazard. This type of flooding occurs when excessive runoff from a storm event exceeds infrastructure capacity and capabilities, thereby increasing urban stream erosion and flooding, and potentially causing sewers to back up into basements and overflows of raw sewage into lakes and natural watercourses. In 2018, two individuals were caught in a Toronto elevator, narrowly escaping rising waters. Isolated intense storm events have caused

significant flood damages to major infrastructure in urban areas and occur with little to no warning.

It is not hard to see that flooding, whether it is as a result of spring freshet, urban flooding or high Great Lakes water levels, is having a growing effect on Ontarians, and has reminded us that there is always room to improve.

Based on an analysis of the information available for all of the systems that experienced flooding in 2019, nothing points to human error or the negligent operation of water control structures as the cause of the flooding. The sheer amount of water (snow and rainfall) on the landscape directly contributed to the flooding. Measures taken by the water managers everywhere were effective in reducing the magnitude of flooding and associated damages throughout the drainage basins.

1.2 Terms of Reference

As Special Advisor on Flooding, I was appointed by the government to provide expert advice to the Minister and to make recommendations to the government on opportunities to improve the existing flood policy framework.

Specifically, I was asked to focus my review on and provide recommendations regarding:

- Current roles and responsibilities among agencies involved in flood management;
- Increasing awareness among homeowners about the growing risk of flooding and living in flood-prone areas;
- The Province's current legislative, land use planning and flood mitigation policy framework, including guidance, approaches and opportunities for improvement;
- Potential additional mitigation approaches that could help address impacts to existing development in floodplains; and
- Opportunities to improve community resilience in the face of ongoing threats.

To conduct the work, I was tasked with reviewing and building on what was heard during the targeted listening sessions held in Muskoka, Pembroke and Ottawa in May 2019, as well as comments received through the online survey. I was also afforded the opportunity to conduct additional consultations to hear and learn about the flood experiences across many areas of Ontario.

My report, to be submitted by October 31, 2019, would draw from my personal expertise and knowledge as well as additional available resources from the Province to provide

my best advice to the government based on my review. My report and recommendations would consider the array of local issues as well as the roles played by municipal and federal governments in flood management, and ensure my recommendations could be feasibly implemented within the province.

My work was supported by the Ministry of Natural Resources and Forestry, which provided background materials and logistical support, and facilitated the transfer of information and correspondence from the public and stakeholders related to my review.

Chapter 2

The Review Process

Despite having worked in Manitoba on flooding issues throughout my career, I was unfamiliar with the complex policy framework for flood management in Ontario. Understanding the various roles of agencies involved including the federal government, municipalities, conservation authorities and individual provincial ministries as well as the policies and technical guidance was of utmost importance to the review process.

2.1 Documents and Other Information

The Ministry provided a number of documents to enable an understanding of the current policy framework for flood management. These included:

- Provincial acts, regulations and policies associated with flood management;
- Technical guidelines prepared by the Province to support municipalities and conservation authorities in managing flooding and other natural hazards;
- Information related to floodplain mapping, disaster relief, funding, insurance, and natural infrastructure; and
- Information on water management in the Muskoka River and Ottawa River watershed and Great Lakes Basin.

I was also provided with a summary of feedback received from both the spring listening sessions and the online flood survey. The Minister's office provided me with correspondence that he received that was directed at my review. A detailed listing of materials reviewed can be found in Appendix A.

2.2 Engagement and Site Tours

While information provided by the Ministry was helpful in providing context for my evaluation, further engagement was warranted to ensure a full review.

I first met with Minister Yakabuski to ensure a clear understanding of my mandate and the importance of this review to the people of Ontario. He underscored the devastating impacts being felt across the province from flooding and the need for the Province to help citizens and ensure their safety in the future.

I also met with Conservation Ontario, Ontario Power Generation, the Ministries of Environment Conservation and Parks, and Municipal Affairs and Housing to get a better understanding of their roles in water management. The purpose of these meetings was

to provide additional background and context to the current policies and responsibilities for flood management within the province.

Through these dialogues, and in reviewing the background information provided by the Ministry, I realized the importance of visiting some of the areas hardest hit by flooding. This was necessary to appreciate the diversity in geographies and issues, and to hear firsthand from people in those areas about the impacts experienced and potential solutions.

Working with the Ministry, a nine-day community tour over two weeks in early September was developed to highlight the variance in issues, geographies and responsibilities. Tour stops included a mix of:

- Agency meetings;
- Municipal and conservation authority roundtables; and
- Guided tours of locally impacted areas.

In selecting the tour locations, it was acknowledged that the size of the province and the number of communities that experienced flooding would make it impossible to visit every area that has been impacted. Representative locations were chosen to provide a mix of riverine, lake, urban and Great Lakes flooding context, with the clear understanding that impacts are being felt across the province, not just in these areas specifically. In the vast majority of cases, meeting locations were chosen within a two-hour drive of the municipalities targeted for engagement.

Participation in municipal engagement sessions targeted municipalities that:

- Declared flood-related states of emergencies in 2019;
- Represented areas that had been approved for provincial disaster recovery assistance;
- Had requested meetings with the Minister to discuss flooding and/or high-water levels;
- Had contacted the Ministry asking for an opportunity to meet with the Special Advisor; or
- Were known to have experienced major flood events in the last few years.

The first set of community tours took place in the Ottawa, Pembroke and North Bay areas.

During the two-day visit to Ottawa, I met with the Ottawa River Regulation Planning Board, the International Joint Commission, the Insurance Bureau of Canada, and the local MPP for Kanata—Carleton. I hosted a municipal roundtable meeting with Ottawa area MPPs, municipal officials and staff, and conservation authority general managers. I toured the areas of Britannia, Constance Bay, Rhoddy's Bay, Westmeath and Braeside, all significantly impacted by flooding in the spring of 2019.

In Pembroke, I held a municipal roundtable discussion with a wide area of eastern Ontario municipal officials and met with a concerned citizens group. I toured the flood-impacted areas of Pembroke, Deux-Riviere and Mattawa, and discussed the characteristics of the Ottawa River at Klock with Ontario Power Generation, which contributes to the highly complex management challenges of the river.

In North Bay, I met with the local conservation authority and hosted a roundtable meeting with local municipal officials, the MPP for Nipissing, the federal government and local First Nation representatives to discuss the challenges associated with managing the river systems in their area.

During the second week of my community tours, I visited Toronto, Muskoka, Cambridge and London.

In Toronto, I spent a day with one of the local conservation authorities. They provided me with an overview of the issues they deal with in their highly urbanized watershed, and we toured the high flood risk neighbourhood of Rockcliffe and the projects under way along the lower Don River floodplain. While in Toronto, I also hosted a day of meetings with stakeholders, agencies, ministers and MPPs. I met with the Minister of Municipal Affairs and Housing, the Hon. Steve Clark; the Minister of Environment Conservation and Parks, the Hon. Jeff Yurek; and a Greater Toronto Area MPP. I met with two branches from the Ministry of Natural Resources and Forestry—Mapping and Surface Water Monitoring as well as Emergency Management Ontario, which falls under the purview of the Office of the Fire Marshall and Emergency Management within the Ministry of the Solicitor General. I also met with representatives from the Association of Municipalities of Ontario, the City of Toronto, the Kingdom of the Netherlands, the Great Lakes St. Lawrence Collaborative, the Regional Public Works Commissioners, and the Electrical Safety Authority.

In the Muskoka area, I met with the Ministry of Natural Resources and Forestry District of Parry Sound and Bracebridge Area staff to understand their role in managing water in the Muskoka and Magnetawan watersheds, and held a municipal roundtable meeting in Huntsville with central Ontario municipal officials, the local MPP for Parry Sound—Muskoka, and a stakeholder group.

In Cambridge, I met with the Intact Centre on Climate Adaptation out of the University of Waterloo, and hosted a municipal roundtable meeting with municipal officials, area conservation authority management and local MPP staff from the surrounding area. I met with the local conservation authority, and toured flood-prone areas in and around Cambridge and Brantford.

In London, I toured the area of Port Stanley, along the shoreline of Lake Erie, to get an appreciation of the height of the lake, but unfortunately was not able to see firsthand any shoreline erosion. I met with local conservation authority staff to discuss their role in local water management and hosted a municipal roundtable with southwestern Ontario municipal officials and area conservation authority managers.

Chapter 3

Background and the 2019 Flooding in Ontario

3.1 Watershed and Meteorological Conditions leading up to the Spring Freshet

3.1.1 Flow Generating Mechanisms in Ontario

The main causes of riverine and lake flooding are snow and ice melt, intense and/or long-lasting precipitation, rain on snow, riverine ice jams, or a combination of these causes. The risk of flooding is also influenced by conditions within the drainage basin, such as pre-flood water levels, presence of snow and ice, the soil moisture content, how early and deep the frost, and land use change, including more efficient rural drainage and urbanization. Some of the largest notable floods in Ontario have occurred as a result of major rainstorms. For this reason, riverine flood hazards limits are generally defined based on the flood resulting from the actual rainfall experienced during a major rain storm, such as the Hurricane Hazel storm (1954) or the Timmins storm (1961), transposed over a specific watershed or the 100-year flood, whichever is greater.

In Ontario, streamflow regimes are generally classified as snowmelt-dominated, whereby most of the winter precipitation falls as snow and melts during the spring. Temperature affects the type of precipitation (i.e. rain versus snow), the accumulation of a snowpack, and the timing and amount of ice and snowmelt runoff, while influencing the snow water equivalent of the snowpack. Snow water equivalent defines the amount of liquid water in the snowpack that would be formed if it were completely melted. Precipitation determines the potential magnitudes of flow generated during different times of the year. The timing of high spring flows in snowmelt regimes are also affected by geographic location, whereby snowmelt occurs later further north and at higher elevations, and is affected by the size of the drainage basin and the amount of storage within the drainage basin as affected by the size and number of lakes and wetlands. In more southerly areas of the province, streamflow regimes, while influenced by snowmelt, can be less defined by it.

The amount of snow on the ground, or the water that it contains, can often be a driver or indicator of the potential for flooding. The amount of this water that becomes runoff for the river depends on the timing and rate of snowmelt. For example, a very rapid melt of an average snowpack could lead to flooding. Conversely, a slow melt of a very heavy snow pack may not result in flooding. This becomes challenging for water managers as the impact of the snow on the river is heavily driven by the weather, which is difficult to predict. This provides a rationale as to why in some years with higher than average

snow on the ground, flooding may not be experienced, whereas years with an average snowpack significant flooding may be observed.

3.1.2 Summary of General Meteorological and Watershed Conditions

A series of noteworthy, atypical and synergistic factors contributed to the severity of the flooding in the spring of 2019. Environment and Climate Change Canada has characterized the 2018/19 winter as very long and extremely cold, including higher than normal snowfall across northern, central and eastern Ontario. Furthermore, this year's winter did not experience the one or more significant thaws that has come to characterize winters in south-central Ontario. The result was a well above average snowpack on the ground in early April, with the snowpack experiencing a rapid melt by mid-April, and a considerable depth of snowpack remaining past mid-April in those areas experiencing flooding. This melt was intensified by a series of strong large-scale storms that resulted in significant rainfall amounts in the latter portions of April, whose occurrence was widespread across the portion of the province experiencing spring flooding.

While April's temperatures in the northwest, the far north and southern Ontario were in the normal range, most of the province, including those areas that experienced the most notable flooding in the spring of 2019, also experienced temperatures 1 to 2 degrees Celsius below normal, with the greatest temperature anomalies—up to 3 degrees Celsius below normal—observed in northern Ontario. These trends towards lower than average temperatures contributed to the maintenance of widespread snowfall distributions later into the spring and extended the duration of conditions that would support frozen soils into the spring compared to an average year. The effect of these temperature and snowfall trends contributes to a greater snowpack later in the season, and frozen or partially frozen soils with a limited ability to absorb runoff water.

More specifically, across central and eastern Ontario, April experienced some extremely active weather, owing in part to a west to east jet stream pattern over southern Canadian latitudes that supported frequent weather disturbances, including above average precipitation. Above average precipitation was observed throughout the spring months of March, April and May across many of the areas affected by flooding in 2019, receiving 50 to 100 millimetres or more precipitation than on average across the three months with the latter half of April 2019 representing above average to 200% of normal values. A low-pressure system developed over the southern U.S. on April 25 and moved northeastward bringing heavy rain on April 26 to 27, focused on southwestern and central Ontario and the upper Ottawa River catchment region of Quebec, with amounts ranging from 32 to 43 millimetres. While a portion of the snowpack had or was beginning to melt by this time, the soil would have remained partly frozen and where

thawed, would have exceeded its capacity to support meltwater infiltration. A significant fraction of the rain that fell during this period would have reached surface water features that were already at or exceeding their capacity to contain water.

This rainfall contributed greatly to the flooding in the affected portions of Ontario in addition to the high-water levels experienced on the Great Lakes, in particular Lake Erie and Lake Ontario and the downstream St. Lawrence River system. The Great Lakes in particular received significant inputs of water from both sides of the border, as the U.S. tributaries experienced the wettest 12-month period on record, from May 2018 to May 2019.

In summary, key drivers leading up to the flooding of spring 2019 included: a colder than average winter without a significant winter thaw, contributing to a larger than average snow pack and higher than average snow water equivalents. These conditions were enhanced by colder than usual spring temperatures that maintained the snowpack further into the spring period than usual, and the melt of this snowpack was accelerated and exacerbated by numerous rain-on-snow events that occurred as temperatures began to rise significantly in mid-April.

3.2 Climate Change – A Recent History

It is particularly difficult to distinguish natural variability from the effects of climate change. The abundance of water in Ontario's numerous rivers and lakes, including within the Great Lakes, tends to oscillate in a cyclical fashion. Research has shown that the periods of these cyclical oscillations can be linked to changes in the global water cycle, including alignments with large scale cyclical patterns of water movement driven by oceanic (e.g. North Atlantic Multidecadal Cycle, Pacific Decadal Oscillation) and other related processes (El Nino/La Nina/Southern Oscillation). Regardless of the mechanisms, history has shown that flows and levels within Ontario's streams, rivers and lakes, including within the Great Lakes, are well established to increase and decrease over a range of temporal and spatial scales.

Recent climate change reports have suggested that Canada's climate is warming twice as fast as the global average. Temperature and precipitation are fundamental climate variables that directly affect natural and human systems. Changes in temperature can affect the timing and extent of snowpack development, soil freezing, snow and ice melt, and rainfall potential during colder seasons, as well as the timing, intensity, duration, amount and phase of precipitation events (rain vs. snow). A recently published MNRF study documenting results for the period 1980 to 2010 has confirmed a significant decreasing trend in maximum snow water equivalent of 6.4% per decade, or approximately minus 9 millimetres, across Ontario, representing a reduction of 5 to 10% of the annual precipitation in affected watersheds.

With climate change, alterations in the global water cycle are expected to bring a range of variability affected by increasing water content of the atmosphere, strengthening of climatological precipitation/evaporation patterns, a more pronounced spatial structure, and sharp gradients in precipitation change. While precipitation is generally projected to increase in the future, summer precipitation, particularly in parts of southern Canada, is projected to decrease. The most serious impacts of climate change are expected to be the changes in climate extremes. Extreme precipitation is projected to increase in the future; however, the observational record has not yet shown evidence of consistent changes in short duration, high intensity precipitation across the province.

For instance, although not backed by a wealth of empirical evidence, recent history in Ontario suggests that hydrological extremes may be increasingly affected by so-called “ninja” storms/rainfall events that are sporadically observed across the province. These rain events are not usually forecast, and are often defined by short duration, high intensity rainfall that can result in extreme rainfall amounts often over a relatively short period of time, generally distributed over a small area and not adequately captured by the rainfall gauge network. There is also growing evidence to suggest that the assumption of climate stationarity, which is fundamental to traditional flood frequency analysis, may no longer be assumed. In other words, under a changing climate, we should perhaps not be relying on hydrologic extremes that are based on an analysis of data from the past to predict the magnitude of future hydrological events, including design storms.

The changing frequency and intensity of precipitation can be expected to lead to a changing likelihood of extreme events, such as floods and droughts. Over the Great Lakes Basin, evidence suggests that climate change is leading towards an increase in precipitation. At the same time, climate change has also shown trends in increasing air temperatures and increasing lake temperatures across the basin, which naturally leads to higher rates of evaporation. These two processes act as competing forces on water levels. Higher precipitation and/or lower evaporation at times will lead to more water on the landscape and higher water levels, but at other times, higher evaporation and/or lower precipitation will lead to lower water levels. With these two competing dynamic forces at odds with each other, some have alluded to this as a “tug-of-war” between stronger climatic forces. The higher water levels in the Great Lakes in 2014 was a change from record low water levels in 2012 and 2013. It was believed to be initiated by a combination of increased precipitation, but more importantly a slowdown in the rate of evaporation triggered by the very cold winter of 2014, which was caused by a polar vortex that sent cold air southward and froze the Lakes. This reduced evaporation and increased precipitation resulted in water levels that have risen in the Great Lakes to the record extremes observed in 2017 and 2019. Climate experts believe that this swing of the pendulum, going from one extreme of low water to one of high water, is in fact a

consequence of climate change across the Great Lakes Basin and at continental scales.

Although one cannot unequivocally say that climate change is causing the flooding that has been observed over the last number of years or the last decade in Ontario, we do, however, know that water levels and flows are affected by a combination of temperature, precipitation and solar inputs that affect changes in precipitation and evaporation. Changes that have been observed at a global scale and a continental scale in North America, including changes in temperature and precipitation, are affecting water levels and flows in a way that would make them different from what would have otherwise been in the past. The potential exists that flooding may become increasingly more prevalent and the swing from wet to dry more volatile, making the flooding hazard more pronounced under a changing climate and its associated swings in variability.

Chapter 4

Region Specific Situations

The section below provides an overview of flooding that occurred in various parts of the province in 2019.

As I was not able to visit or investigate the flooding that occurred in every part of the province, the information included below provides only a partial picture of the flooding that occurred and the associated impacts. While there may be some parallels between the areas discussed below and other parts of the province, it may also be more likely that the situation in other parts of the province are equally as unique.

4.1 Flooding along the Ottawa River

4.1.1 Ottawa River Basin and Ontario Power Generation Facilities

The Ottawa River Basin is located on the border between eastern Ontario and southern Quebec, with 35% of the basin in Ontario and 65% in Quebec. The river has a length of more than 1,130 kilometres and a total basin area of 146,300 square kilometres. There are 13 principal reservoirs on the Ottawa River as defined by the Ottawa River Regulation Planning Board (i.e. > 200 million cubic metres of storage capacity). Ontario Power Generation operates three of the principal reservoirs, namely Bark Lake, Lady Evelyn Lake and Des Joachims Generating Station.

The vertical and horizontal profile of the Ottawa River varies considerably throughout the river, creating hydraulic constrictions throughout. Generally, the easiest place to create a dam and reservoir is at a natural restriction in the river or natural lake area. By selecting narrow river sections, the cost of building the dam is lower. There are also several natural shallow sections in the river. These create the rapids that many tourist companies rely on. Under high flow conditions, narrow or shallow sections of the river create natural restrictions that limit the amount of water that can pass through the section, in effect backing up the river. This is called a backwater effect. If the river flow is large enough, these natural restrictions may lead to flooding.

There is little significant storage available in the lower portion of the Ottawa River; in fact, over 60% of the basin is essentially uncontrolled due to lack of storage capability. Ontario Power Generation (OPG) operates four hydroelectric generation facilities on the lower portion of the Ottawa River, which consists of one or more dams and a powerhouse (Otto Holden, Des Joachims, Chenaux and Chats Falls). These stations operate under the authority of Water Power Leases with the Province of Ontario and with *An Act Respecting the Water Powers of the River Ottawa* (1943). During normal

flow conditions, OPG has the legal ability to raise the water level to the limit prescribed in the license for the respective facility for the purposes of power generation. Under high flow conditions, OPG operates its dams and stations to minimize the impacts of flooding and to at least do no more harm than would occur under natural conditions.

Each station has known water level impacts related to flooding thresholds. For instance, the Des Joachims Generating Station has a known backwater affect on the Town of Mattawa when the combined Otto Holden Generating Station and Mattawa River flows are greater than 2,000 cubic metres per second. The operating strategy during the freshet is predicated on ensuring that Mattawa and Pembroke should not suffer unduly during high water periods, and that a balance must be sought between flows and levels at either site, despite the fact that balancing flooding at these sites reduces depth of water or flow at the generating station and thus energy production.

Reference is often made in this section to OPG's facilities being operated as "run-of-river" facilities (i.e. facilities that have no storage capacity whatsoever and generate electricity by whatever flow is running in the river and through the generating station) during periods of flooding. Understanding what this term means conceptually is critical to understanding why water management approaches were used during periods of high flow and flood flow experienced in the spring of 2017 and 2019. OPG's facilities are not normally operated as run-of-river, nor are they classified as run-of-river facilities. It must be highlighted that, outside of high flow or flood conditions, all of OPG generating stations operate on a daily peaking cycle as peaking or cycling facilities. Ontario's Independent Electricity System Operator incentivizes power production to meet the needs of the Ontario energy market. Under normal operating conditions, outside of high flow or flooding events, OPG has significant control over the flows and levels to support power production, including daily ramping cycles that move water through the facilities in response to energy market demands, all within the licensed requirements approved for each facility. While some OPG generating stations on the Ottawa river have a minimum flow requirement, generating stations, including Otto Holden, completely shut flows off at night to store water for power production the next day. For transparency and full disclosure, the above facts must be emphasised as they can affect public perception of flow and level management regimes on the river and OPG's ability to control flooding. OPG does have a heightened level of control and storage on flows and levels on the Ottawa River when flows are considered normal outside of freshet periods. However, OPG generating stations do not have the ability to store enormous amounts of water and manipulate levels that would prevent extreme high water and flooding in conditions experienced in spring 2017 and 2019.

4.1.2 Spring Freshets – Comparison of 2019 to 2017 and 2018

4.1.2.1 Weather and Watershed Conditions

During my tour along the Ottawa River and the sessions held with municipal and other representatives along the way, there were many questions posed regarding the differences in flooding between 2017 and 2019. Others asked why flooding didn't occur in 2018, as many perceived that snow conditions were similar in 2018 to this past spring (2019) and to 2017.

Despite the occurrence of two large events in relatively close proximity to one another, the driving factors between the spring floods of 2017 and 2019 were different and impacted the basin in different ways.

4.1.2.2 Watershed Conditions in 2019

The snow on the ground as of April 1, 2019, was significantly higher than normal and higher than experienced in 2017 and 2018. Snow surveys showed the upper portion of the basin had 150 to 188% of the normal Snow Water Equivalent (SWE) for that time of year. Most of the watershed had an excess of 200 millimetres of SWE during the peak of the snowpack. The total precipitation throughout the watershed was also higher than normal, although not as high as in 2017. The accumulated April to May precipitation was approximately 125 to 175% of normal in 2019 for that time of year. While this precipitation was distributed more broadly over the basin than it was in 2017, major rainfall events coincided with the peak of the snowmelt period in 2019. Together, this led to historic flooding seen in much of the Ottawa River watershed in 2019.

The return period for the 2019 flood is estimated to be a 1:100-year to a 1:120 to 1:130-year flood depending on location and local factors affecting flows and levels.

4.1.2.3 Watershed Conditions in 2017

Leading up to the freshet of 2017, the snow conditions in the Ottawa River basin were considered to be average. A review of the 2017 winter and spring period showed a relatively average snow pack compared to 2016, in which there was not significant flooding. The major driver of this spring flood event was precipitation. In April and May of 2017, the precipitation over the entire basin totaled 257 millimetres, which is considerably higher than the 150- millimetre average (1981-2010) for those months. Local precipitation accumulation varied between 240 and 380 millimetres, with most precipitation falling in the central and southern portion of the basin. Much of this precipitation came during two events between April 30 and May 6, when 70 to 140 millimetres of rain fell on the lower unregulated portion of the basin. Receiving

approximately two months of rainfall in a period of seven days in the uncontrolled portion of the basin was the major trigger for the flood that occurred in 2017.

4.1.2.4 Watershed Conditions in 2018

In contrast, in 2018, the snow survey campaigns indicated that SWE was above normal in the Quebec region of the basin upstream of Lac des Quinze and near normal for the rest of the watershed. The month of March was slightly warmer than normal, but the month of April was much colder than normal. The cold spell persisted until the third week of April, which resulted in very little snowmelt throughout the month. As a result, the Snow Water Equivalent (SWE) in mid-late April was considerably higher than normal for that time of year. From April 20 to 24, there was a strong warming event with temperatures reaching as high as 20 degrees Celsius. This resulted in a relatively sudden snowmelt in the basin. During the period of March to May, the accumulated amount of precipitation and its distribution was approximately normal. The peak flow on the Ottawa River in 2018 occurred relatively suddenly due to the quick snow melt, but the magnitude of the peak was mitigated with the storage in the principal reservoirs and flows were only slightly above a typical year.

4.1.3 Reservoir and Station Operations in Spring 2019

At the beginning of the 2019 freshet season (the end of March), Ontario Power Generation's strategy was to continue to pass the inflow coming to its facilities in order to maintain low reservoir levels, with the exception of Bark Lake, which is the most southern principal reservoir on the watershed. Early in the week of April 15, the weather forecast showed a large precipitation event of 40 to 70 millimetres approaching for the end of the week. At this time, outflow from Lake Timiskaming and other principal reservoirs in the upper Abitibi-Timiskaming area was being decreased, as was the outflow from Otto Holden and Des Joachims.

This strategy would place water in storage as the snowmelt and a heavy rain event could significantly increase flow on the lower Ottawa River. Bark Lake was filling and expected to rise as much as 50 centimetres per day. The discharge from Bark Lake was allowed to increase as the lake level rose in order to maintain some storage space for later events. By the middle to end of April there was flooding on the Madawaska River, particularly around Kamaniskég Lake. This was due to very high unregulated flow to Kamaniskég Lake from the York and other rivers, and increasingly limited storage at upstream Bark Lake. Also, on April 15, the high flows prompted a strategy change at Chats Falls to begin following the high flow curve. Under high flows, the restriction upstream of the station becomes an important hydraulic control and the guide curve provides information on the relationship between Chats Lake water levels and the Chats Falls Generating Station headwater elevation. By April 21, the weather forecast,

now with a shorter lead time, had decreased (20 to 30 millimetres) and inflow being passed at Otto Holden and Des Joachims was continuing a slow build rate.

4.1.4 The May 6 Flow Increase from Otto Holden Affecting Mattawa

At the end of April, another significant rainstorm was forecast to bring up to 60 millimetres of precipitation to the upper portion of the basin. The principal reservoirs in the upper basin at the end of April were continuing to fill, and more specifically Lake Timiskaming was filling rapidly. The strategy at the Des Joachims Generating Station switched to passing inflows so that the reservoir level would not continue to rise. By the beginning of May, the flow on the lower Ottawa was expected to slowly decline; however, inflows to the upper portions of the Ottawa River were continuing to increase. Model results and inflow forecasts for May 5 continued to project that inflows within Lake Timiskaming and Otto Holden would remain well below 3,000 cubic metres per second. It was not until the following day, May 6, that conditions changed significantly, and model results projected inflows to exceed the 3,000 cubic metres per second threshold. As Lake Timiskaming was continuing to rapidly approach its maximum operating level, with significant further increases in inflows now being forecast, a strategic decision to further increase discharge from Lake Timiskaming was made. Over the course of May 6, there were two significant flow increases from the Timiskaming reservoir, one having been completed in the morning and another performed in the afternoon. This was to account for projected increases to come. The travel time from Lake Timiskaming to Otto Holden is approximately three to four hours, therefore any flow changes from Lake Timiskaming arrives at Otto Holden within a very short timeframe.

In response to the increased discharge from the Timiskaming reservoir, Otto Holden staged flow increases accordingly throughout the day to ensure that all adjustments corresponded with the changes upstream. Otto Holden performed seven flow adjustments throughout the day as inflows climbed, with the subsequent releases upstream. This was intentionally completed during daylight hours. The flow increases from the Timiskaming reservoir and Otto Holden were significant enough to result in the Ottawa River elevation rising approximately 65 centimetres within the Town of Mattawa throughout the day. Over the following five days, flows and elevations continued to increase within the upper Ottawa River basins, as the inflows and discharges at Lake Timiskaming and Otto Holden rose accordingly until they finally peaked at 3,316 cubic metres per second on May 10 and 3,355 cubic metres per second on May 11. At all times throughout freshet, flow changes were performed strategically with regard for impacted areas and ultimately, with a mindset of providing as much flood mitigation as possible. As flows stabilized and declined towards the end of May, the strategy at all Ontario Power Generation reservoirs changed to begin increasing reservoir and forebay

water levels. This allowed the flow of water on the Ottawa River to decrease more quickly than would have occurred under natural conditions. The reservoirs and forebays continued to rise to their normal operating levels, with the Des Joachims reservoir reaching its normal summer operating range in mid-June.

4.1.5 Explanation of Conditions at Des Joachims and the Dry Section at Deux-Rivieres

When Des Joachims was originally constructed, in order to maximize the potential for electricity generation, the license granted in 1946 allowed for the elevation of the water upstream of Des Joachims to be artificially elevated to the natural high-water mark. This serves as the reservoir for the Des Joachims generating station and can be used to store water for power generation or other purposes, such as flood relief. This portion of the artificially elevated water levels can be seen from the Trans-Canada Highway (Highway 17) in the vicinity of Deux-Rivieres. A review of media articles has identified the observation of the de-watered section of the reservoir in other years (including 2017), which again was a significant topic of discussion during sessions with municipal representatives.

A complicating factor for providing flood relief at the Des Joachims Generating Station is the hydraulic conditions upstream of the generating station. The Ottawa River has several reaches that are naturally shallow, narrow or have changes in gradient, which leads to the development of the rapids for which the river is famous. There is a flat shallow region between the upstream Otto Holden Generating Station and Des Joachims Generating Station. This area, around the old village of Klock several kilometres upstream of Des Joachims, is known as the Rocky Farm Rapids. This section of the river becomes an important control point under high flow conditions. The two analogies below may be useful to help the reader understand the situation:

Analogy 1 – Multi-lane Highway

Think of a multi-lane highway. If there were a two-lane highway that had no more than two lanes worth of traffic travelling across it, all cars could move uninhibited at the proper speed. During rush hours, more traffic would be trying to merge onto the highway than the two lanes could handle. As a result, traffic would be backed up. The more cars, the worse the traffic jam and the further up the highway it would extend. At Rocky Farm Rapids, not only is the river narrower but it is also shallower, which amplifies the traffic analogy, for not only is the traffic backed up in distance and extending further back, it is also as if there are multiple cars piled upon each vying to get through the traffic back-up.

Analogy 2 – Kitchen Funnel

Picture a funnel, as you would use in a kitchen. The rate the water is able to pass through the funnel is limited by the size of the narrow section of the funnel. If water is slowly poured in at a rate that the narrow section can pass, then water will not build up into the funnel. If it is poured in more quickly, the funnel will begin to fill. When the rate of flow exceeds that rate of flow at which can pass through the funnel, the water will begin to overflow as it backs up.

The rapids section at Klock has a similar impact on the Ottawa River. Where the analogies become imperfect is the fact that there is also a connection in the gradient or slope of the river. This is related to the elevation of the water downstream and the ability of the channel to pass water. During normal flow conditions, the Des Joachims reservoir can be maintained at a higher level for energy production, because the flow does not exceed the capacity of the channel and the rapids do not create an appreciable backwater effect. When the flow is high (and typically when the Des Joachims reservoir is low), the rapids become a hydraulic control and begin to cause a backwater effect creating a higher water elevation upstream at the Town of Mattawa. Even if the water level was raised at Des Joachims, it would have a muted influence at Mattawa and Otto Holden. As flow continues to increase, differences in water level between the two sites becomes larger, and the restriction at Klock becomes a more powerful control. High flow weakens but does not eliminate the influence of Des Joachims on the upstream water level.

Because of the geography of the Ottawa River, there are two distinct strategies that can be employed at Des Joachims to alleviate flooding. If the flooding is occurring mainly downstream of the station (for example due to heavy rain) and storage capacity is available, water can be retained in the reservoir to decrease the amount of water in the lower reaches of the Ottawa River. However, if the combined flow out of the Otto Holden Generating Station and the Mattawa River is greater than 2,000 cubic metres per second, the rapids at Klock can begin to create backwater flooding. This is when there is a lot of water coming from the upper portion of the Ottawa River. In these circumstances, the water level in Mattawa can be influenced but not fully controlled by the elevation at Des Joachims Generating Station. As flow increases, the reservoir at Des Joachims is maintained at a lower elevation to avoid backwater flooding. This can be achieved either by not refilling the reservoir after the winter drawdown or by releasing more water from the reservoir. A draw down must be timed to avoid releasing an amount of water that would generate or worsen flooding downstream. Typically, the Des Joachims reservoir will be refilled in two stages. The water level will be built up to a level that is known to not increase flooding in Mattawa. Once this risk subsides, the second stage begins and the reservoir is built up to its summer operating level.

In most years, including 2019, the Ottawa River tends to experience two flow peaks. The first is generated by snowmelt and rain in the lower portion of the watershed. The second occurs if/when the primary reservoirs in the upper portion of the watershed have filled and are forced to pass inflowing water downstream. In 2019, there was substantial snowmelt in the upper reservoirs leading to the second peak being larger than the first. Leading up to the first spring peak, water was slowly stored at Des Joachims Generating Station bringing the reservoir up to the first refill stage. As the second peak approached, driven by the upper reservoirs becoming full and having to pass their inflow, the elevation at Des Joachims Generating Station was held low with the goal of not subjecting the Town of Mattawa and other upstream communities to worse flooding than would have occurred under natural conditions. As upstream flow decreased toward the end of the event, Des Joachims Generating Station was filled, reducing the flow downstream.

A criticism during the 2019 flood event was that the reservoir was empty and could have been used to alleviate flooding at Pembroke. This would have made the overall impact from the event worse, as the Des Joachims reservoir has a finite storage capacity. If the Des Joachims reservoir had been at the top of its operating range, the water level in Mattawa would have been approximately half a metre higher. If the Des Joachims reservoir had been filled, the only option would have been to pass the flow coming into it, having no downstream benefit during a prolonged event. At peak flow, the Des Joachims reservoir would have filled from an empty state in less than half a day. A refill rate that could have had a meaningful impact on flooding in Pembroke could not have been sustained for the multi-week duration of the 2019 event. Therefore, using the storage capacity at Des Joachims Generating Station to alleviate downstream flooding would have had a large impact on Mattawa and provided negligible to no benefits at Pembroke.

4.2 Flooding in The North Bay-Mattawa Area

The North Bay-Mattawa area is one of the most densely populated districts in northern Ontario and is home to more than 83,000 people, with the major population centres of North Bay (51,553), Callander (3,900) and Mattawa (2,000). The region includes two distinct watersheds, the Sturgeon-Nipissing-French and the Upper Ottawa River.

4.2.1 Sturgeon-Nipissing-French Watershed

Lake Nipissing is a Provincially Significant Inland Fishery, which receives water from Lake Temagami in the north through the Sturgeon River and flows west to the Great Lakes Basin (Georgian Bay of Lake Huron) through the French River. The Lake Nipissing and French River system is part of a 19,000 square kilometre watershed. Lake Nipissing is the fourth largest inland lake in Ontario, covering over 850 square

kilometres. From it, the French River runs 105 kilometres to Georgian Bay. The headwaters of the Sturgeon River-Lake Nipissing-French River (SNF) watershed are the northern portions of the Sturgeon and Wanapitei Rivers, with the Sturgeon River watershed flowing directly into Lake Nipissing. The Wanapitei River joins the French River System in the last reach of the French River below Lake Nipissing. The SNF system is quite complicated, being comprised of several large lakes, numerous rivers and more than 40 control structures and power stations. Public Services and Procurement Canada (PSPC) operates four dams that effectively control the outflow from Lake Nipissing.

There is no Water Management Plan (WMP) in place for the SNF watershed; however, there is a WMP for the South River subwatershed, which flows into Lake Nipissing. PSPC operates the dams that effectively control the outflow from Lake Nipissing at the French River. PSPC operates the dams according to guidelines that were published in 1992. The Ministry of Natural Resources and Forestry (MNR) supports integrated water management decisions on this watershed by holding daily or as needed calls during freshet with other dam operators, known as the “SNF Technical Committee.” The MNR also coordinates daily or as needed calls with elected or emergency management representatives from local and Indigenous communities, known as the “SNF Stakeholder Committee,” to share information on water management decisions and foster a shared understanding of water-related impacts.

During freshet 2019, the Technical Committee, with consensus from the Stakeholder Committee, took the approach of incrementally increasing outflows from the French River dams in order to avoid exceeding the flood allowance on Lake Nipissing. Water was also stored in Lake Temagami’s flood allowance during a time when Lake Nipissing was vulnerable to exceeding its flood allowance. The whole watershed experienced significant flooding during freshet 2019.

4.2.2 Upper Ottawa River Watershed

The Upper Ottawa River watershed’s primary reservoir is Lake Temiskaming in the north. It also receives water flowing east from North Bay through the Mattawa River at Mattawa, which means “meeting of the waters” in Algonquin. The Ottawa River flows southeast to the St. Lawrence River, with many other uncontrolled inflows from Quebec and Ontario on the way down. The Mattawa River watershed typically flows into the Ottawa River at the Town of Mattawa. The lower Mattawa River portion of the watershed (below the Hurdman Dam) is hydraulically dominated by backwater effects from the Ottawa River. The Ottawa River drainage basin is 146,300 square kilometres, including regions of Ontario and Quebec. It is twice the size of New Brunswick. More

than 3,000 people live within the three municipalities and townships that border the lower Mattawa River, with 2,000 people living in the Town of Mattawa.

Water Management Plans are in place for many of the subwatersheds in the Upper Ottawa River, including Hurdman Dam, the Matabitchuan River and the Montreal River, with each flowing into the Upper Ottawa River. The Ottawa River Regulation Planning Board is responsible for water management on the Ottawa River (see more detail in Section 4.1).

4.2.3 Spring 2019 Flooding

An above average winter snowpack and slow start to the melt, with cool temperatures in the first three weeks of April, combined with substantial precipitation over the Easter weekend, resulted in substantial flooding throughout both watersheds. The April 15 snow pack readings within the region averaged 517% of the long-term average for that time of year, and water equivalence averaged 425% of the long-term average. April's precipitation was 215% of normal and May was 150.8% of normal, according to the North Bay-Mattawa Conservation Authority (NBMCA). Northern watersheds outside of NBMCA's jurisdiction, which flow into Lake Nipissing and the Ottawa River basin above Mattawa River, also experienced above average snow packs and high amounts of precipitation. Adding to the problem, the Sturgeon-Nipissing- French (SNF) watershed received between 50 to 75 millimetres more precipitation than normal in May 2019, with several large rain events causing spikes in inflows throughout the month.

On April 17, the NBMCA and MNRF North Bay District office each issued the first Flood Watch of the freshet event. The last bulletin issued by the MNRF North Bay District was issued on June 17 and expired June 21. The flood message status for all watersheds within NBMCA's jurisdiction did not return to normal until on July 2.

The Municipality of Mattawa declared a State of Emergency on May 6, 2019. The Ottawa River rose 4.25 metres between April 17 and May 11, a significant portion of which occurred within 48 hours of the Emergency Declaration due to incoming runoff water from upstream reservoirs on the Ottawa River (see explanation in Section 4.1.4). Transport Canada issued a navigational warning for the Ottawa River near Mattawa that prohibited boat travel.

On May 9, the City of North Bay undertook precautions to protect the wastewater treatment plant by installing pumping equipment and temporary piping as part of a contingency plan. In addition, a lift station bypass plan was established to provide system relief where possible in order to limit flow to the wastewater treatment plant. While it was a worst case scenario, a failure at the wastewater treatment plant could have resulted in large volumes of untreated wastewater being released onto the shores

of Lake Nipissing, damage to plant operations that would have likely led to weeks if not months of reduced wastewater treatment capabilities, sewer backups in low-lying areas of the City of North Bay, and the possible evacuation of city residents.

Nipissing First Nation experienced very high water levels and was preparing to evacuate residents if the lake level exceeded 196.59 metres. In the Jocko Point and Beaucage areas, high water levels and high winds damaged many properties. Approximately 60,000 sandbags were deployed in this area.

The Municipality of Callander and Nipissing Township all experienced very high water levels in low-lying areas along the Lake Nipissing lakeshore, impacting local businesses, roads and infrastructure.

The Municipality of West Nipissing declared a State of Emergency on May 9 due to damaging winds and damage to municipal infrastructure. All boat launches were closed until June.

Residents along the Upper French River began to see an increase in water levels, as local inflows peaked and increased discharges were made from the Chaudière Dam (together with Portage, Little Chaudière and Okikendawt Dams) to mitigate lake level rise on Lake Nipissing. On May 26, a State of Emergency was declared in the Municipality of French River, which remained in effect past June 17.

4.3 Flooding in the Muskoka River Watershed

4.3.1 Physical Characteristics and Municipal Governance

The Muskoka River watershed is located in south-central Ontario's lake and cottage country, within the southern Boreal Ecozone of the Precambrian Shield. The main population centres include Huntsville, Bracebridge and Gravenhurst. The drainage basin encompasses an area of approximately 5,100 square kilometres and extends in a southwesterly orientation for a distance of approximately 210 kilometres, descending 345 metres in elevation from the western slopes of Algonquin Provincial Park, to its mouth at Georgian Bay of Lake Huron. The watershed originates along the height of land known as the Algonquin Dome and is comprised of three drainage systems, including the North and South Branches of the Muskoka River and the Lower Muskoka subwatershed, and includes 200 lakes covering an area of approximately 78,000 hectares. The Muskoka River is comprised of 19 quaternary basins that form its subwatersheds. The three largest lakes in the watershed include Lake Rosseau, Lake Muskoka and Lake Joseph.

The Muskoka River watershed is a complex, cascading system. There are a series of notable constrictions or pinch points that impede the flow of water and cause water to back up, creating what is referred to as a backwater effect, as affected by the hydraulic conditions. (As described in an analogy in Section 4.1.5, think of it like a funnel, where discharging a large volume of water is limited by the narrowest and/or shallowest point in the river. Putting water into the funnel at a larger volume than can pass through the tip of the funnel causes it to rise up the funnel and overflow.) Lake Muskoka is the last major lake in the system before water enters the Moon and Musquash rivers that flow into Georgian Bay, which represents the outlet of the funnel. All water from both branches of the Muskoka River and Lakes Rosseau and Joseph flow into Lake Muskoka, and the only outflow for Lake Muskoka is through the two dams at Bala. The MNRF Bala dams control the water levels on Lake Muskoka; however, during periods of high flows and levels, a difference in water levels develops between Lake Muskoka and what is known locally as Bala Bay. This is caused by three constrictions at Bala Park Island and Wanilah Island that restrict flow into Bala Bay, affecting how much water can be discharged from the Bala dams. During periods of flooding, a significant difference in water surface elevation (≥ 1 metre) is observed between Bala Bay and Lake Muskoka, which further exacerbates efforts to move water through the dams at Bala.

Muskoka is governed by a two-tier municipal system with the District Municipality of Muskoka as the regional municipality forming the upper-tier, working with the six area municipalities including the Towns of Bracebridge, Huntsville and Gravenhurst, and the Townships of Lake of Bays, Georgian Bay and Muskoka Lakes making up the lower tier. The drainage basin also includes components of other municipalities including the Township of Algonquin Highlands and Haliburton County, among slivers of others. Of the approximate 150,000 people populating the watershed, approximately 58% are seasonal residents according to the 2011 Canadian census. The majority of the big three lakes—Muskoka, Joseph and Rosseau—are located within the Township of Muskoka Lakes. The Wahta Mohawk and Moose Deer Point First Nations are also located within Muskoka's boundaries.

There is extensive development with high value infrastructure within the main Muskoka Lakes (Lake Muskoka, Lake Rosseau, Lake Joseph, etc.) spread over approximately 14,000 lake lots, including 5,300-5,500 boathouses, greater than 6,500 docks, and approximately 41 marinas and 131 resorts.

4.3.2 Water Management Structures and Operations

There are 42 water management structures within the Muskoka River drainage basin, including dams and/or dam-powerhouse combinations in addition to three navigation locks. The MNRF operates 29 of these structures, all of which are manually operated

using stop logs or valves. Most MNRF dams were originally constructed to facilitate the transport of logs to sawmills, divert water to power the mills, and aid in commercial navigation. Over the intervening years, the operations emphasis of the dams has transitioned from commerce and transportation to the provision of a balance of social/recreational, environmental and economic interests.

It must be emphasised that dams in central Ontario, including those in the Muskoka River watershed, are not flood control structures. Flood control structures require a large lake or reservoir and associated drawdown capacity to store or hold back flood waters. Analyses have confirmed that lakes in the Muskoka River watershed that are regulated by dams have a limited capacity to drawdown water to affect flooding, and during periods of large volume rapid runoff, the available drawdown capacity is insufficient to reduce peak flood water levels. In this sense, the greater the magnitude of the flood event, the less ability the MNRF has on affecting or mitigating flooding through operation of its dams. Once the dams are fully open, the MNRF does not have the ability to increase the rate of flow, as it is then based on the amount of water in the system and the natural rate of flow and elevation as it moves through the wide-open dam sluice ways.

To the extent possible, the MNRF operates dams to maintain water levels within the ranges identified in the established dam operating plan. For the Muskoka River, these ranges were formalized in the Muskoka River Water Management Plan in 2006. The range of operations is based on a range of factors, including recreational and environmental considerations. The plan applies to normal water conditions, while there is recognition that unusually high rainfall or snowmelt can result in high water and flooding. Water Management Plans can help regulate flows to ensure that one activity does not take primacy over another (e.g. waterpower generation over recreational use); however, they do not and cannot prevent flooding. The goal of water management planning, in the context of Section 23 of the *Lakes and Rivers Improvement Act*, is to contribute to the environmental, social and economic well being of the people of Ontario through the sustainable development of waterpower resources, and to manage these resources in an ecologically sustainable way for the benefit of present and future generations. The management of floods and flooding is not explicitly a goal of water management planning, and Water Management Plans are not designed to manage floods.

4.3.3 Land Use Planning and Flood-prone Development in the Muskoka River Watershed

Floodplain mapping for most of the area was originally completed in the late 1980s and early 1990s under the Canada-Ontario Flood Damage Reduction Program (FDRP).

Areas mapped include the Big East River in Huntsville and the Muskoka River, including the major lakes in the Muskoka River Watershed. This exercise identified that a considerable number of cottages and associated docks and boathouses were located within the floodplain of rivers and lakes. In the intervening time since these studies were undertaken, development in the area, particularly related to recreational properties, has increased dramatically.

Recommendations included in FDRP mapping reports from the late 1980s and early 1990s include vertical water levels and horizontal setback criteria to give potential developers a choice in floodproofing criteria: either 1) build dwellings above a minimum vertical water level described in a table; or 2) build dwellings beyond a horizontal setback, also described in a table within the report. Further, this included recommendations that no encroachment be allowed where the depth of flooding during the regulatory event would exceed 1.0 metres, and no encroachment be allowed within 20 metres of either riverbank. More explicitly, the FDRP program, which focused on the identification of high flood risk designated areas in the province, included strong policies to encourage the authority, where the zoning authority is neither provincial or federal, to impose land use restrictions that will prohibit all further projects in a designated area that are vulnerable to flood damage. Furthermore, assistance under any federal or provincial disaster assistance program shall not extend to costs or losses incurred as a result of a flood with respect to any project commenced or any moveable property placed within an area after its designation or interim designation as a flood risk area.

The District Municipality of Muskoka is in the process of updating its floodplain mapping using matched funding from the Federal National Disaster Mitigation Program. It must be emphasised that such mapping only adds value when used to inform development, with the intention of keeping people and property out of the floodplain. The available information suggests that land use planning and development approvals have not been proceeding in this fashion, particularly within the Township of Muskoka Lakes, which has seen significant numbers of boathouses constructed every year. For instance, between 2013 and 2016, the Township of Muskoka Lakes issued building permits for 267 new boathouses with a total value of construction of \$46,263,584. As boathouses are situated atop the water, at or near the high-water mark, boathouses are always within the floodplain (or floodway) and add to the impacts during a high-water event.

There is significant concern that the construction of new boathouses within Muskoka Lakes are being approved without regard for the potential damage from flood and ice heaving. Designs presented to Council include first floor plans with utility rooms, games rooms, elevators and washrooms, which are much more than a basic boathouse, and there appears to be no direction or regard for incorporating floodproofing measures into the construction plans. As these structures continue to be built in harm's way, flooding

and ice damage will only increase as will costs associated with the inevitable damage from these natural phenomena. It is unreasonable to expect that water levels can be controlled within a finite range and be kept below the damage level of docks and boathouses, or other structures, when dealing with a large river system with limited means to mitigate the magnitude and extent of flooding. With a changing climate, damages to these boathouses and other infrastructure in the floodplain as a result of flooding and ice movement will continue to occur, and most likely at increased frequency. It is not a question of if these lakes and river systems will flood again, it is only a question of when.

4.3.4 Spring 2019 Watershed Conditions, Flood Mechanisms and Water Management Activities

The Muskoka River Watershed has experienced flooding on numerous occasions in the past, including in 1976, 1980, 1985, 1998, 2008, 2013 and most recently, in 2019. Throughout the winter, MNRF staff monitor snowpack across the Muskoka River watershed to determine snow depths and snow water equivalents at which time they also evaluate soil conditions. During winter/spring 2018/2019, as in other years, the MNRF monitored the snowpack beginning in December and over the winter. In anticipation of the snowmelt and spring rainfall, the MNRF commenced the drawdown of lakes within the watershed in late fall 2018 and continued through the winter to help mitigate runoff. At this time, the MNRF took an aggressive approach, targeting the lower limit of the operating zone for the lakes.

Over the winter, the MNRF continued to monitor weather conditions. To help mitigate the anticipated spring runoff, the MNRF continued to draw down water levels at the dams. There were several rain events that caused water levels to rise over the winter period and the MNRF took measures to continue the drawdown. Lake Muskoka was drawn down to one of its lowest levels in preparation for the rain, snowmelt and warmer weather expected through April. Complaints from the public about low water levels were received in late March 2019.

By mid-March, the amount of water contained within a snowpack in the Muskoka River watershed was on average 171 millimetres, which is above average for this time of year but not as high as in some prior years. It is important to highlight that above average snow water equivalent does not mean flooding will occur and is one of many factors that water managers must consider when making decisions related to water management. By the beginning of April, the snow water equivalent in the snowpack had increased to 192 millimetres, representing 208% of average, with an average snowpack depth of 66 centimetres and depths exceeding 80 centimetres in the upper headwaters of the watershed within Algonquin Provincial Park. The snow survey conducted on April 15

showed that the snowpack depth had been reduced by approximately one-third (to 43 centimetres) with an average snow water equivalent of 134 millimetres, representing 148.5% of the historic average.

The Muskoka Airport weather station received 129.5 millimetres of precipitation in the month of April, exceeding the monthly average by 164%. Temperatures in April were lower than the long-term average for the month, affected by values considerably lower than average for a little over the first half of the month. Notable increases in maximum temperature on April 7 (12.2 degrees Celsius) and April 12 (14.5 degrees Celsius) accompanied by overnight temperatures above 0 degrees Celsius were important in increasing runoff and sustaining snowmelt and runoff generation. Water levels on Lake Muskoka began to rise on April 7 with the warmer weather and melting snow, as runoff entered the river system. (Once inflows to the lakes are more than the maximum capacity of the dams, with all logs out, water levels will rise.)

From April 10 through April 23, daily average temperatures exceeding 5 degrees Celsius and maximum temperatures ranging from 8.3 to 17.2 degrees Celsius, combined with overnight temperatures above 0 degrees Celsius, were important in sustaining runoff increases, particularly when combined with the 114 millimetres of rainfall that was recorded in the latter half of the month. The existing snowpack and associated snow water equivalents present at the middle of the month, combined with the significant rain on snow, moved considerable water volumes to rivers and lakes draining these areas. On April 17, Parry Sound District MNRF issued a Flood Watch that was upgraded to a Flood Warning on April 19, given the significant rainfall (60 to 70 millimetres), temperature increases and snowmelt that had occurred in the intervening period. Between April 7 and April 28, water levels on Lake Muskoka rose by 1.59 metres, eventually peaking on May 3. Flows in the north and south branches of the Muskoka River peaked on April 26 and April 29, experiencing the highest flows on record.

Actions taken to operate the dams in spring 2019 were consistent with the Muskoka River Water Management Plan, including specific triggers to further draw down water levels when snow water content is high. Specifically, March 15 and April 1 are the key dates identified in the plan.

4.4 Flooding in the Magnetawan River Watershed

The Magnetawan River watershed is situated immediately north of the Muskoka River watershed and also experienced significant flooding in spring 2019. While measured snowpack and snow water equivalent values in the Magnetawan basin were lower than in the Muskoka watershed, they remained considerably higher than average at 260% of normal (for snow water equivalent) in the upper portion of the watershed at the

beginning of April. While the Magnetawan River is less developed than the Muskoka River watershed, defined areas of the Township of Armour, the Township of Ryerson, and the Village of Burks Falls were significantly affected by flooding in the spring of 2019. The small village of Katrine, one of the areas hardest hit in the Township of Armour, is built on a floodplain at the mouth of Doe Lake, where approximately 50 homes were flooded.

4.5 Flooding in the County of Haliburton

The County of Haliburton includes the headwaters of the Trent Severn Waterway (TSW) system, which controls water flows and levels for more than 18,000 square kilometres of the Trent Severn Watersheds. The Trent River basin encompasses 218 lakes in the Haliburton Highlands region, 37 of which are directly controlled by TSW dams. There are some 600 named lakes in Haliburton County with significant waterfront property ownership, including a notable number of water-access only properties.

Watersheds represented in Haliburton County include—the Black River watershed that flows south and west to the Muskokas; the Burnt River watershed; the Gull River watershed (which encompasses the Burnt River system); and the Nogies Creek, Eels and Jack Lake watershed.

As experienced in other regions of Ontario, Haliburton County has been experiencing significant flooding, most notably in 2013, 2016, 2017 and 2019. Declarations of Emergency were declared in 2013, 2017 and 2019, with near misses in 2016 and 2018.

4.6 Flooding along Lake Ontario and the St. Lawrence River

4.6.1 Flooding Conditions in 2019

Following an extended period of below average water levels from 1999 to about 2013, all Great Lake water levels were well above their average in 2019. Lake Superior, Lake St. Clair, Lake Erie and Lake Ontario all exceeded record highs in May, while Lake Huron rose to within one centimetre of the previous record in July.

Significant precipitation and snowmelt around the Lake Ontario basin, combined with record inflows from Lake Erie, set a new record for total water inflows, or supply, to Lake Ontario for the month of May, exceeding the previous record set in 2017. Total inflows in May 2019 were the second highest inflows of any month of the year dating back to 1900. Total inflows to Lake Ontario in June were the second highest on record. From January to June 2019, the six-month combined total inflows were the wettest January to June period on record due to a combination of record inflows from Lake Erie and wet conditions on and around Lake Ontario itself. Downstream of the lake, flows

from the Ottawa River emptying into the lower St. Lawrence River also set a new record high during the spring freshet 2019. The flows in May 2019 exceeded the previous monthly record in 1974 by more than 1,000 cubic metres per second.

As described by the International Joint Commission's (IJC) International Lake Ontario-St. Lawrence Board, Lake Ontario was caught between a flooding Lake Erie upstream and a flooded lower St. Lawrence River downstream. Upstream, Lake Erie water levels were exceeding historic record highs by the beginning of May. Downstream, several months of wet weather followed by heavy rains and snowmelt over late April and early May caused record Ottawa River flows, resulting in severe flooding along the Ottawa and lower St. Lawrence River. This combination of record high inflows from Lake Erie and above average precipitation across the Lake Ontario and Ottawa River basins was the main driver of Lake Ontario-St. Lawrence record high water levels in 2019. Lake Ontario water levels ultimately reached 75.92 metres in early June, exceeding the record daily peak of 75.88 metres reached previously in late May 2017.

Water levels of Lake Ontario change in response to the difference between the supply (total inflow) it receives and its outflow. While outflows are controlled by the Moses-Saunders Dam, inflows are uncontrolled. While the IJC's Plan 2014, brought into effect in 2017, regulates flows through the Moses-Saunders Dam (outflows), inflows are uncontrolled. While increasing outflows through the Moses-Saunders dam can help reduce water levels in Lake Ontario, the amount of control this structure has over water levels in Lake Ontario is very limited, as there are physical limits to the amount of water that can be released. Larger releases, while they may reduce flooding in Lake Ontario, can have drastic impacts downstream. Increasing outflows enough to reduce flood levels in Lake Ontario by one centimetre in a week will result in increasing flood levels below the dam in Montreal by 10 centimetres.

Throughout April and May 2019, the IJC's International Lake Ontario-St. Lawrence Board continued to regulate Lake Ontario outflows by the maximum flow limits prescribed by Plan 2014. In June, as Ottawa River flows began to moderate below their record highs, the Board rapidly increased outflows from the Moses-Saunders Dam to provide relief from shoreline flooding on Lake Ontario. Outflows were ultimately increased to the maximum sustained flow on record, as the Board was now undertaking major deviations from the plan to provide relief from shoreline flooding on Lake Ontario. These outflows reached 10,400 cubic metres per second, equivalent to the record high outflows released for several weeks in the summer of 2017. These major deviations of flow are significant departures from the outflows prescribed in Plan 2014; however, the IJC was doing so in response to extremely high Lake Ontario levels and in accordance with IJC policies. In Ontario, flooding occurred around Lake Erie, Lake Ontario and the upper St. Lawrence River, especially during periods of active weather.

From media reports, Prince Edward County, the Bay of Quinte, Toronto Island, Municipality of Clarington, Brighton, and the Thousand Islands shoreline area in the upper river, among other areas, experienced flooding.

4.6.2 Comparison to Flooding Conditions in 2017

The causes of record high Lake Ontario water levels in 2017 and regulation of outflows under Plan 2014 were studied and reported on by the Board (see the IJC report titled: “Observed Conditions and Regulated Outflows in 2017,” May 25, 2018, https://ijc.org/sites/default/files/2018-08/ILOSLRB_FloodReport2017.pdf). The Board attributed the extreme high levels mainly to record precipitation received across the Lake Ontario-St. Lawrence River basin, noting that wet weather was also experienced upstream in the Lake Erie watershed. Lake Ontario water levels rose rapidly, setting record highs by the end of May. In response, in all but three weeks of the year, outflows from the lake were determined by either the maximum flow limits set by Plan 2014 or by deviations from Plan 2014. The Board concluded that Plan 2014 did not cause the high levels in 2017 or contribute to them in any significant way.

Flooding in 2017, among other impacts, were reported on by the IJC’s Great Lakes-St. Lawrence River Adaptive Management Committee as part of their ongoing evaluation of the IJC’s regulation of lake outflows in the Great Lakes (see the IJC report titled: “Summary of 2017 Great Lakes Basin Conditions and Water Level Impacts to Support Ongoing Regulation Plan Evaluation,” November 13, 2018, https://ijc.org/sites/default/files/2018-11/GLAM_2017_MainReport_FINAL-20181129_2.pdf). The Committee evaluated the impacts on multiple interests, including flooding, from a variety of sources. They noted, however, that much of the quantitative economic and environmental data was not available at the time of reporting.

Impacts to coastal properties in 2017 were reported as widespread, with reports of flooded homes, roads, driveways, trails, lawns, emergency response, and extensive sandbagging efforts to protect houses and properties. In Ontario, flooding of residential property and buildings along the Lake Ontario shoreline was observed with particularly hard-hit areas including portions of Toronto Island, Clarington, Brighton, and Prince Edward County. On the upper St. Lawrence River, shoreline flooding was observed particularly in the Thousand Islands area. From the IJC’s report, Figure 5-25 highlights the percent of shoreline survey respondents that indicated flooding impacts. In Ontario, along the lake shoreline, a local State of Emergency was declared for a portion of the Municipality of Clarington shoreline as well as all of Prince Edward County. The Mohawks of the Bay of Quinte also declared an emergency for their territory in response to high water levels.

4.7 Flooding along Lake Erie and Lake St. Clair Shorelines

Since March 2019, water levels in Lake Erie and Lake St. Clair have remained above locally determined Flood Watch thresholds, with monthly mean lake levels in Lake Erie and Lake St. Clair reaching all time highs in July 2019. Lake Erie is approximately 84 centimetres above long-term monthly average lake levels (or 13 centimetres above previous highs in 1986 and 35 centimetres higher than July 2018). Lake St. Clair is approximately 86 centimetres above long-term monthly average lake levels. This is 10 centimetres above previous 1986 highs and 35 centimetres higher than July 2018.

These record levels have resulted in the Windsor Essex region being under an Extended Flood Watch for more than six months. Similarly, the Lower Thames Valley Conservation Authority has issued 50 flood bulletins (Watershed Conditions Statements/Flood Watches/Flood Warnings) warning shoreline residents of potential flood events so far this year (2019).

Portions of Essex Region, in the Southeast Leamington area between Hillman Marsh and Point Pelee, lie behind earthen dikes built in the late 1800s that have been “spot-repaired” sporadically over time as emergencies required. Approximately 400 homes and 2,100 hectares of farmland are, in some instances, 3 to 3.35 metres below Lake Erie water levels.

While lake levels are currently undergoing seasonal decline, they remain above previous 1986 record levels, meaning these declines have not resulted in any reduction in the level of flood/erosion risk in the region. Making matters worse, fall rain events, wind and winter ice is expected to result in further flooding and erosion.

4.7.1 2019 Flooding

Flooding and erosion along the Lake Erie shoreline resulting from high water levels has had, and in most cases continues to have, significant impacts on residents, businesses and infrastructure.

Three sections of roads have been closed along Lake Erie in Chatham-Kent (total length of road closed is 9.6 kilometres). Similarly, LaSalle and Kingsville have closed sections of road due to high water levels.

High water levels have closed marinas in Windsor and Lakeshore, closed waterfront trails in Windsor, and closed sections of the Holiday Beach Conservation Area and Tremblay Beach Conservation Area.

Residents along the Lake Erie Shoreline between Point Pelee National Park and the Town of Wheatley experienced 10 flood events between March 2019 and August 2019.

This area was developed on a naturally eroding clay shoreline. Therefore, even without the existing development, they would continue to erode. Under the current condition (high lake level), wave action is causing erosion at the shore. Under low lake levels, the erosion is happening on the clay bottom as the waves attack the surf zone.

Shoreline protection structures (sheet pile walls and armour stone breakwalls/revetments) have been used in some areas to try and slow down erosion rates in front of the shoreline protection. However, these structures do not stop erosion of the lake bottom in front of the structures, which results in a deeper and deeper nearshore lake bottom slope. This has allowed larger waves and waves with greater energy to impact the shoreline. In the end, the shoreline protection constructed to reduce the hazard is progressively making it worse. As a result, the flood hazards are getting worse with each passing storm.

Numerous homes and properties have suffered and continue to suffer from flooding with limited access into and out of the community. Some of these areas are not municipally serviced and are sitting in water, which results in failing septic systems, mould and related health and safety and structural concerns, in addition to the physical and mental health effects associated with these conditions.

Current high water conditions have caused significant damage across the shoreline. High waters have also prevented many repairs leaving existing development exposed to both erosion and flood hazards.

With high water levels, lake waves have created a 100+ metre breach in Hillman Marsh Barrier Beach, posing significant risk to inland dikes, which are now exposed to direct wave attack. The inland dikes are now holding back high water levels and over an extended period of time, which they were not constructed to withstand. Inland communities protected by the flood protection dike are also at risk of flooding under this condition.

The Marentette breakwater breached and exposed the interior dikes to open lake wave conditions, which this system was not designed to withstand. Some nominal repairs have proceeded through the provisions of the *Drainage Act*, but these repairs are essentially a temporary fix.

Large blocks of peat continue to be eroded out of the marsh areas in Leamington and Rondeau Bay, with the most recent evidence of this occurring in late summer 2019.

Due to sediment balance issues—a result of shoreline hardening—the barrier beach that forms the southwestern barrier within Rondeau Bay has now been removed for approximately 100 metres. This allows Lake Erie waves to enter Rondeau Bay, putting

the low-lying community of Shrewsbury and 470 homes at risk. Continuing and long-term future flooding is anticipated based on present conditions and climate change forecasts.

A State of Emergency was declared along Erie Shore Drive on August 27, 2019, due to significant flooding caused by high winds (peaked at 35 kilometres per hour) and rain. There are 123 homes at risk along Erie Shore Drive, with 35% being permanent residents. The event resulted in significant damage to 12 homes, the roadway, supporting slope, drain and three breakwalls.

A voluntary evacuation took place in a localized area of Erie Shore Drive, comprising 50 homes. Electricity and natural gas services were shut off where there was a safety risk. The water pressure in the water main (under Erie Shore Drive) that provides drinking water to the community of Erieau was reduced due to fears of failure. In the short time period during and around the event, the municipality shored up the roadway and drainage works.

4.7.2 Erosion

While the flood issues are significant, they cannot be isolated from erosion on the Great Lakes. Many of the areas with the highest flood risks also feature a significant long-term erosion rate. This includes Marentette to Wheatley and Erie Shore Drive and many high bluff areas. In keeping with the 1990s Technical Guide, new development has been allowed to be located as close as possible to shoreline hazards, once the landward limit of the erosion hazard is applied. However, due to climate change, the risk profile is changing. Reductions in lake ice have already and will continue to expose the shorelines to higher amounts of wave energy/erosion. Landowners who thought they were 100 years away from erosion hazards might now only be 50 years away, and significant lengths of municipal infrastructure (roads and utilities) are at risk of failure.

Shoreline erosion on Pelee Island is particularly concerning because it has washed out sections of roadway that provide ingress/egress for residents. Bluff failures have occurred in 2019 related to the erosive effects of the high waters. These failures have impacted existing development with at least one home within 1.5 metres from the precipice. These types of failures are expected soon even as water recedes in the region, as the erosive effects have already occurred at the toe of these bluffs.

The Municipality of Chatham-Kent has closed a significant portion of Talbot Trail (West) (length of road closed is 3.8 kilometres). The road was closed due to erosion on the south side of the road (rotational failure). The solution will require a high level of investment estimated at \$640 million up front and \$12 million per year in maintenance costs.

4.7.3 Recent Severe Rain Events

Risks of flooding in southwestern Ontario are not only a result of high lake levels.

In September 2016, Windsor, Tecumseh and Lakeshore were impacted by a severe and isolated rain event that tracked from the northwest, dumping over 200 millimetres of rainfall in six hours, causing flooding in thousands of urban area basements.

In August 2017, a similar system tracked out of the southwest that formed two distinct storms dumped 146 millimetres of rainfall in less than three hours, which followed a 100-millimetre rainfall earlier. The storm total of 246 millimetres in less than six hours surpasses all accepted design standards. This event exceeded \$300 million in insurable losses.

Because both Essex Region and Lower Thames Valley are low lying, high lake/river levels mean that water from stormwater and drainage systems has no place to go.

For example, 30,000 residents living in parts of the Town of Lakeshore, the Town of Tecumseh and the City of Windsor are fully urbanised centres that exist within Lake St. Clair's historic flood extent. Pumping systems that provide for drainage are now regularly overcome by rainfalls that exceed acceptable design standards. These areas have protection systems to prevent lake flooding (either berms or pumping schemes); however, record lake level elevations are challenging the existing protection systems. Any measurable rainfall, such as those events that happened in 2016 and 2017, will cause significant flooding, especially in the urban centres.

4.8 Other Notable Recent Flooding Events

While flooding in spring 2019 resulted in significant damages to many parts of Ontario, several other recent flood events were also brought to my attention during the review. I've noted some of these other recent flood events in this section for the purpose of demonstrating that the flooding that occurred in 2019 does not appear to be an isolated event. Again, this section is not meant to provide an exhaustive account of notable flooding events in Ontario's recent history— an account of that nature was outside the scope of my assignment. However, I felt it important to include some of these events to help demonstrate that flooding is a common occurrence in Ontario and something that can occur at any time of the year.

4.8.1 Recent Flood Events in the City of Toronto

Over 2.7 million people live in the City of Toronto with nearly six million people living in the Greater Toronto Area (GTA). While 2019 was not a significant year for flooding in

Toronto when compared to other areas, significant events and associated impacts have occurred there in the past and are worth noting as part of this report.

With drainage areas ranging from 38 square kilometres for the Carruthers Creek to 900 square kilometres for the Humber River, watersheds within the City of Toronto tend to be relatively small. These small drainage areas, with short stream lengths and highly urbanized (impervious) surfaces, leave little lead time between rainfall and flood impacts. Year-round flood threats include ice jams in the winter, snowmelt in spring, unpredictable thunderstorms in the summer, and hurricane remnants in the fall.

While land use planning has effectively reduced risk in greenfield areas, many neighbourhoods were historically settled near rivers prior to floodplain management. Examples include old downtowns in Brampton, Bolton, Unionville and Stouffville. There are 41 Flood Vulnerable Clusters (areas where there is a high concentration of buildings in the floodplain) within the jurisdictional area managed by the Toronto and Region Conservation Authority (TRCA) alone.

The most severe flooding on record in Ontario occurred in October 1954, when Hurricane Hazel passed over the Toronto area. Eighty-one lives were lost and damages were estimated at \$25 million (in 1954 dollars). TRCA's recent Flood Risk Assessment study estimates that if Hurricane Hazel were to occur today, it could result in almost \$3 billion in property damages, business disruption and population displacement. While Hurricane Hazel-type storms remain a possibility that must be prepared for, recent events have shown that significant damages and disruption can also occur from significantly smaller events.

On July 8, 2013, a severe thunderstorm dropped more than 120 millimetres of rain over parts of the GTA during the afternoon rush hour, causing roughly \$1 billion in insurable losses and stranding thousands of commuters, including over 1,400 passengers who needed to be rescued from a GO train marooned in floodwaters from the nearby Don River.

In the spring of 2017, water levels in Lake Ontario reached levels higher than ever recorded. The impact was significant on Toronto Islands, home to over 800 residents, almost 30 businesses and two schools. The islands' parks experienced significant shoreline erosion, damage and debris accumulation. Direct and indirect damages to the City of Toronto due to the closing of Toronto Island Park were estimated to be \$8 million for the 2017 event. In 2019, water levels rose even higher than in 2017, though preventative measures helped to keep the islands open. In 2019, the newly reached record levels were maintained for nearly four weeks. A full accounting of damages from the 2019 levels is still underway.

On August 8, 2018, a highly localized “ninja” storm dumped over 100 millimetres of rain in less than two hours. This storm was not forecast and was so localized that its track evaded detection by TRCA’s real-time precipitation gauges. Flows in Black Creek in the Rockcliffe neighbourhood, a highly flood vulnerable area, rose over two metres in 75 minutes, spilling into nearby properties and stranding two men in an elevator when they attempted to retrieve their vehicles from underground parking. They were rescued by first responders just in time.

On March 15, 2019, as late winter rainfall and snowmelt raised flows in rivers, an ice jam developed in the Town of Caledon, spilling into the Bolton Core neighbourhood. As floodwaters rose through the evening, over 80 homes were evacuated, of which 30 experienced direct flood impacts. The jammed ice had to be manually removed using excavators.

4.8.2 Recent Flood Events in the Grand River Watershed

The Grand River lies at the heart of one of the fastest growing regions in Ontario; however, the watershed faces challenges brought on by intensive population growth, extensive agriculture and climate change. Warmer air and water temperatures, bigger rainstorms and dramatic changes in weather patterns pose new challenges in managing floods, improving water quality and securing water supplies for municipalities, farmers, industry and the natural environment.

Flooding in the Grand River watershed has many causes including:

- Rapid snowmelt over a short period of time;
- Combined rainfall and snowmelt;
- Localized ice jam flooding;
- Moderate rainfall on saturated or frozen ground;
- Extreme localized rain (severe cellular storms, convective thunderstorms or lake breeze events);
- Severe widespread rain (tropical storm remnants or large low pressure systems); and
- Lake Erie surge (shoreline).

While there is seasonality associated with certain types of flooding in the watershed, the risk of riverine flooding remains relatively consistent throughout the year. Compounding challenges associated with riverine flooding, Lake Erie presents additional challenges through lake surge flooding, shoreline erosion and the influence of lake breezes (wind blowing from the water to the shore).

Large floods tend to happen on a cyclical basis in the watershed and trends show they occur in clusters. Data indicates there were clusters of large floods in the late 1940s, mid-1970s, early 2000s, late 2000s, and more recently 2017 and 2018.

In June of 2017, an unforecasted rainfall event caused significant flooding in the communities of Grand Valley, Drayton, West Montrose, Conestogo Cambridge-Preston and Glen Morris. More than 125 millimetres of rain fell across the northern portion of the watershed in the span of a few hours, resulting in the highest flows seen in the Grand River through Cambridge since the May 1974 benchmark flood event. Reports (unconfirmed) of several million dollars in damage resulted from this event.

The highest single-day rainfall event ever recorded in the Grand River watershed occurred in February 2018 and resulted in near floods of record that were further complicated by major ice jams in multiple communities. More than 5,000 residents in Brantford were evacuated due to overtopping of the dike system due to ice jams in that community. Dams owned and managed by the Grand River Conservation Authority helped reduce flows in the order of 40 to 50% downstream of the major reservoirs; however, significant transportation disruptions (road/bridge closures) still occurred due to ice impact. Municipal flood damages in Cambridge and Brantford associated with this event were reported to be in excess of \$5 million. Damage incurred by individual property owners and businesses is unknown.

Snowmelt and ice jams in February 2019 resulted in the second highest community ice jam (West Montrose) identified in records dating back to 1967. This event was only exceeded by an event in February 1981.

Chapter 5

Ontario's Approach to Managing Flood Risk

Ontario's current approach to managing risks associated with flooding is based on the five core components of emergency management: 1) Prevention; 2) Mitigation; 3) Preparedness; 4) Response; and 5) Recovery. Management is achieved through the use of a series of provincial acts, regulations, policies and technical guides that are implemented through partnerships with a number of provincial ministries, municipalities, First Nations and conservation authorities.

The objectives with this approach are to save lives and money, protect property, public health and the environment, maintain economic stability, help assure the continuance of critical infrastructure, and reduce social disruption associated with emergencies.

5.1 The Five Core Components of Emergency Management

5.1.1 Prevention

Prevention includes actions taken to prevent flood-related emergencies or disasters from occurring, and includes land use planning and regulatory restrictions to keep development out of the floodplains and other hazardous areas. While we cannot prevent flooding from occurring, keeping people and property out of flood-prone areas helps ensure naturally occurring flood events do not result in local emergencies.

As an overall principle for flood management, the MNRF prioritizes the use of non-structural and land use planning measures as its preferred approach to manage flood risks. This includes the identification of hazardous areas, including floodplains. Municipalities can then plan to prohibit/limit activities, including development, in these areas. The main legislative tools used to support this approach include the *Planning Act* together with the Provincial Policy Statement and the *Conservation Authorities Act*.

5.1.2 Mitigation

Mitigation includes actions taken to reduce the effects of flooding, and includes the use of structural measures and floodproofing standards to protect development. Structural measures can include dams, dikes, channels, diversions and other flood control works. Floodproofing standards can include a combination of measures incorporated into the basic design and/or construction of buildings, structures or properties to reduce or eliminate flooding hazards, wave uprush and other water-related hazards, such as constructing the lowest occupancy floor of dwellings, water shut off and electrical control panel above the design flood level, and having water resistant electrical systems.

5.1.3 Preparedness

Preparedness includes the use of flood forecasting and warning to assess the potential for flooding, predict when and where flooding will occur, and help ensure an effective response (e.g. any required evacuations or mitigative activities).

The Province conducts flood forecasting and warning via the MNRF's Surface Water Monitoring Centre, which monitors weather, rainfall and stream flows, and provides advisories and a suite of products and tools (e.g. weather panels, snow survey reports) to conservation authorities (CAs), municipalities and MNRF district offices on flood potential. The monitoring of flood conditions occurs seven days a week, and the Province is able to contact CAs and other stakeholders immediately with updates.

Local scale flood forecasting and warning is provided by MNRF district offices and conservation authorities. Many of the CAs conduct more detailed flood forecasting and warning for their respective jurisdictions.

5.1.4 Response

Response includes actions taken to respond to flood emergency, such as the use of emergency services (e.g. providing sandbags, community evacuations, etc.) to protect people and property during flood events. Response can also include training for emergency response staff and meeting with stakeholders/partners to ensure an effective response. It also includes providing logistical support and social and health services.

The *Emergency Management and Civil Protection Act* (EMCPA) establishes Ontario's legal basis and framework for managing emergencies (see Section 5.2.4). It does this by defining the authority, responsibilities and safeguards accorded to provincial ministries, municipalities and specific individual appointments, such as the Commissioner of Emergency Management.

5.1.5 Recovery

Recovery includes actions taken to recover from a flood emergency, such as the use of disaster financial assistance to restore property to pre-flood conditions.

Provincially, financial assistance is delivered through two programs—the Disaster Recovery Assistance for Ontarians (DRAO) program for homeowners, tenants, small owner-operator businesses and farms, and not-for-profit organizations; and the Municipal Disaster Recovery Assistance (MDRA) program for municipalities. These programs provide funds for eligible expenses following a natural disaster to help Ontarians and municipalities recover from extraordinary costs. The DRAO program

covers 90% of eligible costs (subject to a \$500 deductible and a cap of \$250,000). Since the program launched in 2016, it has been activated for 28 events in 68 municipalities, with \$11 million in assistance paid. The MDRA program is based on a sliding-scale cost-sharing formula. Since the program launched in 2016, it has been activated for 16 municipalities, with assistance payments of \$4 million.

Municipalities can access the MDRA program when eligible disaster-related costs reach 3% of the municipality's Own Purpose Taxation levy. Due to the eligibility threshold based on municipal financial capacity, the program is accessed most frequently by small municipalities with a correspondingly small tax base.

The federal government provides funding to provinces and territories for disaster response and recovery costs under its Disaster Financial Assistance Arrangements (DFAA) program. Under this program, the federal government shares costs with provinces and territories based on a sliding-scale per capita formula. Ontario, as the largest province, has the highest threshold for federal funding and consequently is eligible for the DFAA much less frequently than most other provinces. Based on the current formula (which is adjusted for inflation each year), Ontario could access federal funding under DFAA only in the event of a disaster costing the province in excess of \$46.2 million.

Ontario has only qualified for DFAA three times in the relatively recent past—for the 1998 ice storm, the 2004 Peterborough flood and the 2013 ice storm. As a result, disaster financial assistance costs associated with recovery are funded almost entirely by provincial coffers, although the overall financial burden for disasters is borne to a great extent by municipalities and property owners as well.

5.2 Acts, Regulations, Policies and Technical Guides

Ontario's preventative approach of directing development away from floodplains and other hazardous areas is highly effective in preventing property damage. Property damage associated with the same storm event are often exponentially lower in Ontario than they are in Great Lakes states, with the differences in losses primarily attributed to differences in floodplain management policies and approaches.

Provincial policies have been shown to reduce capital and operating costs associated with managing flooding and other natural hazards, reducing pressure on provincial and municipal infrastructure debts. The existing policies have been estimated to reduce costs associated with ongoing flood and natural hazard management, including costs associated with the operation and maintenance of flood and erosion control infrastructure by 20 to 80% depending on differences in urban density and property values.

These policies have been credited with keeping losses associated with flooding in Ontario lower than losses seen in other Canadian provinces. Responsibility for keeping development out of floodplains is a shared responsibility between municipalities (enforced through municipal planning) and conservation authorities (enforced through regulations made under Section 28 of the *Conservation Authorities Act*).

These policies will be increasingly valuable in protecting Ontarians from flooding and other natural hazards. Losses associated with flooding and other natural hazards continue to increase because of increasing property values and income levels, urbanization, ongoing loss of wetlands and other green infrastructure, and the increasing frequency and intensity of extreme rainfall events. As these losses rise, so does the value of Ontario's floodplain and broader hazard management policies.

5.2.1 The Planning Act and the Provincial Policy Statement

The *Planning Act* and the Provincial Policy Statement (PPS) are the primary provincial tools used to guide local land use planning decisions made by municipalities in Ontario. The PPS is the primary provincial land use policy document guiding municipal decision-making. The *Planning Act* requires that decisions on land use planning matters be "consistent with" the PPS, and the PPS policies provide the foundation for regulating development.

Municipalities are the primary implementers of the PPS through incorporation of policies into their local official plans, zoning by-laws and other planning-related decisions.

The PPS is administered by the Ministry of Municipal Affairs and Housing (MMAH), and provides policy direction on matters of provincial interest related to land use planning and development, sets the policy foundation for regulating the development and use of land, and supports the provincial goal of enhancing the quality of life of all Ontarians. The focus of the PPS is on guiding municipal decision making regarding new development and redevelopment.

While this Act and Policy is led by MMAH, the MNRF has the lead in developing the natural hazard policies, including policy direction related to flooding/flood hazards, in Section 3.0 of the PPS. The MNRF works with partners and experts in the development of these policies, which are reviewed every 10 years. These policies require municipalities to identify areas subject to natural hazards in order to consider public safety when planning for new development. To support implementation of policies in the PPS, subject area specific guidance is developed by ministries having the lead for those specific policies in collaboration with other applicable ministries. A series of natural hazard technical guides have been developed by the MNRF to support

implementation of Section 3.0 of the PPS, and are further outlined in Section 5.2.6 below.

The Ministry of Municipal Affairs and Housing conducted consultations from July 22 to October 21, 2019, on proposed changes to the Provincial Policy Statement (PPS) to help increase the supply of housing, support jobs and reduce barriers and costs in the land use planning system (see the Ontario Government website at <https://ero.ontario.ca/notice/019-0279> and titled: “Provincial Policy Statement Review – Proposed Policies”). Specifically related to flooding, the proposed policies would enhance direction to prepare for impacts of a changing climate; enhance stormwater management policies to protect water and support climate resiliency; and maintain current policies related to natural and human-made hazards, which directs development away from hazardous areas including flood-prone areas in order to protect public health and safety. Given the direct correlation between the policies in Section 3.0 of the PPS and the Special Advisor on Flooding review, a placeholder was put on these policies in the draft PPS being consulted, until the government has an opportunity to consider the recommendations made in relation to potential policy changes.

5.2.2 The Conservation Authorities Act

The purpose of the *Conservation Authorities Act* is to provide for the organization and delivery of programs and services that further the conservation, restoration, development and management of natural resources in watersheds in Ontario through the establishment of conservation authorities (CAs) organized on a watershed scale. A CA is a municipal public sector organization whose governing structure of members (similar to a Board of Directors) are appointed representatives from the municipalities that established or may have joined the CA and who mostly fund the CA. Many members, for reasons of fiscal accountability, are elected municipal officials. A CA provides programs and services in local resource management within its jurisdiction to both the Province and municipalities.

In 1956, in response to severe economic and human losses associated with Hurricane Hazel (1954), amendments to the *Conservation Authorities Act* empowered CAs to make regulations to prohibit filling in floodplains. These regulations were broadened in 1960 to prohibit or regulate the placing or dumping of fill in defined areas where, in the opinion of the CA, the control of flooding, pollution or the conservation of land may be affected. In 1968, amendments to the *Conservation Authorities Act* further extended the regulations to prohibit or control construction and alteration to waterways. In 1983, the Minister of Natural Resources delegated to CAs the commenting responsibilities for floodplain management matters. CAs would have the authority to review planning

documents and provide comments to federal, provincial ministries and agencies, municipalities and private landowners, including developers.

In 1988, the Minister delegated commenting responsibilities to CAs for matters related to flooding, erosion and dynamic beaches along the shoreline of the Great Lakes/St. Lawrence River System.

In 1995, the Minister confirmed CAs as lead commenting agencies for riverine erosion, slope and soil instability matters, such as areas of high water tables, organic or peat soils, and Leda or sensitive (unstable) marine clay soils.

The regulatory scope of CAs was broadened again in 1998, giving them the authority to regulate development activities adjacent to Great Lakes shorelines, interconnecting channels and inland lakes, and the authority to regulate activities that may interfere with the hydrologic function of wetlands.

With the advent of the provincial One Window Planning Service, an agreement was developed in 2001 with the MNRF, MMAH and Conservation Ontario to define the roles and relationships between CAs, the MNRF and MMAH in planning for implementation of CA delegated responsibilities under this system. The Agreement focuses on MNRF delegated responsibilities to CAs for the PPS Section 3.1 – Natural Hazard Policies. The CA delegated role does not extend to other portions of the PPS unless specifically delegated in writing by the Province. CAs, as public bodies under the *Planning Act*, can comment on official plans or development applications on other portions of the PPS but not with the same authority as the delegated commenting role.

Each of Ontario's 36 conservation authorities currently administer an individual conservation authority "Development and Interference" regulation approved by the Minister of Natural Resources and Forestry, conforming to the requirements prescribed under Ontario Regulation 97/04 – Content of Conservation Authority Regulations Under Section 28 (1) of the Act: Development, Interference with Wetlands and Alterations to Shorelines and Watercourses. A key provincial responsibility that CAs have within their jurisdiction is the regulatory authority under Section 28 of the *Conservation Authorities Act*—the regulating of development and activities through the permitting process in hazard-prone areas set out in regulation for purposes of public safety and natural hazard management. These regulations are a critical component of Ontario's broader natural hazard management framework and are designed to achieve the following policy objectives:

- Preventing loss of life, minimizing property damage and social disruption;

- Reducing public and private expenditure for emergency operation, evacuation, restoration and protection measures;
- Regulating development which, singularly or collectively, impact upon existing flood levels, and increasing potential risks to upstream and downstream landowners;
- Control interference with natural storage areas such as wetlands;
- Conserving land through the control of development on existing or potentially unstable valley slopes or shoreline bluffs; and
- Controlling development impacts as they relate to pollution (including erosion & sedimentation) or other degradation of existing and water resources, including groundwater.

Section (4) of the regulation requires that CAs geographically describe the hazardous lands and areas susceptible to flooding based on the design flood event that is applicable (i.e. Hurricane Hazel, the Timmins event, the 100 year, etc.), and details of rain intensity, duration and impacted area are included in an appendix. This geographical description of the regulatory limits can include reference to maps filed at the head office and the regulations specific to each CA identifies that, where there is a conflict in the description of areas identified in maps, the text description of the regulated areas prevails. Floodplain and other hazard mapping and related studies provide a support for implementing the conservation authority regulations under the *Conservation Authorities Act* and for the conservation authority commenting role on official plan review activities delegated under the *Planning Act*.

Conservation authority activities are funded through a combination of shared provincial and municipal funding, municipal levy and self-financing. Floodplain mapping and technical studies for delineation of hazard areas for municipal planning (not the authority regulations) are among the items eligible for the cost-shared provincial and municipal funding.

The MNRF continues as lead administrative ministry having overall government responsibility for natural hazard management policies/programs.

The MNRF has proposed changes to regulations administered by CAs and the public was consulted between April 5 and May 21, 2019. The following excerpts are from the Ontario Government's website titled: "Focusing conservation authority development permits on the protection of people and property" (refer to <https://ero.ontario.ca/notice/013-4992>).

The MNRF is proposing a regulation that outlines how conservation authorities permit development and other activities for impacts to the control of natural hazards and public safety. The proposed regulation will make rules for development in hazardous areas more consistent to support faster, more predictable and less costly approvals.

Prohibited activities set out in the un-proclaimed provisions of Section 28 of the *Conservation Authorities Act* as amended by Schedule 4 of the *Building Better Communities and Conserving Watersheds Act*, 2017 include:

- Development in areas related to natural hazards such as floodplains, shorelines, wetlands and hazardous lands (i.e. lands that could be unsafe for development because of naturally occurring processes associated with flooding, erosion, dynamic beaches or unstable soil or bedrock); and
- Interference with or alterations to a watercourse or wetland.

The Ministry is proposing to create a regulation further defining the ability of a conservation authority to regulate prohibited development and other activities for impacts to natural hazards, including flooding and to public safety.

The Ministry is proposing to consolidate and harmonize the existing 36 individual conservation authority-approved regulations into one Minister of Natural Resources and Forestry approved regulation to help ensure consistency in requirements across all conservation authorities while still allowing for local flexibility based on differences in risks posed by flooding and other natural hazards.

Of note, the Ministry is also proposing under this regulation to:

- Allow conservation authorities to exempt low-risk development activities from requiring a permit provided in accordance with conservation authority policies;
- Require conservation authorities to develop, consult on, make publicly available and periodically review internal policies that guide permitting decisions; and
- Require conservation authorities to notify the public of changes to mapped regulated areas such as floodplains or wetland boundaries.

Ensuring conservation authority permitting decisions focus and deliver on their core mandate of protecting people and property from flooding and other natural hazards is part of the government's Made-in-Ontario Environment Plan to help communities and families prepare and respond to climate change. The proposed changes will also provide the business sector with a clear and consistent

regulatory environment in which to operate and will help to make approval processes faster, more predictable and less costly.

As more extreme weather events occur that threaten homes, businesses and infrastructure, it's important to ensure conservation authorities deliver on their core mandate for protecting people and property from flooding and other natural hazards. Improving the efficiency and effectiveness of these regulations is a critical component of this government's strategy for strengthening Ontario's resiliency to extreme weather events.

The MNRF believe this regulation is a critical component of Ontario's approach to reducing risks posed by flooding and other natural hazards and strengthening Ontario's resiliency to extreme weather events.

At the same time as the MNRF public review period for proposed changes to regulations, the Ministry of the Environment, Conservation and Parks consulted with the public on proposed amendments to the *Conservation Authorities Act*, which, if passed, would help conservation authorities focus and deliver on their core mandate, and improve governance. More information can be found on the Ontario Government's website titled: "Modernizing conservation authority operations - Conservation Authorities Act" (refer to <https://ero.ontario.ca/notice/013-5018>).

One of the stated areas of focus for conservation authorities will be providing programs and services related to managing risks posed by natural hazards, including flooding. The specific programs and services to be provided by conservation authorities related to flooding and other natural hazards are set to be outlined in regulation.

5.2.3 Lakes and Rivers Improvement Act and Water Management Planning

The *Lakes and Rivers Improvement Act* (LRIA) provides the Minister of Natural Resources and Forestry with the legislative authority to govern the design, construction, operation, maintenance and safety of dams in Ontario. The *Lakes and Rivers Improvement Act* and Ontario Regulation 454/96 require dam owners to obtain approval from the MNRF for the construction of new dams, certain repairs and alterations to existing dams, and certain water crossings and channelization works.

The *Lakes and Rivers Improvement Act* Administrative Guide and supporting technical bulletins and best management practices have been prepared to provide direction to MNRF staff responsible for application review and approval, and guidance to applicants who are seeking approval under the LRIA.

Normal operating ranges for dams authorized under the LRIA are described in Water Management Plans or site-specific operating plans for dams located outside the geographical boundary of a water management plan.

The LRIA was amended in 2002 to create a regulatory framework for existing dam operations. The amendments established the statutory authority for the Minister of Natural Resources and Forestry to order an owner of an existing dam to prepare or amend a management plan for the operation and maintenance of the dam, consistent with Minister approved guidelines.

To implement this legislative amendment, the Water Management Planning Guidelines for Waterpower 2002 (WMPG) were approved by the Minister of Natural Resources and Forestry. The goal of water management planning was to contribute to the environmental, social and economic well-being of the people of Ontario through the sustainable development of waterpower resources, by managing these resources in an ecologically sustainable way. The WMPGs established a planning process for defining goals, objectives, scope and criteria for the preparation of Water Management Plans (WMP). WMPs are owned by the primary waterpower producer and must be prepared with the input of stakeholders along the river to which it is situated.

Existing waterpower facilities on rivers in provincial jurisdiction were ordered to prepare plans for the management of flows and levels at their generating stations. In some instances, owners of non-power producing water control structures within the same river were required to participate in water management planning for rivers in which their dams were situated, if their dams were integral to the regulation of flows and levels.

“Complex” WMPs were generally prepared for rivers with multiple waterpower facilities or control structures with significant control over water levels and flows. Complex plans typically had more than one plan proponent (dam owner or waterpower facility owner) and/or significant competing interests.

“Simplified” WMPs were prepared for sections of rivers where there were one or more waterpower facilities or water control structures that generally had limited control of water levels and flows.

WMPs describe the normal range of operating conditions, defined in terms of seasonal flows and levels for each dam within a WMP. The provisions of a WMP do not apply in the event of a declared flood, low water condition or emergency situation.

In 2016, the Ministry approved the Maintaining Water Management Plans Technical Bulletin, which replaces the 2002 Water Management Planning Guidelines and its appendices.

5.2.4 The Emergency Management and Civil Protection Act

The overall legal framework for emergency management in Ontario is addressed primarily in the *Emergency Management and Civil Protection Act*, which, along with powers contained in other ministry-specific legislation, allows the government to take necessary steps to deal with a provincial emergency or any emergency in the province. The purpose of the legislation is to promote the public good by protecting the health, safety and welfare of the people of Ontario in times of emergencies.

Ontario Regulation 380/04 establishes the minimum standards for emergency management programs required by municipalities and provincial ministries and supports the requirement in the Act for mandatory emergency management programs.

The Act and Regulation require provincial ministries to develop an emergency management program consisting of:

- An emergency plan;
- Training programs and exercises for public servants;
- Public education on risks to public safety and on public preparedness for emergencies;
- Any other element required by the standards for emergency management programs;
- Identify and assess the various hazards and risks to public safety that would result in an emergency, and identify the facilities and infrastructure that are at risk of being affected by emergencies; and
- Develop a continuity of operations plan.

The Act and Regulation require municipal programs to address two core components of emergency management—preparedness and response:

- Appoint an Emergency Management Program Committee;
- Develop an Emergency Response Plan for types of emergencies assigned pursuant to Order-in-Council 1157/2009, conduct a Hazard Identification Risk Assessment, and identify critical infrastructure;
- Identify an Emergency Operations Centre;
- Appoint an information officer and conduct public education;
- Conduct training for the Community Emergency Management Coordinator (CEMC), Alternate CEMC, and Emergency Control Group;

- Conduct an exercise for the Emergency Control Group to test Emergency Operations Centre protocols, procedures and response plans; and
- Undertake an annual review of the Emergency Management program.

5.2.5 The Environmental Assessment Act

The environmental assessment (EA) process is established to ensure that governments and public bodies consider potential environmental effects before an infrastructure project begins. Consideration of impacts in and around hazardous lands is primarily through the Provincial Policy Statement and permissions issued under the *Conservation Authorities Act*.

In this context, the Provincial Policy Statement is a planning tool which applies only to “new development” proposals that require approval under the *Planning Act*, and from an infrastructure lens, applies only to infrastructure that forms the foundation for development. Permits issued under the *Conservation Authorities Act* apply to both new development and alteration to existing development, as well as the placement of fill, in defined areas of regulatory control.

Flood mitigation activities that fall outside the scope of these two legislative authorities may be subject to the *Environment Assessment Act*, either as an individual EA or a streamlined EA through the Conservation Authority Class EA for Remedial Flood and Erosion Control Projects or the Class EA for Municipal Infrastructure Projects. Class Environmental Assessments set out a standardized planning process for classes or groups of activities. It applies to projects that are carried out routinely and have predictable environmental effects that can be readily managed. An evaluation of activities under the EA process provides an opportunity for the MNRF to review proposed infrastructure activities, such as flood protection works, including the creation or maintenance of a berm or dike. Various infrastructure works proposed through this process may also be subject to additional approval requirements, such as under the *Lakes and Rivers Improvement Act* (LRIA) or the *Public Lands Act* (PLA) or subject to Ministry of Environment, Conservation and Parks permissions, such as Environmental Compliance Approvals for any discharges to the air, land or water under the *Environmental Protection Act*, or a Permit to Take Water under the *Ontario Water Resources Act*.

5.2.6 Natural Hazard Technical Guides

To support municipal implementation of the natural hazard policies of Section 3.1 of the PPS, a series of natural hazard technical guides were developed and approved by the MNRF. These documents also assist in the municipal land use planning approval

process and in explaining, or if necessary, defending technical methodologies when challenged.

The Province strongly discourages deviations from technical guidance; however, because technical guidance is not in regulation, the MNRF cannot ensure municipal compliance with provincial policy and can only point to technical guidance for direction on the appropriate use of policies, methods and protocols.

The natural hazards technical guides are represented by the following documents:

- I. Understanding Natural Hazards (2001), which provides the planning concepts to address natural hazards.
- II. Technical Guide – River & Stream Systems: Flooding Hazard Limit (2002), which documents standardized approaches to manage flood susceptible lands across the province. It outlines the three flood event standards used in Ontario and outlines hydrologic and hydraulic work needed to conduct floodplain analysis and delineate flood-prone areas.
- III. Procedures for Approval of New Special Policy Areas (SPAs) and Modifications to Existing SPAs Under the Provincial Policy Statement, 2005 (PPS, 2005), Policy 3.1.3 – Natural Hazards – Special Policy Areas. The procedural document that supersedes and replaces the information in Part B of Appendix 5 of the Technical Guide – River & Streams: Flooding Hazard Limit (2002).
- IV. Technical Guide – River & Stream Systems: Erosion Hazard Limit (2002) which has the purpose of providing a consistent and standardized procedure for the identification and management of riverine erosion hazards in Ontario.
- V. Great Lakes-St. Lawrence River Shorelines: Flooding, Erosion and Dynamic Beaches (2001), which focuses on documenting standardized approaches to shoreline management and land use planning and management to address shoreline flooding, erosion and dynamic beaches, with a focus on the need to better understand the system, particularly its formation, evolution and potential impacts.
- VI. Technical Guide for Large Inland Lakes Shorelines: Flooding, Erosion and Dynamic Beaches (1996), which addresses effective shoreline management and land use management approach for addressing shoreline natural hazards.
- VII. Hazardous Sites – Technical Guide (1996), which provides technical support in identifying areas of unstable soils, including sensitive marine clays and organic soils as well as unstable bedrock, including karst bedrock.

5.3 Organizational Roles and Responsibilities

In Canada, flood management is the responsibility of the provinces and territories, and is often delegated to municipalities through legislation. Therefore, most flood management activities including mapping, planning, preparation, response and recovery are executed at the local rather than provincial, territorial or federal levels. The management of flooding hazards, including the prevention and mitigation of impacts, is a coordinated approach by the province, municipalities and conservation authorities. The federal government can become involved if federal disaster assistance is triggered. Management is achieved through a series of provincial acts, regulations, policies, and technical guides (see Section 5.2), which together enable local decision making to protect people and property from the impacts of flooding. These individual tools are managed by various agencies in the province based on expertise, creating a network of policies which together implement the flood management program.

5.3.1 Ministry of Natural Resources and Forestry

Since 1975 and re-affirmed by Order-in-Council 1157/2009 of the *Emergency Management and Civil Protection Act*, the MNRF is the provincial lead for seven hazards, including floods.

While the MNRF plays a major role in flood response and response support, the MNRF's current approach focuses on prevention—keeping people out of harm's way and minimizing loss of human life, injury, damage to property and the environment, and mitigation of economic and social disruption through a range of legislative, policy and technical mechanisms. As part of this approach, regulatory and land use restrictions are developed by the MNRF and put in place by municipalities through the Provincial Policy Statement (PPS) land use planning policies, with their implementation supported by a series of technical guidelines produced by the MNRF. Also, under the *Planning Act*, conservation authorities have a delegated responsibility through the MNRF to provide plan input on matters of provincial interest relating to Section 3.1 of the PPS focusing on the Official Plan and Official Plan Amendment stages as well as site plan applications, on a site-by-site basis. In combination, these actions work to prevent new or intensified development in areas prone to flooding and other natural hazards, and regulate activities that can create or increase hazards (e.g. alterations to watercourses and wetlands). The MNRF does not have its own piece of legislation to implement the hazard program and uses a series of tools to enable flood management. These program tools include:

- The *Planning Act* and Provincial Policy Statement (see Section 5.2.1 above);
- The *Conservation Authorities Act* (see Section 5.2.2 above);

- Natural Hazard Technical Guides (see Section 5.2.6 above);
- Mapping and Geomatics Services (see Section 5.3.1.1 below); and
- Flood Forecasting and Warning Services (see Section 5.3.1.2 below).

5.3.1.1 Mapping and Geomatics Services

Geospatial data is critical to flood mapping as it serves as authoritative data for the entire flood mapping process. The two main types of geospatial datasets used in flood mapping are: 1) Imagery, for two-dimensional feature positions (e.g. roads, rivers and buildings); and 2) Elevation, for three dimensional heights (e.g. height of riverbank, height of road).

The Mapping and Geomatics Services Section (MGSS) of the Mapping and Information Resources Branch in the MNRF is responsible for capturing, creating and maintaining Ontario's foundation geospatial data/base data for government, academia and the general public.

The MGSS acquires, maintains and distributes authoritative, open, provincial-scale geospatial data by coordinating provincial acquisition projects (imagery, elevation, LiDAR, bathymetry, roads, water, wetlands, etc.); developing mapping guidelines and standards; providing leadership and guidance in the management of geospatial data; establishing data sharing agreements and funding partnerships between local, provincial and national agencies; and making data discoverable and accessible as Open Data.

Besides its responsibilities for provincial-scale mapping and MNRF geomatics, the MGSS also coordinates the Land Information Ontario program (LIO) on behalf of all Ontario ministries. LIO improves geospatial service delivery for Ontario Public Service (OPS) ministries and partners by:

- Coordinating governance for collective decision making and leadership;
- Engaging with geospatial communities to identify needs;
- Delivering services and products that meet common needs and realize collective benefits; and
- Sharing geospatial knowledge to establish and review best practices.

LIO's core principles include the value of collaboration for geospatial data and services and the principle of "do once, use many times." A good example of this is the LIO Imagery Program, which acquires high-resolution imagery for the provincial government

and numerous partners across the private, public and academic sectors. The success of the LIO Imagery Program is defined by:

- Leveraging internal and external partnerships across multiple sectors;
- Meeting multiple business needs;
- Achieving financial cost sharing; and
- Establishing a predictable, 5-year imagery acquisition cycle.

5.3.1.2 Flood Forecasting and Warning Services

Flood forecasting and warning services are delivered by the MNRF through its Surface Water Monitoring Centre (SWMC) in cooperation with conservation authorities where they have been established and local MNRF district offices, which provide local level expertise and information through flood warning and watch messages to municipal responders.

The ability to provide this service rests with information provided through the hydrometric network, a federal/provincial partnership, and its 600 gauges across the province, more heavily concentrated in those watersheds of greatest population and therefore greatest risk of harm.

The agreement requires a monetary investment by the Province, most recently in the amount of \$4.6M for 2019/20. It is expected that the cost of the agreement will increase at an annual inflationary rate of 2% per year. The agreement ensures that the gauges are monitored and maintained to provide the “eyes on the ground” toward flood forecasting.

While there are a number of recommendations in Section 6.3 to improve preparedness, the SWMC advises that it is committed to and continues to learn from each event, and has undertaken numerous steps toward continuous improvement. These actions include:

- Implemented a new Kisters WISKI data environment and developed multiple new products for scripting custom products to improve operations.
- Developed a new early warning system for static (calm) water levels on the Great Lakes and consolidated working relationships with federal government for Great Lakes Briefing products.
- Developed new tools for communicating Ottawa River Secretariat forecasts to conservation authorities and district offices of the Ministry of Natural Resources and Forestry.

- Initiated updates to provincial flood forecasting and warning guidelines (scheduled for completion in 2020).
- Sponsored transfer payment funding to multiple conservation authorities for new flood communication tools on the Ottawa River, GAWSER snowmelt modelling routine in WISKI, and HEC-HMS model development. The Province can evaluate and use these products now that they have been developed.
- Sponsored multiple knowledge transfer and training sessions for internal and external clients—After Action reviews, modelling and technology transfer, flood forecasting and warning community workshops, annual internal training, and collaboration with hydrometric network partners.
- Restructured business practices with Water Surveys Canada to improve field responses to gauge maintenance and field measurements for record events.
- Implementing a new communications plan, including webpage refreshes and web usage statistics.

5.3.1.3 Remote Sensing Science Group

The hub of remote sensing expertise in the provincial government is housed within the MNRF's Provincial Services Division (PSD), Science and Research Branch (SRB), Forest Resource Inventory (FRI) Unit. The Remote Sensing Science Group is primarily focused on Provincial Land Cover and Disturbance mapping and, as provincial data custodians, they support a wide range of users and applications. They also possess the skills and experience necessary to support Emergency Management Near Real Time image processing, interpretation, automation and publishing. Operationally, to support provincial emergency management flooding efforts, the Remote Sensing Science Group works closely with the Surface Water Monitoring Centre and Natural Resources Canada's (NRCan) Canada Centre for Remote Sensing and Emergency Geomatics Services Offices.

Two remote sensing products are primarily used by the group—the Canadian Space Agency's RADARSAT-2 and NASA's MODIS. These products provide more spatial information on water, ice and watershed conditions, information between stream gauges, information in remote areas, quantify conditions that cannot be determined from stream gauges, and are used to assess risk, inform flood messaging and emergency operations. They add to the body of knowledge available about flood, ice and more, and supplement human efforts on the ground (i.e. reconnaissance flights, snow surveys, ice observations). In short, these products help to make better, more informed decisions about a flood.

RADARSAT imagery allows for the accurate mapping of ice conditions through inclement weather and night time hours (as opposed to major limitations with optical imagery and local reconnaissance flights). With frequent revisit times, RADARSAT images can be acquired several times per week for each river, which improves the ability for the early detection of ice jamming.

RADARSAT is also used to provide near real time flood maps and information (extent, severity and progression); greatly improves situational awareness during flood events; facilitates better decision making and flood forecasting; creates documentation and increases knowledge that supports future flood management; and supports the development of accurate floodplain maps.

MODIS Optical Imagery is used to monitor river ice breakup in Ontario's far north coastal rivers. Acquisition, interpretation and communication used to be an entirely manual process; however, in-house tool enhancements from 2016 to 2019 have resulted in an entirely automated process.

The Canadian Space Agency is replacing the RADARSAT-2 satellite with three small identical satellites under the RADARSAT Constellation Mission (RCM), which were launched on June 12, 2019. The RCM will capture images of the earth's water, land, ice and atmosphere during the day and night and in all types of weather, including heavy cloud cover, smoke and haze, which is a huge improvement in optical products. The new RADARSAT Constellation will provide near real time data for all of Ontario and provide more information to support the assessment of flood risk, effective flood messaging and emergency operations.

5.3.2 Ministry of Municipal Affairs and Housing

The Ministry of Municipal Affairs and Housing (MMAH), in their role as lead agency for the administration of the *Planning Act* and the Provincial Policy Statement (PPS), plays a critical role in supporting the MNRF through inclusion of hazard policies in the PPS for new development and redevelopment, as previously discussed in Section 5.2.1 above.

MMAH also delivers the Disaster Recovery Assistance for Ontarians (DRAO) program (for private property owners) and at the municipal level, the Municipal Disaster Recovery Assistance (MDRA) program for eligible expenses following a natural disaster (see Section 5.1.5 above).

In addition to these programs, and in response to flooding in the spring of 2019, MMAH created a \$1 million pilot project designed to help municipalities repair flood damaged roads, bridges and other infrastructure to a higher standard, meaning they can better withstand extreme weather. As part of a \$1 million pilot project, the Province will

provide municipalities that qualify for MDRA funding with up to 15% above the estimated cost of rebuilding damaged public infrastructure to make it more resilient to extreme weather. Examples include raising roads to provide better protection from overland flow of water, improving the columns or footings of bridges, or increasing the size of ditches and catch basins to increase their capacity to hold water. Communities that were affected by spring flooding that occurred after March 1, 2019, are eligible for the enhanced funding under the pilot.

5.3.3 Ministry of Environment, Conservation and Parks

The Ministry of Environment, Conservation and Parks (MECP), with priority on protection of public safety and the environment, is the provincial lead for a number of water-related initiatives including:

- Protecting the Great Lakes;
- Protecting waterways and inland waters;
- Ensuring sustainable water use and water security for future generations;
- Providing provincial oversight of municipal and private wastewater and stormwater; and
- Enhancing data, information and knowledge sharing.

MECP also has overall responsibility for the *Conservation Authorities Act* and non-natural hazard related programs and services developed and delivered by CAs.

Ontario's 2018 Environment Plan outlines the government's intention to undertake a comprehensive, multi-sectoral assessment of climate change-related impacts, including vulnerabilities, risks and opportunities, to help provide a detailed understanding of how and where climate change will affect Ontario's economy, infrastructure, communities, public health and safety and ecosystems, and what the likely challenges and opportunities associated with those impacts would be. The draft plan commits to working with industry, such as real estate and insurance, to raise awareness among homeowners about the increasing risk of flooding as more frequent extreme weather events are being experienced. This initiative is also being led by MECP.

MECP develops municipal guidance documents to support stormwater management planning and design, which assists municipalities in developing stormwater servicing master plans as well as planning for infrastructure that provide protection of public safety and the environment.

5.3.4 Ministry of Infrastructure

The Ministry of Infrastructure's connection to flood management and prevention is:

- MOI is responsible for making recommendations on priorities for infrastructure and effective coordination of infrastructure across provincial ministries within the government.
- MOI works with partner ministries and Infrastructure Ontario to design, implement and administer public infrastructure programs.
- MOI manages the Asset Management Planning for Municipal Infrastructure Regulation, O. Reg. 588/17, which guides asset management and provides tools and support for municipalities in Ontario to meet their current and future infrastructure needs (see <https://www.ontario.ca/page/municipal-asset-management-planning>).
- MOI leads the design and implementation of federal-provincial infrastructure programs, working with partner ministries and the federal government.

Resilient infrastructure that helps communities cope with the intensifying effects of climate change and floods has become a key area for targeted investment for MOI in recent years.

MOI administers the Ontario Community Infrastructure Fund (OCIF) which, since 2014, has provided application- and predictable formula-based funding to help build and repair core infrastructure (e.g. road, bridge, water, wastewater infrastructure) in more than 420 small, rural and northern communities. The Province is currently reviewing the design of the OCIF to ensure that it continues to support municipalities to improve and implement asset management plans.

The Green stream of the Investing in Canada Infrastructure Program (ICIP) consists of up to \$7.12 billion in combined federal (\$2.85 billion), provincial (\$2.3 billion), and other partner (\$1.92 billion) funding for projects that improve outcomes under one of the three federal sub-streams—Climate Change Mitigation, Environmental Quality, and Disaster Mitigation.

MOI launched the first intake of the Green stream on October 25, 2019 (see <https://news.ontario.ca/moi/en/2019/10/ontario-investing-in-green-infrastructure-to-help-smaller-communities.html>). The focus of this first intake is to address critical health and safety issues in small municipalities and First Nations communities with populations under 100,000 for water, wastewater and stormwater infrastructure.

MOI will be working with other government departments, including the MNRF, to design additional intakes of the Green stream that could support innovative natural infrastructure and green technology solutions to address current and future challenges in environmental quality, climate change and disaster mitigation.

5.3.5 Office of the Fire Marshall and Emergency Management (Ministry of the Solicitor General)

The Office of the Fire Marshall and Emergency Management, Emergency Management Branch—better known as Emergency Management Ontario (EMO)—is the overall provincial emergency management organization and is responsible for monitoring, coordinating and assisting in the development and implementation of effective emergency management programs throughout Ontario, and for the coordination of these programs with the federal government. In fulfilling this special coordination role, EMO coordinates the provincial emergency response through the Provincial Emergency Operations Centre, when required; provides advice and assistance to communities and ministries in all areas of emergency management; and maintains two provincial level emergency response plans—the Provincial Nuclear Emergency Response Plan and the Provincial Emergency Response Plan (PERP).

The PERP is the plan that is used to coordinate overall provincial emergency response and outlines how EMO and the ministries respond to widespread or large-scale emergencies.

Key initiatives of EMO related to flooding include hosting an annual flood and forest fire symposium, publishing and holding workshops on Hazard Identification and Risk Assessment; conducting a review of national and international best practices to evolve the program; updating the Provincial Emergency Response Plan; and updating the Incident Management System.

For flood events, the Provincial Emergency Operations Centre (PEOC) outreaches to Community Emergency Management Coordinators potentially impacted by flooding to determine anticipated resource requests; develops GIS mapping and incident information products for situational awareness; deploys field officers to provide advice to municipalities and liaise between the PEOC and on-site responders; and develops and circulates flood resource materials (lists of flood-related resources and materials and a Flood Recovery Guide).

5.3.6 Municipalities

In the MNRF technical guides, municipalities are delegated the responsibility under the *Emergency Management and Civil Protection Act* of identifying areas subject to natural

hazards and to develop management plans (i.e. flood contingency plans) to limit exposure to public health and safety risks. This includes identifying floodplains in municipal plans and incorporating policies to address new development consistent with the PPS policy. It is up to the municipality to determine how best to achieve this requirement and the use of floodplain mapping is one tool available to demonstrate hazard areas. Municipalities can choose to involve their conservation authority in preparing floodplain mapping on the municipality's behalf, but are not required to do so.

Any updated or new mapping is generally funded on an as-needed priority basis by municipalities, or through proponent driven development applications. Neither the MNRF nor the Province provides funding for new or updated flood hazard mapping, nor approves new or updated mapping; however, the Province has provided small transfer payments for pilot projects related to mapping technologies in the last few years.

Maps are retained at the municipality and are used for specific land use planning purposes. It is up to the municipality to update their maps when required, which usually is development driven, including updates or amendments to official plans. The MNRF does not track or monitor the development of mapping locally and cannot report on its status or progress.

Municipalities are responsible for municipal stormwater management (e.g. planning, standards, design, establishment, operation and maintenance). Municipal stormwater management deals with the component of the urban surface runoff that is or would be collected by means of separate municipal storm sewers and, in some areas, by combined sewers.

Municipal stormwater management can include green infrastructure that captures (partially or fully) where snow melts or rain falls, reducing stormwater runoff that enters municipal storm sewers.

Municipalities also have an important role for managing surface runoff in rural areas. They, along with landowners, have responsibility for municipal drains that drain and convey surface runoff under the *Drainage Act*. Tile drains, which are important to agricultural productivity, collect and convey surface runoff to natural waterways directly or indirectly via municipal drains. Surface runoff from municipal roads are also conveyed and release to natural waterways. The cumulative drainage of the vast rural areas and rapid conveyance contributes to downstream urban (fluvial) flooding risk.

In emergencies, municipalities undertake first response activities and are responsible for recovery efforts in their jurisdiction.

5.3.7 Conservation Authorities

Conservation authorities are public sector bodies established by municipalities through the *Conservation Authorities Act* (see Section 5.2.2. above) that deliver programs and services, and regulate development and activities set out in regulations within their jurisdiction through a permitting process if the development may impact the control of natural hazards, including riverine and shoreline flooding, or if activities interfere with a watercourse or wetland. Conservation authorities also have a delegated role from the MNRF in reviewing municipal planning documents and applications under the *Planning Act* for consistency with the natural hazard policies in the PPS, including how the development may impact the control of natural hazards. These responsibilities include policy interpretation and the transfer of data, information and science to municipalities. The delineation of hazard areas through mapping and supporting hydrologic/hydraulic studies provides important information and science to support these delegated responsibilities. Regulatory mapping may be updated by a conservation authority from time to time, sometimes when municipalities update their official plans and their floodplain mapping or, as a requirement of a permit application, a proponent may be required to update authority regulatory mapping.

Where they have been established, conservation authorities are delegated with the responsibility for flood forecasting and warning. Where no CA exists, the local MNRF district is responsible. Supporting both CAs and MNRF districts is the MNRF's Surface Water Monitoring Centre, whose main function is to monitor water flows and levels, assess conditions across the province, and provide communications and ongoing knowledge of the provincial flood potential. The scope and complexity of a flood forecasting and warning program for a particular jurisdiction is contingent on a variety of considerations, including the level of risk within flood-prone areas. Some conservation authorities may operate and maintain an additional network of streamflow, snowpack, rain gauges and climate stations throughout their geographical jurisdictions that can also serve as data inputs to their hydrologic models to address the specific needs within their jurisdiction.

5.3.8 The Federal Government

Water management and flood hazard management more specifically are not referenced in the Canadian *Constitution Act*. Provincial water management authority is derived from the authority to legislate over property and civil rights, over matters of local and private nature, over local works and over natural resources. Some federal departments such as Natural Resources Canada (NRCan) also have a role in flooding and other natural hazards. NRCan monitors natural hazards (including flooding and landslides) and provides information about hazards events, as well as information to help

Canadians understand and prepare for natural hazards, and to reduce the losses from hazards events. NRCan develops and distributes geospatial data, topographic and geoscience maps, images and scientific publications associated with flooding and landslides. (See also the discussion on remote sensing in Section 5.3.1.3.)

Public Safety Canada administers the Disaster Financial Assistance Arrangements (DFAA) program, which reimburses provincial and territorial governments for eligible disaster response and recovery costs.

With flooding being the single largest draw on DFAA, NRCan initiated the Federal Flood Mapping Guidelines Series (in partnership with Public Safety Canada) to provide critical support to areas in Canada that didn't necessarily have robust guidance related to floodplain mapping. While well intentioned, this initiative has added to confusion in Ontario, with practitioners not necessarily understanding that Ontario's existing guides take precedence.

Public Safety Canada also provides funding for cost-shared projects related to the management of flooding and other natural hazards through programs like the National Disaster Mitigation Program (NDMP) and Infrastructure Canada provides funding through the Disaster Mitigation and Adaptation Fund (DMAF). Flood-related infrastructure projects may also be eligible for funding under the Investing in Canada Infrastructure Program (ICIP) under the Green stream administered jointly by Infrastructure Canada and Ontario.

5.3.9 Other Agencies

5.3.9.1 International Joint Commission

Canada and the United States are parties to the Boundary Waters Treaty of 1909 (the Treaty), under which the International Joint Commission (IJC) is created. Under the Treaty, IJC has the jurisdiction over cases involving the use, obstruction or diversion of boundary waters shared between Canada and the U.S. For instance, the regulation of water flow through the Moses-Saunders Dam on the St. Lawrence River fall under the jurisdiction of the IJC.

Ontario works closely with the IJC and federal, state and provincial governments to ensure Great Lakes regulation strategies account for sustainable water resources management. While Ontario is not responsible for managing outflows from the Great Lakes, the Province does have responsibilities for lands, tourism, land use planning, water use and natural hazard management (erosion, flooding), all of which are affected by water levels and flows.

The MNRF advises the International Joint Commission through IJC Boards of Control and short-term task forces and studies.

5.3.9.2 Ottawa River Regulation Planning Board

In 1983, Canada, Quebec and Ontario approved the Agreement Respecting Ottawa River Basin Regulation. Under its terms, a board was constituted to plan and recommend regulation policies and criteria leading to integrated management of the 13 principal reservoirs of the basin, taking into account flood protection, hydroelectric power production and other interests. Supported by a Regulating Committee composed of the four agencies that own and operate the reservoirs and Secretariat, the Ottawa River Regulation Planning Board endeavours to ensure that the integrated management of the reservoirs provides as much protection as possible (the generating stations on the main stem of the Ottawa River were not designed for flood protection) against flooding along the Ottawa River and its tributaries, and along its channels in the Montréal region. The term "integrated management" means that the four principal dam operators in the basin operate their facilities with knowledge of what the other operators are doing and the consequences of operational decisions elsewhere in the Ottawa River basin.

The Board consists of seven members, each with an alternate, who represent Canada (three members), Ontario (two members), and Quebec (two members). The two Ontario agencies represented include the MNRF (co-chair of the board) and Ontario Power Generation (OPG).

On the Ottawa River, the responsibility and authority to manage dams in accordance with established operating plans rest with dam owners (e.g. Hydro-Québec, Ontario Power Generation and the federal government through Public Services and Procurement Canada). The Ministry's application of the *Lakes and Rivers Improvement Act* on existing Ottawa River facilities is limited to reviews and approval of repairs/upgrades per associated work permits.

5.3.9.3 Ontario Power Generation

Ontario Power Generation (OPG) has been a member of the Ottawa River Regulation Planning Board (ORRPB) since its inception and is a full member of the Ottawa River Regulating Committee (ORRC) of the ORRPB. As part of the Regulating Committee, OPG collaborates with other operators of principal reservoirs to optimize the use of the storage they manage in view of reducing the river flows downstream, thereby minimizing flooding. In the spring, OPG and other operators follow river condition forecasts provided through the Regulating Committee very closely in order to make appropriate decisions at their facilities.

As agreed by Canada, Ontario and Quebec, the Board is the administrative and policy branch of the organization and the Regulating Committee and Secretariat are the operational arms. The purpose of the ORRPB and ORRC is to ensure integrated management, or the collaborative management, of the 13 principal reservoirs of the Ottawa River to minimize the impact of flooding and droughts along the Ottawa River. The original language in the ORPPB/ORRC agreement from the early 1980s states that the goal of the integrated management is to “provide protection against flooding.” The term “protection” is a misnomer, as the location of existing reservoirs and their physical storage capacity does not provide the ability to fully protect against flooding. Integrated management on the Ottawa River does not prevent the impact of flooding, but reduces the impact of flooding to the greatest extent possible given physical constraints.

Integrated management does not mean that the ORRPB or ORRC dictate or control flows in the river. Instead, the ORRPB mandate is to ensure that all operators are sharing information and forecasts when making decisions and that all decisions are made with the full knowledge of what other operators are doing. Being involved in the management of the principal reservoirs in the Ottawa River basin, OPG communicates and exchanges information at least daily with other members of the Regulating Committee (Hydro-Québec, Québec and Canada) throughout the spring flood season to assess together current and forecast river conditions, and what actions may be required to minimize flood impacts.

The daily process starts with the ORRC members examining the current water level and flow conditions at their facilities and submitting hydrometric data and initial reservoir release decisions. Hydro-Quebec produces a hydrological forecast of inflows along the river, which is shared with the Secretariat and ORRC members. This information is used as input to the reservoir routing model for forecasting flows and levels throughout the river system to aid ORRC members in planning operations (i.e. storage/discharge decisions). Members of the ORRC review the results and discuss the current operational strategy on a conference call. If at this time OPG decides it best to modify their reservoir operation strategy, they will inform the ORRC and the reservoir routing model will be modified to examine the impact of the change in this decision. This process will occur until a final strategy is established. At all times, OPG is responsible for the operation and strategy relating to its facilities. The ORRPB/ORRS/ORRC structure ensures that the operators’ decisions are transparent, consistent and share a common understanding of the watershed conditions with other members.

Chapter 6

Challenges and Opportunities to Managing Flood Risk

Although Ontario has a well-established approach to managing flood risk, the reality is that there have been significant property and casualty losses associated with extreme weather events in the past several years. According to Canada's Parliamentary Budget Officer, the estimated annual DFAA costs resulting from floods are the largest of the weather events (others being hurricanes, convective storms and winter storms) representing 75% of all weather-related expenditures (refer to https://www.pbo-dpb.gc.ca/web/default/files/Documents/Reports/2016/DFAA/DFAA_EN.pdf).

The public should understand that the risk of flooding cannot be eliminated, but it can be reduced. There are considerable challenges to managing flooding especially when governments are having fiscal challenges. However, there are many opportunities to improve on the current approaches to managing flood risk.

6.1 Prevention

6.1.1 Gaps in Policy and Technical Guidance

Components of the current technical guides and associated standards are outdated and need to be updated to reflect emerging environmental concerns and new land use policies.

Beginning in 2016, the MNRF initiated work to better understand and start to address current gaps in policy, and document issues and concerns with technical guidance, including many of the components highlighted in sections below. In some circumstances, specific conservation authorities have developed and adopted their own policies and technical guides which may not be consistent with MNRF's guidance or the Provincial Policy Statement (PPS).

This section is included specifically to highlight the gaps in policy and technical guidance. Subsequent sections get into more detail and result in specific recommendations.

6.1.1.1 Lack of Guidance for Considering Climate Change

Changes made to the PPS in 2014 direct municipalities to consider the potential impacts of climate change that may increase the risk associated with flooding and other natural hazards. Furthermore, draft proposed edits to the PPS released for consultation

in 2019 suggest the need for municipalities to “prepare for the impacts of a changing climate” (see Section 5.2.1).

Climate change has the potential to alter watershed hydrology, such that existing hydrologic procedures, analyses and modelling may require adjustments or adaptations to adequately represent the range of potential hydrologic effects and to support modelling of affected flows and levels using hydraulic analyses to inform floodplain mapping. The MNRF’s Technical Guide – River & Stream Systems: Flooding Hazard Limit, which is used to help implement the PPS, was approved in 2002 and does not include the latest information on climate change. In recent years, there have been substantive changes in technology and an enhanced understanding of climate change considerations with regards to hydrologic modelling and associated influences on the hydraulic analyses required to develop floodplain mapping.

Existing policies and technical guidelines provide very little guidance on how to incorporate climate change consideration into planning and permitting decisions. Background work to derive options for integrating climate change considerations into the MNRF’s technical guidance has been ongoing since 2016 and would be integral to an update of the flooding technical guidance.

In 2017, the MNRF commissioned a study that produced a report titled: “Flooding Hazard Climate Change Advisory and Option Report.” The report identified ways in which climate change considerations can be integrated into the Technical Guide - River and Stream Systems: Flood Hazard Limit. Deliverables from this project will make significant contributions to ensuring that a range of options for addressing climate change and climate change adaptation that are consistent with provincial policy are available for consideration as the MNRF works towards enhancing implementation of Ontario’s existing flood hazard policies, while best addressing future climate considerations.

The MNRF (Water Resources Section) currently sits on the Steering Committee of a Natural Resources Canada funded study that will develop climate change information on future ice conditions and storm extremes for use in coastal infrastructure development, policies, programs and practices on the Great Lakes. Findings and data generated by this study will help inform updates to the MNRF’s technical guidance for the Great Lakes and connecting channels related to flooding, erosion and dynamic beach. Recent high levels and associated erosion on Lake Erie and Lake Ontario (specific areas of focus for the study), make the results of this study particularly timely.

6.1.1.2 Climate Change Resiliency of Existing Flood Standards

Flood standards specified in the MNRF's technical guidance for rivers and streams are based on the greater of the 100-year flood (which forms the minimum standard), floods produced by a specified meteorological event (e.g. Hurricane Hazel or Timmins Storm) or an observed flood greater than the 100-year flood level. Presently, little guidance exists for developing future climate informed flood standards, particularly for river and streams. While some have suggested incorporating arbitrary freeboard in floodplain mapping to account for uncertainty as a qualitative approach for assessing the uncertainties of flood impacts from climate change, little substantive information is available in the published literature, or in use by other jurisdictions to support this approach from a scientific perspective. Acknowledging this gap, the Flooding Hazard Climate Change Advisory and Options Report commissioned by the MNRF in 2017 also included considerations of a range of options for integrating climate change considerations to inform Ontario's flood standards.

6.1.1.3 Outdated Guidance on Floodproofing Standards

Floodproofing standards are currently addressed in the MNRF's Technical Guide – River & Stream Systems: Flooding Hazard Limit. Floodproofing information and standards identified therein are based on science and approaches from the 1980s. Floodproofing as addressed in the Technical Guide includes considerations of types of floodproofing, sound engineering practice related to construction and structural integrity, vehicular access considerations, and additional aspects related to flooding as a threat to life, including general rules regarding independent and combined functions of depth and velocity to support safe access and egress, and safe movement for most individuals in flood waters.

Work is wrapping up on an investigation and synthesis of current best practices, procedures, methodologies and technical considerations related to the field of floodproofing to protect people and property from flooding related natural hazards. This includes an evaluation of guidance presented in "Appendix 6 – Floodproofing" of the MNRF's Technical Guide – River & Stream Systems: Flooding Hazard Limit in the context of current and up-to-date protocols, procedures, methodologies and technical considerations. The evaluation will further include flooding as a threat to life to identify gaps and/or areas in the Technical Guide to highlight where the currency of the existing document would benefit from modifications and/or updates. A key deliverable is the development of considerations outlining appropriate options for updating the floodproofing guidance to support a revised Appendix 6.

Based on findings of background research and evaluation relative to the existing Technical Guide, the MNRF is considering producing a report proposing technical

information requirements, specifications and standards related to floodproofing to enhance the currency of techniques and technical considerations, and promote consistency in the application of floodproofing measures across the province.

This floodproofing review has implications for other MNRF natural hazard technical guides that refer to floodproofing (i.e. Great Lakes St. Lawrence flooding, erosion and dynamic beach) and has linkages to aspects of other policies and legislation such as the Ontario Building Code and the PPS documentation. Endorsement of newer methods could provide an additional range of options for Ontarians to manage and mitigate the impacts of flooding on dwellings.

6.1.1.4 Outdated Guidance on Hydrologic and Hydraulic Modelling

The hydrology and hydraulic chapters of the Technical Guide – River & Stream Systems: Flooding Hazard Limit are considerably dated. This includes reference to obsolete modelling software and to a lesser extent, standard practices.

The MNRF has completed initial research to identify methods and options for updating the sections associated with hydrology and hydraulics in the Technical Guide to account for technological and methodological advancements. With regards to hydrologic modelling, this includes an assessment of technologies and modelling protocols, practices and platforms for informing water level computations and flood line delineation, addressing the types of hydrologic models, model selection and calibration.

With regards to hydraulics, efforts included analyses to support improving the suitability of hydraulic analyses for estimating water levels throughout a wide range of rivers and river characteristics within Ontario. This involved guidance around choosing a hydraulic modelling technique, and direction around the use and applicability of 2-dimensional (2D) modelling, including guidance and standards for its use and interpretation. Guidance and requirements related to hydraulic model calibration, testing and sensitivity analysis were included, as were additional guidance on evaluating uncertainty in model parameters and the resulting impacts on model simulations and the associated range of error in modelled results.

While the above focus is on the riverine flooding guidance, the Great Lakes St. Lawrence and Large Inland Lakes guidance suffers from similar issues. Less effort has been placed on these documents.

6.1.1.5 Outdated Guidance on Surveying and Mapping Standards

In 1986, the MNRF adopted flood-related survey and mapping standards based on guidelines developed by the federal government under the cost shared Federal/Provincial Flood Damage Reduction Program, which ran from 1977 to 1992.

In 2002, to support municipal implementation of the PPS, the MNRF consolidated, developed and approved a series of natural hazards technical guides including the Technical Guide – River & Stream Systems: Flooding Hazard Limit.

In the Flooding Hazard Limit Guide, there is a placeholder: Section J, “Surveys and Mapping”, for new provincial direction on mapping standards and techniques.

Given the MNRF 1986 guidance is out of date, current mapping practice by municipalities and conservation authorities is to use best professional engineering judgement. Substantive advancements continue to be made rapidly in surveying and mapping standards and data acquisition, including in the areas of remote sensing, geomatics and mapping technologies and practices as discussed in other sections of this report.

With the recent release of the Federal Geomatics Guidelines for Flood Mapping, as part of the Federal Flood Mapping Guidelines Series, there is an opportunity to glean information from this document which may serve Ontario well and align, where suitable, the geospatial data requirements for flood modelling and mapping (go to <https://www.publicsafety.gc.ca/cnt/mrgnc-mngmnt/dsstr-prvntn-mtgtn/ndmp/fldpln-mppng-en.aspx>).

Updated standards are required to ensure consistency and adequacy of floodplain mapping across the province. The MNRF commissioned a review of jurisdictional surveying and mapping standards for flood mapping in 2016 and is in the process of evaluating options for updates to the appendix. A document titled: “Survey and Mapping Specifications and Standards Report” produced in 2018 for the MNRF was reviewed internally by the Ontario Public Service Elevation Coordination and Consultation Committee. This Committee brings together elevation experts from all relevant ministries and partner agencies to provide coordination and expertise on elevation data-related projects, acquisitions and issues. Feedback, technical comments and edits provided by this group are being incorporated into a final draft document, including considerations noted above related to the federal geomatics guidelines.

6.1.1.6 Other Policy or Technical Gaps

Other gaps in provincial policies and technical guidelines include:

- Lack of policy direction/technical guidance regarding drought. While the topic of drought is outside the scope of this review, it needs to be considered in the context of lowering reservoirs to capture more water and reduce the impacts of flooding, and whether a subsequent drought will prevent the reservoir from being refilled.
- Direction around the use of 2-dimensional (2D) and/or combined 1-dimensional/2-dimensional (1D/2D) hydraulic models. For example, is it necessary to consider floodplain storage in flood hazard mapping, and if so, which is the appropriate model.

Filling some of these gaps could help streamline approval processes by providing greater clarity and certainty around how to address these issues.

6.1.1.7 Limited Training, Outreach and Awareness

Limited provincial resources are currently directed towards training, outreach and awareness of the MNRF's policies, technical standards and guidelines. Such outreach is typically limited to ad hoc requests for presentations to various groups or events (e.g. annual conferences, workshops).

Limited training, outreach and awareness can contribute to misunderstanding, competing interpretations, and a lack of clarity and consistency in standards and policy requirements. Some stakeholders, including the Association of Municipalities of Ontario, have requested increased training and outreach with municipalities, developers and conservation authorities on the basis that it would help ensure services were undertaken more consistently across the province.

6.1.2 Policies, Standards, Regulations and Legislation

In her 2017 report, Ontario's Auditor General raised the following concerns:

"The provincial emergency management program does not focus on all five components of emergency management: prevention, mitigation, preparedness, response and recovery. Currently, the focus of the emergency management program in Ontario is mainly on only two of the five components—preparedness and response—with the Ministry of Municipal Affairs also undertaking activities related to recovery through the disaster financial assistance programs", (2017 Annual Report Volume 1, Office of the Auditor General of Ontario,

While these concerns apply to the province's overall approach to emergency management, they may also apply to the province's approach to flooding.

Prevention-based approaches have been repeatedly shown to be more effective in reducing the impacts of flooding and other natural hazards. As outlined within the five core components of emergency management, flood prevention relies on the use of non-structural measures, such as land use planning and permitting and building controls to keep people and property out of hazardous areas. In Ontario, land use restrictions are put in place by municipalities to prevent new or intensified development in areas prone to flooding and other natural hazards. Land use restrictions are also put in place by conservation authorities who are required to regulate development (in areas prone to natural hazards) for impacts to the control of natural hazards as set out in regulation (i.e. flooding and erosion) and for interference with a watercourse or a wetland.

While regulations and land use restrictions have been in place for a few decades in Ontario, concerns have been raised noting that these policies and associated technical requirements may not be adequately enforced and too easily ignored in response to the financial incentives or other incentives (such as infill development in historic communities) that encourage new and intensified development in or adjacent to flood-prone areas. These incentives often encourage greater reliance on tools contained within other core components of the emergency management framework, such as the use of mitigation measures (e.g. flood protection berms, floodproofing), preparedness systems (e.g. flood warning systems), and response (e.g. temporary sandbag dikes) and recovery programs (e.g. disaster assistance and/or insurance) that do not require strict adherence to a prevention-first approach to managing the impacts of flooding.

Clearly, more focus on prevention is needed, and strengthening existing policies and standards by enshrining them in legislation (or by regulation) is required.

As mentioned in Section 5.2.2, the MNRF is proposing a regulation under the *Conservation Authorities Act* that outlines how conservation authorities regulate development and other activities for impacts to the control of natural hazards and public safety. The proposed regulation will make rules for development in hazardous areas more consistent to support faster, more predictable and less costly approvals.

Recommendation #1

That the MNRF proceed as expeditiously as possible to finalize its proposed regulation under the *Conservation Authorities Act* and submit it to Cabinet for approval.

6.1.2.1 Consideration of Risk in Floodplain Management Policies

There are two main approaches to managing flooding and other natural hazards: a hazards-based approach and a risk-based approach.

A hazards-based approach focuses on determining where hazards exist and then taking steps to prevent activities from occurring in those areas. A risk-based approach focuses on determining the risks posed by natural hazards, and then taking steps to further reduce those risks to acceptable levels. In the case of flooding, a hazards-based approach seeks to delineate the floodplain and prevent development from occurring within it. A risk-based approach seeks to identify the risks associated with development in a floodplain and find ways to reduce those risks through enhanced floodproofing, flood forecasting and warning, and other measures. Adopting a risk-based approach allows individuals to proceed with a given activity (e.g. development within a floodplain) provided that sufficient measures can be put in place to keep risks as low as reasonably achievable.

While there is some support for a risk-based approach, developing and successfully rolling out a risk-based planning and/or permitting framework would be a complex and resource-intensive task requiring new provincial policy direction in several areas including defining acceptable levels of risk.

The MNRF's current approach to managing flooding and other natural hazards straddles these two approaches by taking a hazards-based approach to limiting new development and taking a risk-based approach to reduce risks associated with existing development located in hazardous areas (e.g. as with Special Policy Areas). Risk-based flexibility is also provided for development in the flood fringe in areas where the two-zone concept is applied, subject to floodproofing consistent with MNRF standards. This seems to be at odds with what some conservation authorities believe, as they have advocated for taking a risk-based approach to mitigate urban flood risk. They recommend that the Province contemplate how to incorporate a consideration of risk when updating floodplain implementation guidelines.

Recommendation #2

That the MNRF consult with the conservation authorities on their application of the hazards-based approach and the risk-based approach to managing flooding.

6.1.2.2 Provincial Policy Statement Review – Proposed Policies

Overall, I am in agreement with the existing policies under the Provincial Policy Statement (PPS) Review, in particular with Section 3.0 Protecting Public Health and Safety. This Special Advisor on Flooding report covers some of the content in the PPS Review, which is based on my review of a considerable amount of background information, what I heard while meeting with municipalities and conservation authorities, and from submissions received by municipalities, CAs and other agencies. The proposed PPS policies are supported by some of the recommendations I've made in this report, such as the need for updated technical guidelines; entrenching elements of the technical guides (such as standards) in legislation; and reviewing and updating the MNRF's technical guides to support the use of flood protection landforms.

Recommendation #3

That the following be incorporated into the Provincial Policy Statement:

- The reference to “impacts of a changing climate” throughout the Provincial Policy Statement helps to bring it to everyone’s attention and should be included in the Preamble as well.
- Either in the body of the PPS or in the definitions section, reference should be made specifically to the requirement for conservation authorities to regulate development activities in hazardous lands as required in the *Conservation Authorities Act*.
- That “d) Transportation and Infrastructure Corridors, Airports, Solid and Liquid Waste Management” be added to Section 3.1.5 of the Provincial Policy Statement.

6.1.3 Floodplain and Flood Risk Mapping

Having accurate floodplain maps help communities make efficient and effective planning decisions. The Office of the Auditor General suggests that up-to-date floodplain maps would allow municipalities to better plan for future growth in areas of low flood risk, and build infrastructure and resiliency in high-risk flood areas.

6.1.3.1 Limitations of Existing Geomatic Data and Mapping

The management of floodplains and other hazardous areas begins with their identification. Knowing the location of these areas can help streamline approval decisions and ensure areas not subject to flooding and other natural hazards can be developed.

Several issues exist associated with data and mapping used to delineate floodplains and other areas. CAs report that a large percentage of their floodplain mapping require some form of an update. This takes into consideration all elements of floodplain mapping, including the age, limitations and accuracy—not just the currency of existing mapping alone. It is important to note that particularly in areas of the province where development pressures are low, age of mapping is not necessarily an indicator that mapping is out-of-date or “outdated.”

6.1.3.2 Updates to Floodplain Data and Mapping

The cost of updating floodplain mapping can be prohibitive to municipalities and CAs, as it requires high resolution elevation data.

Recent base data acquisitions funded by the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) and in partnership with the MNRF, including the use of Light Detection and Ranging (LiDAR) technology, have significantly reduced the cost burden to CAs and municipalities associated with base data acquisition, particularly in south-central and southwestern Ontario.

Considerable work has been undertaken by municipalities and conservation authorities in the province over the last several years to update floodplain mapping with matched federal funding provided through the federal government’s competitive, merit-based National Disaster Mitigation Program (NDMP). Flood mapping was a specific funding stream of NDMP. Under NDMP, only applications related to the municipal land use planning and mitigation were eligible, and projects related to CA regulatory limit mapping to support the implementation of conservation authority regulations made under the *Conservation Authorities Act* were not eligible. The Province included a specific requirement for conservation authority proposals— that municipal support for the project be demonstrated through a letter of support from the affected municipality or municipalities (including regional governments). Furthermore, if the conservation authority planned to use a municipal levy to cover project costs, that the letter of support must also reference the municipalities support for the levy funding mechanism. By way of the letter of support, municipalities were also required to commit to the flood mapping being integrated into Official Plans to guide future development outside of flood-prone areas.

From 2015 to 2019, municipalities and conservation authorities received approximately \$9 million towards updating flood maps across Ontario, for a total investment of at least \$18 million in flood mapping.

Across all five NDMP intakes and all four funding streams, a total of \$40.58 million in federal funding was secured by Ontario applicants. Including applicant matched funding, this means that no less than \$81 million in total funding has been secured for flood-related initiatives through all five intakes of NDMP.

6.1.3.3 Expanding Regulatory Flood Lines

Many factors can contribute to the expansion of regulatory flood lines. These lines are dynamic in nature and can expand and move as development in the watershed changes, altering rainfall-runoff characteristics and associated flood generation. Land use change can contribute to larger amounts of water being more quickly delivered to streams and rivers. The larger volume of water in rivers and streams acts to expand flood lines, covering larger areas of land adjoining streams and rivers with water under the flood standard. In addition, acquisition of new and more accurate survey and mapping data combined with revised hydrologic and hydraulic modelling can result in considerable differences in the extent of regulatory flood lines between current and updated flood hazard mapping, particularly when based on full build-out projections related to a 20-year official plan.

Regulatory flood lines and associated floodplains are expanding or are expected to expand, bringing more existing development, and areas targeted for new development, into flood-prone areas. This can be particularly true in areas using a 1:100-year storm event to delineate regulatory flood lines; however, areas currently using a 1:250-year storm event (e.g. areas within the Upper Thames River watershed) are also finding significant expansions in regulatory flood lines. Areas using a regional regulatory storm (i.e. Hurricane Hazel or the Timmins Storm) are less likely to see significant increases in the size of regulated floodplains as these events have higher return periods (lower chance of occurring).

Regulatory flood lines and floodplain mapping should be updated along with updates to municipal official plans. It is important that flood hazard identification incorporated into municipal planning documents, through mapping or otherwise, reflect a full build-out condition of the upstream watershed based on the current official plan. This level of rigour is intended to provide people and property downstream a level of assurance that flood hazards are accounted for, and that the influence of future land development on flooding is considered. As this mapping is used by municipalities for land use planning purposes, mapping is generally current until the next Official Plan update and based on a (+/-) 20-year planning horizon.

Many areas of southern and southwestern Ontario have experienced and continue to experience rapid urban development. Many municipalities have been highlighting the need to update flood hazard mapping to capture the effects of land use development occurring since mapping was last completed and to use the most current data and technologies (i.e. LiDAR, 2D hydraulic modelling where appropriate, etc.).

Expansion of regulatory flood lines can be a concern for municipalities, developers and existing homeowners regarding the impacts of expanded lines on future growth opportunities, the ability to invest in and protect existing homes, and property values. To date, 73 flood mapping projects across southern Ontario have been funded by the federal National Disaster Mitigation Program (NDMP) with the aim of updating existing floodplain mapping across more than 30 municipalities. These studies could result in expanded regulatory flood lines, and associated concerns from the development community and others regarding the potential impacts of updated flood lines on existing and planned development within these municipalities.

Increased urbanization, exacerbated by the influences of a changing climate, can create a situation whereby areas that were considered to be outside of the floodplain, and managed and developed without specific consideration of the flood hazard, may be subject to a greater flood hazard and associated flood inundation. To better understand how this issue is being addressed internationally to provide context on how Ontario may approach them in the future, the MNRF commissioned a jurisdictional analysis of expanding floodplains in a policy and planning context. A scan of the literature conducted early in the project revealed that most jurisdictions have moved beyond a regulatory hazard-based approach to defining and managing regulatory flood lines, and instead now focus on managing floods in-line with a risk-based approach. Most international jurisdictions, rather than using a single likelihood of flood hazard to define flood lines and the flooding hazard limit, have transitioned to consideration of multiple likelihoods, and also of the number and type of exposed elements in the floodplain.

The project therefore focused on considerations for supporting the adoption of a risk-based management approach for riverine and lake flooding in Ontario, including approaches and opportunities for managing changing flood lines, with a view to understanding and managing flood risks in the context of Ontario's policy and planning landscape.

6.1.3.4 Technical Guidance That Governs Floodplain Mapping

While the Mapping and Geomatics Services Section of the Mapping and Information Resources Branch of the MNRF has been able to provide guidance on LiDAR acquisitions and the management of legacy datasets to other provincial agencies, recent projects under the National Disaster Mitigation Program (NDMP) have supported

LiDAR acquisitions by municipalities and CAs on a project-by-project basis. Ontario does not have defined flood survey and mapping guidance or standards available to support consistent survey data acquisition and mapping by conservation authorities, municipalities and developers. Updated technical guidance is needed to determine what level of detail is required for floodplain mapping and how these expectations may differ in rural or urban areas.

This lack of coordination has led to gaps in coverage for many areas of the province; duplication of effort; inconsistent data standards and data access; and increased costs.

Technology, tools and approaches to deliver modern digital floodplain mapping have changed since the most recent update of floodplain mapping technical and implementation guidelines was last completed in 2002. Work recently commissioned by the MNRF to develop surveying and mapping specifications, and standards for flood hazard mapping (in support of an update to the natural hazard technical guides), will make considerable headway in advancing mapping consistency across the province.

A couple of conservation authorities have reported that new technologies and approaches have been piloted or developed amongst the conservation authority community along with CA guidelines for developing new digital floodplain mapping. Case studies and CA guidelines can be provided by the CA community to assist the Province with assessing the new approaches and developing the new provincial guidelines for hazard and flood risk mapping. They have even offered secondments of CA personnel to the MNRF to help transfer knowledge and experience, and to create a collaborative approach to updating the technical guidelines.

Recommendation #4

That the MNRF update floodplain mapping technical and implementation guidelines recognizing new technology and approaches for flood hazard and flood risk mapping, and that the MNRF collaborate with conservation authorities on this initiative.

Recommendation #5

That the Province update its technical guides pertaining to floods and natural hazards. This should include undertaking a review of the flood event standards (e.g. 1%, Timmins storm, Hurricane Hazel), with a view to providing for current science and climate change, such as a specified minimum freeboard. This should also include reviewing the floodplain areas (floodway, floodway fringe, shoreline setbacks) as well as reviewing and updating, where appropriate, Great Lakes flood level values and shoreline erosion hazard methodologies and allowances.

6.1.3.5 Costs Associated with Updating Floodplain Mapping

In 2013, Conservation Ontario estimated that a one-time investment of \$24.8 million was required to update floodplain mapping and modelling in Ontario for areas where CAs have been established. A study on floodplain mapping commissioned by Public Safety Canada estimated that the costs of mapping currently unmapped floodplains in Ontario could be as high as \$119.6 million (2014). More recently, in 2017, Conservation Ontario estimated the cost of an update being approximately \$136 million; however, it is not clear if this cost only includes areas of the province where conservation authorities have been created.

The National Disaster Mitigation Program (NDMP) was an effective federal program that provided 50% funding to complete updated floodplain mapping. That program ends in March 2020. Either a new federal or provincial, or combination of a federal/provincial program could provide the necessary funding.

The federal government continues to advocate and encourage adaptation and preparedness for climate variability. One of the most practical adaptations is emergency preparedness and response plans, which help make communities more resilient to climate change. Floodplain mapping and the associated models supporting floodplain mapping are fundamental to the creation of effective emergency preparedness plans for floods. A case could be made to the federal government to fund the creation of modern digital floodplain mapping as adaptation and preparedness for climate change and severe weather events.

It has been suggested that the Province discuss the opportunity to take a strategic, multi-year, multi-agency planning approach to an extended program, in order to address known gaps in floodplain mapping. As currently established, the National Disaster Mitigation Program (NDMP) is based on interested parties applying for funding. It has also been suggested that the Province advocate to the federal government for continued funding of the NDMP or development of a successor program, recommending the end date of the program be extended for 10 years, from March 2020 to March 2030. As such, the federal government investment in floodplain mapping would help achieve its goal of encouraging adaptation in preparation for climate change and extreme weather events.

Recommendation #6

That the Province establish a working group with provincial departments, conservation authorities and municipalities to prepare a multi-year approach to floodplain mapping.

Recommendation #7

That the federal government be encouraged to extend the National Disaster Mitigation Program or develop a successor program, so that municipalities, conservation authorities, and Ontario and Quebec (in consideration of the Ottawa River) can undertake or update floodplain mapping in all critical areas.

6.1.3.6 Proposed Elevation Mapping Program

Regardless of whether the federal government extends the NDMP, there is a need to establish an Elevation Mapping Program within the MNRF's Mapping and Geomatics Services Section. This program will ensure more complete coverage of the province; centrally manage a cross-agency funding model; leverage existing multi-ministry governance and budgeting capacity of the Land Information Ontario (LIO) program; reduce total costs and bureaucracy for all provincial agencies; consider cross-discipline business requirements; allow for consistent standards to be collected; align with other provincial, state and national elevation programs (Manitoba, Quebec and New Brunswick, Canada and the United States); centrally manage elevation data procurement, quality control, data management and data distribution; and leverage staff knowledge and skills to address future changes in acquisition requirements and technology (e.g. bathymetric LiDAR).

Establishing an Elevation Mapping Program will align with current government priorities:

- Ontario's Open Data Directive by maximizing access to government data;
- Ontario's Data Integration Initiative by supporting standards for data management, and releasing non-sensitive government data to promote transparency, spur innovation and economic growth; and
- Ontario's Digital and Data Task Force driving innovation using emerging data technologies.

This program would require net-new annual funding for data acquisition and for data storage and distribution.

Recommendation #8

That the Province consider the establishment of a provincial Elevation Mapping Program and commit to the annual funding requirements.

6.1.3.7 Provincial Custodian for Floodplain Mapping Information

LiDAR data is a modern approach and an important component of producing floodplain maps. It is expensive but can be affordable if two or more agencies team up to acquire the data. The Mapping and Geomatics Services Section (MGSS) of the Mapping and Information Resources Branch of the MNRF has a multi-year program for planned topographic LiDAR data acquisitions within southern Ontario. The program is intended to assist with identification of priority areas for future data collection, and to reduce duplication of effort by identifying where data may have already been collected or is planned to be collected by other government agencies.

Engagement with municipal, conservation authorities, and provincial and federal agencies has identified that flood mapping information (geospatial data, reports, and flood maps) created through the historic Federal Damage Reduction Program (FDRP) and National Disaster Mitigation Program (NDMP) projects are not seamlessly and centrally managed or accessible. On the latter point, some mapping has been acquired on the vendor's condition of restricted access only by the client.

The lack of a consolidated data management solution for flood mapping data is resulting in: 1) inability for provincial programs to incorporate data into their operations, including emergency management and response; 2) increased risk of data loss; 3) inconsistent data standards; and 4) inability to reference the data for LiDAR acquisition planning. Accordingly, there is a need to identify a provincial custodian for flood mapping information in order to clarify data ownership; determine requirements for data management, storage and access; and leverage Land Information Ontario's existing geospatial infrastructure to support data maintenance, access and dissemination at minimized costs.

If a single provincial custodian is to be established, consideration would need to be made for ownership (intellectual property) of the flood mapping information, as it is mainly held by municipalities. Policy, regulations and legislation would likely need to be updated to identify a requirement for all provincial agencies to provide flood mapping information up to the provincial custodian. Some municipalities and CAs are moving to new Open Data standards and publishing regulatory flood lines on their websites. Policy, regulations and legislation would also likely need to be updated to require that floodplain maps produced at the local level are provided to and integrated into a common provincial floodplain map repository.

Recommendation #9

That the Province consider establishing a provincial custodian for floodplain mapping information and make the necessary updates to policies, regulations and legislation.

6.1.4 Roles and Responsibilities

Several different agencies share roles and responsibilities for the management of flooding and other natural hazards. The reality is that some prevention, mitigation, preparedness and response roles have to be shared between municipalities and multiple ministries by nature of the services they provide.

However, it was pointed out at some of the municipal engagement sessions, that when roles and responsibilities are shared amongst several different agencies, it diffuses control, expertise, and ultimate decision-making and accountability among the agencies.

6.1.4.1 Unclear Roles in Emergency Management

Chapter 3 of the 2017 Auditor General's Annual report raised concerns regarding the current governance structure for emergency management noting that:

“The current governance structure for emergency management in Ontario is not effective for overseeing a province-wide program. Oversight of emergency management in Ontario is the responsibility of the Cabinet Committee on Emergency Management. However, this committee has not met for several years. Concerns about the overall oversight of emergency management in the province were brought to the government’s attention as far back as 2005 in an internal review report, Emergency Management Processes in the Ontario Public Service. The report concluded: At the enterprise level, processes are not currently sufficient to ensure that Ontarians and the resources of the Province are adequately protected against emergencies and disasters.” (2017 Annual Report Volume 1, Office of the Auditor General of Ontario, http://www.auditor.on.ca/en/content/annualreports/arreports/en17/v1_304en17.pdf).

While the report focused on the broader umbrella of emergency management, similar concerns could apply specifically to the management of flooding and other natural hazards.

The Office of the Fire Marshall and Emergency Management (OFMEM) within the Ministry of the Solicitor General is taking action to address the Auditor General’s

recommendations and other reviews. Following is a summary of some of the initiatives planned or currently underway:

- AG recommendation to strengthen Emergency Management and Oversight – Emergency Management Ontario (EMO) will establish inter-ministerial and a multi-level governance framework (e.g. Cabinet Committee on Emergency Management) to support decision-making, collaboration and information sharing.
- AG recommendation to update all risk assessments and response plans – EMO to review existing provincial risk assessments and the provincial emergency response plan; and re-establish province-wide Continuity of Operations Program and directly support development of municipal continuity programs.

Recommendation #10

That the Ministry of the Solicitor General implement the Auditor General's recommendations regarding a governance framework for emergency management and updating continuity of operations programs as soon as possible

6.1.4.2 Unclear Roles and Responsibilities for Identifying Hazardous Areas

While the MNRF generally takes the position that municipalities are exclusively responsible for identifying hazardous areas, provincial policy is unclear and at times contradictory, and has created some confusion over who is responsible for identifying hazardous areas.

The Emergency Management and Civil Protection Act, 2009 (EMCPA) requires both provincial ministries and municipalities to identify and assess the various hazards and risks to public safety that could give rise to emergencies.

Section 2.1(3) regarding municipalities states: "In developing its emergency management program, every municipality shall identify and assess the various hazards and risks to public safety that could give rise to emergencies and identify the facilities and other elements of the infrastructure that are at risk of being affected by emergencies." 2002, c.14, s.4.

Section 5.1(2) regarding provincial ministries states: "In developing an emergency management program, every minister of the Crown and every designated agency, board, commission and other branch of government shall identify and assess the various hazards and risks to public safety that could give rise to emergencies and identify the facilities and other elements of the

infrastructure for which the minister or agency, board, commission or branch is responsible that are at risk of being affected by emergencies.”

Provincial guidelines direct municipalities to identify floodplains and other hazardous lands to incorporate these areas into their Official Plans, plan amendments, zoning bylaws and associated approvals. Municipal planning authorities, under Section 3 of the PPS (2014), are to direct development to areas outside of hazardous lands (including the floodplain identified by the limit of the flooding hazard). As per the preface of the MNRF’s Technical Guide – River and Stream Systems: Flooding Hazard Limit (2002), the Province has empowered municipalities to assume responsibilities for the management of flood risk areas, and the associated liability and the risk relative to planning for new land uses in and around these areas.

Conservation authorities also invest with provincial and municipal funding in identifying hazardous areas for carrying out their delegated role in reviewing municipal planning documents for consistency with the PPS and to support administering their regulation. While the MNRF is responsible for identifying hazardous areas in areas where no municipalities or CAs have been established, some municipalities advocate that this responsibility should extend to any area where a CA has not been established and that expecting municipalities to identify hazardous areas places an unrealistic burden on small, rural municipalities.

Municipalities can choose to rely on the services of CAs to undertake floodplain mapping but are not required to do so. While some municipalities and conservation authorities partner together to create maps, others do not. In these cases, municipalities contract consulting engineering firms to complete the floodplain mapping work, as do CAs in some instances.

Recommendation #11

That the Province consider whether the *Emergency Management and Civil Protection Act* needs to be amended with a view to clarifying roles and responsibilities of identifying hazardous areas.

Recommendation #12

That the MNRF consider working with Conservation Ontario and the Association of Municipalities of Ontario to determine how the experience and information developed by municipalities and conservation authorities of identifying hazardous areas can be transferred to municipalities without a conservation authority.

6.1.4.3 Conflicting Policy Direction and Technical Advice

Shared roles and responsibilities can lead to conflicts over provincial policy direction when multiple agencies have differing perspectives on a given issue, and where other agencies are creating and disseminating guidance materials that are not consistent with MNRF endorsed policy or technical guidelines.

The MNRF provides policy direction and technical guidelines to municipalities and conservation authorities to support their planning and regulatory roles. Many CAs have their own policies in place that, at times, are used to supersede or are seen to contradict provincial policy and technical guidelines.

Some conservation authorities and municipalities view technical guidance provided by the MNRF as simply guidance to be used by engineers and other professionals to help guide their decisions, and allowing them to apply their own policies or professional judgement to decide.

Additional technical guidelines concerning the management of flooding and other natural hazards, although not necessarily provincially endorsed are also prepared and released by academia, the Standards Council of Canada, and the National Research Council.

There is no specific recommendation to deal with this issue as other recommendations provided in this report, such as enshrining flood hazard policies and technical standards in legislation, if adopted, should take care of the conflicting policy direction and technical advice.

6.1.4.4 Conflicts Between Planning and Permitting Decisions

While municipal planning and conservation authority permitting processes are related, they are distinct processes with distinct requirements.

Differences between planning and permitting requirements were noted by some stakeholders as causing conflicts between regulatory and municipal planning decisions. Some stakeholders commenting during the review questioned the ability of a CA to refuse an approval for projects previously approved under the *Planning Act*. Similar concerns have been raised regarding the pressures placed on municipalities, the Province and CAs in balancing growth and the management of hazards, particularly in municipalities with very specific growth targets.

Recommendation #13

That the Province consider legislative amendments that clarify the permissions under the *Conservation Authority Act* and the land use approvals in accordance with the *Planning Act* as they relate to development in hazardous areas.

6.1.4.5 Perceived Conflicts of Interest

Municipalities are ultimately responsible for making local planning decisions. Some stakeholders have raised concerns that this creates a conflict of interest for municipalities, as there is a perceived financial incentive not to limit development in areas prone to flooding and other natural hazards, despite potential future recovery and relief costs.

Some sectors have raised concerns that members of a conservation authority, who are primarily municipal officials, were pressured to approve projects that are deemed to be “in the interest of” municipalities, and that the lack of clarity and consistency in requirements made it difficult for a CA to say no to proposals that member municipalities want, particularly if they feel as though that decision may risk future funding.

Again, there is no specific recommendation to deal with this issue as other recommendations provided in this report, such as enshrining flood hazard policies and technical standards in legislation, if adopted, should take care of the perceived conflict of interest.

6.1.4.6 Role of the Provincial One Window Planning Service

The provincial One Window Planning Service is the organizational structure and process established to support the move to a policy-led land use planning system. It entails the Ministry of Municipal Affairs and Housing (MMAH), in consultation with partner ministries and, where applicable, conservation authorities under their MNRF delegated role, providing municipalities, planning boards, development applicants and the public with “one-stop” access for provincial land use planning services, with a focus on where MMAH exercises its statutory functions under the *Planning Act*.

Under the provincial One Window Protocol and an associated memorandum of understanding, MMAH consults with conservation authorities regarding natural hazard impacts of policy and development proposals for which it is the decision maker. Where no conservation authority has been established, the MNRF undertakes this review. Municipal planning documents approved by MMAH include all upper-tier and single-tier Official Plans (OPs), and some upper-tier and single-tier Official Plan Amendments

(OPAs). MMAH is also the decision-maker for applications from territory without municipal organization where there is no planning board. Under the provincial One Window Protocol, the Minister of Municipal Affairs and Housing is the only provincial minister who can appeal municipal planning decisions to the Local Planning Appeal Tribunal. In some circumstances, public bodies, including conservation authorities, that provided comments before a municipal decision was made can also appeal municipal planning decisions.

6.1.4.7 The Federal Government

The release of the Federal Flood Mapping Guideline Series has created confusion on the flood modelling and mapping landscape of Ontario and other provinces/territories, related to roles and responsibilities between the provinces and the federal government. The incorrect assumption among some practitioners is that the federal “guidelines” supersede those of the province. However, this series of federal documents does not replace or supersede any provincial legislation, technical standards, policy or assigned roles and responsibilities of provincial and municipal governments and their agencies in natural hazard management and mitigation. The development and implementation of flood management legislation, regulation, standards, policy and flood mitigation measures is primarily a provincial/territorial responsibility.

The federal government may intend these federal guidelines as a basis for further specification as defined by a province. However, Ontario already has its “specifications” and will adopt what is pertinent to the province, through any subsequent updates that the MNRF makes to existing guidance. The overall confusion which seems to be exacerbated by each subsequent federal guideline release has resulted in engineering staff in MNRF’s regional offices needing to reaffirm the precedence of the MNRF’s natural hazard technical guides when working with proponents and consultants.

6.1.4.8 Provincial Watchdog

In many jurisdictions, there is a “provincial watchdog” role by a minister over a specific subject, area or discipline. The Ontario *Great Lakes Protection Act* legislative framework is a good example of what new legislation could be considered by the Province to improve the existing flood policy framework. As examples, the legislation could:

- Establish a lead minister for all flood related policy, standards, regulations and legislation.

- Establish the Minister of Natural Resources and Forestry, as the lead Minister given that the MNRF is already lead administrative ministry having overall government responsibility for hazard management policies/ programs.
- Direct that the Minister of Natural Resources and Forestry to work with the ministers responsible for the other Acts that touch on flooding (as identified in Section 5.2) on issues raised above and re-listed here:
 - Clarifying roles in emergency management;
 - Clarifying roles and responsibilities for identifying hazardous areas;
 - Clarifying policies;
 - Clarifying technical advice;
 - Eliminating conflicts between planning and permitting decisions;
 - Eliminating conflicts of interest;
 - Reviewing the role of the provincial One Window Planning Service and the appeal mechanism; and
 - Reinforcing that provincial guides, standards, etc., take precedence.
- Provide the lead minister with the authority to amend flood hazard related planning policies.
- Provide the lead minister with the authority to direct public bodies (including other ministries, municipalities, CAs, etc.) to carry out defined actions.

Recommendation #14

That the Province consider new legislation to improve the existing flood policy framework by having a lead minister responsible for all flood-related policy, standards, regulations and legislation.

6.1.4.9 Lack of Awareness of Property Owners

Often when floodplain properties are sold the seller isn't aware of, or doesn't openly disclose, the fact that the property is located in the floodplain nor the risk of flooding that is associated with the property. Disclosure is not required during real estate transactions. However, it was reported that financial institutions are now looking at the risk of providing mortgages to flood risk properties, and some real estate agents are disclosing the risk to protect their own liability. Even if this was being done everywhere,

it is too late in the process and potential home buyers should know up front before making an offer and applying for a mortgage.

Recommendation #15

That the Province consider adopting legislation that will require flood risk properties to be identified in some way that is publicly accessible, at the very least on the property title, to ensure that prospective buyers are aware.

6.2 Mitigation

As Ontario metropolitan areas continue to grow, they face increasing pressures to develop—by growing outward, through the construction of new communities at the urban fringe, and growing upward, by accommodating more residents in existing urban areas. Provincial policies such as those contained within “Growth Plan for the Greater Golden Horseshoe” (2006) as well as within the Provincial Policy Statement, include density targets and other policies designed to limit outward growth and the creation of urban sprawl, and to promote greater densification and infill development within existing built-up areas.

Across larger scales, limiting sprawl helps to mitigate increased flooding caused by development by maintaining natural and pervious surfaces within a watershed that help to reduce and slow stormwater runoff. At the same time, targets for increased densification and infill development places additional pressure on municipalities to utilize currently undeveloped areas in existing settlement areas, including floodplains and other hazardous areas, and increase densities in already developed areas that are located in hazardous areas due to historic settlement patterns, such as designated Special Policy Areas. In some instances, urban areas targeted for further intensification and growth may be partially, or wholly, within flood-prone areas.

6.2.1 Great Lakes/St. Lawrence River Shorelines

As discussed in Sections 4.6 and 4.7, the shorelines of the Great Lakes and the St. Lawrence River have and continue to be significantly impacted by very high lake levels and erosion.

It would be ideal if everyone lived, carried on a business or installed infrastructure (roads, water, sewer, etc.) far away from the edge of the shoreline, as shoreline erosion is a natural event, and occurs under both high and low water situations and in between. However, legacy development and conversions of quaint little cottages into primary residences has resulted in a very large number of properties being at risk. This is

exacerbated by the fact that there are neighborhoods with ground elevations below the shoreline and the current lake level.

Mitigation of shoreline erosion is a very complicated challenge. For areas of intense development, the common mitigation option is shoreline protection, such as dikes, erosion protection and shoreline stabilization. There are many different examples of these structures that exist today and some are more resilient than others. Of course, removing or moving structures further away from the shoreline is another option.

These mitigative measures are extremely expensive and sometimes can't protect to the water levels seen recently. Property owners are responsible for covering the cost of these works on private property, which is the same in many jurisdictions across Canada.

In Ontario (and similarly in other jurisdictions), municipalities may consider using local improvement charges (see Ontario Regulation 586/06 under the Municipal Act, 2001) to: first, assist with the construction and financing of a shoreline protection project for a group of private property owners (that may provide economy of scale for the design and construction of the works); and second, imposing a local improvement charge which may help make the financial commitment of the overall cost of the shoreline protection works on their property easier for the private property owner by spreading it out over 20 years or more.

Further, in the case of low-lying neighborhoods inland that rely on the protection works, the municipality could consider if charges might be included as part of the calculation of a larger benefitting area and therefore the cost of the works might be spread out among all benefitting properties, and not just the properties along the shoreline.

In my review of Ontario statutes, I discovered a piece of older legislation that is not currently used titled: *The Shoreline Property Assistance Act*. Under this legislation, the province may offer a Shoreline Property Assistance Program under which municipalities may issue debentures (subsequently purchased by the Treasurer of Ontario) to fund loans to private property owners to construct works such as retaining walls, dikes, breakwaters, groynes, cribs and other structures for the rehabilitation or protection of shorelines, including repairs and improvements to existing works. The funds may also be used by private property owners for raising, relocation or repairs to buildings. The Shoreline Property Assistance Program was cancelled by the Province in 2010 and not currently available to municipalities.

Municipalities may still consider offering loans to private property owners. One municipality in southwestern Ontario, the Town of Essex, has recently approved a new loan program for shoreline residents.

Recommendation #16

That municipalities consider utilizing local improvement charges to help finance and install (or upgrade) shoreline protection works, and if necessary, that the Province provide municipalities with enhanced authority to do so.

6.2.2 Ottawa River

6.2.2.1 Meteorological and Hydrological Conditions

The meteorological and hydrological conditions during the spring freshet period in the Ottawa River basin can vary widely and the inability to forecast, with any precision, mid-to-long term conditions presents an ongoing challenge. The storage capacity within the basin is finite and the goal of integrated management of the reservoirs is to effectively apply the use of reservoir storage to reduce downstream flows at the most critical periods of spring flooding. The appropriate use of the available storage is typically applied by reducing reservoir discharges during the periods when flows from the uncontrolled sectors of the basin are high (first peak) and then increasing discharges as this flow in the lower tributaries begins to decrease. The challenge then becomes one of increasing reservoir discharges, to prevent overfilling the storage reservoirs, but at the same time not causing downstream flow to exceed the initial peak.

Due to the topography of the Ottawa River basin, the use of reservoir storage in the upper part of the river has an exaggerated effect on reducing the first peak in the upper sections of the river (Mattawa-Pembroke) because of their proximity to the reservoirs. In years where the spring runoff in Abitibi-Timiskaming greatly exceeds the storage capacity of the principal reservoirs, a second peak along the lower river reach can occur. The area of the highest constriction on the river is below Pembroke in the Westmeath/Lac Coulonge area, and the effective use of reservoir storage in the Abitibi-Timiskaming area can be seen by two peaks that are close in size but both significantly lowered due to the use of reservoir storage. The basin topography and use of reservoir storage then often results in a second peak that is lower in the southern sections of the basin but higher in the more northerly sectors even though under natural conditions, without reservoir storage, the first peak would have been higher throughout. These are broad operational strategies that are impacted by the specific meteorological and hydrological conditions that vary significantly from year to year.

The uncontrolled/unregulated portion of the drainage basin contributed significantly to the flooding in both the 2017 and 2019 floods. For instance, in 2019, the Water Survey of Canada streamflow gauge on the Petawawa River, in operation since 1915, experienced its highest flow on record in April 2019, with a peak flow 46% higher than

its previous historic peak value recorded in April 1995. An analysis of flood magnitudes in the absence of existing water management structures and reservoirs (which regulate the other 40% of the drainage basin) was undertaken by the Ottawa River Regulation Planning Board following the 2017 flood. For example, results showed that under the 2017 flood at Lac Deschenes, water levels would have been approximately one metre higher had there been no dams or reservoirs within the Ottawa River drainage basin.

6.2.2.2 Existing Development in the Floodplain and Floodway

Many areas affected by flooding in 2019 (and 2017) were legacy development or development that predates Ontario's floodplain planning policies. Some of the more significantly affected areas in the vicinity of Westmeath, Rhoddy's Bay, Braeside and Constance Bay, among other areas, are generally situated within the floodplain of the Ottawa River under the 1% flood (pursuant to mapping prepared under the Canada-Ontario Flood Damage Reduction Program during the 1980s and early 1990s) and updated mapping completed by the municipalities and or a conservation authority (where available). Many of these areas are also mapped to be in the floodway, where flood depths exceed one metre and/or flow velocities above one metre per second can create significant hazards for developments.

Many of the dwellings that dot the landscape along the Ottawa River in the above noted villages and hamlets were once modest camps that were transitioned into seasonal cottages, and now many exist as permanent year-round residences. Significant investments have been made to these residences throughout the years; however, for the most part they are not flood proofed to the flood standard (1% flood).

While clearly unfortunate, it was not a surprise to see in person that many of the areas affected by flooding were very close to the river and there was a relatively small difference in elevation between the foundations (main floors) of many residences and the elevation of the river under normal water conditions in early September 2019. A tour of some areas provided evidence that some property owners were already in the process of raising their residences to a higher level and possibly some included moving their structures further from the river's edge.

Recommendations in other sections of this report can also apply to this section on the Ottawa River.

6.2.3 Riverine, Lake

6.2.3.1 Maintaining Wetlands and Pervious Surfaces

Estimates suggest that 68% of the wetlands originally present in southern Ontario were lost by the early 1980s (State of Ontario's Biodiversity Report, 2010). An additional 4% has been lost since this time (State of Ontario's Biodiversity Report, 2015). However, a recent assessment has shown that the rate of loss appears to be decreasing (State of Ontario's Biodiversity Report, 2015). While land conversion is the primary cause of wetland loss in southern Ontario, pollution, invasive species, alteration to natural water levels, and climate change also pose serious threats.

Ontario's Great Lakes coastal wetlands have experienced similar historical losses and degradation over the past 200 years. It is estimated that by 1984, 35% of wetlands along the Canadian shores of Lakes Erie, Ontario and St. Clair had been lost, with the greatest losses occurring between Toronto and the Niagara River. Loss and degradation continue today, largely resulting from shoreline alteration, water level control, nutrient and sediment loading, invasive species, dredging and development. Upstream land use practices also have an impact, particularly through runoff from urban and industrial development, agricultural lands and impervious surfaces. Despite some localized loss and degradation, wetlands in the northern part of Ontario (Hudson Bay Lowlands and Ontario Shield ecozones) remain largely intact.

Wetlands act as natural stormwater management ponds, slowing the speed of flood waters and storing large quantities of surface water. Maintaining, restoring or constructing wetlands can be a cost-effective way of reducing flood risks and associated costs. A study commissioned in part by the MNRF in 2017 found that maintaining wetlands can reduce flood damages and costs by 29% in rural areas and by 38% in urban areas. The Insurance Bureau of Canada (IBC) has also recently issued a report documenting the ability of wetlands to reduce flood damages, and promoting wetlands and other natural infrastructure as "a viable alternative to grey infrastructure option[s] for flood mitigation" and "a cost-effective way to mitigate material financial losses that would otherwise result from flooding." (Combatting Canada's Rising Flood Costs, September, 2018: <http://assets.ibc.ca/Documents/Resources/IBC-Natural-Infrastructure-Report-2018.pdf>).

Recommendation #17

That the Province support municipalities and conservation authorities to ensure the conservation, restoration and creation of natural green infrastructure (i.e. wetlands, forest cover, pervious surfaces) during land use planning to reduce runoff and mitigate the impacts of flooding.

6.2.3.2 North Bay/Mattawa Area

As discussed in Section 4.2, there are two distinct watersheds in the MNRF North Bay District—the Sturgeon-Nipissing-French and the Upper Ottawa River. In the engagement session, it was quite apparent from representatives from both areas, that each area had their own distinct experience through the spring freshet.

In general, there was much more collaboration between all interested parties in the Sturgeon-Nipissing-French area, and although difficult decisions needed to be made regarding what area would see more water and when, at the end of the day everyone had the opportunity for input, everyone was well informed of the situations in the entire watershed, and everyone signed off on the final decisions. This resulted in a successful outcome in the sense that they did the best they possibly could in a bad situation.

Recommendation #18

That the MNRF North Bay District facilitate a meeting between the Sturgeon-Nipissing-French watershed group and the Upper Ottawa River Watershed group to help the latter group establish a collaborative arrangement for future flood events. It is important that all parties involved in the flood be present at the meeting.

Also as discussed in Section 4.2, the City of North Bay undertook a contingency plan to protect the wastewater treatment plant. However, if Lake Nipissing had reached a critical elevation, the wastewater treatment capabilities would have been severely limited, and there was no ability to bypass the plant and temporarily discharge (during the extreme flood event scenario) directly to the lake, which meant that a huge area of the City of North Bay would experience sewer backup and a few thousand residents would have needed to be evacuated.

Recommendation #19

That the City of North Bay in particular, and any other municipalities in a similar situation, install appropriate treatment plant bypass piping to improve resiliency of key infrastructure and limit the impacts of flooding on this infrastructure and associated impacts to public health and safety.

Based on their experience with the 2019 flood, but also events in previous years, the North Bay/Mattawa session participants suggested that the Lake Nipissing operational guidelines be reviewed.

Recommendation #20

That the Province, the federal government (Public Service and Procurement Canada) and the North Bay-Mattawa Conservation Authority review the Lake Nipissing Operational Guidelines.

6.2.3.3 The Muskoka/Magnetawan Rivers/Lakes

The Muskoka and Magnetawan Rivers are both complex systems with many factors impacting water levels, including physical geography, rainfall, snowpack and temperatures. They are both cascading systems and both originate on the western slopes of Algonquin Provincial Park. Dam operations are guided by the Muskoka Water Management Plan and Dam Operations Manual, and the Magnetawan Dam Operations Manual. There are no conservation authorities in either watershed, meaning the MNRF Parry Sound District Office and other dam owners are responsible for water management operations.

The public and residents have high expectations that the dam operations will maintain relatively static water levels and prevent floods. However, the dams are not flood control structures and have very limited capacity to store or hold back flood waters, as they have little to no lake or reservoir capacity. As a result, in a large volume, rapid runoff flood, the dams have limited capacity to reduce peak water levels. The greater the flood event, the less ability the MNRF/dam operators have to mitigate the impacts.

The dams were originally constructed to facilitate the transport of logs to sawmills and aid in commercial navigation. Over time, the operational emphasis has evolved from commerce and transportation to the provision of a balance of social/recreational, environmental and economic interests. To meet these interests, and to the extent possible, the MNRF operates the dams to maintain water levels within ranges identified in the established dam operating plan. These plans were formalized in the Water

Management Plans, and are based on normal conditions. The general public and stakeholders have been critical of how the dams are operated, not only with high water conditions but low water conditions as well.

Recommendation #21

That the MNRF establish a communication protocol to inform and involve key stakeholders (i.e. municipalities) on watershed conditions and operations throughout the fall and winter leading into and throughout the spring freshet, commencing in early 2020.

While there is growing development along the shorelines within the Magnetawan River watershed, there is significant development along the shorelines within the Muskoka River watershed. Accordingly, there is keen interest from local stakeholders and municipalities in the Muskoka River Water Management Plan.

In August 2018, the Province announced a \$5 million Muskoka Watershed Conservation and Management Initiative to better identify risks and issues facing the Muskoka Region. The government also committed to matching tax-deductible donations up to an additional \$5 million. By protecting this particular watershed and working with the local community, this initiative will help the Province develop a comprehensive approach to watershed management, which can inform current actions and future development.

On August 7, 2019, the Minister of Environment, Conservation and Parks announced the appointment of nine members to the Muskoka Watershed Advisory Group. The Advisory Group is tasked with providing advice and recommendations to the Minister on measures to protect the health of the watershed and support the economic growth in the region. An effective watershed management approach is important to the residents of the Muskoka, especially as the watershed faces pressures and stresses from increased development, increasing contaminants and nutrient loads, and intense and frequent flooding caused by extreme weather events.

Recommendation #22

That the Ministry of Environment, Conservation and Parks (MECP) use the results of the Muskoka Watershed Conservation and Management Initiative to inform any potential future amendments to the Muskoka River Water Management Plan by working with the Ministry of Natural Resources and Forestry, and in the meantime, that the MECP consider whether to encourage the municipalities to establish a conservation authority or request the Ministry of Municipal Affairs and Housing to restrict development in the floodplains (e.g. Ministerial Order).

6.2.3.4 County of Haliburton/Trent Severn Waterway

Haliburton County is a large geographic area with multiple municipalities and infrastructure jurisdictions, including the Trent Severn Waterway (Parks Canada), the Province of Ontario (Ministry of Transportation, MNRF), the Crowe Valley Conservation Authority, the County of Haliburton, and the four local municipalities of Algonquin Highlands (Dysart et al, Highlands East and Minden Hills). This situation is somewhat unique with the number of watersheds and federal dams.

Six watersheds are represented in Haliburton County, but the majority of the County is located outside the jurisdiction of a conservation authority. The municipality of Highlands East is located within the jurisdiction of the Crowe Valley Conservation Authority.

Water originating in Haliburton County supplies water to the Trent Severn Canal but also for 47 downstream drinking water systems for communities such as Bobcaygeon Fenelon Falls, Lindsay, Peterborough and Trenton. There are 28 Trent-Severn Waterway (TSW) controlled dams above the village of Minden and the agency leads its own processes associated with dam operations and water level management. During high water conditions and flooding, TSW convenes conference calls to advise the MNRF and conservation authorities of current and predicted short-term dam operations strategies. Within the area, the MNRF operates four dams with specific operation plans, but these are operated in conjunction and collaboration with TSW operations.

As a result of the Haliburton County experiences with flooding over the last few years, there are now regular “spring freshet” conference calls held by staff of the MNRF and Trent-Severn Waterway, along with elected officials and administrative officials from emergency services, public works, etc. This collaboration has been reported as a success for helping disseminate information to the front-line people working to combat the flooding impacts, including municipal staff, conservation authority staff and the public.

A collaborative agency called the Upper Trent Water Management Partnership (UTWMP) was formed among the municipalities of Algonquin Highlands, Dysart et al, Minden Hills, Highlands East, North Kawartha, Trent Lakes, and the Coalition for Equitable Water Flow. The mission of UTWMP is to speak as a single voice for all stakeholders on water management issues affecting the reservoir and flow-through lakes, and to provide local water management leadership.

The County has partnered with Trent Severn Waterway, Kawartha Region Conservation Authority, Ganaraska Region Conservation Authority, and the Upper Trent Water Management Partnership to form a steering committee to oversee the completion of LiDAR, hydrology and mapping.

The County was successful in receiving National Disaster Mitigation Program (NDMP) funding for airborne LiDAR survey data for the Burnt and Gull River Watersheds; however, additional funding to complete data analysis, hydrologic and hydraulic models and floodplain maps was denied as this work wouldn't be complete before the program end date of March 2020. It is the intent of the County to apply for funding to complete this work if the program is extended.

Recommendation #23

That Haliburton County document how their collaborative model worked for the 2019 flood and share this information with, and for the benefit of, other counties, municipalities and conservation authorities.

6.2.3.5 Southwestern Ontario

As mentioned in Section 6.2.1 above, the shorelines of the Great Lakes and the St. Lawrence River have and continue to be significantly impacted by very high lake levels and erosion. The focus in that section is mainly on mitigation methods using typical infrastructure solutions and associated funding mechanisms. However, municipalities are looking for bigger picture solutions as they acknowledge that these are not affordable.

The municipalities and conservation authorities in southwestern Ontario held a Roundtable Information meeting on September 19, 2019, in London, Ontario. The meeting was attended (in person or by phone) by municipalities (Chatham-Kent, Leamington, Windsor, Essex, Kingsville, Tecumseh, Pelee Island, Amherstburg, LaSalle, Elgin), conservation authorities (Lower Thames, Essex Region, St. Clair Region, and Kettle Creek), provincial departments, federal departments, the Great

Lakes St. Lawrence Collaborative and Zuzek, Inc. (consultant). A summary from the meeting resulted in the following statements:

High water levels and floods of 2019 must be viewed as a warning/wake up call. Change is needed – maintaining the status quo in policy and practice cannot continue. Municipalities cannot afford the infrastructure problems our current development approach creates, let alone future costs associated with climate change. There is an opportunity for the Provincial Government to work with Conservation Authorities and the Federal Government to lead a revolution on shoreline management. The shorelines, the ecosystems they support, the biodiversity, and ecosystem goods and services are simply too valuable to treat them like undeveloped subdivisions.

The Roundtable also resulted in a number of recommendations, some of which have been captured in other areas of this report, but I am highlighting one here:

Recommendation #24

That the provincial, federal and municipal governments work with the Essex Region Conservation Authority and the Lower Thames Valley Conservation Authority to undertake a coordinated short- and long-term strategy to address the existing and expected impacts to Chatham-Kent, Windsor-Essex and Pelee Island as a result of current and future water levels, flood and erosion hazards, and climate change on Lake Erie, Lake St. Clair and the Detroit River.

6.2.3.6 Flood Protection Land Forms

Some municipalities are considering the use of “flood protection landforms” to open hazardous areas up to new or intensified development. This is the approach currently being taken by the City of Toronto to open lands east of the Don River to development—a \$1.25 billion development project supported by all three levels of government. The approach taken was permitted as a “one-off” and represents a considerable deviation from the MNR’s natural hazard technical guides and the Provincial Policy Statement, as documented in a protocol signed by the City of Toronto, the Ministry of Municipal Affairs and Housing and the MNR.

Existing ministry policies do not support using flood protection landforms to open new areas for development. Specifically, the MNR’s Technical Guide – River and Stream Systems: Flooding Hazard Limit (2002) does not support the use of flood protection landforms (e.g. berms, dikes, flood walls, and other such structural methods) as permanent flood control structures or to facilitate development in hazardous areas.

Flood protection landforms can result in increases in upstream flood levels, increases in downstream flows and increases in downstream velocities. The construction of flood protection landforms can create new or aggravate existing hazards and would therefore not be consistent with Section 3.0 of the Provincial Policy Statement. Flood protection landforms and other structural measures can be overtopped making flooding worse, and they often inspire a false sense of security thereby encouraging further development in hazardous areas. Structural measures are associated with high costs, during construction and in perpetuity afterwards. Inspection, certification, maintenance, operation and repair are ongoing, often unaffordable for local communities. New construction adds to the existing municipal infrastructure deficit.

Increasing development pressures and high-profile projects, such as the Lower Don Development project, is forcing the Ministry to defend its current approach to hazard management and how best to balance the use of prevention versus protection to manage flooding and other natural hazards.

While prevention-based approaches have been repeatedly shown to be more effective in reducing the impacts of flooding and other natural hazards, flood protection landforms do have a role to play in certain situations, and the approach taken to develop the lower Don area is an excellent example. The value of the proposed real estate development has justified the great expense of ensuring that all the issues and concerns of a permanent landform and the intense development behind it in the floodplain were appropriately dealt with, including being adaptive to climate change by building higher than the design flood. While flooding will always be potentially a risk, the risk has been reduced.

There is a strong possibility that the protocol for the lower Don area and the City of Toronto's flood protection infrastructure projects will set a precedent for other areas in the province. To ensure that developers, municipalities and conservation authorities adhere to strict requirements and conditions to permit such a development in the hazard lands, this new category, the requirements and conditions should all be enshrined in legislation (regulation).

Recommendation #25

That the MNRF review and update the appropriate technical guides, with consideration of a new category permitting development in hazardous lands along large inland lakes, rivers and streams, and along the Great Lakes/St. Lawrence River, utilizing flood protection land forms and/or other forms of flood protection and floodproofing methods with very strict requirements and conditions. Further, consideration should be given to enshrining this concept in legislation or in a regulation along with other structural methods that are now permitted in non-hazard lands or Special Policy Areas.

6.2.4 Urban/Flash Flooding (Pluvial Flooding)

There are many examples of pluvial flooding in urban areas that have resulted in major disruptions of service and significant impacts on property, businesses, homes and people.

This type of flooding occurs during heavy rainfall events independent of an overflowing river or stream. The ground cannot absorb the water as quickly as it falls, especially in urban areas with a lot of hard surfaces like pavement. Drainage systems (such as human-made and natural channels, roadways, storm and combined sewers) can quickly become overwhelmed, causing water to pond in parking lots, flow into streets and nearby homes and structures, or back up into basements.

Floodplain mapping is not really practical, as overland and sewer flooding can occur anywhere in the urban area. This is partly because of the spatial variability of the “eye” of the rainstorm, but also due to the local topography, unique development (legacy and new), and the type of drainage systems in each neighborhood.

Challenges with pluvial flooding include increased imperviousness over time; inadequate surface drainage plan; private property being lower than the streets (either the grade at the house or reverse slope driveways); reliance on storms sewers that are designed for smaller rainstorm events; sedimentation of channels and sewers; blocked culverts or curb inlets; inflow and infiltration; sewer and channel design capacity limitations in older neighborhoods; deteriorated sewers; reduced sewer or wastewater treatment plant capacity due to high water levels in the receiving stream (and lack of proper gates); and failures of pumping stations or wastewater treatment plants.

There is a substantial difference between managing floods in newer greenfield development and historically developed areas, and some of the latter areas are subject to intensification or infill development pressures. In the greenfield areas, non-structural

and structural mitigation methods, including green infrastructure, can be incorporated as part of the development. In older areas, municipalities are faced with significant costs to rehabilitate, enhance or build new flood protection infrastructure for drainage systems. There are also challenges for municipalities when a newer greenfield development must utilize an existing drainage system downstream through an existing development.

Stormwater management in Canada has been evolving over the years, and system components are not only dealing with the quantity of stormwater but the quality as well (pollution reduction and erosion protection). Installation of regional stormwater management (retention or detention) ponds or linear naturalized channels has achieved both objectives, although quality improvement to a lesser degree.

6.2.4.1 Use of Regional Flood Control Facilities

Development practices are also changing and exposing potential regulatory gaps.

Stormwater management facilities are regulated in Ontario by the Ministry of Environment, Conservation and Parks (MECP). Under the *Environmental Protection Act*, an approval is issued for the purpose of stormwater management works to provide for an enhanced level of water quality control, erosion protection, and attenuation of post-development storm flows up to and including the 100-year storm event. Regional Flood Control Facilities (RFCFs) are increasingly being constructed in some areas to help mitigate flooding in urban areas. RFCFs are stormwater management ponds that are designed to control flooding associated with much larger regional storm events (e.g. Hurricane Hazel for GTA communities) exceeding the 1% storm and well above and beyond the capacity of traditional stormwater management (SWM) ponds.

While traditional SWM ponds are considered to pose a relatively low risk to downstream landowners, the risks associated with the increased use of RFCFs are largely unknown, and they are not regulated by the MNRF. RFCFs retain significant volumes of stormwater runoff and could cause significant flood damages if they were to fail, raising concerns that the use of these facilities creates new, or aggravates existing, flood hazards, particularly when built immediately upstream of residential areas.

Due to their design, RFCFs function more like dams than traditional SWM ponds (i.e. they provide flood control function). Unlike dams, there are no provincially approved structural design standards for RFCFs.

The construction of these structures can be viewed as creating new hazards and thereby conflicting with provincial policy direction which states that “planning for stormwater management shall not increase the risks to human health and safety and property damage.” In addition, the MNRF’s Technical Guide specifies that stormwater

management facilities are not to be used to provide any reduction in flood flows, and accounting for their storage in flood hazard mapping artificially reduces the extent of regulatory flood lines and is non-compliant with the MNRFs Technical Guide.

While many of these RFCFs are being constructed to support greenfield development, they are also being used in existing developments, often in highly urbanized landscapes. In some instances, RFCFs are being constructed for the purpose reducing flood flows and freeing up flood hazard lands for intensified development by artificially reducing the size of floodplains (i.e. redrawing flood lines) downstream of RFCFs, through amendments to existing flood hazard maps (i.e. floodplain maps) used to guide land use planning decisions. The MNRF views this as putting people and property in harm's way and contrary to the MNRF's Technical Guide and the Provincial Policy Statement (PPS).

While the construction of these structures has been limited, they are becoming more common (more than 50 of these structures within 46 Ontario communities) as determined by a study commissioned by the MNRF. Apparently, many of them are being built larger than their original design specifications with the aim of holding back even larger volumes of water. A prevalent perception observed when collecting data for the study was that RFCFs protect downstream landowners and these larger ponds contribute to safety rather than increased risk. The study documented that one-third of the RFCFs examined represented an increased risk to downstream communities in the event of a failure. Furthermore, the risks and consequences of failure of these facilities is not typically a design consideration. Important factors determining risk of RFCFs included the size of the pond and the embankment height, with the most influential factor in determining the risks of these facilities being the pond configuration and landscape setting (e.g. elevation of pond relative to downstream receptors) specifically in relation to populated areas.

Recommendation #26

That, due to the increased use of the regional flood control facilities, the MNRF review whether the Province should take steps to regulate the use of these structures or let municipalities decide their use.

The above issue raises the point that there is a lack of clarity around the MNRF's role in urban flooding. To date, the MNRF's focus has been on flooding from waterbodies (rivers, streams and lakes), suggesting that "urban flooding"—owing to its linkage with stormwater management and development infrastructure—should be borne by ministries with mandates related to those components (i.e. MECP, MOI, MMAH, etc.).

Recommendation #27

That the Province create a working group of all pertinent ministries to define their respective roles as they pertain to pluvial flooding.

6.2.4.2 Municipal By-laws – Pre-development Rates of Runoff

One of the methods to reduce the impact of intense rainstorm events on drainage systems is to limit new development to “pre-development” rates of stormwater runoff. All the new hard surface means that rain or snowmelt water will runoff at a much greater rate than previous agricultural use or natural habitat. By limiting the runoff to the pre-development rate, the drainage system downstream will see no more water after development than before development.

For a new subdivision, restricting to pre-development rates may be achieved with a combination of conventional stormwater management techniques (i.e. dry or wet pond) and other low impact development practices. For multi-residential or commercial situations, such as a high-rise tower or shopping mall, detention of the stormwater can be achieved by on-site storage (roof-top, underground tank, open retention basin or parking lot storage) and/or by using permeable surfaces.

6.2.4.3 Municipal By-laws – Flood Protection Measures for Private Property

Flood protection of private property is not just a municipal responsibility but also a property owner responsibility. We put locks on our doors because we can't expect that the police service will protect our houses from intruders. Neither can we expect that the drainage system will protect us from all storm events. Accordingly, residents and other property owners have a responsibility to protect from pluvial flooding by the installation of backwater valves, sump pits and pumps, sealing doors and windows, disconnecting downspouts from the sanitary sewer, and building up the earth around the foundation and window wells, etc.

Recommendation #28

That the Province consider whether it should take steps to regulate drainage standards in urban areas, such as the requirement to restrict runoff flows to pre-development rates and flood protection measures for private property, and if so, what is the most appropriate legislation.

6.2.4.4 Intact Centre on Climate Adaptation

The Intact Centre on Climate Adaptation (Intact Centre) is an applied research centre with a national focus located within the Faculty of Environment at the University of Waterloo. The Intact Centre was founded with a gift from the Intact Financial Corporation. The Intact Centre works with homeowners, communities, governments and businesses to identify the impacts of extreme weather and climate change, and to develop the practical tools needed to help communities adapt to these changes and minimize impacts.

A particular focus of the Intact Centre over the last three years has been the development and testing of a variety of tools that have advanced flood risk reduction in Canada. From 2016 to 2018, the Intact Centre's Home Flood Protection Program developed a home flood risk assessment tool and assessor training program, and delivered over 500 flood risk assessments to residents in Ontario and Saskatchewan. Learnings from the program delivery contributed to the publication of a national guideline for basement flooding protection (CSA Z800-18) in 2018. Additionally, in April 2019, a report titled: "Water on the Rise: Protecting Canadian Homes from the Growing Threat of Flooding" was released by the Intact Centre summarizing the top flood risks associated with residential homes and the best practices for motivating action in order to reduce risk.

The Intact Centre is committed to working with municipal and provincial governments to educate residents. The Intact Centre has also published several other reports on flooding, all of which can be found on their website (<https://www.intactcentreclimateadaptation.ca>).

Recommendation #29

That the Ministry of Environment, Conservation and Parks reach out to the Intact Centre for Climate Adaptation, as part of their commitment to consult with the insurance and real estate industry under the 2018 Environment Plan, to work collaboratively to raise awareness among homeowners about the increasing risk of flooding and to disseminate the basement flooding protection information to homeowners.

6.2.5 Funding for Permanent Works

Following significant events, there is always a demand for funding for more permanent works (infrastructure such as a dam, bridge, shoreline protection work, erosion control infrastructure, etc. that will be designed, used and remain in place over the long term)

by local officials and the general public. Given the financial pressures that governments are facing currently, a potential immediate source would be existing programs, such as the Ontario Community Infrastructure Fund (OCIF) program, the Federal Investing in Canada Infrastructure Program (ICIP), the Ontario Water Erosion Control Infrastructure (WECI) program, and the Ontario Financing Authority green bond program.

Recommendation #30

That the Ministry of Infrastructure ensure that the Ontario Community Infrastructure Fund supports municipalities in enhancing and implementing asset management plans (which includes stormwater management and consideration of climate change adaptation and mitigation activities), which will help municipalities make the best possible investment decisions for their infrastructure assets.

Recommendation #31

That the Ministry of Infrastructure work specifically with the MNRF on the design of future intakes of the Green stream of the Investing in Canada Infrastructure Program to ensure flood-related projects are eligible.

The Province's Water Erosion Control Infrastructure (WECI) program is an effective provincial-municipal cost-share program for maintenance of water control infrastructure that reduces flooding, mitigates flood damages and disruption to the economy. Currently, the program is funded through the MNRF capital program budget on a fiscal year basis, and it is suggested that a multi-year budget be established for some larger maintenance projects that may span many years to provide flexibility for future potential fluctuations in funding requests.

Recommendation #32

That the Province continue to fund the Water Erosion Control Infrastructure program and consider adopting a multi-year budget.

The Ontario Financing Authority runs a green bond program that includes five categories— Clean Transportation; Energy Efficiency and Conservation; Clean Energy and Technology; Forestry, Agriculture and Land Management; and Climate Adaption and Resilience. Under the last category, the following projects will generally be considered eligible—flood protection and stormwater management; extreme weather resistant infrastructure and municipal infrastructure for clean and/or drinking water;

wastewater treatment; sustainable urban drainage systems; and other forms of flooding mitigation. (See more details at www.ofina.on.ca/greenbonds.)

Recommendation #33

That the Province continue to issue Green Bonds in 2020 and beyond to help finance extreme-weather resistant infrastructure.

6.3 Preparedness

6.3.1 Monitoring and Data Management

6.3.1.1 The Hydrometric Agreement

There is always an argument for better hydrometric data; however, the fiscal realities likely mean that there will be no significant increase in funding for the hydrometric network.

Recommendation #34

That the Province continue its financial commitment and partnership arrangement with the federal government through the hydrometric network agreement.

Recommendation #35

That the Province continue to monitor the effectiveness and location of gauges to ensure that there is appropriate coverage and consider repositioning gauges if necessary.

Recommendation #36

That, where appropriate and where funding permits, the Province consider the installation of GOES telemetry at key locations where more frequent access to information is required (areas of higher risk/watersheds that react quickly to changes in precipitation or snowmelt) and where current landline telecommunication technology is less secure and not as reliable in transmitting information.

Recommendation #37

That, where appropriate and where funding permits, the Province consider the use of automated alarms at those stations in watersheds of higher risk/quick response to precipitation and snowmelt to alert when water levels have exceeded a threshold of concern.

6.3.1.2 Climate (Weather) Monitoring

While there is heavy reliance on the hydrometric network, it is recognized that weather “inputs” are critical to understanding and predicting events. Citizen science is an effective tool in gaining additional precipitation information (such as through the Community Collaborative Rain, Hail and Snow Network or CoCoRAHS), typically at a lower cost and at low risk.

Recommendation #38

That the Province explore whether there would be value toward additional manual snow course locations in those watersheds where snow cover and snow water content are factors in spring flooding, and seek to involve the citizens in the collection and reporting of that data.

Recommendation #39

That the Province explore the feasibility of remote sensing products to better estimate the spatial distribution of snow and snow patterns.

6.3.1.3 Data Management

Beyond the MNRF, there are a number of other organizations or agencies that collect or have data that would be beneficial toward enhancing flood forecasting.

Recommendation #40

That the MNRF work with federal, provincial and local partners as well as industry toward an Open Data model where information is shared and consolidated into the existing Surface Water Monitoring Centre (SWMC) hydrometric monitoring database.

6.3.1.4 Satellite Remote Sensing

Although currently operationally working in an emergency management environment, the MNRF's Remote Sensing Science Group is not an emergency management tasked group. The recent launch of the three RADARSAT Constellation Mission satellites highlights a significant opportunity to improve flood and ice monitoring, but will require additional provincial resources to coordinate, process, interpret and disseminate information in near real time. The portfolio of satellite imagery products and services the Remote Sensing Science Group supports to aid the emergency management products and services is growing year upon year.

Currently the Remote Sensing group supports emergency management flood monitoring only during the spring flooding season.

Additional remote sensing satellite monitoring opportunities (e.g. snow extent and snow water equivalent) remain unexplored/unexploited provincially due to resourcing.

Recommendation #41

That the Province investigate the return on investment of utilizing the new satellite imagery and resourcing with the necessary staff additions to provide better flood forecasting and monitoring.

6.3.2 Flood Forecasting and Warning

Flood forecasting and warning plays an important role in achieving the provincial objective of reducing risk to life and reducing property damages. It is particularly important to residents located in a floodplain where permanent mitigation works do not exist. The flood forecasting and warning system is very reliant on the provincial hydrometric network (stream gauges), from which the data is used to make decisions of when to issue flood warnings, operate infrastructure (such as dams), and provide real-time status reports on flooding on different reaches of a river. The stream gauge networks also provide an important history of flooding.

Flood forecasting and warning requires integration with municipal emergency response. However, there is inconsistent resourcing for flood forecasting and warning across the province. Conservation authorities are not present in all areas of the province. In areas without conservation authorities, flood forecasting and warning is the responsibility of the local MNRF district office. Not all conservation authorities and districts are consistently equipped or resourced in order to provide flood forecasting and warning services.

Updated floodplain mapping provides the opportunity to produce new products to aid in flood forecasting and warning, and emergency response. Floodplain maps can provide a fundamental base for designing and developing response plans for a range of floods. Updated hydrology modelling for floodplain mapping can be leveraged to create new up-to-date flood forecasting models. Flood forecasting and warning systems can be designed to reflect the local watershed characteristics and be risk-based. More sophisticated complex warning systems can be implemented where the risk is highest, and less complex systems where there is lower risk and more lead time.

An ideal system would include developing real-time flood forecasting models that merge hourly forecasts with radar and real-time gauge data, the use of machine learning algorithms for data assimilation, and ensemble forecasting for areas where flood vulnerability has been identified. Flood messages should target people within affected geographic areas and consider the use of Common Alerting Protocol – Canadian Profile format. This would increase coordination, interoperability and efficiency between agencies. Over the long term, this could integrate with the Canadian Alert Ready platform and mobile telephone public safety apps.

Recommendation #42

That the Province update the flood forecasting and warning guidelines, providing clarity on roles and responsibilities (conservation authorities, MNRF district offices, municipalities) and provide examples of the systems, from simple to complex, with recognition that each system should be designed to reflect the local watershed characteristics and resources.

6.4 Emergency Response

6.4.1 Emergency Operations

As first discussed above in Section 6.1.4.1, Chapter 3 of the 2017 Auditor General's report raised concerns regarding the current governance structure for emergency management in Ontario.

The Office of the Fire Marshall and Emergency Management (OFMEM) within the Ministry of the Solicitor General, is taking action to address the Auditor General recommendations and other reviews. The following are two additional initiatives planned or currently underway that will improve emergency operations around floods:

- 1) AG recommendation to enhance Emergency Management program capacity – Emergency Management Ontario (EMO) to enhance readiness for large-scale

emergencies; adopt and meet international/national best practices; mandate use of the Incident Management System; and enter into mutual assistance agreements with neighbouring jurisdictions.

- 2) AG recommendation to increase support to municipalities and emergency management partners – EMO to enable the Provincial Emergency Operations Centre (PEOC) to more quickly deploy resources to supplement local capacity; implement emergency management software to support provincial-municipal information and resource sharing; enhance capacity to deploy humanitarian aid; and implement emergency management supply chain/logistics program.

Recommendation #43

That the Ministry of the Solicitor General implement emergency operations initiatives in response to the recommendations of the Auditor General as soon as possible.

During my engagement sessions, I did receive a lot of feedback from municipalities about improvements they would like to see implemented by EMO. In short, once they declare an emergency and request assistance from the Province, they want the Province to be more involved in coordinating a response and ensuring that the municipality has access to the resources and expertise it needs. Municipalities also request that the Province condense their requirements for reporting during an event, as it distracts from the actions needed to fight a flood, including reducing the amount of paperwork and daily reporting during a flood to multiple people at EMO.

Recommendation #44

That Emergency Management Ontario improve its processes for interacting with municipalities and clearly lay out the processes on their website.

Another complaint of municipalities was how the Canadian Forces (CF) were deployed. Municipalities do not understand the process as to how the Province engages the CF, and more importantly what activities the CF are approved to implement. In one municipality, the CF was distributing potable water when the municipality needed their help building sandbag dikes.

However, the focus should be on how the municipalities ask for assistance with specific needs rather than how to ask for a specific group's assistance. The Province should determine best how to support the request and whether it can be done without federal support.

Recommendation #45

That Emergency Management Ontario clearly lay out the process for municipalities to request assistance during emergencies and provide field support to help determine the assistance that is required.

6.4.2 Communications

A better job could be done with communication and information dissemination before, during and after a flood, but most critically during a flood. Municipalities and residents demand good information so they can make informed decisions. Timely information is also key, such as forecast peak water levels, to allow appropriate preparations to be made to protect people and property.

Many smaller municipalities and CAs don't have the resources to hire technical and communications specialists (either full-time or part-time) to answer public inquiries during a flood event. They get questions such as: "Who do I approach to ask for assistance with sandbagging?" or "What is the forecast peak water level at X location?" or "How do I build a sandbag dike?"

Recommendation #46

That the Province have a central website for flooding issues that provides answers (for conservation authorities, municipalities and the public) to a myriad of typical and frequent questions, or at the very least, a link to the agency (provincial department, power company, etc.) that provides the answers to the questions.

6.5 Recovery**6.5.1 Compensation for Damages and Rebuilding****6.5.1.1 Compensation Programs**

In many of the municipal engagement sessions, many smaller municipalities advised me that achieving the damage threshold of 3% of their total own purpose taxation (revenue) to be eligible for financial assistance is difficult. Further, if a municipality did not meet the 3% threshold, they were also excluded from the "build back better" pilot.

Recommendation #47

That the Province review the funding formula for eligibility of municipalities under the Municipal Disaster Recovery Assistance program.

As discussed in Section 5.3.2, partly in response to flooding in spring 2019, the Ministry of Municipal Affairs and Housing created a \$1 million pilot project designed to help municipalities repair flood damaged roads, bridges and other infrastructure to a higher standard so they can better withstand extreme weather. As part of a \$1 million pilot project, the province will provide municipalities that qualify for MDRA funding with up to 15% above the estimated cost of rebuilding damaged public infrastructure to make it more resilient to extreme weather. This is a very important program, as the investment to “build back better” will reduce flood damage in future events and therefore provides a return on the investment.

Recommendation #48

That the “build back better” pilot under the Municipal Disaster Recovery Assistance program move from a “pilot” to a full program. The Province should consider raising the 15% cap where it makes economic sense. The program should be tied to legislated flood protection levels and floodproofing criteria. For example, a bridge damaged by a flood can only be replaced if it is raised to the design flood.

There is no “build back better” component under the Disaster Recovery Assistance for Ontarians (DRAO) program. Under that program, assistance is based on the cost of returning a property to a functional level, which includes meeting building code requirements. Eligible costs may include floodproofing as required to obtain a building permit. Under the applicable provisions of the *Building Code Act*, the municipality must not issue a building permit in a regulated flood zone unless the conservation authority (or the MNRF in areas with no CA) has issued the required permit, which would include floodproofing requirements. DRAO does not cover floodproofing that is not required to obtain a building permit.

However, in municipal engagement sessions I heard several stories of individuals who repaired their houses after the 2017 flood only to be flooded again in the 2019 flood, and who claimed that had they been able to “build back better” after the 2017 flood that their damages in 2019 would have been eliminated or reduced. It is not clear if the damages were caused by flooding that exceeded the design flood or designated flood protection level for the area.

Recommendation #49

That the Province consider including a “build back better” component under the Disaster Recovery Assistance for Ontarians program.

At another municipal engagement session, I was advised that a home on leased land on a First Nation reserve and leased by a “non-status” person is not eligible under either the federal or provincial disaster assistance programs. The DRAO does not have any eligibility restrictions on leased land except if it is on First Nation reserve land. Indigenous Services Canada offers disaster assistance programs on First Nation reserves but only “status” residents are eligible. There are two possible ways to address this—the federal government could expand its program to include non-status individuals leasing on reserve land, or the province could expand its program to include reserve land. There would be a number of considerations that would come into play with the latter, including that provincial planning and building regulation policies do not apply on reserve land.

Recommendation #50

That the Province approach Indigenous Services Canada about expanding their disaster assistance program to include houses that are leased on First Nation reserve land by non-status individuals.

6.5.1.2 Relocation and Buyouts

A number of individuals and groups who participated in the review were interested in a buyout program being made available to residents living in floodplains whose homes were severely damaged by the 2019 flood events.

Buyouts can be beneficial when it is anticipated that the cost of more frequent emergency response activities and disaster assistance costs will outweigh the cost of providing those homeowners with fair market value for their homes. Also, buyouts are sometimes necessary when it is not technically feasible to meet floodproofing criteria, although this situation is not common. These programs can be highly contentious depending on how market value is determined and whether these programs are optional or forced onto residents in high-risk areas.

Recommendation #51

That the Disaster Recovery Assistance for Ontarians program be flexible enough to allow for removal of the structure from the floodplain (buyout) if it is the only technically and financially feasible option.

6.5.2 Insurance

Section 5.1.5 discussed that financial assistance for most flooding events in Ontario is largely provided by the Province or costs are borne by the property owner.

The flooding costs borne by property owners in Ontario are due to the limited insurability of flood risk areas. However, insured catastrophic losses in Canada (mostly related to water damage) are significantly increasing. Accordingly, the Insurance Bureau of Canada has been conducting research and producing reports on this issue.

“Overland flood insurance is available from a number of insurance companies active in the Ontario marketplace, however it is not available for high-risk properties, or if it is available, it is prohibitively expensive or available with a limited cap, and as a consequence virtually all high-risk zones remain uninsured or underinsured. Overland flood insurance premiums for high risk flood zones can average over \$10,000, while the average premium for all other perils combined in these areas is in the order of \$1,000.”¹

“The limited insurability of flood risk places the burden for post disaster reconstruction and recovery on homeowners and taxpayers who are funding disaster relief spending from federal and provincial governments.”²

¹ Insurance Bureau of Canada (2019). Options for Managing Flood Costs of Canada's Highest Risk Residential Properties: A report of the National Working Group on Financial Risk of Flooding. June 2019, <http://assets.ibc.ca/Documents/Studies/IBC-Flood-Options-Paper-EN.pdf>.

² IBC (2015) The financial management of flood risk - An international review: Lessons learned from flood management programs in G8 countries, http://assets.ibc.ca/Documents/Natural%20Disasters/The_Financial_Management_of_Flood_Risk.pdf.

“Currently, for every dollar of insured losses borne by insurers in Canada, three to four dollars are borne by governments and home and business owners.”³

Although the market is now starting to change, residential coverage for overland flooding has historically not been available in Canada on the basis that it lacks economic viability. However, this is starting to change.

“As of spring 2019, 16 insurers offer overland flood products available to approximately 77% of Canadian property owners, with approximately 34% of Canadians having at least some insurance for overland flood risk.”¹

Residential insurance for overland (pluvial and fluvial) flooding started to become available in Canada in 2015. The emergence of private flood insurance represents a significant redistribution of the financial risks associated with flooding. Despite significant costs to governments (who are typically compelled to provide disaster relief to flooded areas), individual private home and business owners also bear significant costs as disaster relief in Ontario is limited and only covers costs for the restoring “essential property” to a basic standard, up to a limit. Insurance will help to pool individual costs across broader society (who in the future will manage their own financial risks through flood insurance). Further on the concept of pooling costs, the Insurance Bureau of Canada recently released a report in June 2019 titled: “Options for Managing Flood Costs of Canada’s Highest Risk Residential Properties” (<http://assets.ibc.ca/Documents/Studies/IBC-Flood-Options-Paper-EN.pdf>) with input from a members of a private-public sector working group on financial management of flood risk. The report focuses on ways to better manage costs of overland flooding for high risk properties across Canada and advances three potential options: 1) Pure Market Solution: risk borne by homeowners; 2) Evolved Status Quo: risk borne by blend of homeowners and governments; and 3) Create a High-Risk Flood Insurance Pool. Option 3, the creation of a high-risk insurance pool for properties otherwise not able to access affordable flood insurance to cover losses and which would include capping or subsidizing premiums, was advanced as a preferred option. Work is continuing on this option; however, it is postulated that this “pool” could be capitalized through a fund

³ IBC, INTACT, etc. (2018). Combatting Canada’s Rising Flood Costs: Natural Infrastructure is an underutilized option, <http://assets.ibc.ca/Documents/Resources/IBC-Natural-Infrastructure-Report-2018.pdf>.

contributed by governments, and then be supported by insurance premiums paid into the pool and levies assessed on all homeowners or municipal rate payers.

There may be opportunities for the Province and the federal government to work with the insurance market to make flood insurance more available to more Ontarians (and Canadians) through increased investments in the identification and management of flood risks. Effective hazard maps are a pre-condition for establishing an effective flood insurance program. The risks associated with offering flood insurance cannot be adequately assessed without accurate, up-to-date mapping.

Recommendation #52

That the Province continue the dialogue with the Insurance Bureau of Canada and the federal government on the steps needed to make flood insurance more available to more Ontarians.

6.5.3 Waste Materials and Landfills

Smaller municipalities raised the issue of how the significant waste materials from a flood can negatively impact the capacity of a local landfill. Used dirty sandbags, flooded contents from a house or cottage (such as furniture, appliances, etc.) and if the house or cottage is destroyed, all the material from the structure's demolition, can quickly use up landfill capacity. These municipalities claim that even if the waste can be accepted at an alternative landfill, it would most likely have to be hauled further away and the costs of hauling were a concern. And finally, municipalities expressed concern over the time period for the permitting process for establishing a new landfill (or expanding an existing landfill), which may exceed the time remaining before an existing landfill has reached capacity.

Disposal costs are in fact eligible costs under the Municipal Disaster Recovery Assistance (MDRA) program, but there has to be an actual cost incurred by the municipality. For example, if the municipality uses a private landfill and pays the tipping fees, those would be eligible. If the municipality does more runs with their garbage trucks, the overtime costs and additional fuel costs, etc., would be eligible. However, the MDRA is oriented to actual paid expenditures, meaning if a municipality has their own small landfill, there is nothing in the MDRA program to compensate them for the "room" or capacity of the landfill that is used up from flood-related waste materials and reduces the future lifespan of the landfill site, because there is no "out-of-pocket" cost incurred.

Recommendation #53

That the Province ensure that municipalities have all the information regarding eligible items under the Municipal Disaster Recovery Assistance program, including costs for disposal of waste materials from a flood.

Recommendation #54

That the Province consider special or expedited approvals for new or expanded landfills if significant capacity is used up from the disposal of flood-related waste materials.

Chapter 7

Recommendations to External Agencies

Implementation of the following recommendations are focused on agencies outside the jurisdiction or control of the Ministry of Natural Resources and Forestry (MNRF). In those cases, I would expect that the MNRF can initiate discussions with the particular agency to try and seek agreement for implementation of a recommendation, in full or in part.

All three agencies below provided me with a considerable amount of material either in written form or in PowerPoint presentations, including very descriptive pictures, graphs and charts, during the review. A lot of the information is technical, but goes into considerable detail about their operations before, during and after the flood, including decisions that were made. Some of this information has already been presented to citizens in public meetings.

Recommendation #55

That the International Joint Commission, the Ottawa River Regulation Planning Board, and Ontario Power Generation make their detailed information about their flood operations readily available on their respective websites.

7.1 International Joint Commission

Part of the general public and some stakeholder groups seem to misunderstand how the structures on the St. Lawrence River work and what effect the operation of those structures has during extreme floods. In particular, some believe that the International Joint Commission's (IJC) operation of the structures has a negative impact on Lake Ontario or even Ottawa River flooding. However, it is important to understand that while the IJC's responsibilities include the regulation of outflows at the Moses-Saunders Dam on the St. Lawrence River, they cannot fully regulate the water levels of Lake Ontario and the St. Lawrence River, and they have absolutely no bearing on flows of the Ottawa River. The Moses-Saunders Dam can allow for a higher outflow of waters from Lake Ontario to the St. Lawrence River than the natural conditions before its construction, and the 2017 and 2019 flood peaks on Lake Ontario were lower than those that would have occurred under natural conditions (refer to IJC's website at www.ijc.org for more information).

The IJC has a tremendous amount of good information on their website, but unless you know what you are looking for, it is hard to navigate and you can spend a lot of time

searching through reports to find specific information. The general public should have easy direct access to current issues such as the floods of 2017 and 2019. Having a “2017 Flood” button on the main webpage with links to related reports would be helpful, but illustrations on the Great Lakes -St. Lawrence River system or how the operation of their structures impacted water levels in 2017 should be pulled out of the reports and be prominent on the “2017 Flood” page. For example, Figures 2-1 and 2-2 of the IJC report titled: “Summary of 2017 Great Lakes Basin Conditions and Water Level Impacts to Support Ongoing Regulation Plan Evaluation,” November 13, 2018 (https://ijc.org/sites/default/files/2018-11/GLAM_2017_MainReport_FINAL-20181129_2.pdf), are excellent illustrations of the Great Lakes St. Lawrence River system. Figure 2.6 of the IJC report titled: “Observed Conditions and Regulated Outflows in 2017,” May 25, 2018 (https://ijc.org/sites/default/files/2018-08/ILOSLRB_FloodReport2017.pdf) is an excellent illustration of the water surface profile of Lake Ontario and the St. Lawrence River showing the effects that a release of water needed to achieve a one centimetre drop over a period of one week on Lake Ontario would have on water levels at critical areas of the St. Lawrence River, such as Montreal. There are probably many other illustrations that could be pulled from the reports and prominently displayed.

Recommendation #56

That the International Joint Commission consider meeting with interested stakeholder groups and individuals to explain in considerable detail how their structures are operated.

Recommendation #57

That the International Joint Commission consider creating specific “2017 Flood” and “2019 Flood” buttons for their home webpage and populating those pages with detailed information on the floods and their operations, as well as providing direct links to related reports.

7.2 Ottawa River Regulation Planning Board

Likewise, with the Ottawa River Regulation Planning Board (ORRPB), the general public and stakeholder groups misunderstand how water control structures on the Ottawa River are operated and what effect the operation of those structures has during extreme floods. A common complaint was that the information was too technical for the general public. As a result of the flooding damages in 2017 and 2019, residents

questioned whether more can be done to better plan for and reduce the impacts of flooding in the future.

On July 11, 2019, the Hon. John Yakabuski, Minister of Natural Resources and Forestry, sent a letter to his provincial and federal counterparts requesting their support in conducting an independent review of how the Ottawa River system is managed. The letter requested each counterpart to name an individual within their respective ministries that the MNRF could work with to set out the specific details of the review.

The ORRPB suggested that it may be time to review the actual 1983 Agreement that governs the Board and their roles and responsibilities to determine if the conclusions from 1980 still hold true almost 40 years later. The review could repeat the original process of studying the coordination between generation station operators and exploring reservoir expansion and related costs.

Recommendation #58

That the supporting agencies of the Ottawa River Regulation Planning Board (Canada, Ontario, Quebec and the dam operators) consider reviewing the original agreement, recommendations and guiding principles, and board policies given they are almost 40 years old.

Recommendation #59

That the supporting agencies of the Ottawa River Regulation Planning Board (Canada, Ontario, Quebec and the dam operators) consider removing “Regulation” from the title, as it implies that the Board can actually manage large floods when, in fact, they cannot because of the limited storage capacity of the generating station reservoirs, which were designed for electric power generation and not flood control.

Recommendation #60

That a communications officer be assigned to the Ottawa River Regulation Planning Board to help with messaging during flood events or any public meetings and free up the staff engineers to concentrate on their duties. At least two communications officers should be assigned as needed and well trained in the technical operations. The officers should be from another government department as opposed to Ontario Power Generation or another non-government dam owner, since the public believes the dam owners only care about generating electricity.

Recommendation #61

That a communications person with marketing experience work with the Ottawa River Regulation Planning Board to prepare more easily understood materials for publication. The approach to managing the Ottawa River by the Board is not well understood by the public or government officials. Also, the materials should not be confusing. In one example I saw, a line graph showed a water level difference of 1.0 metres but the text below it stated "> 50 cm or 20 in.

Hydrological forecasts should include better information about water levels all along the Ottawa River. People rarely care about flows, but they want to know what level the river will rise to, so they can prepare accordingly. Most of the information is right at or near a hydro structure, but there are a lot of houses and cottages along the river in between the gauges. Since this is a complicated river, it is recognised that it is difficult to interpolate between two gauges (it's not a straight-line relationship).

Recommendation #62

That the Ottawa River Regulation Planning Board work with Ontario Power Generation and consider installing staff gauges at critical settled locations along the river, and engage residents to read and report on these gauges. These residents have a vested interest in getting accurate information and so their "buy-in" could be to volunteer their time to provide the data.

Recommendation #63

That two municipal officials, one from the Association of Municipalities of Ontario and one from the Quebec counterpart, sit on the Ottawa River Regulation Planning Board. The intent is to provide contact persons on the Board trusted by municipalities in both provinces, and for the municipal representatives on the Board to help disseminate correct and accurate information back to municipalities. Consideration could also be given to adding municipal representatives to the Ottawa River Regulating Committee, in addition to or instead of the Board. It is recognized that the three signatories to the Agreement (Canada, Ontario and Quebec) would have to agree to amending the Agreement for this purpose.

7.3 Ontario Power Generation

As with the above two agencies, the general public and stakeholder groups do not understand how the Ontario Power Generation (OPG) stations work and what effect the operation of those power generating structures has during extreme floods. I included considerable discussion and explanation on the issues that were raised by stakeholders about the Ottawa River in Section 4.1.

Further to that, I must emphasize that while Ontario has many different waterpower producers operating throughout the province, my focus on OPG has been in relation to their operations on the Ottawa River, as they are the only Ontario-based waterpower provider operating on the Ottawa River proper. The recommendations below may also be relevant to other waterpower producers operating throughout Ontario.

Regarding Section 4.1.5, Explanation of Conditions at Des Joachims and the Dry Section at Deux-Rivieres, OPG had originally provided me with two diagrams showing operating levels during normal and high flow conditions to try and illustrate the situation. However, I did not include the diagrams in this report, as I think they would confuse the reader. What would greatly assist the reader would be additional illustrations of how the river goes through the changes from normal to high and back to normal conditions.

Recommendation #64

That Ontario Power Generation create a dynamic illustration regarding the dry section at Deux-Rivieres that “walks” the observer through the changes in water levels during low to normal to high flows, with voice-over explanation of water level changes, and that this video be included on their website.

I also discussed the issues in the upper Ottawa River watershed (Mattawa) in Section 4.2 and recommended a more collaborative approach with better communication in Section 6.2.3.2, which OPG supports.

OPG has made several recommendations to me on other matters and most are covered in other sections of this report.

One operational recommendation that OPG has raised that could reduce flooding impact would be a change of the reservoir refill date in the Water Management Plans for each power dam. It is suggested that the refill date be flexible depending on the watershed conditions, such as size and speed of the freshet in the region. Water Management Plans were not designed to manage floods. Balancing the constraints of the plan with the potential for flooding can sometimes be challenging. The Victoria Day refill constraints have been set primarily for recreational purposes; however, they cause

water management staff to make a trade-off between flood resilience and recreation. The refill date should not be based on a set trigger (or series of potential triggers), but allowed to be based on the unique conditions of each given year.

Recommendation #65

That Ontario Power Generation identify options to address their concern about refill dates and provide greater flexibility on how refill is determined, taking into consideration the range of potential impacts, to support potential amendment proposals to relevant Water Management Plans.

Chapter 8

Fiscal Pressures and Capacity Issues

The efficiency and effectiveness of the existing approval processes and associated policies and technical requirements could be limited by Ontario's overall fiscal reality and capacity issues facing provincial ministries, municipalities, and conservation authorities.

8.1 Ontario's Deficit

Ontario's deficit was estimated to be as high as \$15 billion in 2018 leading to the government committing to taking necessary steps towards restoring Ontario's fiscal health. Ontario's deficit places pressure on the Province to further reduce costs and promote economic growth to help balance the budget and sustainably fund essential public services for current and future generations.

8.2 The Ministry of Natural Resources and Forestry Capacity

Some stakeholders and other groups have raised concerns regarding the capacity of the MNRF to support approval processes and associated policies and technical requirements.

The MNRF has not assessed internal capacity needs required to support provincial natural hazard management policies and programs or assessed how such programs are resourced in other jurisdictions. The Environmental Commissioner of Ontario has also raised concerns that reductions in budgets, staffing and in-house expertise has hampered the effectiveness of the MNRF.

8.3 Conservation Authority Capacity

Many MNRF policies and programs associated with protecting Ontarians from flooding and other natural hazards are delivered by conservation authorities. Reliance on conservation authorities to administer permit applications and decisions, and to comment on municipal planning policies reduces costs for the MNRF but increases costs for conservation authorities and the municipalities that fund them.

Capacity levels among conservation authorities are very diverse with annual budgets ranging from less than \$1 million to more than \$100 million. This divergence in capacity affects the extent to which any given conservation authority can support hazard management policy objectives. Increases to conservation authority roles and responsibilities disproportionately impact smaller conservation authorities with limited

tax bases within their jurisdictions to support program and service delivery. Conservation Ontario and municipalities have repeatedly requested increases to provincial funding levels to conservation authorities, which have not been increased in over 20 years, and this year they have requested that the 2018 funding level be reinstated.

8.4 Municipal Capacity

The MNRF relies on municipalities to implement natural hazard policies contained within the Provincial Policy Statement (PPS).

As with conservation authorities, capacity levels among municipalities are also quite diverse. Small, rural municipalities typically have a much smaller tax base than larger urban municipalities, and may be less able to support the effective management of flooding and other natural hazards.

Some municipalities rely on conservation authorities to support the management of flooding and other natural hazards, and would not have the resources to take on these responsibilities.

Recommendation #66

That the Province maintain, at a minimum, the current level of funding in departmental budgets and programs related to everything flood (i.e. existing approval processes and associated policies and technical requirements, floodplain mapping, maintenance of flood infrastructure, satellite imagery, etc.).

Appendix A – List of Documents Reviewed

A number of reports and additional background information was reviewed in developing recommendations included in this report, many of which were provided by stakeholders and individuals via email or during in-person meetings. A listing of publicly available documents received and reviewed has been provided below.

Information on current flood-related initiatives being undertaken by the Province of Ontario

- A Made-in-Ontario Environment Plan
- ERO#013-4992: Focusing conservation authority development permits on the protection of people and property
- ERO#019-0279: Provincial Policy Statement Review – Proposed Policies
- The Municipal Disaster Recovery Assistance (MDRA) pilot program (news release)
- Provincial Flooding Task Force (news release)
- Helping Protect the Muskoka Watershed (news release)

Information on the International Joint Commission

- Lake Ontario – St. Lawrence River Plan 2014
- IJC GLAM (2017) Great Lakes Basin Conditions and Water Level Impacts to Support Ongoing Regulation Plan Evaluation

Provincial acts, regulations and policies associated with flood management

- Provincial Policy Statement 2014
- The Planning Act (1990)
- Ontario Regulation 97/04 – Content of Conservation Authority Regulations Under Section 28 (1) of the Act: Development, Interference with Wetlands and Alterations to Shorelines and Watercourses

Technical guidelines prepared by the province to support municipalities and conservation authorities in managing flooding and other natural hazards

- Understanding Natural Hazards (2001)
- Special Policy Areas Technical Guide (2009)
- Technical Guide for Large Inland Lakes (1996)
- Hazardous Sites Technical Guide (1996)
- Technical Guide - River and Stream Systems: Erosion Hazard Limit (2002)
- Technical Guide - River & Stream Systems: Flooding Hazard Limit (2002)
- Great Lakes-St. Lawrence River System Tech Guide (2001)

Information on federal funding programs

- National Disaster Mitigation Program

Studies, reports and presentations prepared by non-OPS entities

- Intact Centre (2018) After the Flood: The Impact of Climate Change on Mental Health and Lost Time from Work
- Intact Centre (2018) Too Small to Fail: Protecting Canadian Communities from Floods
- Muir, Robert J. (2018) Reducing Flood Risk from Flood Plain to Floor Drain: Developing a Canadian Standard for Design Standard Adaptation in Existing Communities
- Ganaraska Region Conservation Authority. March 2015. Metadata Inventory of Existing Conservation Authority Flood Mapping
- Intact Centre (2016) Climate Change and the Preparedness of Canadian Provinces and Yukon to Limit Potential Flood Damage
- Insurance Bureau of Canada (2015) The Financial Management of Flood Risk
- Insurance Bureau of Canada (2018) Combatting Canada's Rising Flood Costs: Natural Infrastructure is an Underutilized Option
- Conservation Ontario (2013) Dodging the Perfect Storm: Conservation Ontario's Business Case for Strategic Reinvestment in Ontario's Flood Management Programs, Services and Structures
- Ontario (2008) Provincial-Municipal Fiscal and Service Delivery Review: Facing the Future Together
- Making the Most of Floodplain Buyouts
- Kenosha County Fox River Floodplain Acquisition Program
- Are Floodplain Buyouts A Smart Investment for Municipalities?
- Urban Flood Homeowners Hazard Perception & Climate Change (2009)
- Urban Flood Resilience in Ontario – Ready Set Rain (2019)
- Canadian Voices on Changing Flood Risk, 2017

Information provided to the Special Advisor during the community tour, section 1

- Limits to the Regulation of the Ottawa River – 2019 Spring Flood Overview (ORRPB)
- Agreement Respecting Ottawa River Basin Regulation, 1994 (ORRPB)
- Recommendations and Guiding Principles, 1989 (ORRPB)
- Board Policies, 1990 (ORRPB)
- The Quebec government unveils its flood action plan (news release)
- 18 homes evacuated as Ottawa River floods, Chaudiere Bridge closing due to 'high water levels' (news article)
- Some in flooded Quebec town angry new dike will block their waterfront views (news article)
- Longitudinal Profile of the Lower Ottawa River
- Ottawa River Nomination Document – Chapter 3 – Natural Heritage Values
- Britannia's berm faces its greatest test yet (news article)
- Floods: Critical berm in Britannia showing signs of leaking (news article)
- Flooding adds urgency to disaster planning and damage mitigation (news article)
- Under water, again (news article)
- Flood Warning – Ottawa River-Arn prior to L'Original (news release)
- Ottawa River Flood Activation Area Map (Alfred and Plantagenet)

- [Ottawa River Flood Activation Area Map \(Champlain\)](#)
- [Ottawa River Flood Activation Area Map \(Clarence-Rockland\)](#)
- [Ottawa River Flood Activation Area Map \(City of Ottawa, east\)](#)
- [Ottawa River Flood Activation Area Map \(City of Ottawa, west\)](#)
- [Lanark County Flood Activation Area Map](#)
- [This new mapping tool helped Ottawa handle 2019 floods \(news article\)](#)
- [Ottawa River Flood Risk Map – Constance Bay – Map 25](#)
- [Ottawa River Flood Risk Map – Constance Bay – Map 31](#)
- [Ottawa River Flood Risk Map – Constance Bay – Map 32](#)
- [Ottawa River Flood Risk Map – Constance Bay – Map 33](#)
- [Ottawa River Flood Risk Map – Constance Bay – Map 34](#)
- [Townships of McNab/Braeside and Horton declare states of emergency due to flooding \(news article\)](#)
- [‘You guys are responsible’: Anger, frustration in Westmeath at flood meeting \(news article\)](#)
- [‘The 500-year flood’: Dozens forced from homes in Whitewater Region \(news article\)](#)
- [Westmeath Spatial Context Map – 1/2](#)
- [Westmeath Spatial Context Map – 2/2](#)
- [Residents displaced from nearly 40 properties in Laurentian Valley \(news article – Pembroke Observer\)](#)
- [Update on the current state of flooding in County of Renfrew \(news article\)](#)
- [Renfrew County Flood Activation Area Map](#)
- [County of Hastings Flood Activation Area Map – Municipality of Hastings Highlands](#)
- [District of Nipissing Flood Activation Area Map – Town of Mattawa](#)
- [High and dry – the maddening story of the upper Ottawa River \(news article\)](#)
- [Flood damage in the millions – Backer \(news article\)](#)
- [Flooding’s worst still to come \(news article\)](#)
- [OPG gives reasons for high water levels near Mattawa \(news article\)](#)
- [North Bay-Mattawa Conservation Authority Jurisdictional Map](#)
- [District of Nipissing Flood Activation Area Map – Town of Mattawa](#)
- [Municipality of French River Flood Activation Area Map](#)
- [French River state of emergency, province needs more flood funding \(news article\)](#)
- [Several areas in northeastern Ontario declare a state of emergency \(news article\)](#)

Information provided to the Special Advisor during the community tour, section 2

- [After the flood: can Toronto Islands be saved from the next disaster? \(news article\)](#)
- [Environmental Impact of 2017 – Flooding At Toronto Islands \(news article\)](#)
- [Humber River flood waters force 200 people from their homes in Bolton \(news article\)](#)
- [Major Flooding: Rising flood waters force residents from homes in Caledon \(news article\)](#)
- [Members of Ontario’s Muskoka Watershed Advisory Group \(OPS news release\)](#)
- [Ontario Helping Protect the Muskoka Watershed \(OPS news release\)](#)
- [Ontario Takes Next Steps to Protect Muskoka Watershed \(OPS news release\)](#)

- [District of Parry Sound Flood Activation Area Map](#)
- [District of Muskoka Flood Activation Area Map](#)
- [Drone footage shows extent of flooding in Ontario cottage country as further rain looms \(news article\)](#)
- [Kingdom of the Netherlands Water Management](#)
- [Great Lakes Action Plan, Full Report](#)
- [Great Lakes Action Plan, Summary](#)
- [Work on Brantford dike to resume on August 19 \(news release\)](#)
- [Preparing for Flooding – A Guide for Residents of Ayr](#)
- [City proceeding with dike land expropriation \(news article\)](#)
- [Ice jam, rain forecast has Chatham bracing for possible widespread flooding \(news article\)](#)
- [Helping Canadians Adapt to Extreme Weather](#)
- [Agriculture minister visits flood damage in Chatham-Kent \(news article\)](#)
- [Chatham-Kent mayor declares localized state of emergency amid flood fears \(news article\)](#)
- [Lake Erie Shoreline \(news article\)](#)
- [Erosion, flooding trigger revision of Erie shoreline development policy \(news article\)](#)
- [New floodplain map may stall south London development \(news article\)](#)
- [Strong winds could bring more flooding to Erie Shore Drive \(news article\)](#)

Appendix B – Community Tours

Community tours were held from September 4 – 14, 2019. The tour was broken into two sessions as noted below. The sessions were designed to allow municipal leaders and other stakeholders to share their experiences with flooding and their ideas as to how the province can be better prepared in the future.

Feedback provided during the tour was used to assist in developing recommendations. Of note, both sessions included engagement sessions (held in groups), targeted engagement session (one-on-one meetings), and area-specific tours to help gain a complete understanding of the issues and impacts Ontarians are facing as a result of this spring's flooding.

Community Tour Session #1 – Eastern Ontario

- Wednesday September 4, 2019 – Ottawa (*targeted session and tour*)
 - Britannia
- Thursday September 5, 2019 – Ottawa (*engagement session and tour*)
 - Constance Bay, Braeside, Rhoddy's Bay and Westmeath
- Friday September 6, 2019 – Pembroke (*engagement session and tour*)
 - Pembroke, Deux Rivieres, Klock and Mattawa
- Saturday September 7, 2019 – North Bay (*engagement session*)

Community Tour Session #2 – Central and Southwestern Ontario

- Tuesday September 10, 2019 – Toronto (*targeted meeting and tour*)
 - Rockcliffe neighbourhood and Port Lands
- Wednesday September 11, 2019 – Huntsville (*engagement session and tour*)
 - Bracebridge
- Thursday September 12, 2019 – Toronto (*targeted sessions*)
- Friday September 13, 2019 – Cambridge (*engagement session and tour*)
 - Cambridge Flood Walls, Brantford Flood Works and Eagle Place
- Saturday September 14, 2019 – London (*engagement session*)

Appendix C – Engagement Session Participation

The following is a list of organizations that participated in Regional Engagement Sessions.

Thursday September 5, 2019 – Ottawa Engagement Session

City of Clarence-Rockland

City of Ottawa

MPP, Carlton

MPP, Constance Bay / Kanata-Carlton

Mississippi Valley Conservation Authority

Rideau Valley Conservation Authority

South Nation Region Conservation Authority

Town of Mississippi Mills

Township of Champlain

Township of Alfred and Plantagenet

Friday September 6, 2019 – Pembroke Engagement Session

City of Pembroke

Municipality of Hastings Highlands

MP, Renfrew–Nipissing–Pembroke

Town of Arnprior

Town of Deep River

Township of Admaston/Bromley

Township of Brudenell, Lyndoch and Raglan

Township of Greater Madawaska

Township of Laurentian Valley

Township of Madawaska Valley

Township of McNab/Braeside

Township of North Algona Wilberforce

Township of Whitewater Region

Saturday September 7, 2019 – North Bay Engagement Session

City of North Bay

City of Temiskaming Shores

MPP, Nipissing

Municipality of East Ferris

Municipality of French River

Nipissing First Nation

North Bay-Mattawa Conservation Authority

Public Services and Procurement Canada

Town of Mattawa
Township of Chisholm
Township of Mattawan

Wednesday September 11, 2019 – Huntsville Engagement Session

Armour Township
MPP, Parry Sound-Muskoka
Muskoka Watershed Advisory Group
Muskoka Watershed Council
Town of Bracebridge
Town of Gravenhurst
Town of Huntsville
Town of Lake of Bays
Town of Muskoka Lakes
Township of Algonquin Highlands
Ryerson Township
Village of Burk's Falls

Friday September 13, 2019 – Cambridge Engagement Session

City of Brantford
City of Cambridge
City of Kitchener
City of St. Catharines
County of Brant
Grand River Conservation Authority
Halton Region Conservation Authority
MPP, Cambridge (Office of)
MPP, Haldimand-Norfolk (Office of)
Region of Waterloo

Saturday September 14, 2019 – London Engagement Session

City of Sarnia
County of Essex
Essex Region Conservation Authority
Lower Thames Valley Conservation Authority
Municipality of Chatham-Kent
Town of Essex
Town of Kingsville
Township of Pelee
St. Clair Region Conservation Authority

Upper Thames River Conservation Authority

The following is a list of the individuals and groups who met directly with the Special Advisor.

Wednesday September 4, 2019

Ottawa River Regulation and Planning Board

Thursday September 5, 2019

Insurance Bureau of Canada
International Joint Commission

Friday September 6, 2019

Westmeath Citizens Group

Saturday September 7, 2019

North Bay-Mattawa Conservation Authority

Tuesday September 10, 2019

Toronto and Region Conservation Authority

Thursday September 12, 2019

Association of Municipalities of Ontario
City of Toronto
Electrical Safety Authority
Emergency Management Ontario
Great Lakes Collaborative
Kingdom of the Netherlands
MPP Lindsey Park, Durham
Regional Public Works Commissioners of Ontario

Friday September 13, 2019

Intact Centre on Climate Adaptation
Grand River Conservation Authority

Saturday September 14, 2019

Upper Thames River Conservation Authority

Appendix D – Written Submissions to the Special Advisor on Flooding

Written submissions were also received from a number of different groups over the course of the review. The submissions covered an array of issues including introductory comments, follow up materials, invitations/requests to meet with Mr. McNeil, detailed comments about flooding, water management and recent flood experiences or ideas of recommendations that should be put forward to government.

The list below identifies who submitted comments. A number of submissions were also received from members of the public whose names are not included below.

- Aquanty Inc.
- Association of Municipalities of Ontario
- Blue Mountain Watershed Trust
- Boating Ontario Association
- Central Lake Ontario Conservation Authority
- Cheryl Gallant, MP Renfrew-Nipissing-Pembroke
- City of Ottawa
- Community Living Upper Ottawa Valley
- Conservation Ontario
- County of Essex
- Electrical Safety Authority
- Emergency Management Ontario
- Great Lakes Collaborative
- Insurance Brokers Association of Ontario
- International Joint Commission
- International Joint Commission, Great Lakes-St. Lawrence Adaptive Management Committee
- Kingdom of the Netherlands
- Marit Stiles, MPP, Davenport
- McMaster University
- Ministry of the Environment, Conservation and Parks
- Ministry of Infrastructure
- Ministry of Municipal Affairs and Housing
- Ministry of Natural Resources and Forestry
- Municipality of Chatham-Kent
- Municipality of Clarington
- Municipality of Leamington
- Muskoka Lakes Association

- Muskoka Watershed Council
- North Bay-Mattawa Conservation Authority
- Ontario Association of Home Inspectors
- Ontario Power Generation
- Ottawa River Regulation Planning Board
- Regional Public Works Commissioners of Ontario
- Toronto and Region Conservation Authority
- Township of Champlain
- Township of Laurentian Valley
- Township of Madawaska Valley
- Upper Thames River Conservation Authority
- Upper Trent Water Management Partnership
- Westmeath Citizens Group
- World Wildlife Fund



Hastings Highlands

Beautiful By Nature

The Municipality of Hastings Highlands
P.O. Box 130, 33011 Hwy 62, Maynooth, ON K0L 2S0
613 338-2811 Ext 277 Phone
1-877-338-2818 Toll Free

December 9, 2019

VIA EMAIL

Ministry of the Attorney General
McMurtry-Scott Building
720 Bay St., 11th Floor
Toronto, ON
M7A 2S9
attorneygeneral@ontario.ca

Re: Joint and Several Liability Consultation – Town of Springwater Support

At its meeting on December 4, 2019 the Council of the Municipality of Hastings Highlands supported the Township of Springwater with the following resolution:

Resolution 774-2019

THAT Council supports the Township of Springwater in its concern for joint and several liability consultation.

cc:
Doug Ford, Premier of Ontario
Association of Ontario Municipalities (AMO)
Ontario Municipalities
Daryl Kramp, MPP, Hastings-Lennox and Addington
Derek Sloan, MP, Hastings-Lennox and Addington
Jeff Schmidt, Township of Springwater

Encl: Correspondence – Joint and Several Liability Consultation – Township of Springwater

Regards,

Suzanne Huschilt

Municipal Clerk
shuschilt@hastingshighlands.ca

September 26, 2019

Ministry of the Attorney General
McMurtry-Scott Building
720 Bay Street, 11th Floor
Toronto ON, M7A 2S9

Re: Joint and Several Liability Consultation

Please be advised that in response to your letter dated July 12, 2019, the Township of Springwater provides the following comments in regards to Joint and Several Liability.

1. Please describe the nature of the problem as you see it?

In response to the Province's request for consultation, the Township has a significant issue with Joint and Several Liability (JSL) and the impact it has on the municipality.

a. No Requirement of Proof

JSL is a tool that is used by the legal industry without any discretion to the point that this municipality feels that its use is negligent and in fact unethical. Most law suits that municipalities see are frivolous and vexations as lawyers cast their nets wide and attempt to use shotgun justice for their clients that are more than often the sole cause of a claim. A statement of claim does not require any proof that there is fault. A plaintiff only has to state who they think is involved and a significant amount of court time is spent determining who should be a party to the legal claim.

b. No Consequence for Being Wrongly Identified in a Statement of Claim

To add to this, there is no consequence that lawyers and their clients face for submitting a claim against a municipality when it is clear that a municipality is not involved. Municipalities incur significant administrative costs in managing these claims and the municipalities and their insurers pay significant costs to go through a lengthy process to prove that a claim was made in error (intentionally) only to find that a judge sees no reason to compensate a municipality for cost for incorrectly being named in a lawsuit by a plaintiff. Municipalities are seen as having deep pockets by the legal industry as well as the judicial system that makes decisions on these claims. Proof of innocence is often furnished to the plaintiff and lawyer by a municipality immediately upon notification of a pending legal action of statement of claim. This information is ignored by the plaintiff's lawyer. A plaintiff and their lawyer should have to reimburse a municipality for

all administrative and legal costs when the municipality is cleared of liability. Judges rarely compensate municipalities for being wrongly named in a legal action.

A recent example from 2019 occurred when a statement of claim was made against the Township of Springwater for an accident on a County Road (not the jurisdiction of Springwater). After legal and administrative costs totaling more than \$5,000, Springwater was dismissed from the claim. Unfortunately no costs were assigned to the plaintiff for wrongly naming Springwater in the statement of claim. The current system is broken and Springwater tax payers are left paying the bill.

2. What are the problems that you need addressed to benefit your community?

a. Ethical Standard of Due Diligence Required Before Submitting a Legal Action

Lawyer's representing plaintiff's should be required to submit documentation that provides significant research into why a claim is being made and a municipality is being named in a law suit. The claim should clearly prove authority and responsibility. The current practice of naming every party under the sun in a legal claim is negligent and unethical.

b. Frivolous and Vexatious Suits are Costing Taxpayers

The Township of Springwater is seeing a significant waste of administrative time and cost in managing legal claims against the municipality that are predominantly frivolous and vexatious due to JSL. Over the last seven years, the municipality has had 55 claims made against the municipality. These claims range from trips/falls resulting in broken eyeglasses to cases that unfortunately involve loss of life. The Township has no problem dealing with claims that the municipality is responsible for; however the Township does have a problem dealing with claims it does not have any responsibility for. Of the 55 claims against the municipality, 42 of these claims are frivolous and vexatious. Claims that the municipality has no responsibility for. Over the past 7 years, Springwater has paid more than \$100,000 on these frivolous and vexatious claims as they work themselves through the legal process. Many of these files are still open. This does not include additional costs paid by Springwater's insurance company that are beyond the municipality's deductible.

c. Negligent Legal Actions (Beyond Frivolous and Vexatious)

The Township of Springwater is currently named in 4 legal actions and an additional legal action (recently abandoned) for claims that occurred in another municipality (no where near Springwater). The Township is currently named in 3 claims that occurred in the Township of Clearview west of Stayner and one claim in the Township of Brock that have nothing to do with the Township. Springwater was named in a claim that occurred

in Wasaga Beach that was abandoned recently. All of these claims cost the Springwater taxpayer in administrative and legal costs as they work their way through the process.

d. Triage System for Claims

Before a claim makes it to a court date, the file should be triaged. It is at this stage that negligent of frivolous and vexatious claims will be filtered or thrown out. This process will trigger the reimbursement of costs to municipalities by unethical law firms.

e. Law Society of Ontario Charges

Lawyers that use JSL in an unethical way should be charged by the Law Society of Ontario. If a lawyer names a municipality in a legal action that should not be named, these lawyers should be suspended and potentially lose their license to practice law. There is a significant commonality when comparing frivolous and vexatious claims and the law firms/lawyers that submit them. The current code of ethics of the Law Society of Ontario should be updated by the Province to reprimand lawyers and law firms that negligently use JSL. The Province of Ontario should be involved in creating a new Code of Ethics for Ontario's legal industry.

3. Is it increased premiums? Rising deductibles?

A recent survey by CAO's in Simcoe County shows that insurance premiums are going up between 10% at the lowest to 59% being the highest in 2019. The Township of Springwater experienced a 10.8% increase in its 2019 insurance renewal. The area that typically sees an annual increase is related to the Municipal General Liability and Excess Liability lines of the business. The municipality was advised by its insurance broker that "over the past several years, insurance companies' appetite for Municipal Insurance has remained fairly stable. Insurance rates across all lines have seen only modest increases intended to simply keep pace with inflation and the rising cost of claims. Larger rate increases have been reserved for those accounts experiencing adverse claims development; either in frequency or severity (or both). However, starting in June 2018, the insurance market as a whole has shown clear signs of "hardening". Insurance companies for all sectors are putting stricter rules in place regarding the amount and breadth of coverage they will provide, and to which clients. Since the overall insurance supply is being reduced, the demand for insurer capacity is increasing, and as such, prices are elevating."

The table below provides at a high level (includes all lines of coverage) the Township's annual insurance premiums over the past five years.

2015	2016	2017	2018	2019
\$234,942	\$247,262	\$254,388	\$274,936	\$304,688

The Township continues to consult with its insurance broker in an effort to ensure that Springwater's constituents are receiving the best value for their tax dollar; however, the rising costs of insurance are not sustainable over the long run. Staff and its insurance broker have looked at increasing our deductibles in an effort to reduce the overall premium; however this has led to minimal reductions in the overall annual premium to the Township.

4. Being unfairly named in lawsuits?

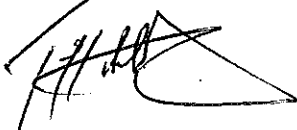
As detailed above, Springwater continues to be unfairly named in legal actions. Issues here range from a complete absence of research by legal firms on causality to the municipality being named in legal action in completely separate jurisdictions (other municipalities).

5. Feeling you cannot offer certain services because of liability risks?

More recently, with the advice of the Township's insurance broker, the Township has changed the way in which it delivers some of its recreational programs/services, especially as it relates to children's programs/activities. For example, the Township in partnership with its Community Recreation Associations will host a number of community based events throughout the year, which includes children's activities. In order to allow inflatable Bouncy castles at community events, the Township now requires the service provider to indemnify the Township and to also provide staff to monitor the safety of participants while in the inflatable Bouncy castle. Some vendors are reluctant to take on this risk.

Thank you for allowing the Township to participate in this consultation. We are open to further dialogue should you feel it necessary.

Yours truly,



Jeff Schmidt, CPA, CGA, B.A.S.
Chief Administrative Officer

Cc: Ontario Municipalities



December 12, 2019

Town of Essex
33 Talbot Street South
Essex, ON N8M 1A8

Mayor & Members of Council:

This will acknowledge receipt of your Council's resolution requesting OGRA provide childcare services during our annual conference. I want to thank you for bringing this matter to our attention. OGRA received similar resolutions from several municipalities. OGRA is always pleased to hear from our members and we pride ourselves on being responsive to our member's needs.

The Board of Directors discussed this matter at their meeting in November and agreed that we would promote the use of a Toronto based childcare service that provides childcare in the delegate's room and that OGRA would reimburse 50% of the cost of the service (limits apply). Details on the service were emailed out on December 4, 2019 to all members and can be found on the OGRA Conference website.

<http://ograconference.ca/accommodation/child-care-services/>

The provision of childcare services is expensive and while OGRA is not in a position financially to cover 100% of the cost we do want to respond to our member's needs and feel that the 50% subsidy is reasonable.

We will review this program following the 2020 conference.

Yours truly

Rick Kester
President



The Parish of St. Paul's/Trinity Anglican Churches
"Our parish is a caring, welcoming family dedicated to God and Community"
And, with God's help, hopes to become: "One in God in Community"

November 29, 2019

To Whom This May Concern:

On behalf of St. Paul's Anglican Church we would like a handicap sign installed by the entrance of our church which is on St. Paul street.

Could this issue be brought to council's attention at the December 16th meeting.

Thank you.

Sincerely,



Deborah Rousseau
Deputy Warden
St. Paul's Anglican Church

Mailing Address: 92 St. Paul St. Essex, ON N8M 1C5

Office Phone: 519-776-7711; Office Email: office@stpaulstrinity.org; Website: www.stpaulstrinity.org



The Corporation of The Town of Amherstburg

November 29, 2019

Mayor Larry Snively
Town of Essex
33 Talbot Street South
Essex, ON N8M 1A8

Re: Municipal Modernization Program

Dear Mayor Snively,

On November 1, 2019, the Honourable Steven Clark, Minister of Municipal Affairs and Housing advised that Intake 1 of the Municipal Modernization Program would be available to Municipalities. Under the program the Province is making \$125 million available through 2022 – 2023 to help small municipalities to conduct new service delivery reviews. Further to this announcement Amherstburg's Town Council passed the following resolution at their November 25th meeting:

Administration BE DIRECTED to engage the professional services of a third party consultant, in accordance with the program eligibility requirements, to undertake a municipal service delivery review to address opportunities to achieve cost savings and efficiencies for the Town of Amherstburg and opportunities for shared services with regional municipalities; and,

The Mayor send correspondence to regional Mayors seeking participation in the shared services review, in a future Municipal Modernization Program.

Significant reduction in Provincial grant funding is forcing local government to either reduce levels of service or increase taxation levels in an effort to attain sustainability. As such we are suggesting our region undertake discussions on taking a proactive, collaborative approach on shared services that would benefit the regional as a whole, quite possibly ensuring the viability of our local municipal independence.

Please discuss this with your respective Councils and if in agreement, forward a resolution noting your support of such an initiative.

Together we are stronger,

Yours truly,

A handwritten signature in dark ink, appearing to read 'Aldo DiCarlo', written over the 'Yours truly,' text.

Mayor Aldo DiCarlo



Court of Revision Minutes

County of Essex Council Chambers
360 Fairview Ave. W., Essex, Ontario
Monday, October 7, 2019 – 5:00 PM

The purpose of the meeting is to hold the Court of Revision for:
South Malden Road Drain Replacement Bridge for David & Jamie Kendrick,
Part of Lot 32, Concession SMR, Geographic Township of Colchester North,
Project REI 2018D025,
Town of Essex, County of Essex

This is pursuant to the report prepared by Gerard Rood, Professional Engineer, Rood Engineering Inc. dated July 12th, 2019 which was considered and adopted at a Consideration Meeting held August 19, 2019 and pursuant to By-Law 1849 which received two readings by Council at its regular meeting held September 3, 2019.

This sitting of this Court of Revision was duly appointed by Council on September 3, 2019.

Section 54 (1) of The Drainage Act provides that the decision of the Court of Revision can be appealed to the Drainage Tribunal within twenty-one (21) days from the date of the Court of Revision. The final day for appeal is October 28, 2019. At the first Council meeting after this date the third reading to By-Law number 1849 will be given.

1. Roll Call

Present: Dan Boudreau
Councillor Patterson, Town of Kingsville

Regrets: None

Also Present: Shelley Brown, Deputy Clerk
Norm Nussio, Manager, Operations and Drainage
Tanya Tuzlova, Operations/Drainage Clerk
Kory Snelgrove, E.I.T., Rood Engineering Inc.

General Public: Per attached Sign-in Sheet

The Clerk confirmed having administered the Oaths to the Members of the Court of Revision.

The Clerk confirmed that all notices have been sent in accordance with The Drainage Act.

The meeting was called to order by the Chair at 5:04 PM.

2. Declarations of Conflict of Interest

None declared.

3. Adoption of Published Agenda

Shelley Brown, Deputy Clerk, stated that Board Member Larry Patterson from the Town of Kingsville would be representing the Town of Kingsville as our second Board Member.

Court of Revision Agenda

Moved by Councillor Patterson

Seconded by Chair Boudreau

(CR-19-10-01) That the published agenda for the October 7, 2019 Court of

Revision be adopted as presented.

“Carried”

4. Adoption of Minutes

i) Court of Revision for West Townline Drain Union Gas Bridge held on August 6, 2019.

Moved by Councillor Patterson

Seconded By Chair Boudreau

(CR-19-10-02) That the minutes of the Court of Revision for West Townline Drain Union Gas Bridge held on August 6, 2019 be adopted as circulated. **“Carried”**

5. Appeals from Landowners

The Chair advised that the purpose of the Court of Revision is to hear appeals regarding the Schedule of assessment only. The Schedule of Assessment may be altered but the total assessment must remain the same. If one assessment is reduced then another must be increased to balance.

6. List of Written Appeals of Assessment Received by the Clerk

The Chair asked if there were any appeals from landowners. The Deputy Clerk confirmed that there were no appeals.

7. Engineer to provide a Background on the Drain and the Proposed Project

Kory Snelgrove, E. I. T., Rood Engineering Inc.

Mr. Snelgrove stated that the report provides for the bridge replacement for David and Jamie Kendrick, parcel 400-00200. The report also provides for the future cost sharing of maintenance for the bridge.

Mr. Snelgrove advised that cost of the bridge construction will be assessed to David and Jamie Kendrick and the upstream lands and roads of two municipalities: the Town of Essex and the Town of Kingsville. Mr. Snelgrove added that future maintenance costs for this bridge be assessed in accordance with the proposed bridge cost sharing.

Mr. Snelgrove advised that agricultural properties may be eligible for the OMAFRA grant for both construction and future maintenance.

Mr. Snelgrove stated that the adjustment should be made for the Town of Kingsville roll number 580-01001 on page 15 of the report. Mr. Snelgrove explained that the corrected roll number is 580-01006 with the area affected increased from 1.6 acres to 5.01 acres and the current owner should be shown as D&M Mastronardi Management. Mr. Snelgrove added that due to this increased area the assessment to the parcel should be increased from \$43.00 to \$83.00. Therefore Mr. Snelgrove recommended to the Court of Revision to increase the assessment of roll number to \$83.00 and to reduce the assessment on page 11 of King's Highway No. 3 by \$40.00 to offset the amended assessment to 580-01006 and to keep the schedule total balanced.

8. Questions from Landowners

The Chair asked if there were any questions from the Court of Revision Members or the landowners. There were no questions.

9. Court of Revision Decision

Moved by Councillor Patterson

Seconded By Chair Boudreau

(CR-19-10-03) That the assessments contained in the report for the South Malden Road Drain Bridge for David and Jamie Kendrick, Geographic Township of Colchester North, Project REI 2018D025, Town of Essex, County of Essex, as prepared by Gerard Rood, Professional Engineer, Rood Engineering Inc. dated July 12, 2019, and as amended pursuant to Drainage Board Resolution DB-19-08-004 be confirmed as presented.

"Carried"

10. Adjournment

Moved by Councillor Patterson

Seconded By Chair Boudreau

(CR-19-10-04) That the meeting be adjourned at 5:22 PM. **“Carried”**

Chair

Recording Secretary

Date



Court of Revision Minutes

County of Essex Council Chambers

360 Fairview Ave. W., Essex, Ontario

Monday, November 18, 2019 – 4:30 PM

The purpose of the meeting is to hold the Court of Revision for:

**Batten Drain: Replacement Bridge for Abram Harms Holdings Inc.,
Part of Lot 27, N.M.R. Concession, Geographic Township of Colchester North,
Project REI2019D024, Town of Essex, County of Essex**

This is pursuant to the report prepared by Gerard Rood, Professional Engineer, Rood Engineering Inc. dated September 16th, 2019 which was considered and adopted at a Consideration Meeting held October 7, 2019 and pursuant to By-law 1860 which received two readings by Council at its regular meeting held November 4, 2019.

**Philip Ferris Drain: Drain Diversion for Atlas Tube Inc.,
Maintenance Schedule of Assessment Philip Ferris Drain-North Branch,
Geographic Township of Colchester South,
Project REI2019D007, Town of Essex, County of Essex**

This is pursuant to the report prepared by Gerard Rood, Professional Engineer, Rood Engineering Inc. dated September 6th, 2019 which was considered and adopted at a Consideration Meeting held September 30, 2019 and pursuant to By-law 1861 which received two readings by Council at its regular meeting held November 4, 2019.

This sitting of this Court of Revision was duly appointed by Council on November 4, 2019.

Section 54 (1) of The Drainage Act provides that the decision of the Court of Revision can be appealed to the Drainage Tribunal within twenty-one (21) days from the date of the Court of Revision. The final day for appeal is December 9, 2019. At the first Regular Council meeting after this date the third reading to By-Law Number 1860 and 1861 will be given.

1. Roll Call

- Present: Luke Martin, Vice-Chair
 Kirk Carter
 Felix Weigt-Bienzle
- Regrets: none
- Also Present: Robert Auger, Town Solicitor/Clerk
 Norm Nussio, Manager, Operations and Drainage
 Tanya Tuzlova, Operations/Drainage Clerk
 Gerard Rood, Professional Engineer, Rood Engineering Inc.
 Kory Snelgrove, E. I. T., Rood Engineering Inc.
- General Public: Per attached Sign-in Sheet

The Clerk confirmed having administered the Oaths to the Members of the Court of Revision.

The Clerk confirmed that all notices have been sent in accordance with The Drainage Act.

The meeting was called to order by Vice-Chair at 4:35 PM.

2. Declarations of Conflict of Interest

None declared.

3. Adoption of Published Agenda

- Moved by Board Member Carter
Seconded by Board Member Weigt-Bienzle

(CR-19-11-01) That the published agenda for the November 18, 2019 Court of Revision Meeting be adopted as updated with the following amendment:

- a) Correspondence from Diana Sheprak dated November 18, 2019. **“Carried”**

4. Adoption of Minutes

Court of Revision for South Malden Road Drain: Bridge for David and Jamie Kendrick held on October 7, 2019.

- Moved by Board Member Weigt-Bienzle
Seconded By Board Member Carter

(CR-19-11-02) That the minutes of the Court of Revision for South Malden Road Drain: Bridge for David and Jamie Kendrick held on October 7, 2019, be adopted as circulated. **"Carried"**

5. Court of Revision for Batten Drain

- a) Batten Drain Replacement Bridge for Abram Harms Holdings Inc., Part of Lot 27, N.M.R. Concession, Geographic Township of Colchester North, Project REI2019D024, Town of Essex, County of Essex;

This is pursuant to the report prepared by Gerard Rood, Professional Engineer, Rood Engineering Inc. dated September 16th, 2019 which was considered at a Consideration Meeting held October 7, 2019 and adopted by Council at its November 4, 2019 Regular Meeting.

- b) Appeals from Landowners

The Vice-Chair advised that the purpose of the Court of Revision is to hear appeals regarding the Schedule of assessment only. The Schedule of Assessment may be altered but the total assessment must remain the same. If one assessment is reduced then another must be increased to balance.

- c) List of Written Appeals of Assessment Received by the Clerk

The Vice-Chair asked if there were any appeals from landowners. The Clerk confirmed that there were no appeals.

- d) Engineer to provide a Background on the Drain and the Proposed Project

Kory Snelgrove, E.I.T., Rood Engineering Inc.

Mr. Snelgrove presented the overview of the Report. The Report provides for the installation of a new replacement access bridge for Abram Harms Holdings Inc.

Mr. Snelgrove advised that the cost of the bridge will be shared between the owner and the upstream lands and roads as per Construction Schedule of Assessment. Future maintenance of the bridge costs will be assessed at 56% to the owner and 44% assessed pro-rata against upstream lands and roads.

Mr. Snelgrove advised that the estimated cost of the project is \$26,500.00 and stated that the agricultural properties will be eligible for agricultural grant.

Mr. Snelgrove advised that there is an issue related to the property of Kimberley Mak, which is showing as agricultural on the report. Mr. Snelgrove added that the names of the owners for the roll numbers 410-01800 and 410-01850 were put to

each other's roll by the Municipal Property Assessment Corporation and this issue is still under review.

e) Questions from Landowners

The Vice-Chair asked if there were any questions from the Court of Revision Members or the landowners. There were no questions.

f) Court of Revision Decision

Moved by Board member Carter

Seconded by Board Member Weigt-Bienzle

(CR-19-11-03) That the assessments contained in the report for the Batten Drain Replacement Bridge for Abram Harms Holdings Inc., Part of Lot 27, N.M.R. Concession, Geographic Township of Colchester North, Project REI2019D024, Town of Essex, County of Essex, as prepared by Gerard Rood, Professional Engineer, Rood Engineering Inc. dated September 16th, 2019, be confirmed.

"Carried"

6. Court of Revision for the Philip Ferris Drain

a) Philip Ferris Drain New Drain Diversion for Atlas Tube Inc., Maintenance Schedule of Assessment Philip Ferris Drain-North Branch, Geographic Township of Colchester South, Project REI2019D007, Town of Essex, County of Essex;

This is pursuant to the report prepared by Gerard Rood, Professional Engineer, Rood Engineering Inc. dated September 6th, 2019 which was considered at a Consideration Meeting held September 30, 2019 and adopted by Council at its November 4, 2019 Regular Meeting.

b) Appeals from Landowners

The Vice-Chair advised that the purpose of the Court of Revision is to hear appeals regarding the Schedule of assessment only. The Schedule of Assessment may be altered but the total assessment must remain the same. If one assessment is reduced then another must be increased to balance.

c) List of Written Appeals of Assessment Received by the Clerk

The Clerk informed that he received written appeals from Mrs. Sheprak dated November 8, 2019 and the reply from Gerard Rood, Professional Engineer, dated November 11, 2019.

The Clerk advised that just before the meeting he has received further correspondence from Mrs. Sheprak with two attachments which were distributed before this meeting. The Clerk stated that he would like to read the email since the public did not have a chance to review this correspondence.

The Clerk read the email from Mrs. Sheprak dated November 18, 2019 received on 3:41 PM. The letter indicates that Mrs. Sheprak believes that the future maintenance of the bridge on her property should be reduced to 25% and that the compensation to her property for the land taken should be increased to \$12,435 per acre.

The Clerk asked the Engineer if he would like to comment about the validity of these appeals.

d) Engineer to provide a Background on the Drain and the Proposed Project

Gerard Rood, Professional Engineer, Rood Engineering Inc. informed that the cost of the project is estimated at \$1,155,000.00 and will be assessed to two parcels owned by Atlas Tube Inc.

Mr. Rood advised that the Addendum dated 2019-10-17 for Maintenance Schedule of Assessment was prepared before the Court of Revision and contains the updated roll information.

Mr. Rood advised that all concerns conveyed in the appeal dated November 8, 2019 were addressed in his reply dated November 11, 2019. Mr. Rood added that the compensation amount was also addressed on November 11, 2019. Mr. Rood added that compensation amount indicated in the report is \$12,200.00 per acre which is comparable to the average farmland price in Ontario indicated as \$12,435 per acre as per London Free Press.

Mr. Rood indicated that his calculation of allowances at \$12,200.00 per acre is based on the appraisal prepared by the licensed appraiser from Fuerland Realty Limited and takes into consideration that the farmland is tiled.

Board Member Carter asked where the appraisal company is located.

Gerard Rood, Professional Engineer, replied that Fuerland Realty Limited is from Windsor and has prepared a full study of Harrow area.

Board Member Carter commented that that the information provided by the local licensed appraiser should be more reliable than values provided in the London

Free Press since the higher values are related to the average farmland price in entire Ontario.

Vice-Chair Martin asked if there are any other questions from the Drainage Board Members or from the audience. There were no questions.

e) Court of Revision Decision

Moved by Board Member Carter
Seconded by Board Member Weigt-Bienzle

(CR-19-11-04) That the assessments contained in the report for Philip Ferris Drain New Drain Diversion for Atlas Tube Inc., Maintenance Schedule of Assessment Philip Ferris Drain-North Branch, Geographic Township of Colchester South, Project REI2019D007, Town of Essex, County of Essex, as prepared by Gerard Rood, Professional Engineer, Rood Engineering Inc. dated September 6th, 2019 be confirmed.

"Carried"

7. Adjournment

Moved by Board Member Weigt-Bienzle
Seconded by Board Member Carter

(CR-19-11-05) That the meeting be adjourned at 4:59 PM.

"Carried"

Chair

Recording Secretary

Date



Drainage Board

Consideration of Report Minutes

Town of Essex Council Chambers, 33 Talbot Street South, Essex, Ontario

Tuesday, November 12, 2019 5:00 p.m.

Shepley Drain: Replacement Bridges for Elwood Defour and Garry & Bonny Quick (Part of Lots 6 & 7, Gore Concession)

Geographic Township of Colchester South, Project REI2018D024,

Town of Essex, County of Essex

1. Roll Call

Present: Dan Boudreau
Luke Martin
Kirk Carter
Percy Dufour
Felix Weight-Bienzle

Regrets: none

Also Present: Shelley Brown, Deputy Clerk
Norm Nussio, Manager, Operations and Drainage
Tanya Tuzlova, Operations/Drainage Clerk
Gerard Rood, Professional Engineer, Rood Engineering Inc.
Kory Snelgrove, E.I.T., Rood Engineering Inc.

General Public: Per attached Sign-in Sheet

The Deputy Clerk confirmed that all notices have been sent in accordance with The Drainage Act.

The meeting was called to order by the Chair at 5:03 P.M.

2. Declarations of Conflict of Interest

Board Member Weight-Bienzle declared a Conflict of Interest due to the fact that he owns several properties assessed to this drain.

3. Adoption of Published Agenda

i) Drainage Board Meeting Agenda

Moved by Board Member Dufour

Seconded by Board Member Martin

(DB-19-11-01) That the published agenda for the November 12, 2019 Drainage Board Meeting be adopted as updated with the following amendment:

a) Correspondence from Councillor Steve Bjorkman and Gerard Rood,
Professional Engineer dated November 12, 2019.

"Carried"

4. Adoption of Minutes

i) Consideration of Report for Thompson Drain New Bridge for Cindy Brockman on October 21, 2019.

Moved by Board Member Carter

Seconded by Board Member Dufour

(DB-19-11-02) That the minutes of the Drainage Board Meeting held on October 21, 2019, be adopted as circulated.

"Carried"

5. List of Written Appeals

The Chair asked if there were any written appeals.

The Deputy Clerk confirmed that there were no appeals received by the Clerk's Office prior to the meeting.

6. Public Presentations

i) Kory Snelgrove, E.I.T., Rood Engineering Inc.

Re: Report from Rood Engineering Incorporated dated October 17th, 2019 regarding Shepley Drain: Replacement Bridges for Elwood Defour and Garry & Bonny Quick; Part of Lots 6 & 7, Gore Concession, Geographic Township of Colchester South, Project REI2018D024, Town of Essex, County of Essex.

Mr. Snelgrove presented the overview of the Report. The Report provides for the construction of a replacement access bridge for Elwood Defour and the replacement access bridge for future construction for Garry and Bonny Quick. Mr. Snelgrove explained that the existing bridge conditions for Garry and Bonny Quick were investigated and the bridge was found to be in fair condition and not in need of immediate replacement. Mr. Snelgrove added that this report provides all necessary details for the future replacement of the access bridge for Garry and

Bonny Quick. The works under this report are in accordance with Section 78 of the Drainage Act.

Mr. Snelgrove advised that all necessary survey and investigations for the proposed bridges were conducted. Mr. Snelgrove presented the overview of the reports which were utilized to prepare the current report and added that the report from 1993 prepared by N.J. Peralta was reviewed to investigate the watershed boundary changes subsequent to the storm sewer reconstruction report completed by Lafontaine, Cowie, Buratto and Associates on September 12th, 1990.

Mr. Snelgrove presented the technical characteristics of the bridges and their position as it was discussed at the on-site meeting.

Mr. Snelgrove also explained how the project cost was calculated and added that there will be no allowances. Mr. Snelgrove stated that it is anticipated that the agricultural lands served by the replacement Defour Bridge should be eligible for an agricultural grant as the Defour property is currently assessed under the Farm Property Tax Class. Mr. Snelgrove added that all upstream lands that hold the Farm Property Tax Class designation are also expected to be eligible for the O.M.A.F.R.A. grant as stated on the Schedule of Assessment.

Mr. Snelgrove detailed the Essex Region Conservation Authority (ERCA) and Fisheries and Oceans Canada (DFO) requirements and advised how those requirements will be satisfied.

Mr. Snelgrove advised that at the day of the meeting Rood Engineering received a request from Councillor Steve Bjorkman. Councillor Bjorkman inquired as to why the Quick's property was assessed \$1,892.00 since there will be no construction of their bridge at this time.

Mr. Snelgrove explained that Rood Engineering Inc. was appointed to do a report for both bridges. There was no written notice to withdraw the Quick Bridge from the scope of work, but general discussions had established that the bridge was to remain in place until it required replacement in the future therefore the report does not provide for replacement at this time.

Mr. Snelgrove explained that a number of years ago, there were upgrades done to the storm drainage for Harrow Centre with a new larger outlet discharging into the Shepley Drain where it turns along County Road 20 just east of Roseborough Road. This drainage change requires all downstream pipes in the Shepley Drain from the Roseborough Road area westerly to the Richmond Drain be increased in size when replaced. In order to save the Quick parcel and all the upstream lands

and roads the cost of a separate drainage report for the bridge replacement in the future, Rood Engineering Inc. has included the survey and design work in the current drainage report. The assessment shown to the Quick parcel is their share of incidental costs for doing the bridge design now so that it can be replaced under maintenance in the future and save them and all affected lands and roads on the cost of a separate drainage report.

The Chair asked if there are any questions from the Drainage Board.

Board Member Carter asked Mr. Snelgrove to explain why the Quick Bridge is not being replaced at this time. Board Member Carter also asked why it was not replaced in 1990 due to the increased water flow after storm sewer reconstructions.

Mr. Snelgrove replied that in 1990 there were no requests to replace the bridge and since Rood Engineering Inc. was appointed at this time the company has an obligation to review previous reports and to conduct a survey, investigate and to provide technical details for the future reconstruction of Quick bridge under this report to save on the future costs of preparing a separate report.

The Chair asked if there are any further questions from the Drainage Board.

Board Member Dufour asked what is the life expectancy of the current Quick Bridge. Mr. Snelgrove replied that it is 5-10 years.

ii) Public Presentations (if any).

The Chair asked if there are any further questions from the public.

Bonny Quick, 2361 County Road 20 West, stated that she did not submit an application for bridge repairs. Mrs. Quick stated that she believes that the bridge expectancy is 20 years since it is large and looks good. She added that she did not ask for this works and would likely appeal the assessment. Mr. Quick asked who included Quick Bridge into the report and why it was included.

The Chair advised that he specifically remembers that Mr. Quick asked for his bridge replacement when the Chair met with Garry Quick and Elwood Defour at the initial meeting which was before the on-site meeting.

Norm Nussio, Manager of Operations and Drainage added that at the on-site meeting the Quick Bridge was discussed. Mr. Nussio added that Mr. Quick called him later calling off his request. Norm Nussio explained that including Quick Bridge into the report has a benefit both for the Quick property and the other

owners. Mr. Nussio added that storm water requirements are now higher and call for using the other type of pipes.

Garry Quick, 2361 County Road 20 West, said that he and Bonny were not present at the on-site meeting and that he does not remember meeting with the Chair and asked for documentation.

Mr. Rood replied that as per his records Garry and Bonny Quick were in attendance at the on-site meeting on September 15, 2018, which is specified at the Part III of the report.

Bonny Quick, 2361 County Road 20 West, said that she called to remove the Quick Bridge from the project as soon as she received the report. She added she will appeal the value of the benefit.

Norm Nussio, Manager of Operations and Drainage explained that it is more cost effective for both the Quick property as well as upstream owners to use one report for both bridges.

Gerard Rood, Professional Engineer, stated that the Quick bridge will deteriorate very soon and by incorporating the Quick Bridge into the current report, Rood Engineering has saved the owners from \$6,000 to \$7,000. Mr. Rood added that as an Engineer he has an obligation to provide an effective solution to taxpayers. Mr. Rood added that the Quick property was assessed \$1,892 for incidentals to prepare the report and in the future the repairs on Quick Bridge can be done as part of maintenance thus providing an advantage for the Quick property and the other taxpayers on the drain.

Bonny Quick, 2361 County Road 20 West, asked how long this report is valid for.

Gerard Rood, Professional Engineer, advised that this report will be current until another report is prepared for this drain. Mr. Rood added that the report was prepared taking into consideration the fairness principle and providing the most cost effective approach. Mr. Rood informed that the appeal to the Tribunal will increase the cost of the project by approximately \$3,000. Mr. Rood stated that he feels that the appeal will not be substantiated since there were no other appeals and including Quick bridge is cost effective, fair and has advantage to all parties related to the drain.

Felix Weigt-Bienzle, AFF Farms, asked why the Engineer did not prepare a report for one bridge that could have served both the Quick and Defour properties.

Gerard Rood, Professional Engineer, replied that he has offered this option but Mr. & Mrs. Quick did not agree to this option since the cost to their property would have been about \$25,000.

Board Member Carter asked if there is any way to distribute the cost of the Quick property to the other property owners.

Norm Nussio, Manager of Operations and Drainage, explained that it will be not fair to distribute the Quick’s property cost to the Road Department or to any other property owners since they have been already assessed their fair share of the cost for this project.

Moved by Board Member Dufour

Seconded by Board Member Martin

(DB-19-11-03) That the presentation by Gerard Rood be received and that the Report for the **Shepley Drain: Replacement Bridges for Elwood Defour and Garry & Bonny Quick; Part of Lots 6 & 7, Gore Concession, Geographic Township of Colchester South, Project REI2018Do24, Town of Essex, County of Essex** as prepared by Gerard Rood, Professional Engineer dated October 17th, 2019 be received and recommended for adoption, and that it be recommended that a provisional by-law be prepared for Council’s consideration and that the Report proceed to a Court of Revision to be scheduled. **“Carried”**

7. Adjournment

Moved by Board Member Carter

Seconded by Board Member Martin

(DB-19-11-04) That the meeting be adjourned at 6:12 PM. **“Carried”**

Chair

Recording Secretary

Date



Special Essex Municipal Heritage Committee (EMHC)

Essex Municipal Building, 33 Talbot Street South, Large Meeting Room

Wednesday, November 13, 2019 - 5:00 PM

"The EMHC is the resource base for information and knowledge for Council, administration and the community on all matters of heritage"

1. Roll Call

Present: Councillor Steve Bjorkman, Chair

Phil Pocock, Vice-Chair

Laurie Kowtiuk

Anthony Paniccia

Joseph Lucas

Also Present: Rita Jabbour, Staff Liaison

Sarah Aubin, Recording Secretary

Regrets: Laurie Brett

Claudette Gauthier

Richard Kokovai

2. Declarations of Conflict of Interest

Laurie Kowtiuk declares a conflict of interest under New Business –Heritage Alteration Application – 78 Fox Street.

3. Adoption of Published Agenda

- a) Thursday November 13, 2019 EMHC Special Meeting Agenda

Moved by Anthony Paniccia

Seconded by Joseph Lucas

(EMHC-2019-11-25) That the published agenda for the November 13, 2019 Special EMHC meeting, be adopted as presented.

"Carried"

4. Adoption of Minutes

- a) October 24, 2019 EMHC Regular Meeting Minutes

Moved by Phil Pocock

Seconded by Laurie Kowtiuk

(EMHC-2019-11-26) That the minutes of the October 24, 2019 Regular EMHC Meeting, be adopted as circulated.

"Carried"

5. Public Presentations

None.

6. Unfinished Business

Moved by Joseph Lucas

Second by Phil Pocock

(EMHC-2019-11-27) That Unfinished Business be postponed for discussion at the November 28th, 2019 EMHC Regular Meeting.

“Carried”

- a) Greater Marketing and Public Education about Heritage– Ongoing
- b) Cemeteries –ongoing
Committee to be updated on designation of cemeteries without verifiable owners.
- c) Listing –ongoing
- d) Heritage Designation and Interpretive Plaque Program – ongoing
Committee to be updated on budgeted funds for plaques in 2020.
Committee to be updated on the feasibility of a plaque for the greenway.
- e) Reports to Council
Committee to be updated on the listing report that went to Council on November 4.
Committee to review report and bylaw for heritage alteration delegation.
- f) Studies and Master Plans
- g) Friends of the Colchester Schoolhouse – Ongoing
- h) Heritage Week 2020
Committee to be updated on contacts for heritage interviews with Mr. Loncke’s Grade 9 English Class.
Committee to discuss past heritage week events and plans for heritage week 2020 with a focus on budgeted funds for 2020.
- i) Charles Maedel Commemoration Project –ongoing
- j) Heritage Walking Tour and Digital Component
Committee to be updated on digital walking tour.
- k) Batten Schoolhouse and Iler Schoolhouse
Committee to be updated on the history of the Batten and Iler Schoolhouse.

7. Reports from Administration

None.

8. Correspondence

None.

9. New Business

a) Heritage Alteration Application –78 Fox Street

Rita Jabbour, Staff Liaison, advises the members that the Special Meeting was called to review a Heritage Alteration application for 78 Fox Street.

She states that the applicant would like to replace the roof on the designated dwelling. She advises that a report will be sent to Council for review at the November 18th, 2019 Regular Council Meeting. She advises that Council needs to ensure that the EMHC approves the alteration application prior to the decision of Council.

Laurie Kowtiuk, applicant, states that she would like to replace the roof with shingles that are a light brown in colour to match the look for cedar shakes.

Rita advises that should the members approve the alteration application, Council will be aware that the alteration request be approved on the base that the existing shingles are not original to the home and have been altered since the home was constructed in the late 19th century. The applicant proposes to replace the shingles with a similar material that better approximates the original roofing material. The alteration will not result in any disturbance to the roof line or any other heritage attribute of the property. The removal of the shingles and repair of the roof will assist in the conservation of the home.

She also advises the members that Laurie Kowtiuk will be the first resident to utilize the Heritage Grant Program. Two quotes were provided to administration for review. The grant is for a maximum of \$10,000.00 in assistance to conserve, repair, reconstruct or restore significant components of a designated property. She states that the applicant will receive 50% of the cost returned should the alteration application and grant be approved.

Moved by Anthony Paniccia

Second by Phil Pocock

(EMHC-2019-11-28) That the Heritage Alteration Application for 78 Fox Street be approved by the Essex Municipal Heritage Committee and sent to Council for final approval at the November 18th Regular Council Meeting.

“Carried”

b) 2020 Meeting Schedule

Motion: Phil Pocock

Seconds: Joseph Lucas

(EMHC-2019-11-29) That the Committee Review and adopt the meeting schedule for 2020 at the EMHC Regular Meeting on November 28th, 2019. .

“Carried”

10. Adjournment

Moved by Phil Pocock

Seconded by Anthony Paniccia

(EMHC-2019-11-30) That the meeting be adjourned at 5:26 p.m.

“Carried”

Next Meeting Date November 28th at Essex Municipal Building, 33 Talbot Street South, at 5:00 pm

Chair

Recording Secretary

The Corporation of the Town of Essex

By-Law Number 1872

Being a by-law to confirm the proceedings of the December 2, 2019, Regular Meeting of Council of The Corporation of the Town of Essex

Whereas pursuant to Section 5(1) of The Municipal Act, 2001, S.O. 2001, c.25 as amended, the powers of a municipality shall be exercised by its Council;

And whereas pursuant to Section 5(3) of The Municipal Act, 2001, S.O. 2001, c.25 as amended, a municipal power, including a municipality's capacity, rights, powers and privileges under Section 8 of the Municipal Act, 2001, S.O. 2001, c.25, as amended, shall be exercised by by-law unless the municipality is specifically authorized to do otherwise;

And whereas it is deemed expedient that a by-law be passed to authorize the execution of Agreements and other documents and that the proceedings of the Council of The Corporation of the Town of Essex at its meetings be confirmed and adopted by by-law.

Now therefore be it resolved that the Council of The Corporation of the Town of Essex enacts as follows:

1. That the actions of the Council of The Corporation of the Town of Essex in respect of all recommendations in reports and minutes of committees, all motions and resolutions and all other actions passed and taken by the Council of The Corporation of the Town of Essex, documents and transactions entered into during the December 2, 2019 meeting of Council, are hereby adopted and confirmed as if the same were expressly contained in this by-law.
2. That the Mayor and proper officials of The Corporation of the Town of Essex are hereby authorized and directed to do all the things necessary to give effect to the actions of the Council of The Corporation of the Town of Essex during the said December 2, 2019 meeting referred to in paragraph 1 of this by-law.
3. That the Mayor and the Clerk are hereby authorized and directed to execute all documents necessary to the actions taken by this Council as described in Section 1 of this by-law and to affix the Corporate Seal of The Corporation of the Town of Essex to all documents referred to in said paragraph 1.

Read a first and a second time and provisionally adopted on December 2, 2019.

Mayor

Clerk

Read a third time and finally adopted on December 16, 2019.

Mayor

Clerk

The Corporation of the Town of Essex

By-Law Number 1859

Being a by-law to provide for Thompson Drain: New Bridge for Cindy Brockman, Part of Lot 32, N.M.R. Concession, Geographic Twp. of Colchester North, Project REI2019D005, Town of Essex, County of Essex

Whereas the Town of Essex Drainage Department recommended that Council appoint a Drainage Engineer to prepare a drainage report for the for Thompson Drain: New Bridge for Cindy Brockman, Part of Lot 32, N.M.R. Concession, Geographic Twp. of Colchester North, Project REI2019D005, Town of Essex, County of Essex;

And Whereas Section 78 of the Drainage Act, R.S.O. 1990, Chapter D. 17, as amended 2010, states that the Council of any municipality whose duty it is to maintain and repair the drainage works or any part thereof, may on the report of an Engineer appointed by it, complete the drainage works as set forth in such report;

And Whereas an Engineers Drainage report dated August 30, 2019 and considered by the Drainage Board at its October 21, 2019 Consideration of Report meeting, has been procured and made by Gerard Rood, Professional Engineer, Rood Engineering Inc. and that the said report is attached hereto and forms part of this by-law;

And Whereas the Council of The Corporation of the Town of Essex is of the opinion that the said drainage works and/or improvements are warranted and desirable;

Now therefore the Council of The Corporation of the Town of Essex pursuant to the Drainage Act enacts as follows:

1. That the considered report dated August 30, 2019 and attached hereto as Schedule A to this By-law is hereby adopted and the said drainage works and/or improvements as therein indicated and set forth is hereby authorized and shall be completed in accordance therewith.
2. That the Corporation of the Town of Essex may borrow on the credit of the Corporation the amount of \$26,700.00, the amount necessary for the construction of the said drainage works.

3. That the Corporation may issue debentures for the amount borrowed less the total amount of:

- Grants received under Section 85 of the Drainage Act, R.S.O. 1990, Chapter D. 17, as amended, 2010;
- Commuted payments made in respect of lands and roads assessed within the Municipality;
- Money paid under Section 61(3) of the Drainage Act, R.S.O. 1990, Chapter D. 17, as amended 2010;

and such debentures shall be made payable: a) in the case of assessments in value of between \$500.00 and \$9,999.99 within (5) five years from the date of the debenture and shall bear interest at a rate not higher than the lending rates published by Infrastructure Ontario for municipalities; or b) in the case of assessments in value of \$10,000.00 and greater, within (10) ten years from the date of the debenture and shall bear interest at a rate not higher than the lending rates published by Infrastructure Ontario for municipalities

4. That a special equal annual rate sufficient to redeem the principal and interest on the debentures shall be levied upon the lands and roads as set forth in the Schedule, to be collected in the same manner as other taxes collected in each year for (5) five or (10) ten years (as applicable) after the passing of this by-law.
5. For paying the amount assessed upon the lands and roads belonging to or controlled by the Municipality, a special rate sufficient to pay the amount assessed plus interest thereon, shall be levied upon the whole rateable property in the Town of Essex, in each year for five years after the passing of this by-law to be collected in the same manner and at the same time as other taxes are collected.
6. All assessments of \$499.99 or less are payable in the first year in which the assessment is imposed.
7. The by-law comes into force on the passing thereof and may be cited as "Thompson Drain: New Bridge for Cindy Brockman".

Read a first and a second time and provisionally adopted on November 4, 2019.

Mayor

Clerk

Read a third time and finally passed on December 16, 2019

Mayor

Clerk

The Corporation of the Town of Essex

By-Law Number 186o

Being a by-law to provide for Batten Drain: Replacement Bridge for Abram Harms Holdings, Inc., Part of Lot 27, N.M.R. Concession, Geographic Twp. of Colchester North, Project REI2019Do24, Town of Essex, County of Essex

Whereas the Town of Essex Drainage Department recommended that Council appoint a Drainage Engineer to prepare a drainage report for the for Batten Drain: Replacement Bridge for Abram Harms Holdings, Inc., Part of Lot 27, N.M.R. Concession, Geographic Twp. of Colchester North, Project REI2019Do24, Town of Essex, County of Essex;

And Whereas Section 78 of the Drainage Act, R.S.O. 1990, Chapter D. 17, as amended 2010, states that the Council of any municipality whose duty it is to maintain and repair the drainage works or any part thereof, may on the report of an Engineer appointed by it, complete the drainage works as set forth in such report;

And Whereas a Engineers Drainage report dated September 16, 2019 and considered by the Drainage Board at its October 7, 2019 Consideration of Report meeting, has been procured and made by Gerard Rood, Professional Engineer, Rood Engineering Inc. and that the said report is attached hereto and forms part of this by-law;

And Whereas the Council of The Corporation of the Town of Essex is of the opinion that the said drainage works and/or improvements are warranted and desirable;

Now therefore the Council of The Corporation of the Town of Essex pursuant to the Drainage Act enacts as follows:

1. That the considered report dated September 16, 2019 and attached hereto as Schedule A to this By-law is hereby adopted and the said drainage works and/or improvements as therein indicated and set forth is hereby authorized and shall be completed in accordance therewith.
2. That the Corporation of the Town of Essex may borrow on the credit of the Corporation the amount of \$26,500.00, the amount necessary for the construction of the said drainage works.

3. That the Corporation may issue debentures for the amount borrowed less the total amount of:

- Grants received under Section 85 of the Drainage Act, R.S.O. 1990, Chapter D. 17, as amended, 2010;
- Commuted payments made in respect of lands and roads assessed within the Municipality;
- Money paid under Section 61(3) of the Drainage Act, R.S.O. 1990, Chapter D. 17, as amended 2010;

and such debentures shall be made payable: a) in the case of assessments in value of between \$500.00 and \$9,999.99 within (5) five years from the date of the debenture and shall bear interest at a rate not higher than the lending rates published by Infrastructure Ontario for municipalities; or b) in the case of assessments in value of \$10,000.00 and greater, within (10) ten years from the date of the debenture and shall bear interest at a rate not higher than the lending rates published by Infrastructure Ontario for municipalities

4. That a special equal annual rate sufficient to redeem the principal and interest on the debentures shall be levied upon the lands and roads as set forth in the Schedule, to be collected in the same manner as other taxes collected in each year for (5) five or (10) ten years (as applicable) after the passing of this by-law.
5. For paying the amount assessed upon the lands and roads belonging to or controlled by the Municipality, a special rate sufficient to pay the amount assessed plus interest thereon, shall be levied upon the whole rateable property in the Town of Essex, in each year for five years after the passing of this by-law to be collected in the same manner and at the same time as other taxes are collected.
6. All assessments of \$499.99 or less are payable in the first year in which the assessment is imposed.
7. The by-law comes into force on the passing thereof and may be cited as-"Batten Drain: Replacement Bridge for Abram Harms Holdings Inc.".

Read a first and a second time and provisionally adopted on October 21, 2019.

Mayor

Clerk

Read a third time and finally passed on December 16, 2019.

Mayor

Clerk

The Corporation of the Town of Essex

By-Law Number 1861

Being a by-law to provide for Philip Ferris Drain: Drain Diversion for Atlas Tube Inc., Geographic Township of Colchester South, Project REI2019D007, Town of Essex, County of Essex

Whereas the Town of Essex Drainage Department recommended that Council appoint a Drainage Engineer to prepare a drainage report for the for Drain Diversion for Atlas Tube Inc., Geographic Township of Colchester South, Project REI2019D007, Town of Essex, County of Essex;

And Whereas Section 78 of the Drainage Act, R.S.O. 1990, Chapter D. 17, as amended 2010, states that the Council of any municipality whose duty it is to maintain and repair the drainage works or any part thereof, may on the report of an Engineer appointed by it, complete the drainage works as set forth in such report;

And Whereas a Engineers Drainage report dated September 6, 2019 and considered by the Drainage Board at its September 30, 2019 Consideration of Report meeting, has been procured and made by Gerard Rood, Professional Engineer, Rood Engineering Inc. and that the said report is attached hereto and forms part of this by-law;

And Whereas the Council of The Corporation of the Town of Essex is of the opinion that the said drainage works and/or improvements are warranted and desirable;

Now therefore the Council of The Corporation of the Town of Essex pursuant to the Drainage Act enacts as follows:

1. That the considered report dated September 16, 2019 and attached hereto as Schedule A to this By-law is hereby adopted and the said drainage works and/or improvements as therein indicated and set forth is hereby authorized and shall be completed in accordance therewith.
2. That the Corporation of the Town of Essex may borrow on the credit of the Corporation the amount of \$1,044,144.00, the amount necessary for the construction of the said drainage works.
3. That the Corporation may issue debentures for the amount borrowed less the total amount of:

- Grants received under Section 85 of the Drainage Act, R.S.O. 1990, Chapter D. 17, as amended, 2010;
- Commuted payments made in respect of lands and roads assessed within the Municipality;
- Money paid under Section 61(3) of the Drainage Act, R.S.O. 1990, Chapter D. 17, as amended 2010;

and such debentures shall be made payable: a) in the case of assessments in value of between \$500.00 and \$9,999.99 within (5) five years from the date of the debenture and shall bear interest at a rate not higher than the lending rates published by Infrastructure Ontario for municipalities; or b) in the case of assessments in value of \$10,000.00 and greater, within (10) ten years from the date of the debenture and shall bear interest at a rate not higher than the lending rates published by Infrastructure Ontario for municipalities

4. That a special equal annual rate sufficient to redeem the principal and interest on the debentures shall be levied upon the lands and roads as set forth in the Schedule, to be collected in the same manner as other taxes collected in each year for (5) five or (10) ten years (as applicable) after the passing of this by-law.
5. For paying the amount assessed upon the lands and roads belonging to or controlled by the Municipality, a special rate sufficient to pay the amount assessed plus interest thereon, shall be levied upon the whole rateable property in the Town of Essex, in each year for five years after the passing of this by-law to be collected in the same manner and at the same time as other taxes are collected.
6. All assessments of \$499.99 or less are payable in the first year in which the assessment is imposed.
7. The by-law comes into force on the passing thereof and may be cited as-"Philip Ferris Drain: Drain Diversion for Atlas Tube Inc.".

Read a first and a second time and provisionally adopted on October 21, 2019.

Mayor

Clerk

Read a third time and finally passed on December 16, 2019.

Mayor

Clerk

The Corporation of the Town of Essex

By-Law Number 1875

Being a by-law to confirm the proceedings of the December 16, 2019, Regular Meeting of Council of The Corporation of the Town of Essex

Whereas pursuant to Section 5(1) of The Municipal Act, 2001, S.O. 2001, c.25 as amended, the powers of a municipality shall be exercised by its Council;

And whereas pursuant to Section 5(3) of The Municipal Act, 2001, S.O. 2001, c.25 as amended, a municipal power, including a municipality's capacity, rights, powers and privileges under Section 8 of the Municipal Act, 2001, S.O. 2001, c.25, as amended, shall be exercised by by-law unless the municipality is specifically authorized to do otherwise;

And whereas it is deemed expedient that a by-law be passed to authorize the execution of Agreements and other documents and that the proceedings of the Council of The Corporation of the Town of Essex at its meetings be confirmed and adopted by by-law.

Now therefore be it resolved that the Council of The Corporation of the Town of Essex enacts as follows:

1. That the actions of the Council of The Corporation of the Town of Essex in respect of all recommendations in reports and minutes of committees, all motions and resolutions and all other actions passed and taken by the Council of The Corporation of the Town of Essex, documents and transactions entered into during the December 16, 2019 meeting of Council, are hereby adopted and confirmed as if the same were expressly contained in this by-law.
2. That the Mayor and proper officials of The Corporation of the Town of Essex are hereby authorized and directed to do all the things necessary to give effect to the actions of the Council of The Corporation of the Town of Essex during the said December 16, 2019 meeting referred to in paragraph 1 of this by-law.
3. That the Mayor and the Clerk are hereby authorized and directed to execute all documents necessary to the actions taken by this Council as described in Section 1 of this by-law and to affix the Corporate Seal of The Corporation of the Town of Essex to all documents referred to in said paragraph 1.

Read a first and a second time and provisionally adopted on December 16, 2019.

Mayor

Clerk

Read a third time and finally adopted on January 20, 2020.

Mayor

Clerk