City of Port Colborne
Council Meeting Agenda

Date:	July 26, 2021
Time:	6:30 pm
Location:	Council Chambers, 3rd Floor, City Hall 66 Charlotte Street, Port Colborne

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2. National Anthem

3. Proclamations

4. Adoption of Agenda

5. Disclosures of Interest

6. Approval of Minutes

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Due to COVID-19 this meeting will be conducted virtually. Anyone wishing to speak to Council is asked to submit a written delegation that will be circulated to Council prior to the meeting. Written delegations will be accepted until noon the day of the meeting by emailing deputyclerk@portcolborne.ca or submitting a hard copy in the after-hours drop box in front of City Hall, 66 Charlotte Street, Port Colborne. Written delegations accepted after this time will be circulated with the minutes and included as public record.

11. Mayor's Report

12. Regional Councillor's Report

13. Staff Remarks

14. Councillors' Remarks

15. Consideration of Items Requiring Separate Discussion

16. Motions

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20. Confidential Items

Confidential reports will be distributed under separate cover. Items may require a closed meeting in accordance with the Municipal Act, 2001.

21. Procedural Motions

22. Information items

23. Adjournment

City of Port Colborne

Council Meeting Minutes

Date:	**Monday, July 12, 2021**
Time:	**6:30 pm**
Location:	**Council Chambers, 3rd Floor, City Hall** **66 Charlotte Street, Port Colborne**

Members Present:	M. Bagu, Councillor R. Bodner, Councillor G. Bruno, Councillor F. Danch, Councillor A. Desmarais, Councillor D. Kalailieff, Councillor W. Steele, Mayor (presiding officer) H. Wells, Councillor
Member(s) Absent:	E. Beauregard, Councillor
Staff Present:	A. LaPointe, Acting Director of Planning & Development/City Clerk S. Luey, Chief Administrative Officer C. Madden, Deputy Clerk (minutes) C. Kalimootoo, Director of Public Works S. Lawson, Fire Chief

1. Call to Order

Mayor Steele called the meeting to order.

2. National Anthem

3. Proclamations

4. Adoption of Agenda

Moved by Councillor A. Desmarais
Seconded by Councillor R. Bodner

That the agenda dated July 12, 2021 be confirmed, as circulated.

Carried

5. Disclosures of Interest

6. Approval of Minutes

6.1 Regular Meeting of Council - June 28, 2021

Moved by Councillor D. Kalailieff
Seconded by Councillor M. Bagu

That the minutes of the regular meeting of Council, held on June 28, 2021, be approved as presented.

Carried

7. Staff Reports

8. Correspondence Items

Moved by Councillor A. Desmarais
Seconded by Councillor F. Danch

That items 8.1 and 8.2 be received for information.

Carried

8.1 Township of Wainfleet - Support City of Port Colborne and City of Welland - Governance and Ownership of Niagara Central District Rungeling Airport

8.2 Niagara Peninsula Conservation Authority - Wainfleet Bog Biederman Drain Re-Alignment

9. Presentations

10. Delegations

10.1 Nicolas Desrosiers - Request to receive exemption to park tow truck on residential street

Nicolas Desrosiers reiterated his request to Council with respect to receiving an exemption to park his tow truck on a residential street and responded to questions received from Council.

Moved by Councillor A. Desmarais
Seconded by Councillor G. Bruno

That the Fire Chief be directed to investigate Nicolas Desrosiers' request to receive exemption to park tow truck on residential street and provide a recommendation to Council.

Carried

11. Mayor's Report

12. Regional Councillor's Report

13. Staff Remarks

14. Councillors' Remarks

14.1 City Hall Front Counter Update (Bagu)

In response to Councillor Bagu's request for an update on the City Hall front counter renovations, the Director of Public Works indicated that a Designated Substance Survey will be taking place in the near future and that construction will begin either in the late fall or early winter.

14.2 Kids Fishing Dock (Bagu)

Councillor Bagu expressed gratitude towards staff for installing the kids fishing dock at Sugarloaf Marina.

14.3 Thank you to Staff (Kalailieff)

Councillor Kalailieff expressed appreciation towards all of City staff for their hard work over the past couple of weeks.

14.4 Elevator Renovation at City Hall (Bruno)

In response to Councillor Bruno's inquiry regarding whether the elevator at City Hall could be repaired before the re-opening of City Hall, the Director of Public Works informed Council that the project will be started later this year.

15. Consideration of Items Requiring Separate Discussion

15.1 Application to Canada Community Revitalization Fund, 2021-200

Moved by Councillor H. Wells
Seconded by Councillor G. Bruno

That Chief Administrative Office Report 2021-200 be received;

That the Manager of Strategic Initiatives be directed to submit a funding application to the Canada Community Revitalization Fund for a new community multi-purpose facility to be located at the City's waterfront as part of the new cruise ship welcoming area;

That Council support the commitment to fund the City's share of the community multi-purpose facility to be located at the City's waterfront as part of the new cruise ships welcoming area; and

That if the grant is successful the funds be included in the 2022 budget process.

Carried

15.2 2020 Year in Review – Public Works Department, 2021-198

Moved by Councillor D. Kalailieff
Seconded by Councillor A. Desmarais

That Public Works Department Report 2021-198 be received for information.

Carried

15.3 Recommendation Report for a Draft Plan Extension Request for the Chippawa Estates Subdivision, 2021-197

Moved by Councillor H. Wells
Seconded by Councillor M. Bagu

That Planning and Development Department Report 2021-197 be received; and

That the By-law attached as Appendix A of Planning and Development Report 2021-197 be approved, extending the Chippawa Estates Draft Plan of Subdivision for one year; and

That the property owner and agent be notified accordingly.

In Favour (3): Councillor R. Bodner, Councillor G. Bruno, and Mayor Steele

Opposed (5): Councillor M. Bagu, Councillor F. Danch, Councillor A. Desmarais, Councillor D. Kalailieff, and Councillor H. Wells

Lost (3 to 5)

a. Delegation material from Kim Videcak, Zdenko Videcak, and Gerry Guitar, residents

b. Delegation material from Melissa Bigford and Christopher Lofquist, residents

c. Delegation from Frank Evangelista, applicant

15.4 2021-21 Multi-Use Trail Repairs, 2021-196

Moved by Councillor H. Wells
Seconded by Councillor G. Bruno

That Council award the contract for the 2021-21 Multi-Use Trail Repairs (the Project) to Diamond Earthworks Corporation (the Contractor) for the bid amount of $247,868, plus applicable taxes;

That Council approve a contingency amount of $25,000 to be disbursed at the discretion of the Director of Public Works to extend provisional items and unforeseen circumstances under the contract; and

That staff prepare the Contract By-law, and the City Clerk and Mayor be authorized to execute the Contract Agreement.

Carried

15.5 CIP Agreement 234-238 West Street, 2021-193

Moved by Councillor G. Bruno
Seconded by Councillor D. Kalailieff

That Chief Administrative Office Report 2021-193 be received; and

That Council approve the Downtown Central Business District Community Improvement Plan Agreement between the City of Port Colborne and Greg Poisson, attached as Appendix A to Chief Administrative Office Report 2021-193; and

That a by-law to enter into an agreement with Greg Poisson be brought forward.

Carried

15.6 Community Update on City Facilities and Programs, 2021-108

Moved by Councillor G. Bruno
Seconded by Councillor F. Danch

The Chief Administrative Office Report 2021-108 be received for information and serve as an update to Council and the community.

Carried

15.7 Niagara Region CIP Review, 2021-202

Moved by Councillor G. Bruno
Seconded by Councillor H. Wells

That Chief Administrative Office Report 2021-202 be received; and

That Council endorse the letter attached as Appendix A to Chief Administrative Office Report 2021-202.

Carried

15.8 King of the Lake Fishing Tournaments, 2021-192

Moved by Councillor H. Wells
Seconded by Councillor G. Bruno

That Chief Administrative Office Report 2021-192 be received; and

That City sponsorship of the King of the Lake fishing tournaments be approved, with $5,000 in financial support from the City, and waiving the fees for H.H. Knoll Lakeview park permit, bandshell permit, and hydro access permit; and

That approval of the above-noted event and sponsorship is conditional on the King of the Lake fishing tournaments submitting a certificate of liability insurance in the amount of $2,000,000 naming the City of Port Colborne as additional insured.

Carried

16. Motions

17. Notice of Motions

18. Minutes of Boards & Committees

Moved by Councillor H. Wells
Seconded by Councillor F. Danch

That item 18.1 be approved, as presented.

Carried

18.1 Port Colborne Library Board Minutes - May 4, 2021 and June 1, 2021

19. By-laws

Moved by Councillor A. Desmarais
Seconded by Councillor M. Bagu

That items 19.2 to 19.4 be enacted and passed.

Carried

19.2 By-law to Authorize Entering into a Contract Agreement with Diamond Earthworks Corporation regarding Project 2021-21, Multi-Use Trail Repairs

19.3 Being a By-law to Authorize Entering into an Agreement with Greg Poisson Regarding a CIP Agreement for 234-238 West Street

19.4 By-law to Adopt, Ratify and Confirm the Proceedings of the Council of The Corporation of the City of Port Colborne

19.1 By-law to Amend By-law No. 5494/91/10 Respecting Chippawa Estates

Note: Item has been withdrawn as a result of the corresponding report being defeated.

20. Confidential Items

Moved by Councillor F. Danch
Seconded by Councillor R. Bodner

That Council do now proceed into closed session in order to address items 20.1 to 20.3.

Carried

20.1 Minutes of the closed session portion of the June 28, 2021 Council Meeting

20.2 Chief Administrative Office Report 2021-191, Potential Acquisition of Land

20.3 Chief Administrative Office Report 2021-195, Potential Disposition of City Owned Land

21. Procedural Motions

22. Information items

23. Adjournment

Council moved into Closed Session at approximately 9:18 p.m.

Council reconvened into Open Session at approximately 10:28 p.m.

Mayor Steele adjourned the meeting at approximately 10:29 p.m.

William C. Steele, Mayor

Amber LaPointe, City Clerk

PORT COLBORNE

Mayor's Report

July 12, 2021 Council Meeting

COVID-19

The Province will be moving to Step 3 in the Roadmap to Reopening on Friday. This will allow for greater capacity in retail stores and outdoor activities and the return of indoor dining. Please watch our social media pages for complete updates as we receive them from the province. At this time, it will still be important for you to wear a mask and maintain social distancing.

If you have not yet received your vaccine, go to the Ontario.ca website to book an appointment or call 1-888-999-6488. Everyone over the age of 12 is now eligible to receive their first or second dose.

If you have questions in regards to City Hall services or would like to report a concern, you can contact a Customer Service representative Monday – Friday 8:30 a.m. to 4:30 p.m. by calling 905-835-2900 or via email CustomerService@portcolborne.ca.

Alternatively, you can visit our website www.portcolborne.ca and submit a service request or inquiry by clicking on the "Request A Service" tab, located on the top right corner of our website page.

Whether you are a citizen, business owner or city councillor, we are here to assist you and provide Customer Service excellence through all service channels, internally and externally.

In-person appointments will be scheduled for essential and time sensitive services. Where possible, services will continue to be provided through remote means as we ease into Step 3.

DeWitt Carter Public School Project

I received an email from Harmony Cooper, a Grade 1 and 2 teacher at DeWitt Carter Public School.

For the last day of school and she wanted to make it special for some of her students coming off of such a tumultuous educational year. One of the last projects that the Grade 1s had to do for the year concerned the local community - students had to write a postcard to the mayor of Port Colborne, highlighting a special place in their local community, and had to explain to me why it made their community a better place

We have a brief slideshow to show you their responses to the project.

(play slideshow)

I want to thank Ms. Cooper and all of the students in her class for taking the time to write to me and share their artwork.

This video has been shared on social media and will be available for viewing on our Youtube page.

Enjoy the summer and play safe.

Upcoming events

The City of Port Colborne is asking residents to PORTicipate online with the virtual event "Explore Port Colborne." This event will provide some great ways to get outdoors, get active, and get to know Port Colborne a little better! You will have another 3 weeks to complete as many challenges as you can.

The Explore Port Colborne virtual event will be live on the GooseChase app until Friday, July 30, 2021 at midnight. The virtual Explore Port Colborne event will include activities that involve getting out to see all that Port Colborne has to offer. Activities include, visiting parks, utilizing trails, visiting the Museum, supporting local businesses and so much more.

Info, including the access code is available at Events and Festivals - City of Port Colborne page on our website.

Thank you everyone and stay safe and be kind.

PORT COLBORNE

Subject: **Port Colborne Municipal Drain Meeting to Consider**

To: **Council**

From: **Public Works Department**

Report Number: 2021-211

Meeting Date: July 26, 2021

Recommendation:

That Public Works Department Report 2021-211 be received; and

That the Mayor and Clerk be directed to execute a by-law to provisionally adopt the Port Colborne Municipal Drain Engineer's report, dated April 16th, 2021, prepared by Paul Marsh, P.Eng. of EWA Inc., under Section 78, Chapter D. 17 of the Drainage Act R.S.O. 1990.

That staff be directed to advance the Port Colborne Municipal Drain Engineer's Report to that of the Court of Revision, as per Section 46(1), Chapter D. 17 of the Drainage Act R.S.O. 1990.

That Councillor_____, Councillor_____ and Councillor _____be appointed as members of the Port Colborne Municipal Drain Court of Revision and Councillor_____ be appointed as an alternate to be tentatively scheduled for September 29, 2021.

Purpose:

This report is a follow-up to Council direction to proceed to the "Meeting to Consider", regarding the final delivery of the Port Colborne Municipal Drain Engineer's Report, prepared by EWA Engineering Inc. The purpose of this report is to provide Council with the requisite procedure pertaining to the June 14, 2021, Meeting to Consider and the subsequent Court of Revision.

Background:

Further to Public Works Department Report 2021-148 which presented Council with a history, background and summary of events leading up to the delivery of the final version of the Engineer's Report, the following update is provided.

Following Council's decision, at the June 14, 2021, Council meeting, staff completed a mailing to all property owners and/or entities in the watershed of the notification of this 'Meeting to Consider' and included a copy of the Engineer's Report (on a USB Drive). The notification stated the date of filing of the Engineer's Report with the City Clerk; the name of the drainage works; and the date and time of the Council meeting at which the Engineer's Report would be considered. Instructions were also included regarding date and time to comment on the Report to be submitted to the Clerk's office. This mailing was completed as per the requirements of Sections 41(1) and 41(2) of the *Drainage Act R.S.O. 1990* (the Act).

Discussion:

At this meeting, Council will be provided with a verbal presentation by the Engineer of record, Paul Marsh, P. Eng., of EWA Engineering Inc., outlining the intricacies of the Port Colborne drainage works.

Council will have the opportunity during the Meeting to Consider to review any questions or concerns related to the design or any gross errors in the Engineer's Report that were submitted by the property owners. Should the Meeting to Consider reveal any errors in the Engineer's Report, Council may refer the report back to the Engineer for reconsideration. However, under no circumstances is Council to refer the Report back to the Engineer for any concerns regarding assessments. Concerns related to assessment are a function of the Court of Revision, and this process, under the *Drainage Act*, must occur within 60 days of the Meeting to Consider.

Section 97 of the Act states, the Court of Revision shall consist of three members appointed by the Council of the City of Port Colborne. The three members appointed do not have to be standing members of the current council however they must be eligible to run for council within this municipality. A recommendation to that effect is contained in the recommendation section of this report.

Prior to the Court of Revision, the selected panel members will be provided an agenda, guide and key notes outlining the appeals presented to help them through the process.

An up-to-date Engineer's Report allows for drain maintenance and roadside ditching programs, which allows staff to provide a reasonable level of service moving forward.

Financial Implications:

All upfront administration and financing have already been borne by the City of Port Colborne. All construction costs will be borne by the City of Port Colborne and once the report is adopted and the construction is completed, the financing and cost of the project will be expensed to the City of Port Colborne property owners, according to the assessment schedule contained in the report. There will be some assessment to the general levy for City-owned roads and properties within the watershed.

The total estimated cost of the project is $296,048.10. The estimated portion to the members of the watershed is $212,996.48. The amount of $71,436.69 which is for the Municipal Roads and parcels is to be paid by the general tax base.

The Port Colborne Drain is an example of a drain that is both within the rural storm area and within the urban storm levy area. There are ten properties that are assessed on the drain and located in the storm sewer levy area. Council will receive a further report proposing the treatment of properties in this situation in the near future and these properties will be billed based on Council's policy decision at that time.

Strategic Plan Alignment:

The initiative contained within this report supports the following pillar(s) of the strategic plan:

- Service and Simplicity - Quality and Innovative Delivery of Customer Services

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Conclusion:

That Council approve this report and attached bylaw for the Port Colborne Municipal Drainage works.

Appendices:

a. A copy of the Engineer's Report containing plan and profile of the Port Colborne Municipal Drain

Respectfully submitted,

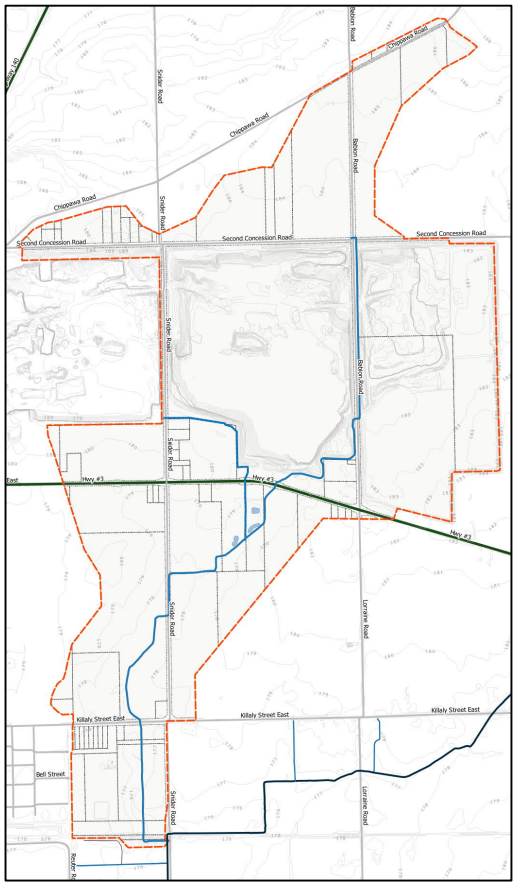
Alana Vander Veen
Drainage Superintendent
905-835-2900 ext 291
Alana.VanderVeen@portcolborne.ca

Report Approval:

All reports reviewed and approved by the Department Director and also the City Treasurer when relevant. Final approval is by the Chief Administrative Officer.

Port Colborne Municipal Drain Report

City of Port Colborne



April 16, 2021

Project No: EWA-189999

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Revision and Version Tracking

Title: Port Colborne Drain Report
Submission Date: April 16, 2021

Version #	Issued As:	Prepared by	QA/QC	Editor	Date:
103	Issued For Report	P.Marsh	K. Graham	P.Marsh	Apr 16, 2021
102	Issued For Final Review	P.Marsh	A.Vander Veen		Dec. 7, 2020
101		P.Marsh		P.Marsh	Nov 13, 2020
100	Issued as Final	P.Marsh	A.Vander Veen		May 15, 2020
99	Issued for Final Review	P.Marsh	A. Vander Veen	P.Marsh	Dec. 13, 2019
95	95% Issued For Review	P.Marsh		P.Marsh	April 12, 2019
070	70% Issued For Review	P.Marsh		P.Marsh	
025	25% Outline IFR				Sept. 18, 2018

FileName: 189999_PortColborneDrainReport_v103Final.docx

Seal Page:

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Appendix B: Cost Estimates & Assessment Schedules

Appendix C: Past Financing and Cost Reports

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1 Executive Summary

The Port Colborne Municipal Drain is located in the eastern portion of the City of Port Colborne. It has an outlet into the Wignell Drain, immediately south of the Friendship Trail and ends at the Second Concession Road and Babion Rd.

The City of Port Colborne retained Paul Marsh, P.Eng of EWA Engineers Inc. to prepare a Drainage Report under the Drainage Act R.S.O. 1990 for the Port Colborne Drain. See appointment resolution of Council included in Appendix D.

This report includes a description of all work, associated plans, cost estimates, and assessment schedules for the proposed work for the Port Colborne Drain, as well as the proposed Branch Drain. The report has been prepared in accordance with the requirements of the Drainage Act, Chapter D.17 of the Revised Statutes of Ontario, Section 4 and 78. The works are described as predominately maintenance with specific improvements identified.

This report includes drain improvements, including drain maintenance, to ensure suitable channel design flows are achieved and extending the drain to the Second Concession to match the original inflow prior to the expansion of the quarry. The drain improvements have been developed through plan and profile drawings. The drawings include As Constructed data for drain improvements already constructed by the City of Port Colborne in 2016 including re-alignment of the drain south of Highway #3.

The following are summary descriptions of the planned improvements:

1. Extension of the drain along the east side of Babion Rd.
2. Re-laying the culverts at the intersection of Babion Rd. and Second Concession Rd.
3. Using the existing outlet (called Wignell Drain in past reports) for the Port Colborne Branch #1 Drain.
4. Maintenance of the Port Colborne Branch Drain #1 to the Snider Rd. ROW.

The following is a summary of the project financial values as prepared in the attached Assessment Schedule included in Appendix C.

Items	Costs
Port Colborne Drain	
Estimated Construction Costs	$54,068.
Previous Works – completed prior to 2018	$52,212.
Eligible Administration Costs	$170,157.
Calculated Allowances	$939.
Sub-Total Port Colborne Drain	**$277,376.**
Port Colborne Branch #1 Drain	
Estimated Construction Costs	$10,340.
Eligible Administration Costs	$8,052.
Calculated Allowances	$277.
Sub-total Port Colborne Branch #1 Drain	**$18,669.**
Total:	**$296,045.**

The Port Colborne Drain is organized into two distinct catchments as follows:

- Port Colborne Drain serving 327.8Ha, with an open channel drain including private crossings and having a Drain length of 3,368m.
- Branch Drain #1 serving 14.8Ha with an open channel drain length of 823m.

The Port Colborne Drain Assessment Summary is as follows:

Benefit Assessment (Section 22)		
Private Lands	$763.50	
Total - Benefit Assessment (Section 22)		**$763.50**
Outlet Liability Assessment (Section 23)		
Private Lands		
Road Right of Way Lands	$225,489.15	
Total - Outlet Liability Assessment (Section 23)		**$225,489.15**
Special Benefit Assessment (Section 24)		
Port Colborne Drain	$5,600.09	
Total - Special Benefit Assessment (Section 24)		**$5,600.09**
Special Assessments (Section 26)		
City of Port Colborne	$40,448.80	
MINISTRY OF TRANSPORTATION ONTARIO	$5,076.19	
Total: Port Colborne Drain	**$45,525.00**	
Total - Special Assessments (Section 26)		**$45,525.00**
Forecasted Total Drain Assessments		**$277,377.74**

The Port Colborne Branch #1 Drain Assessment Summary is as follows:

Outlet Liability Assessment (Section 23)		
Private Lands	$3,096.49	
Road Right of Way Lands	$1,450.25	
Total - Outlet Liability Assessment (Section 23)		$4,546.74
Special Assessments (Section 26)		
City of Port Colborne	$7,008.46	
MINISTRY OF TRANSPORTATION ONTARIO	$7,115.18	
Total - Special Assessments (Section 26)		$14,123.64
		$18,670.38

This report and the proposed improvements are based on instructions from the City of Port Colborne and in consultation with the local landowners. The cost of these improvements is shared across all areas that use the Drain by way of allowances and assessments consistent with the Drainage Act of Ontario.

2 Introduction

The City of Port Colborne retained Paul Marsh, P.Eng of EWA Engineers Inc. to prepare a Drainage Report under the Drainage Act R.S.O. 1990 for the Port Colborne Municipal Drain formerly the Wignell Municipal Drain.

In addition to the Port Colborne Drain Report, there are other Drain Reports being prepared concurrently and they are:

- Wignell Drain, outlets to Lake Erie across Lakeshore Rd. East and proceeds northerly for 7.2km.

- Michener Drain, outlets to Wignell at 0+010 north of the Lakeshore Rd. East and proceeds northerly for 1.7km, ending south of the Friendship Trail.

The Port Colborne Drain originally had an outlet to Lake Erie but was diverted to the Wignell Drain by a previous Engineer's report. The remaining portion has been referred to as a branch of the Wignell Drain, but by the preparation of this Engineer's Report with a revised Assessment Schedule, it will be recognized as the Port Colborne Drain with an outlet to the Wignell Drain south of the Friendship Trail. This report also recognizes the already existing channel as a Branch Drain west to Snider Rd. called Port Colborne Branch Drain #1. The following Figure presents the proposed drain names and drainage boundaries.

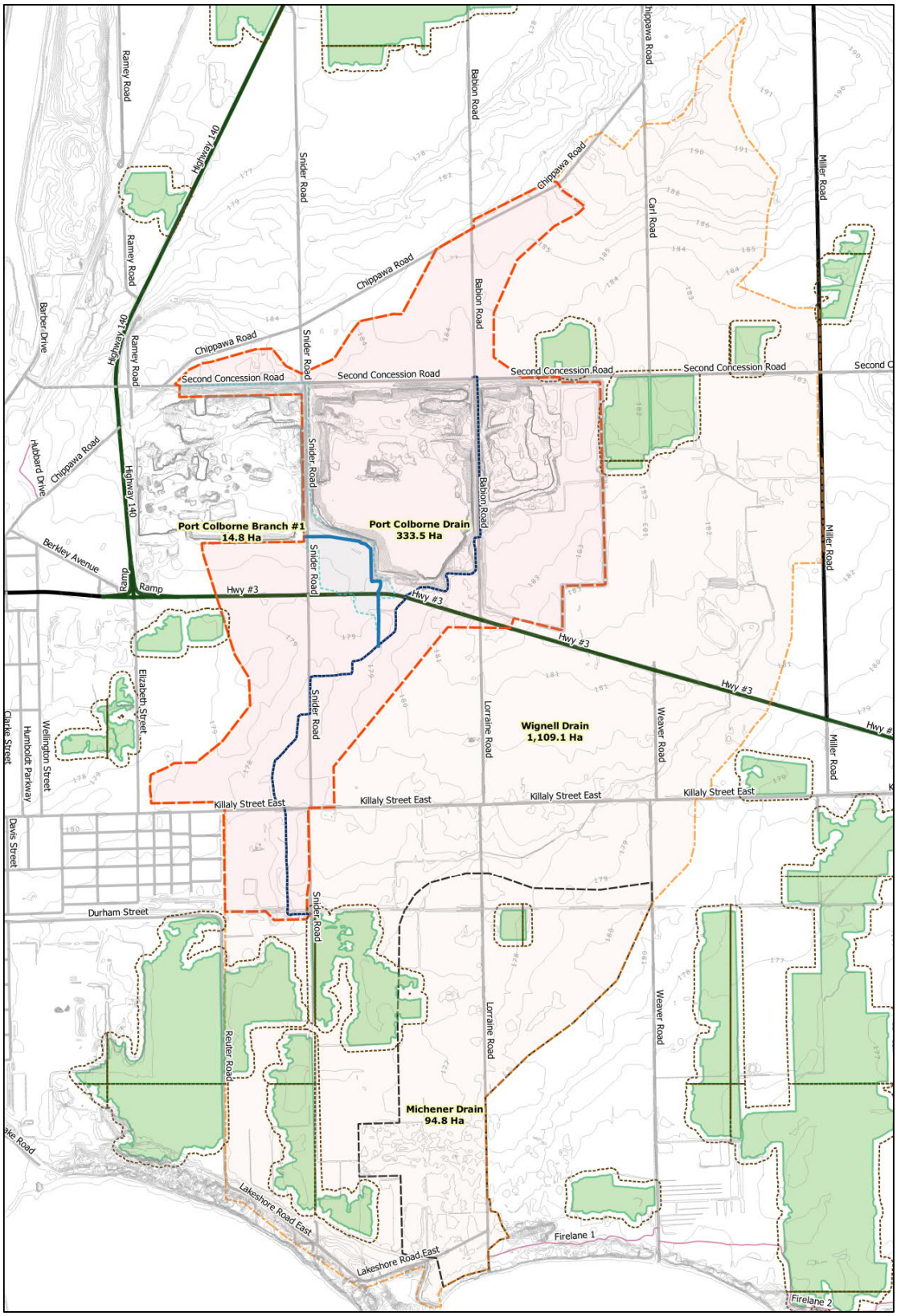

Figure 1 Wignell Watershed; Michener, Port Colborne and Wignell Drains

This report includes a description of all work, associated plans, cost estimates, and assessment schedules for the proposed work on the existing Port Colborne Drain, as

well as for the proposed Branch Drain. The report has been prepared in accordance with the requirements of the Drainage Act, Chapter D.17 of the Revised Statutes of Ontario, Sections 4 and 78.

The proposed improvement work for the Port Colborne Drain is prepared as a Section 78 (1.1) of the Drainage Act. The works are described as maintenance with the exception of re-alignments, which are deemed to be required but not requiring a Section 4 application of the Act. The Port Colborne Branch Drain #1 is prepared as a Section 4 petition by the Road Authority.

2.1 Objective

The Port Colborne Drain already exists and has for many years. Originally known as the Port Colborne Drain, it was renamed and made part of the Wignell/Michener Drain during the 1970s. As of this report, it is being named the Port Colborne Drain again. The objective is to maintain the existing drain in a State of Good Repair (SOGR). The municipal drains have been impacted by changes in land use practices that affect their function. The drain capacity is degraded through growth of vegetation within the banks of the drain.

There are specific new channels proposed to improve drain function recognizing the impacts to the original drain alignments. From Highway #3 to Second Concession is quarry land that has affected the drain alignment with corresponding relocation including quarry boundary and berming.

The Drain channel was relocated to the east side of Babion Road but has not been fully constructed to Second Concession Road. Physical changes to the drain are needed for continued service and proposed improvements have necessitated a new Engineer’s report be prepared under Section 78 of the Drainage Act R.S.O. 1990.

Previous maintenance work conducted in 2016, and other dates, is included in this report and will be assessed as part of the cost of the works.

2.2 Drain History and Past Reports

The Port Colborne Drain Engineer's Report is prepared as follows:

- Baseline Drainage Report; provides an assessment of current drainage problems and identifies the extent of the drainage area to be serviced by the municipal drain. Baseline report includes a history of drainage and presents historical information such as grade lines.

- Wignell Watershed Assessment Report; provides an assessment of existing capacity through the use of hydrologic and hydraulic modelling which identifies the options for resolving problems and recommends a preferred option to improve drainage.

The final Engineer's Report is composed of the two previous reports along with supporting documentation and final drainage cost estimates and assessment schedule or table.

The exact previous alignment of the upper portion of the Port Colborne Drain is not completely clear. With the expansion of the quarry, efforts to abandon portions of the Drain and to re-align the Drain were provided by report to Port Colborne Council, see review in Baseline Report. For this report, based on the information reviewed, the Port Colborne Branch Drain #1 is presumed to have existed previously by drain report. The following figure shows Constructed Drains as presented in the OMAF AgMaps application.

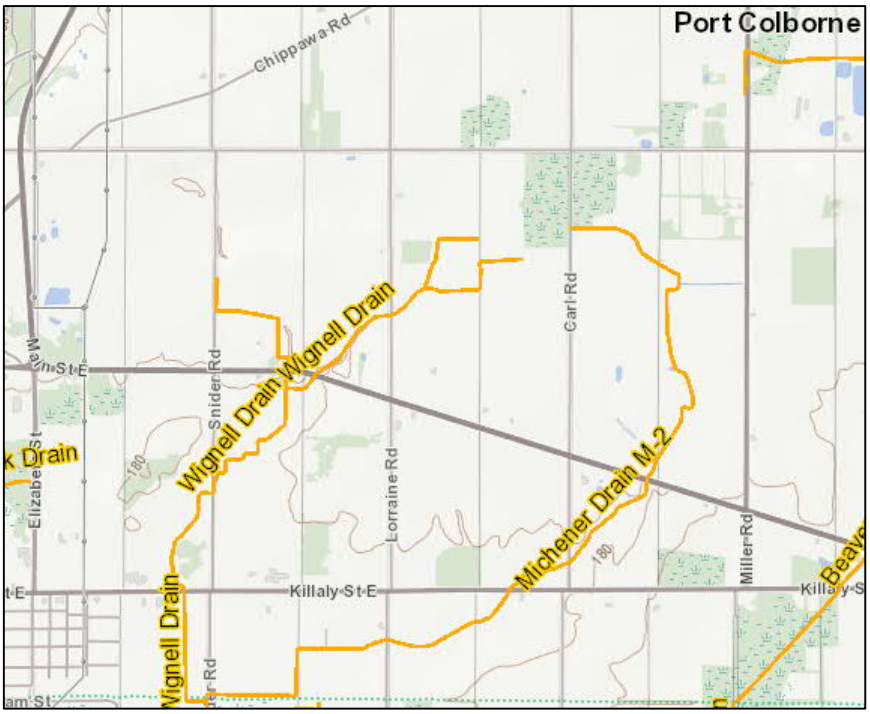

Figure 2 OMAF AgMaps - Constructed Drains

What is clearly shown in the figure are the two (actually three) top branches of the drain. A branch that turns west north of Highway #3 and is shown along the Snider Rd. ROW to a point north along the eastern edge of the roadway. Also a branch that proceeds eastward to Babion Rd (labeled as Lorraine Rd. in the figure) and ending before Carl Rd.

The alignments were substantially changed by report in 1999, in favour of re-alignments to allow the quarry properties to expand rock removal within this area.

2.3 Port Colborne Drain Watershed

The Port Colborne Drain watershed is composed of a single distinct municipal drain that outlets to the Wignell Drain just south of the Friendship Trail.

The Port Colborne Drain serves an area of 327.8 hectares based on the defined drain boundary, refer to Figure 2. The main branch of the drain is 3,368m in length from the drain origin, which is defined as the south end of culvert headwall crossing the Friendship Trail and is 110m to the outlet into Wignell Drain at STA 2+055 for a total main drain length of 3478m.

The watershed boundary is south of Chippawa Rd. with a high point of 190m. The upper portion of the drain is defined to end at the intersection of Babion Rd. and Second Concession Rd. at an approximate elevation of 182m.

- Watershed average fall (slope, height from furthest point in the watershed to lowest point at outlet) is given as 0.32% or 3.17m per 1000m

- Drain average fall (slope) is given as 0.258% or 2.58m per 1000m

It is worth noting that a portion of the upper watershed, the square edge on the west side of the catchment boundary along Snider Road, is removed by a municipal storm sewer that flows west and outlets into the canal.

This slope characterises the Port Colborne Drain as an average sloped watershed, with greater fall than the Wignell Drain at 0.11% average slope. The lower reach of the drain, where it connects to the Wignell Drain, has very little grade and standing water is a common occurrence.

The Port Colborne Drain can be segregated into distinct geographic areas as shown in Figure 3 Drainage Catchment of Port Colborne Drain.

1. The outlet through the Friendship Trail is defined by the low slope and standing water with considerable phragmites growth. This portion of the drain is only 160m in length from the outlet to a point just north of the Friendship Trail.

2. Above the Friendship Trail to Highway #3 Crossing. This section was cleaned and a segment re-aligned by the City of Port Colborne in 2016, as shown in the Baseline Report. The resulting grade line is shown as an “As Constructed” grade line on the Plan & Profile Drawings. There are two constructed wetlands adjacent to the drain. They are located on two properties north of the drain and hydraulically above the drain at STA 1+600 and 1+735 respectively. Two fordings were added to the drain during the 2016 works at STA 1+745 and 1+628, which replaced a culvert in poor condition and with the agreement of the property owner.

3. North of Highway #3, the main channel of the drain follows the edge of the quarry and crosses Babion Rd. to the east side of the ROW. Historically, RV Anderson Drain Report1979, this drain continued east of Babion Rd., but a portion was abandoned by a Drain Report adopted by council in 1999. Since that 1979 report, the channel has been re-routed along Babion Rd. on the west and east side, but not to Second Concession Rd. Currently the channel stops at the Quarry access lanes with an existing culvert underneath the private access road. An existing PVC culvert appears perched and currently blocking the flow path. There’s no defined outlet for the existing culverts located at Second Concession Rd.

4. Two culverts are located at the Second Concession Road; one crossing from east to west of Babion Rd. on the north side of Second Concession (600 HDPE) and a second culvert currently on the west side of Babion Rd. graded to the south but not connecting to the Port Colborne Drain. By this report, the culverts will be reset to provide positive drainage

from west to east and north to south on the north and east sides of the ROW. The Port Colborne Drain will end at the north east corner of the intersection and connect for outlet east of Babion Rd. This change will serve lands to the north of Second Concession Rd. that would otherwise drain south but are blocked by the road and the quarry.

5. The existing channel of the Branch Drain #1 serves west to Snider Rd. at the north edge of the property, ARN = 411000. From the current Highway #3 crossing to a point on Branch Drain #1 roughly at STA 0+480, the drain channel is quite clear and the cross-section well defined. From that point to Snider Rd. ROW, the drain is overgrown with vegetation and the cross-section disappears before the ROW. This section of Branch Drain #1 is to be improved to the edge of the Snider ROW. The portion of the drain shown on Snider Rd. is to be abandoned in favour of municipal roadside swales.

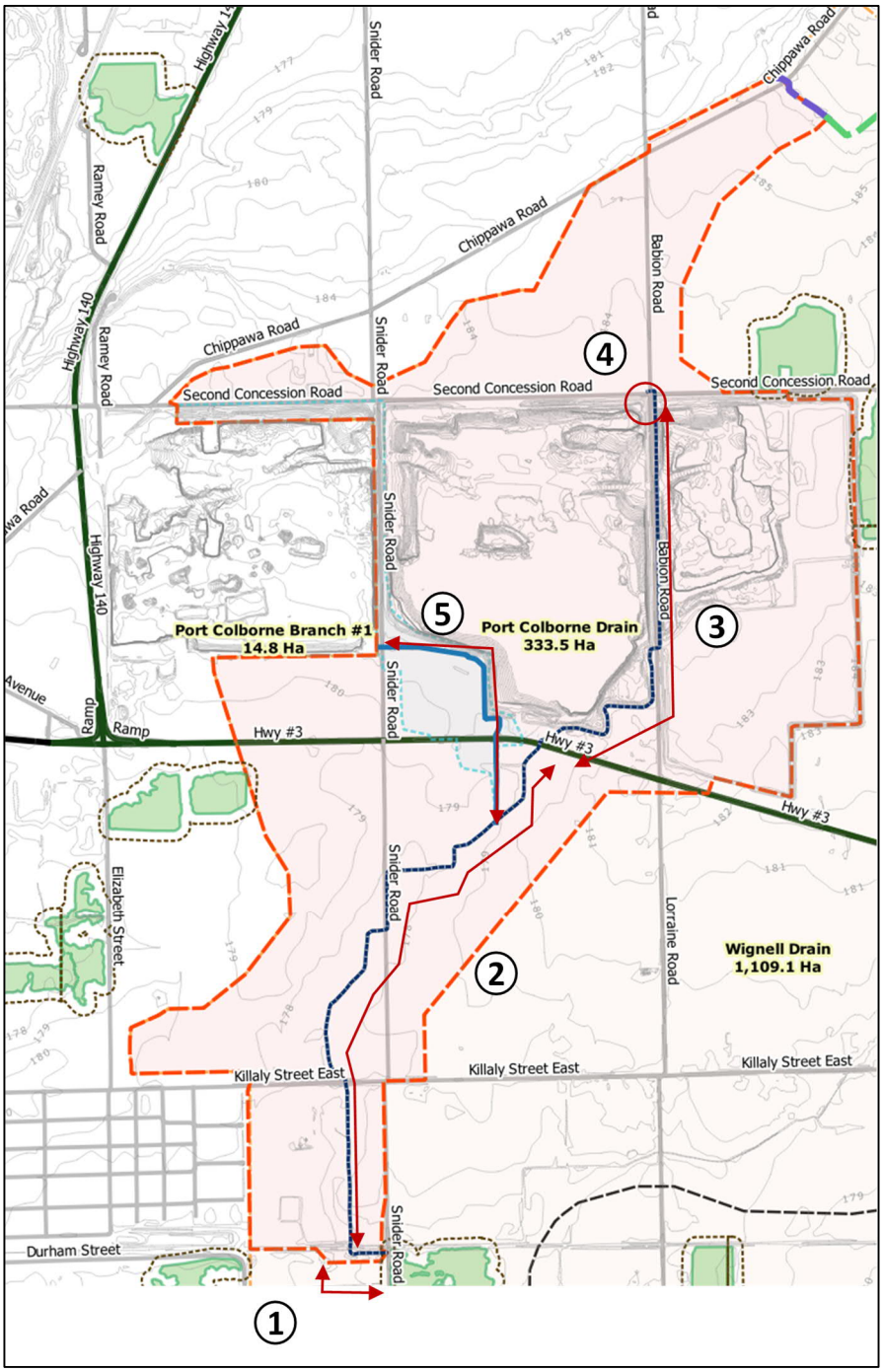

Figure 3 Drainage Catchment of Port Colborne Drain

3 Design Considerations

The analysis of the Port Colborne Drain, part of the Wignell Drain watershed, is based on Hydrologic and Hydraulic analysis to predict runoff flow requirements and to match channel capacity. Water monitoring, gauge measurements, have not been practiced and thus calibration or validation of the computer based model results is limited to historical anecdotal comparisons.

3.1 Watershed Characterization and Use

The Port Colborne Drain watershed is characterized through land use as a design consideration in the following ways:

1. The upper portion of the watershed land use is agricultural with mainly row crops; soya, corn or cereal grains grown. The design service level for agricultural land is flooding with low velocities and drainage of ponding areas over 48 to 72 hours. Drainage is provided to improve working time and an overall goal to reduce the risk of crop drowning.

2. Fringe or rural residential properties are the other major land use with estate sized lots with houses, buildings, wells and septic beds.
   Urban expectations of no ponding on residential lots in rural areas can not be met without extensive costs. Acceptable flooding without damage to property contents is the reasonable design service level similar to agricultural service levels.

3. Gravel and stone quarry operation makes up a significant portion of the drainage area and affects the drain through runoff capture and pumping. The Quarry has several permits to take water granted from the MOE that impact on the function of the drain.

4. Port Colborne Outlet.
   The primary design service level for the outlet is merely to have a positive slope to the Wignell Drain with a clear and clean flow path to outlet.

3.2 Former Drain Changes

The Port Colborne Drain has been in use for a very long time. Over that time, changes have occurred and been abandoned. These changes are described in the Baseline Report. A summary of significant changes are as follows:

- Expansion of the quarry impacting site runoff, changing from stormwater runoff to pumped flow.

- Municipal Drain abandonment:

    - Wignell W1 in 1999 north of Highway #3.

    - Wignell W2a & W2 in 2013 east of Babion Rd.

- Drain Re-alignments:
    - North of Highway #3 and west of Babion Rd. in 1999.
    - South of Highway #3 in 2016
    - Roadside swales along Babion Rd.

3.3 Design

The following describes the design basis for this drain. Descriptions of design criteria are intended to meet the requirements of O. Reg. 588/17: Asset Management Planning for Municipal Infrastructure specifically Table 3.

3.3.1 Criteria

The following section establishes the level of service for the Port Colborne Drain. Channel size is confirmed to be based on a 1 in 5 year return period storm, which is expressed as a design storm as follows:

- 5-year cumulative storm with a total rainfall amount of **68.90 mm** using a Soil Conservation Service (SCS) Type II **24-hr** storm distribution.

The design storm is used to forecast a predicted runoff for identified catchments. Each channel section is designed to convey this runoff.

The existing MTO crossings are to meet the MTO standard criteria of 1:25 year storm. As these are existing crossings with no changes proposed, no analysis of performance is undertaken and available capacity is as it was before this report was prepared. From the original catchments, the quarry lands expansion, previous report abandonments and other watershed changes, the contributory catchments upstream of the MTO crossings are as follows:

- PC1-CS-01; West culvert 1880x1260 (1550x1200) CSPA
    - Original Catchment: 154 Ha
    - Revised Catchment: 14.8 Ha
- PC-CS-04; East culvert, Conc. Box 1200x2400 open bottom
    - Original Catchment: 111Ha
    - Revised Catchment: 61Ha

The Port Colborne Drain outlets to the Wignell Drain and is wholly dependent on the Wignell Drain for sufficient outlet.

3.3.2 Drain Capacity Design

The Wignell Watershed Report describes the modelling used to assess the existing watershed. A revised model was implemented for the design and capacity

determination of the existing channels based on the design drawings attached to this report.

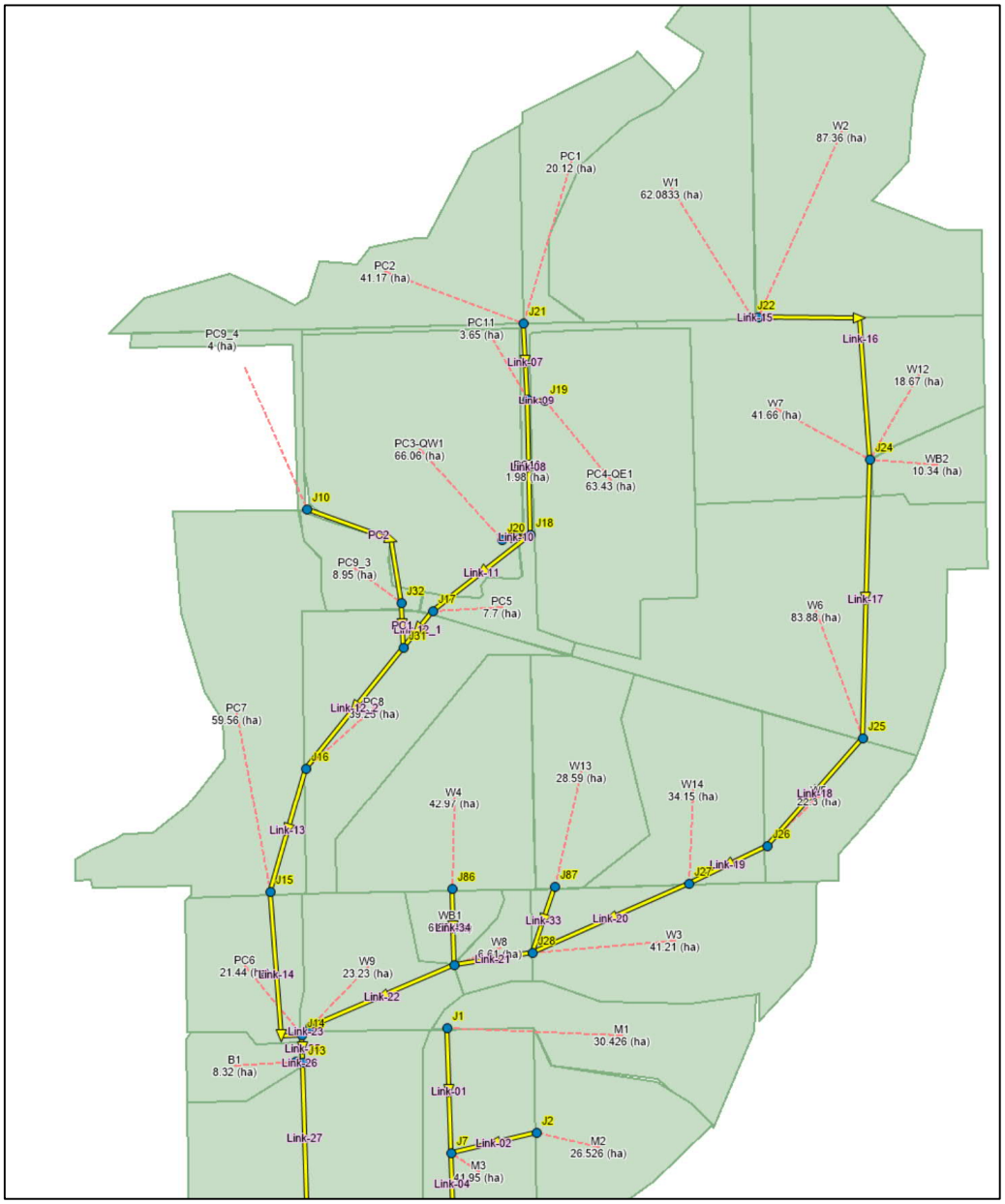

Figure 4: Wignell PC-SWMM Model with Port Colborne

The specific results for the Port Colborne Drain are included in the following table.

The details of the model are included in Appendix D, including the input file.

4 Drain Works Recommendations

The Port Colborne Drain is not a new drain, but an old name for an existing drain. The watershed served has been dramatically altered by the quarry lands and the long term plan for those lands is not referenced in this design. The rest of the watershed is a mixture of rural residential and farm land, which ispredominately row crop.

4.1 Description of the Works

The following presents a program of proposed improvement works for the Port Colborne Drain. As a program, some works are staged at various times and may not proceed in a step-by-step manner, but on an as-and-when available basis that best meets environmental and regulatory requirements.

A significant portion of the works is already complete. The original drain alignment has been compromised by the expansion of the quarry on both sides of Babion Road. A new alignment for the drain extending the open channel to the Second Concession Rd. to provide an outlet for overland flows is required.

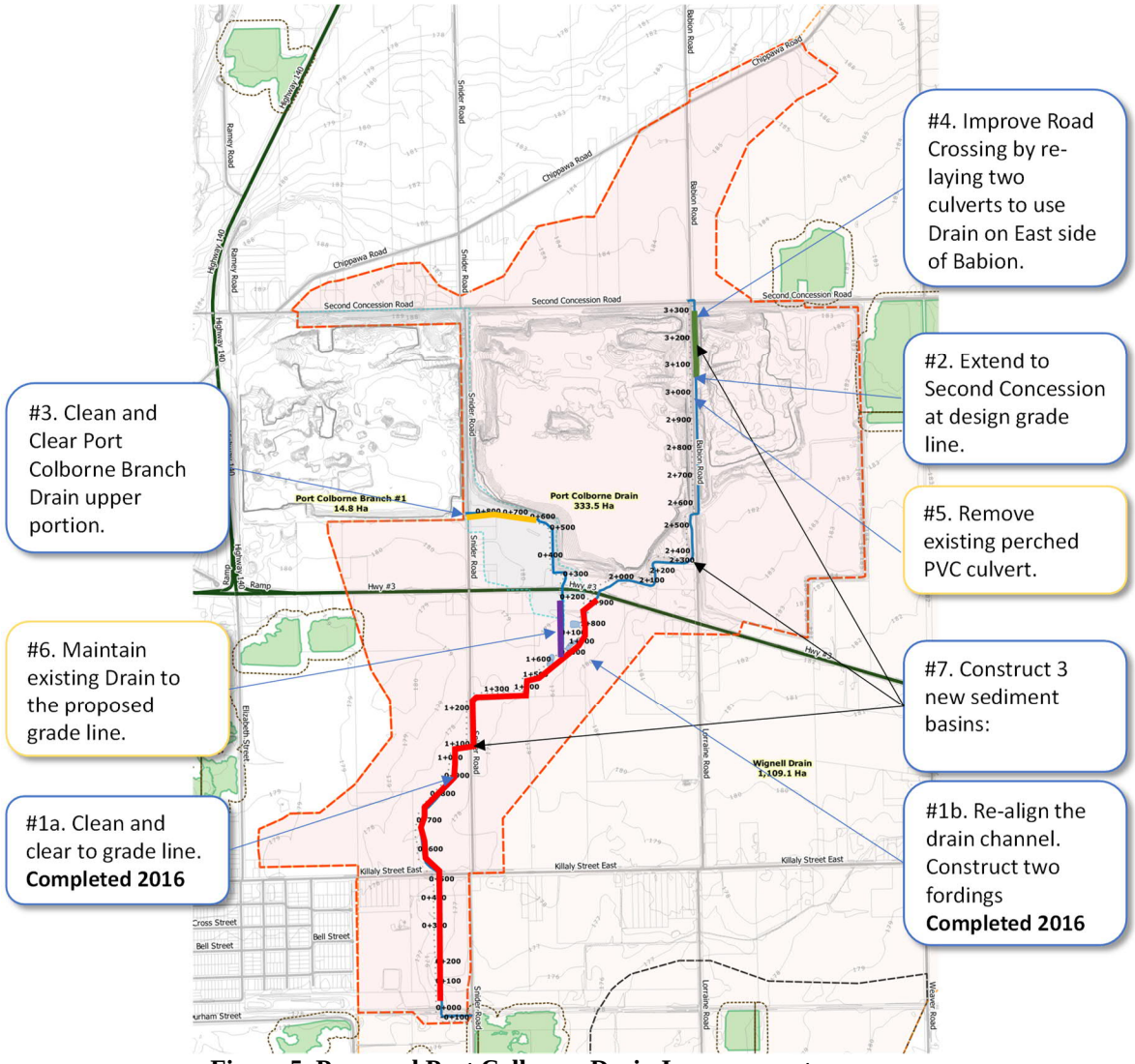

Figure 5 Proposed Port Colborne Drain Improvements

4.1.1 Port Colborne Drain Flow Improvement

The primary function of the proposed works is maintenance of channel section and reduction of flow restrictions. This is for two key restoration efforts as follows:

Restoration works #1 is the removal of vegetation from top-of-bank to top-of-bank. This removal is targeted at tree and shrub growth that limits or could obstruct primary flow paths. Every effort to retain trees, not in the channel, and understory growth will be made to reduce environmental impacts of the maintenance work. A work zone, presumed from previous drain reports, is required for the channel improvements and the maintenance works will seek to minimize the removal of trees and understory growth adjacent to the drain to that required for machine access.

Restoration works #2 is to remove any deposition humps or deviations that are impeding flow. This does not include any changes to grades that were already over deep, past the calculated grade line, but does include channel bank stabilization where slips or excessive erosion is evident during the restoration works. Channel restoration is done from one side with effort to reduce existing stable bank cover damage on the opposite side of the work zone.

Most of the proposed work is to re-establish the original drain capacity and function through the cutting of trees and vegetation that has grown up through the drain. The following figure illustrates a typical cross-section view of the work and work zone required to do the work.

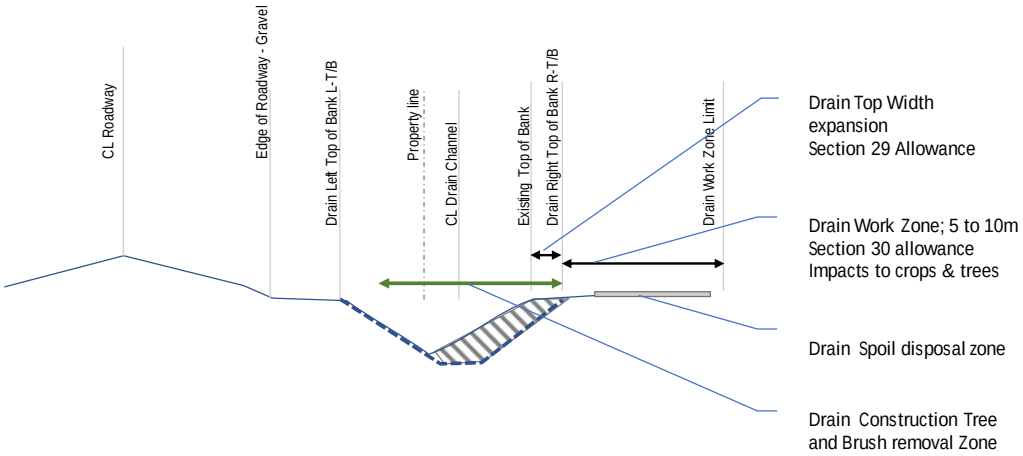

Figure 6 Typical Drain Work and Work Zones

The main work program for the drain is to clean down to the proposed grade line and a design capacity is achieved through removal of bottom and one bank. It is beneficial to only disturb one bank and leave low vegetation in place to reduce risk of erosion. Trees through the drain top of bank (T/B) to top of bank (T/B) are removed leaving stump and roots in place if the removal negatively impacts the grade.

Living trees that are removed from the work zone are eligible for the canopy preservation program, replacement of 2 saplings for each removed tree with a DBH

of 150mm or greater. Trees within the established banks, top of bank to top of bank, are not eligible unless for a new drain or a re-located drain.

4.1.2 Port Colborne Drain Extension to Second Concession Rd.

The original Port Colborne drain alignment to the east has been consumed by the expansion of the quarry. The extension of the drain to the Second Concession was previously identified but not yet completed. This report provides plans and profile drawings for the completion of the extension.

4.1.3 Port Colborne Branch Drain #1

The original Port Colborne Drain alignment is shown in the following figure as circa 1934.

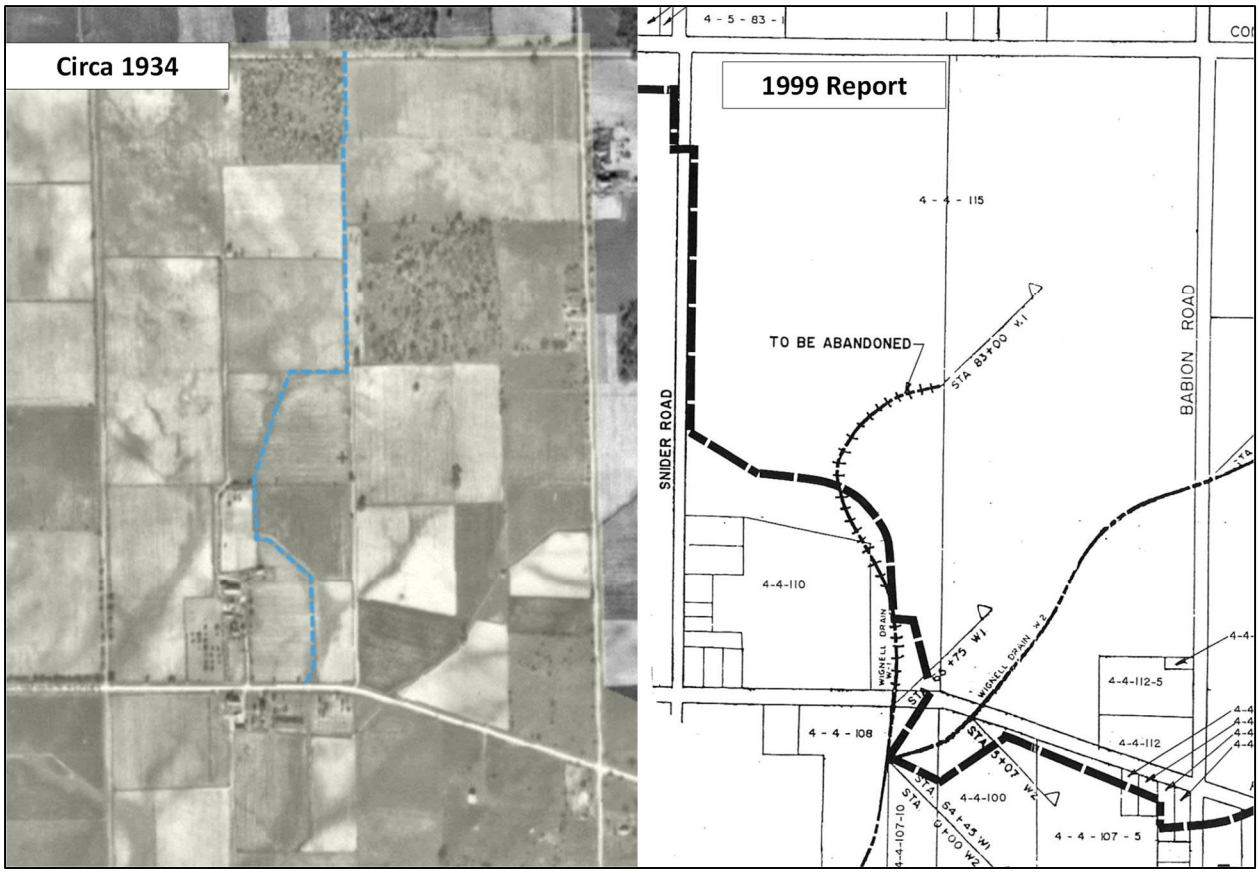

Figure 7 Port Colborne Branch Drain History

Figure 2 OMAF AgMaps - Constructed Drains shows the Port Colborne Branch Drain #1 as existing and proceeding west to Snider. However, there is a bylaw from 1999 showing a portion of the original alignment was abandoned to the north side of Highway #3. This portion is illustrated above in Figure 7 Port Colborne Branch Drain History. By adoption of this report, the City of Port Colborne, recognises that this drain does exist and is formally proposed as a newly named drain, hereafter called the Port Colborne Branch Drain #1. See drawings in Appendix A.

The branch drain is proposed to be 824m in length. The following describes the three proposed sections of work.

1. The existing channel from the outlet at Port Colborne Drain STA 1+654 and proceeding north to Highway #3 requires regrading to design grade line and vegetation clearing with bank re-seeding.

2. The existing CSPA crossing Highway #3 does not require work, nor does the existing channel north of Highway #3. The drainage superintendent may undertake spot maintenance works on as needed basis and where needed basis.

3. Above 0+627 to the end of the drain, requires vegetation clearing and channel excavation to cross-section and grade.

Figure 2 OMAF AgMaps - Constructed Drains shows a final portion or leg of the drain proceeding north along the eastern side of Snider ROW. This Drainage Report proposes for Port Colborne Branch #1 to end on entry to the ROW and any further north or south drainage structures will be municipal roadside swales/channels and not included as part of the Drain Schedule.

4.1.4 Road Crossings

There are 7 road crossings from the outlet of the drain to Second Concession Road. Of those crossings, one is a Provincial highway crossing, (Highway #3) and the others are municipal road crossings (6). There is one crossing for the proposed Port Colborne Branch Drain #1.

There is no additional work proposed for the existing crossings with the exception of the two culverts located at Babion Rd. and Second Concession Rd. which are to have the following changes:

- The west to east culvert crossing Babion Rd. (600mm HDPE) is to be lowered with the grade changed to outlet east.

- The north-south culvert crossing Second Concession Rd. (750mm HDPE) is to be re-located from the west side of Babion Rd. to the east side and connecting to the downstream extension of the drain along the east side of Babion Rd.

All other crossings were surveyed (Amec 2013) and the grade points used to establish the design grade line (see drawings Appendix A).

4.1.5 Private Crossings

Additional survey, CofPC/EWA 2018, showed an existing 30m culvert placed on the east side of Babion Rd. and PVC 6m culvert perched above the grade line. The existing PVC culvert is to be removed and a new channel constructed on the design grade line to the outlet invert of the relocated culvert crossing Second Concession Rd.

Two fordings were constructed in 2016 on two properties south of Highway #3. Amending the fording bottom crossing height using existing concrete slabs (sidewalk removals) is recommended.

4.1.6 Abandonments

A portion of the Port Colborne Drain is to be abandoned through this report. As a part of the drain-re-alignment of the Port Colborne Drain completed in 2016, the proposed outlet for Port Colborne Branch #1 Drain is to be re-aligned north of Highway #3 and outlet to the Port Colborne Main Drain.

Past Abandonments

There were two abandonments adopted by By-Law in 1999 for the Wignell Drain (referred to in this report as the Port Colborne Drain). The part of the Wignell identified as W1, north of Highway #3, was abandoned by adopted By-Law No. 3740/26/99. Additionally, the prepared report also identified that the Wignell, identified as W2a and W2b were abandoned by By-Law No. 5895/02/13.

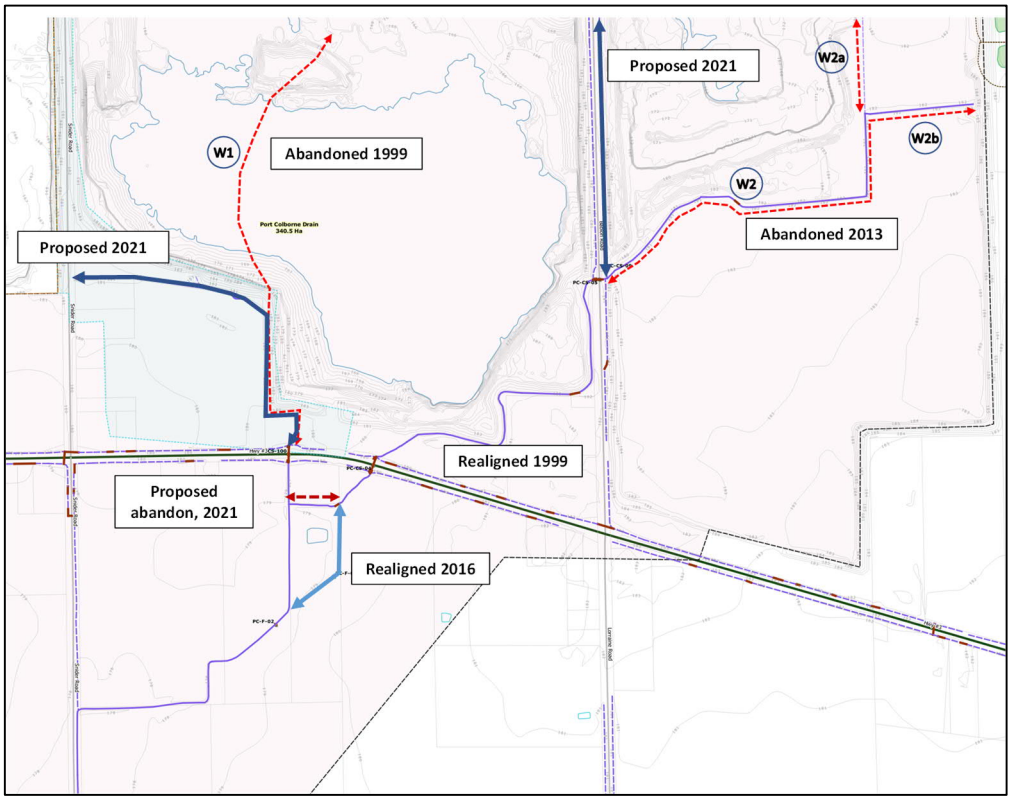

Figure 8 Port Colborne (formerly Wignell) Abandoned Segments

The portion of the original Wignell, W1 drain north of the Highway #3 multiplate culvert (CS-100) was abandoned as a municipal drain by a report in 1999. Since these documents were not included in the Baseline Report, they are included in Appendix D.

4.1.7 Utility Conflicts & Coordination

Utility conflicts may exist with gas lines and telecommunication lines as identified by the exchange of utility information. No direct grade conflicts were identified on the drawings. Where conflicts are identified in the field, relocation of the utilities will be performed following requirements set forth by the utility and charged at cost to each affected utility as per the Drainage Act, R.S.O. 1990.

4.1.8 Plans, Profiles & Specifications

The proposed Port Colborne Drain works are described in the attached Plans, Profile drawings and Specific Design Drawing and Standard Detail Drawings attached as Appendix A.

Project Specifications are included in Appendix E.

4.2 Construction and Constructability

The following describes the specific requirements for drain construction.

4.2.1 Vegetation Removal

Vegetation, specifically trees are to be cut down outside of any bird nesting periods. The remaining stumps are to remain in place unless they obstruct flow or they are Ash trees with re-growth from the lower truck already established. In those cases, the stump will be ground down to match the existing channel section.

Tree removal within the top-of-bank to top-of-bank is to be 100 percent; however, tree removal within the work zone is at the discretion of the drainage superintendent while making every effort to preserve trees where possible. Where live trees are removed in the work zone, they qualify for the tree replacement program as per the tree qualifying criteria. Where a mature live tree is already established and is an individual tree, it can remain on the work zone adjacent to the drain provided there is a working space to provide future maintenance to the drain.

Trees with a DBH greater than 150mm and alive, such trees will be replaced with 2 trees as saplings for future growth in lieu of a damage allowance for the existing tree that is removed. The tree that is removed will be provided to the owner as stacked branches adjacent to the drain and outside of the working zone along with the trunk. The owner shall be wholly responsible for the wood once cut.

New trees can be planted adjacent to a drain following two key criteria:

- The trees are planted back from the top of bank, (the exact distance is determined by tree type and local conditions).
- The trees are planted with adequate space to provide future maintenance access for the drain. Grouping of planted trees is encouraged given that the spacing of the trees and the arrangement permits future maintenance. This is accomplished by providing an angled approach along the tree edge line to

the drain and increasing the tree plant density only as the distance from the drain increases.

- Individual hardwood trees may be allowed every 25m. Trees of any type shall not be planted within 6m of an existing drain (solid tile, wrap joints) or 4.5m from existing open drain.

- In certain circumstances where an owner owns property on both sides of the open drain, upon consultation with the Drainage Superintendent, a windbreak may be permitted on one side. On existing drains where windbreaks exist, costs due to trucking material will be the direct responsibility of the owner and not the upstream ratepayers.

- Replacement trees will be selected from a list of available preferred species at the time of construction for owners eligible for replacements to select their preferred species. Species will be from the identified list of approved Carolinian species typical for the Region. Owners can select any location for the planting of replacement trees excepting within the work zone.

4.2.2 Spoil Material

All spoils and spoil handling practices will comply with applicable legislation including O. Reg. 406/19: ON-SITE AND EXCESS SOIL MANAGEMENT filed December 4, 2019 under Environmental Protection Act, R.S.O. 1990, c. E.19

Where specified, excavated spoil material shall be disposed of and levelled a minimum of 2.5 m from the top of bank to ensure that sediment does not re-enter the drain. Spoil placed next to the drain shall be spread to permit access across the berm area and shall be placed to a maximum height of 0.6m. Spoil excavated along existing travelled road allowances, and on private property where requested, shall be disposed of by the Contractor off site. The cost of spoil trucked from the property shall be borne by the benefiting property owner.

Spoil shall be disposed of as noted in the description of the proposed work. Generally, the spoil will be disposed of adjacent to the drain unless otherwise specified. Should any property owner require that all or a portion of the spoil be trucked away from their property, the cost of trucking spoil shall be assessed totally to the property owner requesting same and will not form part of the total cost of the drainage system. The cost of trucking away spoil from any future maintenance work will be assessed directly to the property owner requesting the same. Vegetation debris from the drain is preferred to be arranged adjacent to the drain to decay but will be removed from the property or disposed of in accordance with agreement of the property owner at the owner’s cost.

With respect to the reaches of drain that are within travelled Municipal road allowances, the spoil will be trucked away during both the initial construction and any future maintenance work where there is no opportunity to dispose of the material on site should the road allowance be the working side.

Access channels shall be provided through the levelled spoil material at every location where existing drainage outlets are visible and/or identified during construction by the Drainage Superintendent. The invert of the access channels shall be consistent with the drain cross-section at that location.

Spoil excavated from the drain shall be levelled in a manner that is suitable for cultivation of crops where crops were previously cultivated. Where the drain is adjacent to a grassed area maintained by the owner, the spoil shall be levelled and re-seeded with grass so that the area is restored to a like or better condition than prior to construction.

4.2.2.1 Contaminated Spoils

Where soils are known to be contaminated but have been assessed to pose no human health risk, on site spreading adjacent to the drain will be the practice and acknowledge that the soils are not be 'moved' off the property.

Where soils are to be removed from the property, then a sample will be collected and analyzed for contamination prior to the commencement of removal. Where that sample is shown to be contaminated and disposal of the soil will require disposal at a registered facility in compliance with O.Reg 406/19, the owner will be responsible for the costs to dispose of the contaminated soil from their property.

Once a contaminated sample is returned, the owner will be given the opportunity to retain the soil on site instead of trucking for disposal.

4.2.3 Sediment Control Basins

The addition of sedimentation basins to the Port Colborne Drain in three locations is to assist with controlling sediment during maintenance and re-grading to the identified design grade line. Post – Construction these basins remain and continue to provide sedimentation control during precipitation events.

Sediment basins are to be constructed at the locations and to the specifications indicated on the drawings. The Contractor will maintain these sediment basins during construction, as directed by the Engineer and/or their designate. The basins are considered to be part of the Municipal Drain and will be maintained in future by the Municipality at the expense of all upstream land and roads owners herein assessed as shown on the attached assessment schedule. Properly maintained sediment basins reduce the incidents of drain maintenance clean out and therefore reduce overall maintenance costs for property owners. The basins will be inspected annually for an assessment of sediment depth and sediment removed where that depth exceeds half the constructed depth of the basin. The inspection schedule may be adjusted after some experience with the sediment basins within the watershed.

4.2.4 Revegetation

Drain banks and exposed soil areas disturbed during the maintenance of the drain are to be seeded as quickly as possible by the Contractor to reduce the risk of soil erosion. The Contractor will seed spoil areas after leveling and shall seed channels at the same time. The Contractor will schedule levelling to reduce the time of bare soil, but where the duration of leveling exceeds 2 weeks, then channels will be seeded immediately after channel maintenance.

Seeding should take place in a manner that optimizes seed germination and establishment of vegetation prior to mid October and after late April.

Seed mixture used shall be applied at a rate of 40 kg/ha in the following proportions:

Creeping red fescue	20 kg	50%
Perennial rye grass	8 kg	20%
Birdsfoot trefoil	12 kg	30%
Total	40 kg/ha	100%

Where working zone adjacent to the drain is grass and this is affected by construction, this area shall be reseeded with a suitable grass mix to restore to a like or better condition.

4.2.5 Private Drain Connections

Where private connections are made to the Municipal Drain, the connections are to be compliant with the City of Port Colborne's standards connection designs. This includes the following connection types:

- Open channel connection – minimal allowance for grade and freeboard.
- Surface water flows – rip rap rock requirements for reducing or amending sites of potential or evident erosion.
- Tile drain connections – use of PE pipe to connect to a receiving channel.
- Berm and Orifice Flow Control - connections designed to control runoff to specified rates of flow.

Private connections are not part of the drain but owned and the responsibility of the landowner for construction and maintenance. Where a deficiency is identified by the Drainage Superintendent or Engineer, the landowner is to make good the connection. Deficiencies can be eroded connections, blocked connections or poor connections and the landowner can accept to have work done by the City on their behalf to make good the connection based on a 50/50 cost sharing basis. Where the City identifies a deficiency and the repairs are not made by the landowner by the next cycle of drain maintenance, the City can make the required repairs and 100% of the cost will be assessed to the landowner.

4.3 Future Maintenance and Repair Provisions

The Drainage Act, Chapter D.17, Sections 74 through 84 governs future maintenance, improvement and repair to any Drainage Works constructed under a By-Law passed under this Act, or any predecessor of this Act.

Upon completion of this report and the works described in the Engineer's Report, the City of Port Colborne will be responsible for future maintenance of the drain with the costs of future maintenance assessed to the upstream lands and roads using the Assessment Schedule in Appendix B, and pro-rating the assessment based on the actual cost using the Outlet Liability Assessment – Section 23. Special Assessment shall not apply to maintenance work. Special Benefit or Special Assessment, Section 24 or Section 26, shall not apply to maintenance work except where maintenance works are related to culvert/bridge replacement or upgrades.

4.4 Construction Summary

The following table provides a list of construction activities by property starting from the outlet and proceeding upstream.

Table 1 Port Colborne Drain Construction Summary

Property / Owner	From STA	To STA	Work Description	Access & Disposal
271104000408700 SCHLENGER USZER	-0-112.7	-0-007.5		Access from Friendship Trail. A 10m Workzone is on the North and east side of the Drain. This Workzone is presumed to already exist from past reports.
271104000699500 PORT COLBORNE CITY	-0-007.5	0+012.5		Work from both sides where required.
271104000408715 PORT COLBORNE CITY	0+012.5	0+053.4		10m Workzone east side
271104000408700 SCHLENGER USZER	0+053.4	0+403.6		10m Workzone east side
271104000408800 SCHLENGER USZER	0+403.6	0+422		10m Workzone east side
271104000409000 HILL KERRY	0+422	0+477		10m Workzone east side
271104000408900 ANNETT SYLVIA	0+477	0+485.7		10m Workzone east side
ROW - Killaly St East City of Port Colborne	0+485.7	0+514.1		
271104000412700 VALE CANADA LIMITED	0+514.1 1+020	1+056.4 1+055	Construct Sediment Basin PC-SB03 at 1+020	10m Workzone east side Excess soil disposal is adjacent to the basin for 10m of Workzone on the south side.
ROW - Snider Rd. City of Port Colborne	1+056.4	1+249.6		10m Workzone
271104000412700 VALE CANADA LIMITED	1+249.6	1+376.8		10m Workzone east side
271104000410900 POWELL BRADLEY KENNETH	1+376.8	1+528.4		10m Workzone east side
271104000410800 VAN RUYVEN JOSEF NICOLAAS	1+528.4	1+657.5		10m Workzone east side
271104000410710 KONC JOHN ANDREW	1+657.5	1+758.3		10m Workzone east side
271104000410000 VALE CANADA LIMITED	1+758.3	1+924.9		10m Workzone east side
Highway#3 ROW MTO	1+924.9	1+958		

Property / Owner	From STA	To STA	Work Description	Access & Disposal
271104000411500 PORT COLBORNE QUARRIES INC	1+958	2+555	commencing at 2+300, clear and re-grade to design grade line and spread spoil on bank. Construct Sediment Basin PC-SB02 at 2+402	10m Workzone north and west side Spread spoil adjacent to drain.
Babion Rd. ROW	2+555	2+575		
271104000315600 PORT COLBORNE QUARRIES INC	2+575	2+923.6		10m Workzone east side
271104000315800 PORT COLBORNE QUARRIES LIMIT	2+923.6	3+330.8	Construct new drain starting at 3+079 to 3+330 Remove existing 500mm PVC culvert. Construct Sediment Basin, PC-SB01 @ 3+300. Spread spoil on adjacent east bank.	10m Workzone east side
ROW-Babion Rd and Second Concession	3+330.8	3+368	Move PC-CS-07 Culvert from West side of Babion Rd. to East side of Babion Rd. at the indicated grade. Excavate PC-CS-06 600mm HDPE culvert and re-lay in the same trench at design grade to drain from West to East.	Work within existing ROW

Port Colborne Branch Drain #1

The following table provides a list of construction activities by property starting from the outlet and proceeding upstream.

Table 2 Port Colborne Branch Drain Construction Summary

Property / Owner	From STA	To STA	Work Description	Access & Disposal
271104000410800 Van Ruyven Josef Nicolaas	0+000	0+224.7	Clear tree vegetation from top of bank to top of bank and re-grade the bottom of the drain to the design grade line. Re-establish the drain bottom width.	Work zone is the east side.
271104000410710 Konc John Andrew	0+000	0+224.7	Clear tree vegetation from top of bank to top of bank and re-grade the bottom of the drain to the design grade line. Re-establish the drain bottom width.	Access from East side and dispose of spoils adjacent to the drain. Spread to match existing field.
MTO Highway #3	0+224.7	0+259.6	No work planned through the MTO Right of Way.	
271104000411500 PORT COLBORNE QUARRIES INC	0+259.6	0+512.7	Spot clean up where required as determined by field inspection.	Work from east side 10m Workzone
271104000411000 HELLINGA JACK SIMON	0+512.7	0+570.6	No work planned.	10m east side workzone
271104000411500 PORT COLBORNE QUARRIES INC	0+570.6	0+818.4	200m - Brush and excavate to extend and re-grade to Snider Rd. ROW	Work from north side 10m Workzone

5 Drainage Works Financing

5.1 Cost of Works

As required by the Drainage Act, Chapter D.17, Section 59(1), Council may call a meeting if the contract price exceeds 133 percent of the estimated construction costs.

5.1.1 Admin & Engineering Costs

Administration costs identified with the Port Colborne Drain are included for the interest payable over the 20 year period of the debenture along with a debenture fee. This total fee is allocated to the Port Colborne Drain on a percentage basis calculated by the total area of each drain. (See Table 3)

There are three engineering costs related to the works for the Port Colborne Drain. These costs are from three separate engineering companies who have worked to prepare the report.

Wiebe Engineering was first hired to prepare the report. Wiebe was paid $92,511.44 for work completed on the Wignell, Michener and Port Colborne Drains and a survey fee of $8,342.93 was paid to a survey firm. A portion of this fee, allocated by area of the drain, is charged to the Port Colborne Drain. (See Table 3 Drain Area Ratios)

Amec Foster Wheeler (formerly Amec and now Wood Plc) was appointed to conclude the report after Wiebe Engineering. They prepared a draft of the report, invoiced and were paid $67,147.23 but they did not finalize the report and ceased to work on the project.

These costs have been allocated to the respective drains using a drain area ratio as per the following table.

Table 3 Drain Area Ratios

Drain	Area, Ha	Area Ratio
Michener Drain Area	135	12%
Port Colborne Drain Area	327.8	30%
Wignell Drain Area	634.4	57%
Total:	**1097.2**	

The result is a cost allocation from past works to Port Colborne Drain for the portion of administration and engineering fees as follows.

Table 4 Past Admin and Engineer Costs

Administration (Debenture) (interest + fees) $35,893.21	Wiebe $92,511.44 + $8,342.93	Amec $67,147.23
$10,723.47	$30,131.30	$20,060.94

The fees for EWA Engineering Inc. are recorded for the fees in the preparation of each individual report. For Port Colborne the EWA Engineering fee is $ 99,812. The total Administration and Engineering fee including estimates for engineering effort remaining for construction oversight is assessed against the Port Colborne Watershed for $178,210.

5.1.2 Capital Construction Cost

The estimated cost of construction is shown in the following table.

Table 5 Port Colborne Estimated Cost of Construction

Estimated Cost of Construction	
Port Colborne Branch #1 – new outlet and grade improvement to Snider Rd.	$10,340.
Port Colborne Drain – Extending to Second Concession Rd. on East Side of Babion, including culverts.	$33,332.
Port Colborne General Construction Costs	$8,279
Port Colborne Contingency	$12,458.
Total - Estimated Cost of Construction	**$74,749**

5.1.3 Previous Works Completed

Additional to this estimate of construction cost is the cost for work already completed.

5.1.3.1 Construction Already Completed

There are two distinct areas of construction that were already completed and they are as follows:

1. Drain adjacent to and downstream of the Babion Rd. Crossing by Rankin Construction. The cost of the cleaning is included in Appendix D as $26,050.

2. Additional to this work was construction of a re-aligned portion and re-grading of the Friendship Trail to MTO Highway #3.

    a. Re-grading and clearing to design grade from STA 0+010 to 1+500

    b. Drain channel re-alignment from STA 1+500 to 1+860 including stone protection on outside channel bends.

    c. Fording # 1 providing private property access.

    d. Fording #2 providing private property access.

Additional work included two constructed wetlands which were externally funded and are not part of the drain.

Table 6 Previous Construction Costs

Previous Construction Costs	
Channel maintenance by Rankin Construction - 2+580 to 3+045	$ 26,050.00
Channel Re-Alignment - 1+660 to 1+860	$ 9,442.50
Channel Re-Grading and Clearing - 0+010 to 1+660	$ 15,300.00
Fording #1; ARN = 410710 - 1+740 to 1+750	$ 710.00
Fording #2; ARN = 410800 - 1+630 to 1+640	$ 710.00
Total Previous Construction:	**$ 52,212.50**

5.2 Maintenance & Program Costs

Included in the estimated cost of construction are allocations for costs related to drain maintenance works including vegetation removal and re-grading.

5.3 Principles of Assessment

The following are general and specific principles used to assess costs according to the Regulations formed under the Drainage Act using our understanding of the Act and seeking the most fair methods to share costs to rate payers within the Port Colborne Drain part of the Wignell Drain Watershed.

1. Assessments are a method to calculate a contributing property's share of drainage works, hereafter referred to as a Drain.

2. The Drain is defined by a fixed point of commencement that traverses to a fixed Outlet, which may be a receiver or another Drain.

3. A property contributes to a drainage work if any portion of the property contributes a runoff flow directly or indirectly to the Drain.

4. A Drain is any constructed or existing natural method of conveyance or stormwater management function that moves or controls water from one point of collection to a discharge point, an Outlet.

5. The use of a property; farming, residential, or vacant does not define benefit of the Drain. The benefit of a Drain is realized among all properties with runoff to the Drain.

6. An excess or additional benefit is realized for any property or group of properties for which a higher standard of drainage service is required for the specific use of a property for which a higher value is realized.

As an example, where a market garden farm requires additional pumping for either irrigation or reducing the water surface in the drain, then the additional costs for those works to provide a higher level of service are borne by the benefitting lands.

7. Similarly, where a property or group of properties is provided with a lower standard of drainage service or where such property or properties provides a stormwater management function within the drainage works of the Drain, the value of the lower service or function is determined at a rate commensurate with the benefit to the drain.

As an example, where a property converts a portion of their lands (or the entire property) to a wetland or other stormwater management feature that reduces the peak flow of the runoff, thereby reducing or enhancing the capacity of the Drain to improve drainage and reduce flooding, then a commensurate benefit is realized to the volume of water removed from the runoff hydrograph.

Where the volume of detained runoff is small relative to the capacity of the drain, this contribution is deemed to be negligible. Where the volume detained is below 1% of the total runoff volume for the Drain, there is no real benefit realized for an individual Stormwater Management Feature.

8. The capacity of the Drain is determined based on a hydrologic model forecast of precipitation event based runoff. Therefore each property realizes a drain benefit based on the proportion of predicted runoff for their property. Predicted runoff is a product of the following attributes, which are determined for each property:

a. Area contributing to runoff;
b. Land use as it relates to runoff;
c. Land topography;
d. Proportion of hard surfaces vs soft surfaces as they relate to infiltration; and
e. Stormwater management features specially built to reduce the rate of runoff.

9. A benefit is realized for a property that causes a physical change in the Drain works to serve a particular use or surface water benefit to the property. An example of this is a culvert, which provides access to a property across a drain.

10. A benefit/assessment is realized for Municipal, Regional or Provincial lands held as Rights of Way that cause or require additional infrastructure, effort or costs related to the Drain. (Section 26)

11. Where a cost to the drain is realized through effort during construction or otherwise for the protection of flora, fauna or quantity or quality of stormwater runoff, this cost is born proportionally amongst all watershed contributing owners at the same proposal rate as established for Drain Maintenance.

12. For the Port Colborne Drainage works being considered, a Drain already exists and the proposed assessment is to recognize a service or benefit that already exists and is being confirmed to exist through the creation of the report and assessment schedule. Section 31 allowances for existing channels are not considered for allowance granted by Assessment schedule in this report.

13. Utilities that require additional works, changes in design or protection during construction, those costs are borne by the owner of the utility.

While efforts within the drain design and assessment have been made to address water quality as well as quantity, there are limits within the Drainage Act to incorporate these features. The assessment tables are proposed for using those regulations within the Drainage Act to address stormwater management features as recognized works as part of the Drain.

Benefit (Section 22)

This Assessment is based on lands, roads, buildings, utilities or other structures that are increased in value or are more easily maintained as a result of the construction, improvement, maintenance or repair of a drainage works may be assessed for benefit. Section 23 benefits specifically require the creation of increased value through the creation of a new or additional drainage systems including natural drainage systems such as wetlands. The Port Colborne Drain work consists of maintenance and drain improvements within existing flow paths.

The Drain improvements are not a new service of additional drainage but maintenance of the existing system. The re-alignments completed do not create new drainage with the possibility of enhanced service level but merely address the current decreased function by restoring a functioning drainage system.

The Drain works has no Benefit Assessment proposed on the main channel of the Port Colborne Drain or for the proposed Branch Drain #1.

Outlet Liability (Section 23)

This is the primary basis for the assessment of the maintenance and drain works. Assessment is based on each individual property's contributing runoff. This is determined from the area flowing to the drain and from the runoff factor C. The runoff factor C is the Rational Method for predicting peak runoff and does not predict volume of runoff (note special benefit used for Site Specific SWM facilities).

The C factor for assessing property runoff is selected based on the property zoning. Where a property is not currently farmed but is zoned for farming, then a C factor is selected based on the potential use of the property. C factors are not adjusted for variations in Residential properties. Residential properties with or without buildings are assigned the same C factor. Thus, the C factor is not a current prediction of runoff for an individual property but a Factor to assess the potential runoff based on the property's potential use in the present and in the future. The attached Table will be used for the determination of C Factor values used in the Runoff Outlet Factor assessment.

Table 7 Land Use and C Factors

PropCode	CATEGORY	DESCRIPTION	C-Factor Low	C-Factor High
100	LAND	Vacant residential land not on water	10	25
105	LAND	Vacant commercial land		
110	LAND	Vacant residential/recreational land on water		
200	FARM	Farm property without any buildings/structures	20	55
201	FARM	Farm with residence - with or without secondary structures; no farm outbuildings		
210	FARM	Farm without residence - with secondary structures; with farm outbuildings		

PropCode	CATEGORY	DESCRIPTION	C-Factor Low	C-Factor High
211	FARM	Farm with residence - with or without secondary structures; with farm outbuildings		
221	FARM	Farm with residence - with commercial/industrial operation		
228	FARM	Farm with gravel pit	12	50
230	FARM	Intensive farm operation - without residence	20	50
231	FARM	Intensive farm operation - with residence		
234	FARM	Large scale poultry operation	20	55
244	FARM	Managed forest property, residence not on water	20	30
260	FARM	Vacant residential/commercial/ industrial land owned by a non-farmer with a portion being farmed	20	55
261	FARM	Land owned by a non-farmer improved with a non-farm residence with a portion being farmed		
301	RESIDENTIAL	Single family detached (not on water)	15	40
302	RESIDENTIAL	More than one structure used for residential purposes with at least one of the structures occupied permanently		
303	RESIDENTIAL	Residence with a commercial unit		
313	RESIDENTIAL	Single family detached on water year round residence		
322	RESIDENTIAL	Semi-detached residence with both units under one ownership two residential homes sharing a common center wall.		
332	RESIDENTIAL	Typically a Duplex residential structure with two self-contained units.		
334	RESIDENTIAL	Residential property with four self-contained units		
383	RESIDENTIAL	Bed and breakfast establishment		
391	RESIDENTIAL	Seasonal/recreational dwelling - first tier on water		
392	RESIDENTIAL	Seasonal/recreational dwelling - second tier to water		
405	COMMERCIAL	Office use converted from house	20	65
410	COMMERCIAL	Retail - one storey, generally under 10,000 s.f.		
421	COMMERCIAL	Specialty automotive shop/auto repair/ collision service/car or truck wash		
441	COMMERCIAL	Tavern/public house/small hotel		
490	COMMERCIAL	Golf course	12	35
510	INDUSTRIAL	Heavy manufacturing (non-automotive)	45	85
518	INDUSTRIAL	Smelter/ore processing		
520	INDUSTRIAL	Standard industrial properties not specifically identified by other industrial Property Codes		
590	INDUSTRIAL	Water treatment/filtration/water towers/pumping station	*	*
593	INDUSTRIAL	Gravel pit, quarry, sand pit	*	*
597	INDUSTRIAL	Railway right-of-way	40	65
598	INDUSTRIAL	Railway buildings and lands described as assessable in the Assessment Act		
605	INSTITUTIONAL	School (elementary or secondary, including private)	35	50
702	SPECIAL PURPOSE	Cemetery	35	65
710	SPECIAL PURPOSE	Recreational sport club - non commercial (excludes golf clubs and ski resorts)	35	85
715	SPECIAL PURPOSE	Racetrack - auto	45	85
735	SPECIAL PURPOSE	Assembly hall, community hall	30	85
	ROW	Single lane Municipal Roadway	75	95
	ROW	unopened road allowance	65	85
	ROW	Regional or MTO	90	98

* C factor values are situationally assigned based on land use.

The following drain features are part of the whole system and are paid for through the outlet assessment:

- Channel Clearing and Re-grading

- Sediment Basins

In addition to assessed costs considered for special benefits, there is also recognition for stormwater management facilities within the watershed that reduce the peak flow used to determine the outlet assessment. These facilities that may already exist in the watershed and are recognized as having a benefit in the reduction of peak flow by determining the available volume is greater than the 24 hour peak flow volume predicted for the 1:100 year design storm.

- Site Specific Stormwater Management (SWM) Facilities
  - Wetlands,
  - Ponds, (natural and stormwater)
- Natural occurring features
  - Kettle lakes, and
  - Bog lands.
- Artificial runoff capture; such as Quarry lands or other features that collect runoff but do not outlet it to the Drain during the peak flow of the event.

Table 8 Section 23 Runoff Factor Determination - QRF Ratio

Area Ha	Soil Type	Gradient	Land Factor	Runoff Factor 'C'	QRF	SWM	SWMF	QRF-SWMF	QRF Ratio
2.176	Bookton (BOK2) - 40to100 cm sandy textures over lacustrine silty clay - Well Drained - Brunisolic Gray Brown Luvisol	0.20%	COMMERCIAL	17	2.41	0	0	2.41	**0.1760**
1.201	Bookton (BOK2) - 40to100 cm sandy textures over lacustrine silty clay - Well Drained - Brunisolic Gray Brown Luvisol	0.20%	RESIDENTIAL	15	1.18	0	0	1.18	**0.0857**
1.084	Bookton (BOK2) - 40to100 cm sandy textures over lacustrine silty clay - Well Drained - Brunisolic Gray Brown Luvisol	0.20%	ROW - paved 2 lane	85	6.01	0	0	6.01	**0.4382**
0.848	Bookton (BOK2) - 40to100 cm sandy textures over lacustrine silty clay - Well Drained - Brunisolic Gray Brown Luvisol	0.20%	RESIDENTIAL	15	0.83	0	0	0.83	**0.0605**
0.729	Bookton (BOK2) - 40to100 cm sandy textures over lacustrine silty clay - Well Drained - Brunisolic Gray Brown Luvisol	0.20%	RESIDENTIAL	15	0.71	0	0	0.71	**0.0521**
0.560	Bookton (BOK2) - 40to100 cm sandy textures over lacustrine silty clay - Well Drained - Brunisolic Gray Brown Luvisol	0.20%	RESIDENTIAL	15	0.55	0	0	0.55	**0.0400**
0.517	NM - Sandy well drained	0.20%	LAND	12	0.41	0	0	0.41	**0.0295**

QRF is a predicted runoff factor based on the following variables:

- Area, Ha – each property's connected area
- Runoff Factor 'C' – Coefficient of Runoff of generally accepted values
  - Soil Type – from Niagara Soil Report
  - Gradient – General Value from NPCA contours
  - Land Factor – reflects the impact of landuse on Runoff

QRF =0.0028* Runoff Factor 'C' * Avg Intensity mm/hr * Area, Ha

QRF-SWMF is the adjusted Runoff Factor used to represent the impact of owner implemented stormwater management facilities.

- SWM is the reduction achieved by the stormwater management facility as determined by the Drainage Engineer / Drainage Superintendent.
- SWMF is the reduction in QRF to be applied.
- QRF-SWMF = QRF - SWMF

QRF Ratio is QRF-SWMF divided by the Sum of all QRF-SWMF for each cost allocated area. The QRF Ratio is the value for each property contribution to the outlet liability cost as a portion of all other contributors.

QRF-SWMF and QRF Ratio is to be used for all future Maintenance assessments.

Special Benefit (Section 24)

The following are assessed costs considered special benefits:
- Culverts,
- Fordings,
- Closed Conduit conveyance (piped flow)
- Channel re-alignment for property use, such as quarry expansion.

The cost of a culvert is assessed against the property owner based on the incremental cost of the drain. A new culvert is paid for by the owner less the cost of drain construction on a per metre basis. The drain per metre construction cost will be estimated for the report but the actual cost will be used to calculate the final value.

Culvert construction costs are shared between the landowner and the rest of the watershed on a 50/50 split basis. Construction costs are based on the City's typical design standard. Additional costs, headwalls, etc. are at the owners cost unless required by the Engineer to meet requirements.

Special Assessment (Section 26)

There are special assessments, as recognized under the Act, for public (not private) roads and utilities that have or require additional costs to the drainage system.

In addition to the projected assessments for Right of Way lands as determined by the outlet assessment, any other costs for road crossings or protection of utilities during construction are assessed to the road owner or utility owner. In the case of Port Colborne Drain, some of the existing Road culverts are to be changed and additional costs are planned or identified. The two new culverts providing road crossings proposed for the Second Concession Rd. are other examples of Section 26 assessments that apply to Port Colborne Drain.

Also included are costs related to impacted utilities such as Enbridge. These costs are additional effort during construction to protect or meet site supervision requirements by the utility. Also included are costs to move infrastructure, if required by site conditions. Actual costs will be assigned to the project as this is merely an estimate of costs during design.

5.3.1 Allowances:

1. Where a drain assessment schedule already exists and a prior maintenance and assessment schedule is known to exist, then a Schedule 29 allowance is accepted and recognized through a past report and schedule unless it can be shown otherwise.

2. Where a drain is re-aligned to a new path, then a Section 29 allowance for land taken is recognized. This can be amended by the restoration of any lands to the same owner by the same re-alignment. Thus, a net allowance can be recognized where that is shown to be the case.

3. Where previously no drain was recognized but already existed as a flow path, then a Section 31 allowance can be realized along with a one time creation of a current and future easement for drain maintenance activities as a Section 29 allowance. This is used in the creation of branch drains.

4. All property valuations are based on the same basic valuation, as per the Schedule of Costs. This single valuation is based on the agricultural land value in the Region of Niagara.

5. Any tree or feature planted within a drainage works right of access for maintenance is not eligible for compensation in any form. Trees within the work zone are eligible for the 2 for 1 tree replacement program.

Section 29 Allowance
(One time payment for land taken)

Where a drain already exists and has had maintenance in the past, then a work zone is assumed to already exist and a one time payment for the work zone easement has been made. No further payment for a work zone or easement is deemed to be required based on the pre-existing work zone regardless of whether that is known to exist or shown to exist in an explicit reference in a previous Engineer's report.

Where a drain re-alignment or a branch drain is proposed, then a Section 29 allowance is determined. The determination is based on a 10m work zone running parallel to one side of the drain commencing at the Top of Bank. The side from which work is done is determined by the Drainage Engineer and shown on the Plans for Construction. In the case of a close conduit the work zone can be reduced to a 5m zone or a 10m zone with 5m on each side. The value is based on a single value of land figure as shown in the Schedule of Costs and because the access is intermittent with the owner retaining ownership and access / use of the land for farming or otherwise, then a factor in the assessment value of land is applied. Since the work zone is likely to be occupied on a 10 year cycle for maintenance a 1/10 factor is to be applied using the land purchase value.

Where a buffer is established that restricts use of the land adjacent to the drain in favour of permanent vegetation, then a full payment for land taken based on the value established is made. For a buffer, a registered easement on title is recommended.

Section 30 Allowance
(Payment for damages during construction)

This allowance is to compensate landowners for economic damages due to construction and recognizes two types of injury. Immediate loss of crop as a result of working corridor for construction and longer-term damage to crops as a result of spoil spreading.

An allowance is made where work on the drain, such as construction or maintenance, damages crops which can not be restored. Compensation in the form of an allowance does not apply to grass or any other ornamental feature that is restored to similar condition as existed pre-construction for the tree canopy program. Compensation is paid for the work zone width multiplied by the length affected at the rate of $4,300 per Hectare.

For any trees removed for construction that have a greater diameter than 150mm at breast height, (DBH) a compensation program of replacement saplings is proposed.

Where a tree is removed and 2 trees of a variety native to the area and available through the canopy program are planted outside the work zone as compensation, then no award for damage is made.

A damage allowance for fences can be paid where the fence is not restored. In any of the planned work for the Drain, fences are to be restored to a like or better condition and no allowance for payment is planned.

Section 31 Allowance
(Incorporate a Private Drain)

This type of allowance is to credit the construction effort of a private drain once the private drain is incorporated into a municipal Drain.

The value of the private drain is dependent on condition and contribution to the function of the Drain. For valuation purposes, the cost to construct a similar channel would be made based on the Schedule of Prices. The cost to maintain it would be subtracted.

This does not apply within the Port Colborne Drain watershed.

Section 32 Allowance
(Insufficient Outlet)

This provides compensation to affect owners for whom lands are not sufficiently drained by the service level provided by the Drain or where lands are discharged into instead of having a sufficient outlet.

There are no known occurrences of this within the Port Colborne Drain.

Section 33 Allowance
(Loss of Access)

Where a re-aligned Drain crosses property and cuts off access, an allowance can be granted. There is one known such occurrence, property 410900 has a portion that is naturally severed by the crossing of the drain. It is assumed that this historical severance would have a loss of access payment made at the time of the severance and is not required to be recognized by this report.

5.3.2 General Instructions to Property Owners, Road Authorities and Public Utilities

The principles of the Drainage Act are:

- Drainage is a collective good that benefits all landowners. However, drainage does not have to benefit all landowners equally.
- All landowners cooperatively fund the drainage works proposed. There is no direct financial government role in the drainage works other than administrative.

- Landowners are assessed a financial share of the cost for the drainage works based on their respective drainage benefit.

- All drainage costs are born by landowners including allowances.

- Drainage is provided on the basis of an identified service level for a specified size of storm. The standard storm, 1 in 5 year frequency, for basic open channel design is 68.9mm over 24 hours. A storm of a larger size or intensity may cause flooding. Tile placed in the bottom of an open channel is provided for drainage and not conveyance capacity.

  For more details, refer to the Wignell Watershed Hydrology and Hydraulics Report.

A best effort has been made to compose a fair and reasonable assessment of costs to each portion of the contributing lands.

5.3.3 Grants

Owners of qualifying agricultural land are presently eligible for a grant of up to one-third of the cost of their assessment from the Ontario Ministry of Agriculture and Food. This grant will be applied for by the City of Port Colborne, and applied to the property owners' assessment at the time of final billing. The Port Colborne Assessment Schedule indicates lands that, based on information provided by the municipality, qualify for the agricultural land use grant. The final determination of eligibility is the decision of the Ontario Ministry of Agriculture and Food. To be eligible for a grant, the property owner must have a Farm Property Class Tax Rate or in combination with the Managed Forest Tax Incentive Program or the Conservation Land Tax Incentive Program for the lands to be drained by the Drain.

For additional information on the Agricultural Drainage Infrastructure Program refer to the OMAFRA website at www.omafra.gov.on.ca.

5.4 Port Colborne Drain Improvements & Maintenance

Added to the cost of maintenance is the full engineering and administration costs less any costs directly assigned to specific Section 22, Section 24 benefit assessments.

With the Runoff Ratio, there is a Stormwater Management Facility reduction in Section 23 that can be applied for those properties that can demonstrate a runoff amendment structure that reduces peak flow contributions to the drain subject to evaluation and confirmation by the Drainage Superintendent and the Engineer.

For the purposes of the submission of the report, no SWMF assessments are recognized and the individual property owners can make a request for assessment and this will be recognized by the Engineer on project completion.

A cycle of review and update of the SWMF assessments is planned to update and address private property runoff improvements made by homeowners. At present this cycle is set to once every 5 years but this will be reviewed and adjusted by the City

of Port Colborne and can be triggered at any point using a Section 76 assessment change process.

5.4.1 Drain Improvement to Second Concession

The re-alignment of the former Wignell W1 and W2 did not appear to be constructed to Second Concession. This report provides the design and report information to complete that work and achieve a full replacement of the original drain pathway around the quarry. The City of Port Colborne had constructed the roadside ditches down the ROW's to help provide some drainage.

As part of this work, a sediment basin is proposed to 'treat' runoff from the farmland upland of the Babion Rd. and Second Concession Rd. intersection culvert crossings.

5.4.2 Drain Crossings

There are no new drain crossing planned; however, the two crossings located at Babion Rd. and Second Concession Rd. are to be changed in grade and/or flow direction. The costs for this work is to be borne by the Municipality.

These re-worked crossings are proposed to pass the former flows crossing Second Concession Rd. and passing into the now quarry lands to the East and crossing Babion Rd. first then Second Concession Rd. and connecting to the extended Drain along the east side of Babion.

5.4.3 Port Colborne Branch #1 Drain Improvement

The majority of the Port Colborne Branch Drain #1 is functioning well but the portion that provides drainage to Snider Rd. is no longer functioning as intended. A removal of the vegetation growth is required along with a re-grading of the channel to connect and serve the roadside swale.

In addition, the outlet is proposed to be re-aligned along the north side of Highway #3 to outlet into the main Drain channel at a connection point north of the existing culvert crossing identified on Plans as PC-CS-004 crossing Highway #3. This new outlet will be the primary channel for Port Colborne Branch Drain #1; however, the original flow path will remain without being a part of the Municipal Drain but as an overflow path should a large runoff event occur. The berm directing runoff to the new outlet is set to overtop prior to the full flow occurring at the PC-CS-004 culvert.

5.4.4 Sediment Basins

There are three sediment basins planned for construction. Each is located adjacent to a road right of way to provide access for future maintenance.

The cost of constructing sediment basins are shared among upstream landowners through a Section 23 assessment including assessed cost for ROW runoff.

5.4.5 2016 Grading and Re-alignment

The City conducted work on the drain to re-grade the channel from station 0+007, North of the Friendship Trail to station 1+928, South of Highway #3. This included some rock removal.

The resulting graded works is shown on the Profile drawings; P1, P2 as an As Constructed drawing record.

A re-alignment of the drain starting at 1+650 to 1+860 was constructed. There were two fordings constructed through this area to provide farm crossings. Each is to be treated in a similar manner to a culvert and the costs shared between the watershed and the landowner on a 50/50 basis.

Two wetlands were constructed on private property using grants. These wetlands are not part of the Municipal Drain and remain with the landowners for future maintenance.

5.5 Allowance and Assessment Schedules

The Assessment calculation Tables are included in Appendix B. The following sections provide a summary reporting of those calculations.

5.5.1 Drain Allowances

5.5.1.1 Port Colborne Drain

The improvement of the Port Colborne Drain using Section 78 is to make specific changes in the drain and assign the cost for the same using an updated schedule and to achieve enhanced stormwater management functions.

The channel is presumed to have an allowance under Section 29 for land taken as well as a work zone allowance for future access. The original land required for the drain is recognized by previous report and an assumed work zone of 30ft (9.14m) already exists. An additional 1m work zone, (0.76m) to be added to the 9.14m existing work zone is declined.

A section 30 allowance is recognized for the damage to crops during construction and is paid at the rate of $4,300 per hectare applied to the 10m work zone.

An allowance paid to the property for the re-alignment is made under Section 29 for land taken on the re-location of the drain path. The other properties are not recognized on the basis of a like for like move of the drain. No other allowances are recognized for the maintenance of this existing drain.

Table 9 Port Colborne Allowances

Drain	Section 29	Section 30	Section 31	Section 32	Section 33
Port Colborne	$939.00	$0.00	$0.00	$0.00	$0.00
				Sub-Total of Allowances:	**$939.00**

Additional to these costs will be Administration and Engineering Costs related to the design.

5.5.1.2 Port Colborne Branch Drain #1

As discussed previously, this drain already existed and is presumed to have been a Municipal Drain previously. All required land is presumed to have been previously assessed for both land taken for the drain and for access for maintenance, which is a 10m work zone.

Table 10 Port Colborne Branch #1 Allowances

Drain	Section 29	Section 30	Section 31	Section 32	Section 33
Port Colborne Branch #1	$0.00	$277.62	$.00	$0.00	$0.00
				Sub-Total of Allowances:	**$277.62**

5.5.2 Port Colborne Assessment Schedules

The assessment tables show the resulting assessment schedules for the past construction works and the proposed construction works based on the calculations performed and included in Appendix B. Past costs are presented by summary reports in Appendix C.

Table 11 Port Colborne Drain Assessment Schedule of Costs

Port Colborne Municipal Drain
City of Port Colborne
Regional Municipality of Niagara

Section 22: Assessed Benefit
Section 23 Outlet Benefit / Outlet Liability
Section 24 Special Benefit

	Owner	Legal Text	Roll No	Area, Ha	Assessment			Total	Allowance	Net
					Benefit	Outlet Liability	Special			
	City of Port Colborne - Lands Assessed									
	Vale Canada Limited	HUMBERSTONE CON 1 PT LOTS 24	271102000718000	1.642	$0	$1,413.83	$0.00	$1,413.83	$0.00	$1,413.83
	McLean William Richard Samue	CON 1 PT TWP LOT 23	271102001311300	0.095	$0	$45.49	$0.00	$45.49	$0.00	$45.49
	Tomiuck Jonas	CON 1 PT TWP LOT 23	271102001311400	0.191	$0	$91.13	$0.00	$91.13	$0.00	$91.13
	Scott Gregory George	CON 1 PT TWP LOT 23	271102001311500	0.190	$0	$91.08	$0.00	$91.08	$0.00	$91.08
	Vale Canada Limited	CON 2 PT LOT 24	271102001312000	0.534	$0	$306.76	$0.00	$306.76	$0.00	$306.76
	Port Colborne Quarries Inc	CON 2 PT LOTS 19 AND 20 RP	271104000315600	30.868	$0	$20,671.95	$0.00	$20,671.95	$0.00	$20,671.95
	Phillips Richard Gordon	CON 2 PT LOT 20 RP 59R-1546	271104000315702	0.089	$0	$42.53	$0.00	$42.53	$0.00	$42.53
	Port Colborne Quarries Inc	CON 2 PT LOT 19 PT LOT 20	271104000315800	35.112	$0	$23,514.47	$0.00	$23,514.47	$0.00	$23,514.47
	Schlenger Uszer	CON 1 PT LOT 23	271104000408700	0.583	$0	$334.83	$0.00	$334.83	$0.00	$334.83
	Schlenger Uszer	CON 1 PT LOT 23	271104000408700	6.726	$0	$4,504.18	$0.00	$4,504.18	$0.00	$4,504.18
	City of Port Colborne	CON 1 PT LOTS 23, 24 RP	271104000408715	2.431	$0	$1,628.23	$0.00	$1,628.23	$0.00	$1,628.23
	Schlenger Uszer	CON 1 PT LOT 23	271104000408800	0.373	$0	$228.20	$0.00	$228.20	$0.00	$228.20
	Coccagna Anthony	CON 1 PT LOT 23	271104000408900	0.631	$0	$301.99	$0.00	$301.99	$0.00	$301.99
	1346618 Ontario Ltd	CON 1 PT LOT 23	271104000409000	0.463	$0	$310.00	$0.00	$310.00	$0.00	$310.00
	Ostric Milan	CON 1 PT LOT 23 RP 59R5797	271104000409100	0.201	$0	$96.15	$0.00	$96.15	$0.00	$96.15
	1108904 Ontario Limited	CON 1 PT LOT 23 PT LOT 24	271104000409200	0.779	$0	$521.36	$0.00	$521.36	$0.00	$521.36
	Favero Lidia	CON 1 PT LOT 23	271104000409300	0.202	$0	$96.58	$0.00	$96.58	$0.00	$96.58
	Ed Christensen Roofing Limited	CON 1 PT LOT 23	271104000409400	0.190	$0	$90.98	$0.00	$90.98	$0.00	$90.98
	Sauder William Edward	HUMBERSTONE CON 1 PT LOT 23	271104000409500	0.190	$0	$90.98	$0.00	$90.98	$0.00	$90.98
	Stenson Ian John	CON 1 PT LOT 23	271104000409600	0.190	$0	$90.98	$0.00	$90.98	$0.00	$90.98
	Polverari Giuseppe	CON 1 PT LOT 23	271104000409700	0.190	$0	$90.98	$0.00	$90.98	$0.00	$90.98
	Vale Canada Limited	CON 1 PT LOT 23	271104000409800	4.106	$0	$1,963.89	$0.00	$1,963.89	$0.00	$1,963.89
	Vale Canada Limited	CON 2 PT LOT 21 RP59R3588	271104000410000	4.963	$256	$3,323.44	$187.50	$3,766.44	$939.00	$2,827.44
	Huffman John Wayne	CON 2 PT LOT 21	271104000410400	0.071	$0	$33.82	$0.00	$33.82	$0.00	$33.82
	Young Tammy Lynn	CON 2 PT LOT 21	271104000410500	0.107	$0	$51.04	$0.00	$51.04	$0.00	$51.04
	Vollick Ronald Christopher	CON 2 PT LOT 21	271104000410600	0.159	$0	$76.06	$0.00	$76.06	$0.00	$76.06
	Citrigno Angela	CON 2 PT LOT 21	271104000410700	0.168	$0	$80.12	$0.00	$80.12	$0.00	$80.12
	Stark Raymond	CON 2 PT LOT 21 RP 59R4333	271104000410705	1.936	$0	$926.05	$0.00	$926.05	$0.00	$926.05
	Konc John Andrew	CON 2 PT LOT 22 RP 59R4801	271104000410710	2.899	$508	$1,941.39	$5,057.59	$7,506.97	$0.00	$7,506.97
F	Van Ruyven Josef Nicolaas	CON 2 PT LOT 22 RP 59R4801	271104000410800	4.199	$0	$2,811.99	$355.00	$3,166.99	$0.00	$3,166.99
	Stewart Scott James	CON 2 PT LOT 22 RP 59R 5732	271104000410810	0.407	$0	$194.50	$0.00	$194.50	$0.00	$194.50
F	Powell Bradley Kenneth	CON 2 PT LOT 22 RP59R4801	271104000410900	7.711	$0	$5,164.30	$0.00	$5,164.30	$0.00	$5,164.30
	Hellinga Jack Simon	CON 2 PT LOT 22	271104000411000	5.411	$0	$2,588.33	$0.00	$2,588.33	$0.00	$2,588.33
	Kinzie Patricia Helen	CON 2 PT LOT 21 RP 59R6766	271104000411200	1.202	$0	$574.94	$0.00	$574.94	$0.00	$574.94
	Pipher Lynn Mae	CON 2 PT LOT 21 RP 59R6766	271104000411205	1.208	$0	$578.00	$0.00	$578.00	$0.00	$578.00
	Scace Wesley	CON 2 PT LOT 21	271104000411300	0.067	$0	$31.95	$0.00	$31.95	$0.00	$31.95
	Port Colborne Quarries Inc	CON 2 PT LOT 21 PT LOT 22 RP	271104000411500	73.170	$0	$51,802.13	$0.00	$51,802.13	$0.00	$51,802.13
	Parsons David Scott	CON 2 PT LOT 22	271104000411600	0.418	$0	$199.95	$0.00	$199.95	$0.00	$199.95
	Leavere Larry Allan Thomas	CON 2 PT LOT 22	271104000411700	0.209	$0	$100.02	$0.00	$100.02	$0.00	$100.02
	Yanni Bill	CON 2 PT LOT 22	271104000411900	0.418	$0	$199.95	$0.00	$199.95	$0.00	$199.95
	Fitzgerald Shawn Patrick	HUMBERSTONE CON 2 PT LOT 22	271104000412000	0.209	$0	$100.07	$0.00	$100.07	$0.00	$100.07
	Orlowski Jeffrey	CON 2 PT LOT 22 RP 59R4884	271104000412100	0.209	$0	$100.02	$0.00	$100.02	$0.00	$100.02
	Moes Frank Allan	HUMBERSTONE CON 2 PT LOT 22	271104000412200	0.357	$0	$170.72	$0.00	$170.72	$0.00	$170.72
	Boda Terry Joseph	CON 2 PT LOT 22	271104000412400	0.186	$0	$88.88	$0.00	$88.88	$0.00	$88.88
F	Elite Capital P.C Developments Inc	CON 2 PT LOT 22	271104000412600	4.110	$0	$2,359.42	$0.00	$2,359.42	$0.00	$2,359.42
	Vale Canada Limited	CON 2 PT LOT 22 PT LOT 23	271104000412700	10.153	$0	$5,827.80	$0.00	$5,827.80	$0.00	$5,827.80
	Vale Canada Limited	CON 2 PT LOT 22 PT LOT 23	271104000412700	22.189	$0	$12,736.89	$0.00	$12,736.89	$0.00	$12,736.89
	Vale Canada Limited	CON 2 PT LOT 23	271104000412800	0.363	$0	$208.54	$0.00	$208.54	$0.00	$208.54
	NCDSB	CON 2 PT LOT 23	271104000412900	5.947	$0	$3,413.79	$0.00	$3,413.79	$0.00	$3,413.79
	Dyson Patrick James	CON 2 PT LOT 23	271104000413000	0.176	$0	$84.14	$0.00	$84.14	$0.00	$84.14
	Dyson Mary Lynn	CON 2 PT LOT 23	271104000413100	0.182	$0	$104.19	$0.00	$104.19	$0.00	$104.19
	Hortobagyi Zoltan	CON 2 PT LOT 23	271104000413200	0.186	$0	$88.88	$0.00	$88.88	$0.00	$88.88
	Wakunick Deborah Ivy	CON 2 PT LOT 24	271104000413300	0.085	$0	$40.85	$0.00	$40.85	$0.00	$40.85
	Wells Donna Louise	CON 2 PT LOT 23 PT LOT 24	271104000413400	0.828	$0	$396.13	$0.00	$396.13	$0.00	$396.13
	Vale Canada Limited	CON 2 PT LOT 23 PT LOT 24 RP	271104000413401	7.409	$0	$3,544.32	$0.00	$3,544.32	$0.00	$3,544.32
	Vale Canada Limited	CON 2 PT LOT 23 PT LOT 24 RP	271104000413410	10.115	$0	$6,774.19	$0.00	$6,774.19	$0.00	$6,774.19
	Vale Canada Limited	CON 2 PT LOT 24 RP 59R10047	271104000413435	0.631	$0	$422.51	$0.00	$422.51	$0.00	$422.51
	Port Colborne Quarries Inc	HUMBERSTONE CON 2 PT LOTS 23	271104000414000	3.326	$0	$1,909.44	$0.00	$1,909.44	$0.00	$1,909.44
	Vale Canada Limited	CON 2 PT LOT 24	271104000414120	0.928	$0	$621.68	$0.00	$621.68	$0.00	$621.68
	2023165 Ontario Inc	CON 3 PT LOT 19 PT LOT 20	271104000506400	1.291	$0	$617.56	$0.00	$617.56	$0.00	$617.56
F	Koch Olga	CON 3 LOT 19CPT	271104000506500	0.222	$0	$106.05	$0.00	$106.05	$0.00	$106.05
	Kozelj Stif	CON 3 PT LOT 20	271104000506600	0.079	$0	$37.89	$0.00	$37.89	$0.00	$37.89
F	Orsetto Aldo	CON 3 PT LOT 20	271104000506700	4.228	$0	$2,426.75	$0.00	$2,426.75	$0.00	$2,426.75
	Currie Michael Bruce	CON 3 PT LOT 20	271104000506702	0.085	$0	$40.80	$0.00	$40.80	$0.00	$40.80
F	Fijavz David	CON 3 PT LOT 20	271104000506703	0.334	$0	$159.58	$0.00	$159.58	$0.00	$159.58
	Levitt Corie	CON 3 PT LOT 20 PLAN 59R	271104000506710	0.212	$0	$101.17	$0.00	$101.17	$0.00	$101.17
	Michaud Antonio Abel	CON 3 PT LOT 20 RP 59R8240	271104000506800	0.271	$0	$129.44	$0.00	$129.44	$0.00	$129.44
F	Henderson David Marshall	CON 3 PT LOT 20	271104000506801	11.011	$0	$7,373.83	$0.00	$7,373.83	$0.00	$7,373.83
F	Babion Gail J	HUMBERSTONE CON 3 PT LOT 21	271104000506900	15.252	$0	$10,214.09	$0.00	$10,214.09	$0.00	$10,214.09
	Wagner Dan Patrick	CON 3 PT LOT 21	271104000507400	3.050	$0	$2,042.84	$0.00	$2,042.84	$0.00	$2,042.84
	Stovell David Alan	CON 3 PT LOT 21 59R8535	271104000507500	1.238	$0	$592.40	$0.00	$592.40	$0.00	$592.40
F	Cooper Collin James Lee	CON 3 S PT LOT 21 S PT LOT	271104000508100	7.613	$0	$5,098.67	$0.00	$5,098.67	$0.00	$5,098.67
F	Henderson Drew David	CON 3 PT LOT 22	271104000508301	1.055	$0	$706.46	$0.00	$706.46	$0.00	$706.46
	Beaulieu George E	CON 3 E PT LOT 23	271104000508900	0.388	$0	$185.46	$0.00	$185.46	$0.00	$185.46
	Garner Mark Edward	CON 3 PT LOT 23	271104000509100	0.346	$0	$165.65	$0.00	$165.65	$0.00	$165.65
	Joseph Grandilli	CON 3 PT LOT 23	271104000509300	0.082	$0	$39.37	$0.00	$39.37	$0.00	$39.37
	Stefan John	CON 3 PT LOT 23	271104000509400	0.016	$0	$7.85	$0.00	$7.85	$0.00	$7.85
	Johnson Raymond Francis Jr	CON 3 PT LOT 23 RP 59R10549	271104000510200	0.208	$0	$103.68	$0.00	$103.68	$0.00	$103.68
	Vance Gregory Thomas	CON 3 PT LOT 23 RP 59R10549	271104000510202	0.417	$0	$199.52	$0.00	$199.52	$0.00	$199.52
	Saxon Ronald Joseph	CON 3 PT LOT 23 PLAN	271104000510204	0.605	$0	$289.50	$0.00	$289.50	$0.00	$289.50
	Pilkey Dean Lloyd	CON 3 PT LOT 23 PLAN	271104000510206	0.597	$0	$285.72	$0.00	$285.72	$0.00	$285.72
F	Schneider Darryl Frederick	CON 3 PT LOT 23	271104000510801	2.252	$0	$1,077.11	$0.00	$1,077.11	$0.00	$1,077.11
	Zonneveld Bastian	CON 3 PT LOT 24	271104000510900	0.103	$0	$49.17	$0.00	$49.17	$0.00	$49.17
	Terreberry Jack	CON 3 PT LOT 24	271104000511000	0.144	$0	$68.98	$0.00	$68.98	$0.00	$68.98
	Jacak Dominik	CON 3 PT LOT 24	271104000511300	0.347	$0	$166.13	$0.00	$166.13	$0.00	$166.13
	Moore Linda Ann	CON 3 PT LOT 24	271104000511400	0.099	$0	$47.21	$0.00	$47.21	$0.00	$47.21
	Moore Linda Ann	CON 3 PT LOT 24	271104000511500	0.029	$0	$13.78	$0.00	$13.78	$0.00	$13.78
	Medvic Peter James	CON 3 PT LOT 24	271104000511600	0.356	$0	$170.06	$0.00	$170.06	$0.00	$170.06
	McIntyre Shelly	CON 3 PT LOT 24	271104000511700	0.191	$0	$91.41	$0.00	$91.41	$0.00	$91.41
	City of Port Colborne	59R11175 PART 1 59R11176	271104000699500	0.630	$0	$421.71	$0.00	$421.71	$0.00	$421.71
				311.038	$763.50	$199,226.89	$5,600.09	$205,590.48	$939.00	$204,651.48

Owner	Legal Text	Roll No	Area, Ha	Assessment Benefit	Outlet Liability	Special	Total	Allowance	Net
Roads									
City of Port Colborne	Snider Rd. N of Second Concession	ROW	0.071		$3,306.62	$0.00	$3,306.62		
City of Port Colborne	Killaly St E east of Snider	ROW	0.176		$1,752.36	$0.00	$1,752.36		
City of Port Colborne	Snider Rd portion south of Killaly St E	ROW	0.353		$2,876.95	$0.00	$2,876.95		
City of Port Colborne	Second Concession Rd. E of Babion	ROW	0.596		$116.22	$0.00	$116.22		
City of Port Colborne	Killaly St East W of Snider Rd	ROW	0.920		$968.19	$0.00	$968.19		
City of Port Colborne	Chippawa Road	ROW	1.016		$3,753.26	$0.00	$3,753.26		
City of Port Colborne	Second Concession W of Snider Rd.	ROW	1.221		$854.95	$0.00	$854.95		
City of Port Colborne	Babion Rd. from 2nd to Chippawa	ROW	1.432		$2,329.34	$0.00	$2,329.34		
City of Port Colborne	Second Concession from Snider to Babion	ROW	1.645		$541.04	$0.00	$541.04		
City of Port Colborne	Snider Rd. from Hwy 3 to Second Conc	ROW	2.005		$1,464.94	$0.00	$1,464.94		
City of Port Colborne	Sndier Rd from Hwy 3 to Killaly St E	ROW	2.033		$286.73	$0.00	$286.73		
City of Port Colborne	Babion Rd. from Hwy 3 to Second Concess	ROW	2.308		$2,675.64	$0.00	$2,675.64		
							$20,926.24		
MTO	Highway #3	ROW	3.281		$5,336.02	$0.00	$5,336.02		
			17.058		$26,262.26	$0.00	$26,262.26		
Section 26 - Special Assessments									
City of Port Colborne	Extend drain along Babion Rd. to Second Concession. Re-lay culverts at Second Concession Rd.						$40,448.80		
MINISTRY OF TRANSPORTATION ONTARIO							$5,076.19		
Utilities - Enbridge	No conflicts assessed during design						$0.00		
Utilities - Other	No conflicts assessed during design						$0.00		
							$45,525.00		
Port Colborne Drain									
	Total Assessed:						$277,377.74		

Notes:
1. The above lands marked "F" are currently classified as agricultural according to the OMAFRA and are therefore entitled to a 1/3 grant.
2. Section 21 of the Drainage Act, RSO 1990 requires that assessments be shown for each parcel of land and road affected. The affected parcels of land are identified using the roll number received from the City. For convenience only, the owners' names are shown by the last revised assessment roll.
3. The value of the assessments identified in this schedule are estimates only, and should not be considered final.

Port Colborne Branch #1 Municipal Drain

City of Port Colborne
Regional Municipality of Niagara

Section 22: Assessed Benefit
Section 23 Outlet Benefit / Outlet Liability
Section 24 Special Benefit

Owner	Legal Text	Roll No	Area, Ha	Assessment Benefit	Outlet Liability	Special	Total	Allowance	Net
City of Port Colborne - Lands Assessed									
Konc John Andrew	CON 2 PT LOT 22 RP 59R4801	271104000410710	0.107	$0	$27.28	$0.00	$27.28	$277.62	-$250.35
Van Ruyven Josef Nicolaas	CON 2 PT LOT 22 RP 59R4801	271104000410800	1.084	$0	$184.32	$0.00	$184.32	$0.00	$184.32
Hellinga Jack Simon	CON 2 PT LOT 22	271104000411000	5.247	$0	$1,338.84	$0.00	$1,338.84	$0.00	$1,338.84
Port Colborne Quarries Inc	CON 2 PT LOT 21 PT LOT 22 RP	271104000411500	2.758	$0	$469.10	$0.00	$469.10	$0.00	$469.10
Parsons David Scott	CON 2 PT LOT 22	271104000411600	0.413	$0	$105.40	$0.00	$105.40	$0.00	$105.40
Leavere Larry Allan Thomas	CON 2 PT LOT 22	271104000411700	0.098	$0	$16.60	$0.00	$16.60	$0.00	$16.60
Yanni Bill	CON 2 PT LOT 22	271104000411900	0.418	$0	$106.65	$0.00	$106.65	$0.00	$106.65
Orlowski Jeffrey	CON 2 PT LOT 22 RP 59R4884	271104000412100	0.025	$0	$4.25	$0.00	$4.25	$0.00	$4.25
Port Colborne Quarries Inc	HUMBERSTONE CON 2 PT LOTS 23	271104000414000	3.308	$0	$844.05	$0.00	$844.05	$0.00	$844.05
			12.267	$0.00	$3,096.49	$0.00	$3,096.49	$277.62	$2,884.89
Roads									
City of Port Colborne	Snider Rd. from Hwy 3 to Second Conc	ROW	1.612	$0	$616.77	$0.00	$616.77		
City of Port Colborne	Second Concession from Snider to Bab	ROW	0.022	$0	$16.13	$0.00	$16.13		
City of Port Colborne	Second Concession W of Snider Rd.	ROW	0.501	$0	$370.35	$0.00	$370.35		
							$1,003.25		
MTO	Highway #3	ROW	0.547	$0	$446.99	$0.00	$446.99		
			2.682	$0.00	$1,450.25	$0.00	$1,450.25		
			14.948				$4,546.73		
Section 26 - Special Assessments									
City of Port Colborne	Assessed special benefit for improving Snider road outlet.						$7,008.46		
Regional Municipality of Niagara	No works proposed						$0.00		
MINISTRY OF TRANSPORTATION ONTARIO							$7,115.18		
Utilities - Enbridge	No conflicts assessed during design						$0.00		
Utilities - Other	No conflicts assessed during design						$0.00		
							$14,123.64		
Port Colborne Branch #1 Drain									
	Total Assessed:						$18,670.37		

Notes:
1. The above lands marked "F" are currently classified as agricultural according to the OMAFRA and are therefore entitled to a 1/3 grant.
2. Section 21 of the Drainage Act, RSO 1990 requires that assessments be shown for each parcel of land and road affected. The affected parcels of land are identified using the roll number received from the City. For convenience only, the owners' names are shown by the last revised assessment roll.

5.5.3 Port Colborne Drain Maintenance Schedules

The maintenance schedules for use with future maintenance work conducted in each of the Drain catchments.

From the Port Colborne Outlet to the upstream limit of the Drain at the Friendship Trail, STA 0-112.7 to 0+010 basic drain maintenance is required as the Drainage Superintendent determines.

From 0+010 to 1+928, was maintained by the City of Port Colborne in 2016 including work to re-align the channel from 1+650 to 1+860.

Added to the cost of maintenance is the full engineering and administration costs less any costs directly assigned to specific Section 22, and Section 24 benefit assessments.

With the Runoff Ratio, there is a Stormwater Management Facility reduction in Section 23 that can be applied for those properties that can demonstrate a stormwater management facility (SMWF) on property that reduces peak flow contributions to the drain subject to evaluation and confirmation by the Drainage Superintendent and the Engineer.

For the purposes of the submission of the report, no SWMF assessments are recognized and the individual property owners can make a request for assessment and this will be recognized by the Engineer on project completion.

5.5.3.1 Port Colborne Drain Maintenance Schedule

The following is the Maintenance Assessment table for assigning future maintenance costs using Section 23, refer to Appendix B for the calculations.

Table 13 Port Colborne Drain Maintenance Assessment Schedule

Port Colborne Drain

Owner	Legal Text	Roll No	Area, Ha	Runoff Factor 'C'	QRF	QRF Ratio
Vale Canada Limited	HUMBERSTONE CON 1 PT LOTS 24	271102000718000	1.642	45	4.82	**0.0063**
McLean William Richard Samue	CON 1 PT TWP LOT 23	271102001311300	0.095	25	0.16	**0.0002**
Tomiuck Jonas	CON 1 PT TWP LOT 23	271102001311400	0.191	25	0.31	**0.0004**
Scott Gregory George	CON 1 PT TWP LOT 23	271102001311500	0.190	25	0.31	**0.0004**
Vale Canada Limited	CON 2 PT LOT 24	271102001312000	0.534	30	1.05	**0.0014**
Port Colborne Quarries Inc	CON 2 PT LOTS 19 AND 20 RP	271104000315600	30.868	35	70.48	**0.0917**
Phillips Richard Gordon	CON 2 PT LOT 20 RP 59R-1546	271104000315702	0.089	25	0.14	**0.0002**
Port Colborne Quarries Inc	CON 2 PT LOT 19 PT LOT 20	271104000315800	35.112	35	80.17	**0.1043**
Schlenger Uszer	CON 1 PT LOT 23	271104000408700	0.583	30	1.14	**0.0015**
Schlenger Uszer	CON 1 PT LOT 23	271104000408700	6.726	35	15.36	**0.0200**
City of Port Colborne	CON 1 PT LOTS 23, 24 RP	271104000408715	2.431	35	5.55	**0.0072**
Schlenger Uszer	CON 1 PT LOT 23	271104000408800	0.373	32	0.78	**0.0010**
Coccagna Anthony	CON 1 PT LOT 23	271104000408900	0.631	25	1.03	**0.0013**
1346618 Ontario Ltd	CON 1 PT LOT 23	271104000409000	0.463	35	1.06	**0.0014**
Ostric Milan	CON 1 PT LOT 23 RP 59R5797	271104000409100	0.201	25	0.33	**0.0004**
1108904 Ontario Limited	CON 1 PT LOT 23 PT LOT 24	271104000409200	0.779	35	1.78	**0.0023**
Favero Lidia	CON 1 PT LOT 23	271104000409300	0.202	25	0.33	**0.0004**
Ed Christensen Roofing Limited	CON 1 PT LOT 23	271104000409400	0.190	25	0.31	**0.0004**
Sauder William Edward	HUMBERSTONE CON 1 PT LOT 23	271104000409500	0.190	25	0.31	**0.0004**
Stenson Ian John	CON 1 PT LOT 23	271104000409600	0.190	25	0.31	**0.0004**
Polverari Giuseppe	CON 1 PT LOT 23	271104000409700	0.190	25	0.31	**0.0004**
Vale Canada Limited	CON 1 PT LOT 23	271104000409800	4.106	25	6.70	**0.0087**
Vale Canada Limited	CON 2 PT LOT 21 RP59R3588	271104000410000	4.963	35	11.33	**0.0147**
Huffman John Wayne	CON 2 PT LOT 21	271104000410400	0.071	25	0.12	**0.0001**
Young Tammy Lynn	CON 2 PT LOT 21	271104000410500	0.107	25	0.17	**0.0002**
Vollick Ronald Christopher	CON 2 PT LOT 21	271104000410600	0.159	25	0.26	**0.0003**
Citrigno Angela	CON 2 PT LOT 21	271104000410700	0.168	25	0.27	**0.0004**
Stark Raymond	CON 2 PT LOT 21 RP 59R4333	271104000410705	1.936	25	3.16	**0.0041**

Owner	Legal Text	Roll No	Area, Ha	Runoff Factor 'C'	QRF	QRF Ratio
Konc John Andrew	CON 2 PT LOT 22 RP 59R4801	271104000410710	2.899	35	6.62	**0.0086**
Van Ruyven Josef Nicolaas	CON 2 PT LOT 22 RP 59R4801	271104000410800	4.199	35	9.59	**0.0125**
Stewart Scott James	CON 2 PT LOT 22 RP 59R 5732	271104000410810	0.407	25	0.66	**0.0009**
Powell Bradley Kenneth	CON 2 PT LOT 22 RP59R4801	271104000410900	7.711	35	17.61	**0.0229**
Hellinga Jack Simon	CON 2 PT LOT 22	271104000411000	5.411	25	8.83	**0.0115**
Kinzie Patricia Helen	CON 2 PT LOT 21 RP 59R6766	271104000411200	1.202	25	1.96	**0.0025**
Pipher Lynn Mae	CON 2 PT LOT 21 RP 59R6766	271104000411205	1.208	25	1.97	**0.0026**
Scace Wesley	CON 2 PT LOT 21	271104000411300	0.067	25	0.11	**0.0001**
Port Colborne Quarries Inc	CON 2 PT LOT 21 PT LOT 22 RP	271104000411500	73.170	37	176.62	**0.2297**
Parsons David Scott	CON 2 PT LOT 22	271104000411600	0.418	25	0.68	**0.0009**
Leavere Larry Allan Thomas	CON 2 PT LOT 22	271104000411700	0.209	25	0.34	**0.0004**
Yanni Bill	CON 2 PT LOT 22	271104000411900	0.418	25	0.68	**0.0009**
Fitzgerald Shawn Patrick	HUMBERSTONE CON 2 PT LOT 22	271104000412000	0.209	25	0.34	**0.0004**
Orlowski Jeffrey	CON 2 PT LOT 22 RP 59R4884	271104000412100	0.209	25	0.34	**0.0004**
Moes Frank Allan	HUMBERSTONE CON 2 PT LOT 22	271104000412200	0.357	25	0.58	**0.0008**
Boda Terry Joseph	CON 2 PT LOT 22	271104000412400	0.186	25	0.30	**0.0004**
Elite Capital P.C Developments Inc	CON 2 PT LOT 22	271104000412600	4.110	30	8.04	**0.0105**
Vale Canada Limited	CON 2 PT LOT 22 PT LOT 23	271104000412700	10.153	30	19.87	**0.0258**
Vale Canada Limited	CON 2 PT LOT 22 PT LOT 23	271104000412700	22.189	30	43.43	**0.0565**
Vale Canada Limited	CON 2 PT LOT 23	271104000412800	0.363	30	0.71	**0.0009**
NCDSB	CON 2 PT LOT 23	271104000412900	5.947	30	11.64	**0.0151**
Dyson Patrick James	CON 2 PT LOT 23	271104000413000	0.176	25	0.29	**0.0004**
Dyson Mary Lynn	CON 2 PT LOT 23	271104000413100	0.182	30	0.36	**0.0005**
Hortobagyi Zoltan	CON 2 PT LOT 23	271104000413200	0.186	25	0.30	**0.0004**
Wakunick Deborah Ivy	CON 2 PT LOT 24	271104000413300	0.085	25	0.14	**0.0002**
Wells Donna Louise	CON 2 PT LOT 23 PT LOT 24	271104000413400	0.828	25	1.35	**0.0018**
Vale Canada Limited	CON 2 PT LOT 23 PT LOT 24 RP	271104000413401	7.409	25	12.08	**0.0157**
Vale Canada Limited	CON 2 PT LOT 23 PT LOT 24 RP	271104000413410	10.115	35	23.10	**0.0300**
Vale Canada Limited	CON 2 PT LOT 24 RP 59R10047	271104000413435	0.631	35	1.44	**0.0019**
Port Colborne Quarries Inc	HUMBERSTONE CON 2 PT LOTS 23	271104000414000	3.326	30	6.51	**0.0085**
Vale Canada Limited	CON 2 PT LOT 24	271104000414120	0.928	35	2.12	**0.0028**
2023165 Ontario Inc	CON 3 PT LOT 19 PT LOT 20	271104000506400	1.291	25	2.11	**0.0027**

Owner	Legal Text	Roll No	Area, Ha	Runoff Factor 'C'	QRF	QRF Ratio
Koch Olga	CON 3 LOT 19CPT	271104000506500	0.222	25	0.36	**0.0005**
Kozelj Stif	CON 3 PT LOT 20	271104000506600	0.079	25	0.13	**0.0002**
Orsetto Aldo	CON 3 PT LOT 20	271104000506700	4.228	30	8.27	**0.0108**
Currie Michael Bruce	CON 3 PT LOT 20	271104000506702	0.085	25	0.14	**0.0002**
Fijavz David	CON 3 PT LOT 20	271104000506703	0.334	25	0.54	**0.0007**
Levitt Corie	CON 3 PT LOT 20 PLAN 59R	271104000506710	0.212	25	0.34	**0.0004**
Michaud Antonio Abel	CON 3 PT LOT 20 RP 59R8240	271104000506800	0.271	25	0.44	**0.0006**
Henderson David Marshall	CON 3 PT LOT 20	271104000506801	11.011	35	25.14	**0.0327**
Babion Gail J	HUMBERSTONE CON 3 PT LOT 21	271104000506900	15.252	35	34.83	**0.0453**
Wagner Dan Patrick	CON 3 PT LOT 21	271104000507400	3.050	35	6.97	**0.0091**
Stovell David Alan	CON 3 PT LOT 21 59R8535	271104000507500	1.238	25	2.02	**0.0026**
Cooper Collin James Lee	CON 3 S PT LOT 21 S PT LOT	271104000508100	7.613	35	17.38	**0.0226**
Henderson Drew David	CON 3 PT LOT 22	271104000508301	1.055	35	2.41	**0.0031**
Beaulieu George E	CON 3 E PT LOT 23	271104000508900	0.388	25	0.63	**0.0008**
Garner Mark Edward	CON 3 PT LOT 23	271104000509100	0.346	25	0.56	**0.0007**
Joseph Grandilli	CON 3 PT LOT 23	271104000509300	0.082	25	0.13	**0.0002**
Stefan John	CON 3 PT LOT 23	271104000509400	0.016	25	0.03	**0.0000**
Johnson Raymond Francis Jr	CON 3 PT LOT 23 RP 59R10549	271104000510200	0.208	26	0.35	**0.0005**
Vance Gregory Thomas	CON 3 PT LOT 23 RP 59R10549	271104000510202	0.417	25	0.68	**0.0009**
Saxon Ronald Joseph	CON 3 PT LOT 23 PLAN	271104000510204	0.605	25	0.99	**0.0013**
Pilkey Dean Lloyd	CON 3 PT LOT 23 PLAN	271104000510206	0.597	25	0.97	**0.0013**
Schneider Darryl Frederick	CON 3 PT LOT 23	271104000510801	2.252	25	3.67	**0.0048**
Zonneveld Bastian	CON 3 PT LOT 24	271104000510900	0.103	25	0.17	**0.0002**
Terreberry Jack	CON 3 PT LOT 24	271104000511000	0.144	25	0.24	**0.0003**
Jacak Dominik	CON 3 PT LOT 24	271104000511300	0.347	25	0.57	**0.0007**
Moore Linda Ann	CON 3 PT LOT 24	271104000511400	0.099	25	0.16	**0.0002**
Moore Linda Ann	CON 3 PT LOT 24	271104000511500	0.029	25	0.05	**0.0001**
Medvic Peter James	CON 3 PT LOT 24	271104000511600	0.356	25	0.58	**0.0008**
McIntyre Shelly	CON 3 PT LOT 24	271104000511700	0.191	25	0.31	**0.0004**
City of Port Colborne	59R11175 PART 1 59R11176	271104000699500	0.630	35	1.44	**0.0019**
			311.038			
Roads						
City of Port Colborne	**Snider Rd from Hwy 3 to Killaly St E**	ROW	2.033	85	11.27	**0.0147**

Owner	Legal Text	Roll No	Area, Ha	Runoff Factor 'C'	QRF	QRF Ratio
City of Port Colborne	**Second Concession W of Snider Rd.**	ROW	1.221	75	5.97	**0.0078**
City of Port Colborne	**Snider Rd. from Hwy 3 to Second Conc**	ROW	2.005	75	9.81	**0.0128**
City of Port Colborne	**Snider Rd. N of Second Concession**	ROW	0.071	85	0.40	**0.0005**
City of Port Colborne	**Second Concession Rd. E of Babion**	ROW	0.595	85	3.30	**0.0043**
City of Port Colborne	**Babion Rd. from Hwy 3 to Second Concess**	ROW	2.308	85	12.80	**0.0166**
City of Port Colborne	**Chippawa Road**	ROW	0.559	80	2.92	**0.0038**
City of Port Colborne	**Babion Rd. from 2nd to Chippawa**	ROW	1.432	85	7.94	**0.0103**
City of Port Colborne	**Snider Rd protion south of Killaly St E**	ROW	0.353	80	1.84	**0.0024**
City of Port Colborne	**Killaly St East W of Snider Rd**	ROW	0.901	85	4.99	**0.0065**
City of Port Colborne	**Killaly St E east of Snider**	ROW	0.176	85	0.98	**0.0013**
City of Port Colborne	**Second Concession from Snider to Babion**	ROW	1.645	85	9.12	**0.0119**
MTO	**Highway #3**	ROW	3.281	85	18.19	**0.0237**
			16.581			
			327.619		**768.83**	**1.00**

5.5.3.2 Port Colborne Branch Drain #1 Maintenance Schedule

The Maintenance Assessment table is for assigning current and future maintenance costs using Section 23, refer to Appendix B for the calculations.

Table 14 Port Colborne Branch Drain #1 Maintenance Schedule

Owner	Legal Text	Roll No	Area, Ha	Runoff Factor 'C'	QRF	QRF Ratio
City of Port Colborne - Lands Assessed						
Konc John Andrew	CON 2 PT LOT 22 RP 59R4801	271104000410710	0.107	30	0.21	**0.0060**
Van Ruyven Josef Nicolaas	CON 2 PT LOT 22 RP 59R4801	271104000410800	1.084	20	1.41	**0.0405**
Hellinga Jack Simon	CON 2 PT LOT 22	271104000411000	5.247	30	10.27	**0.2945**
Port Colborne Quarries Inc	CON 2 PT LOT 21 PT LOT 22 RP	271104000411500	2.758	20	3.60	**0.1032**
Parsons David Scott	CON 2 PT LOT 22	271104000411600	0.413	30	0.81	**0.0232**
Leavere Larry Allan Thomas	CON 2 PT LOT 22	271104000411700	0.098	20	0.13	**0.0037**
Yanni Bill	CON 2 PT LOT 22	271104000411900	0.418	30	0.82	**0.0235**
Orlowski Jeffrey	CON 2 PT LOT 22 RP 59R4884	271104000412100	0.025	20	0.03	**0.0009**
Port Colborne Quarries Inc	HUMBERSTONE CON 2 PT LOTS 23	271104000414000	3.308	30	6.47	**0.1856**
		Sub-Total (Lands)	**13.457**			
Roads						
City of Port Colborne	Snider Rd. from Hwy 3 to Second Conc	ROW	1.612	45	4.73	**0.1357**
City of Port Colborne	Second Concession from Snider to Babion	ROW	0.022	86	0.12	**0.0035**
City of Port Colborne	Second Concession W of Snider Rd.	ROW	0.501	87	2.84	**0.0815**
MTO	Highway #3	ROW	0.547	96	3.43	**0.0983**
		Sub-Total (Roads)	**2.682**			
		Total:	**16.139**		**34.88**	**1.00**

6 Port Colborne Drain Report Conclusions

This report has identified a series of drain improvements that include drain maintenance to ensure suitable channel design flows are achieved. The drain improvements have been developed through plan and profile drawings, and includes the results of works already undertaken by the City.

The following is a summary description of the planned improvements:

1. Extension of the drain along the East side of Babion Rd. from the Quarry crossing to Second Concession Rd. for 254m.
2. Re-laying the two culverts at the intersection of Babion Rd. and Second Concession Rd.
3. Construction of a new outlet for the Port Colborne Branch #1 Drain to reach the Port Colborne Drain along the North side of Highway #3.
4. Maintenance of the Port Colborne Branch Drain #1 to the Snider Rd. ROW.
5. Construction of 3 sediment basins along the Drain.

Previous Work completed by others is also being assessed.

1. Work already completed for the Port Colborne Drain involving vegetation removal and re-grading to design grade line from 0+010 to 1+928.

Construction of these works is to be recognized as a Section 29 allowance for land access, which has been assumed to already be in place for the Port Colborne Drain and Port Colborne Branch #1. Damages for construction are not expected except as the adjacent lands are to be restored to an equal or better condition.

Assessment for the Drain is based on Section 23 with special benefit assessed for new drain crossings (fordings) and for the cost of channel re-alignment.

Damages for construction, Section 30 allowances, are implemented for economic harm for crop damage from construction work impacts for farming properties only. All other construction impacts are to be restored to an equal or better condition.

The proposed new sediment basins are a Section 23 outlet liability benefit along with the overall construction costs and are shared across the watershed on a pro-rated basis.

This report and the proposed improvements are based on instructions from the City of Port Colborne and the local landowners within the Port Colborne Drain catchment. The cost of these improvements are shared across all areas that contribute runoff to the Drain by way of allowances and assessments consistent with the Drainage Act of Ontario.

Appendix A: Plans, Profiles

Highway 140
Snider Road
Babion Road
Chippawa Road
Second Concession Road
Port Colborne Drain
327.3 Ha
506700
4.23 Ha
506702
0.09 Ha
506703
0.33 Ha
506710
0.21 Ha
506800
0.27 Ha
506500
0.22 Ha
506600
0.08 Ha
506400
1.29 Ha
506801
11.01 Ha
506900
15.25 Ha
507400
3.05 Ha
507500
1.24 Ha
508100
7.61 Ha
508301
1.05 Ha
509400
0.02 Ha
509100
0.35 Ha
509300
0.08 Ha
508900
0.39 Ha
510200
0.21 Ha
510206
0.60 Ha
510204
0.61 Ha
510202
0.42 Ha
510801
2.25 Ha
511000
0.14 Ha
510900
0.10 Ha
511300
0.35 Ha
511600
0.36 Ha
511700
0.19 Ha
511400
0.10 Ha
511500
0.03 Ha
414000
3.33 Ha
411500
73.17 Ha
315800
35.11 Ha
315600
30.87 Ha
411900
0.42 Ha
411000
5.41 Ha
3+200
3+100
3+000
2+900
2+800
2+700
2+600
0+800
0+700

CofPC-Port Colborne Drain 10-FEB-21
- CofPC-Port Colborne Drain 10-FEB-21 entities

CofPC-Port Colborne Drain 10-FEB-21 entities
- __01_PC_MainDrain
- _dc-chainage for sd ONLY
- PC_catch

- PC_ROW_rev4
- PC_Drain_Xroll_rev4
- PC MapBook_index2500
- Contours

NPCA_ENV
- GR_WetlandAllowance_NPCA

- GR_RegulatedWetlands_NPCA
- AssessmentParcels

DrainC
- Port Colborne Drain
- Port Colborne Branch #1
- Wignell Drain

Road_Segments
- MUN
- ON
- BuildingFootprints

100 0 100 200 300 400 m

Map Scale 1:2811

This page is formated for printing on ANSI E size portrait, 863.6mm x 1117.6mm

1

Port Colborne Drain

Assessed Properties by Drainage Area and ARN

EWA Engineering Inc.
647.400.2824 www.ewaeng.com

Printed on: 2021-04-12

Port Colborne Drain
327.3 Ha

Port Colborne Branch #1
14.8 Ha

Wignell Drain
1,103.1 Ha

Snider Road
Babion Road
Lorraine Road
Reuter Road
Hwy #3
Main Street East
Ramp
Killaly Street East
Durham Street
Lincoln Avenue
Mercury Avenue
James Avenue
Christmas Street
Cross Street
Bell Street
Johnston Street

0+800 0+700 0+600 0+500 0+400 0+300 0+200 0+100 0+000 -0+100
1+900 1+800 1+700 1+600 1+500 1+400 1+300 1+200 1+100 1+000 0+900 0+800 0+700 0+600 0+500 0+400 0+300 0+200 0+100
2+700 2+600 2+500 2+400 2+300 2+200 2+100 2+000

411500 73.17 Ha
411900 0.42 Ha
411600 0.42 Ha
411700 0.21 Ha
411000 5.41 Ha
412000 0.21 Ha
412100 0.21 Ha
412200 0.36 Ha
412400 0.19 Ha
413435 0.63 Ha
413410 10.12 Ha
413400 0.83 Ha
413300 0.09 Ha
413200 0.19 Ha
413100 0.18 Ha
413000 0.18 Ha
413401 7.41 Ha
410810 0.41 Ha
410900 7.71 Ha
410800 4.20 Ha
410710 2.90 Ha
410000 4.96 Ha
411300 0.07 Ha
411205 1.21 Ha
411200 1.20 Ha
410700 0.17 Ha
410600 0.16 Ha
410500 0.11 Ha
410400 0.07 Ha
410705 1.94 Ha
315702 0.09 Ha
315800 35.11 Ha
315600 30.87 Ha
412600 4.11 Ha
412700 22.19 Ha
412700 10.15 Ha
414120 0.93 Ha
412900 5.95 Ha
312000 0.53 Ha
412800 0.36 Ha
409200 0.78 Ha
409100 0.20 Ha
409000 0.46 Ha
408900 0.63 Ha
408800 0.37 Ha
408700 6.73 Ha
409800 4.11 Ha
718000 1.64 Ha
408715 2.43 Ha
699500 0.63 Ha
408700 0.58 Ha
312300 0.09 Ha
312400 0.09 Ha
312500 0.09 Ha
409700 0.19 Ha
409600 0.19 Ha
409400 0.19 Ha
409300 0.20 Ha

CofPC-Municipal Drain-Wignell9_2020-09-01
CofPC-Municipal Drain-Wignell9_2020-09-01 entities
__03_W_Branch_Drain2
__04_W_Branch_Drain3
__10_W_PrivateDrain
AET-CL-WIGNELL MAIN BRANCH DRAIN CL
CofPC-Port Colborne Drain 10-FEB-21
CofPC-Port Colborne Drain 10-FEB-21 entities

CofPC-Port Colborne Drain 10-FEB-21 entities
__01_PC_MainDrain
__02_PC_BranchDrain1
_dc-chainage for sd ONLY
AET-CL-PCD Branch 1- N and S-TXT
PC_catch
W_ponds
PC_ROW_rev4

PC_Drain_Xroll_rev4
PC MapBook_index2500
Contours
NPCA_ENV
GR_WetlandAllowance_NPCA
GR_RegulatedWetlands_NPCA
AssessmentParcels
DrainC
Port Colborne Drain

Port Colborne Branch #1
Wignell Drain
Road_Segments
MUN
ON
BuildingFootprints

100 0 100 200 300 400 m

Map Scale 1:2783

This page is formated for printing on ANSI E size portrait, 863.6mm x 1117.6mm

2

Port Colborne Drain

Assessed Properties by Drainage Area and ARN

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647.400.2824 www.ewaeng.com

Printed on: 2021-04-12

Port Colborne Municipal Drain

City of Port Colborne

APRIL 16, 2021

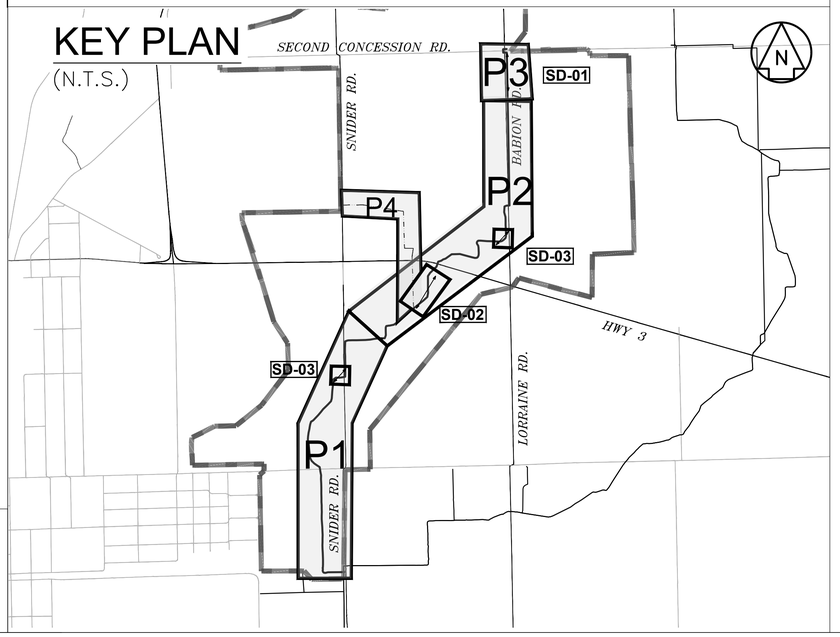
PORT COLBORNE MUNICIPAL DRAIN - 2021

LOCATION PLAN

(N.T.S.)

KEY PLAN

(N.T.S.)



LEGEND

	EXISTING DITCH BOTTOM (NPCA DEM DATA)
	EXISTING DITCH BOTTOM (SURVEYED)
	HISTORICAL GRADELINE
	PROPOSED DRAIN GRADELINE–EWA, 2021
LEFT	LEFT BANK
RIGHT	RIGHT BANK
	EXISTING DRAIN SECTION
	EXISTING STRUCTURE DETAILS
	ASSUMED EXISTING STRUCTURE DETAILS
OBV=175.00	EXISTING DRAIN ELEVATION
175.00 PR.	PROPOSED DRAIN CENTERLINE ELEVATION
175.00 EX.	PROPOSED DRAIN ELEVATION (WHERE MATCHES EXISTING ELEVATION)
	DATA POINT FROM HISTORICAL DESIGN GRADELINE RVA, 1979

DRAWING INDEX

DWG I.D.	DWG TITLE
PC.PLAN	PLAN VIEW
PC.P1	PROFILE STA: –0+120 to 1+400
PC.P2	PROFILE STA: 1+400 to 3+000
PC.P3	PROFILE STA: 2+800 to 3+757 END OF DRAIN
PC.P4	PROFILE BRANCH DRAIN #1: 0+000 to 824
PC.SD–01	PLAN & PROFILE SPECIFIC DETAIL STA 3+040 to 3+368
PC.SD–02	PLAN & PROFILE SPECIFIC DETAIL STA 1+610 to 1+960
PC.SD–03	PLAN & PROFILE SPECIFIC DETAIL– SEDIMENT BASIN 02 & 03
PC.GD	GENERAL DETAILS
PC.CN	CONSTRUCTION NOTES

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PORT COLBORNE DRAIN

RE-GRADE FOR 388m TO 600mmØ CULVERT CROSSING SECOND CONCESSION RD. (BY CofPC) SEE PC.P3

RE-LAY 600mmØ CULVERT TO DRAIN TO EAST

PC.SD-01

CONSTRUCT SEDIMENT BASIN AT STA 3+300 SEE PC.SD-01

EXCAVATE TO DESIGN GRADE LINE 3+079 TO 3+340

EXISTING 600mmØ PVC PIPE TO BE REMOVED

MOVE EXISTING 750mmØ HDPE CULVERT FROM WEST TO EAST INTERSECTION SEE DRAWING PC.P3 AND PC.SD-01

RE-ALIGNMENT CREATED IN 1999 2+000 TO 2+575

DRAIN MOVED OFF ROW 2+595 TO 2+960

EXTEND DRAIN TO WEST SIDE OF BABION RD. NORTH OF SECOND CONCESSION 2+595 TO 3+371

CLEAR & RE-GRADE 197m TO SNIDER RD. 0+627 TO 0+824

PORT COLBORNE BRANCH DRAIN #1

CONSTRUCT PC.SB2 SEDIMENT BASIN AT STA 2+402 & RE-GRADE FOR 250m SEE PC.SD-03

PC-CS-004 ConcBox Open Bottom

PC-CS-005 ConcBox 1800x1200

WORK ZONE SWITCHES TO NORTH AND WEST SIDES AT 1+952

CSP-100 Pipe Arch Multiplate 1070

CLEAR & RE-GRADE 277m EXISTING CHANNEL TO DESIGN GRADE LINE. MAINTANCE WORK- SECTION 74 0+000 TO 0+277

PC-F-001 Fording#1

PC-F-002 Fording#2

RE-ALIGN CHANNEL & RESTORE (COMPLETED 2016) 1+650 TO 1+860 SEE PC.SD-02

2 CONSTRUCTED WETLANDS (COMPLETED 2016)

2 FORDINGS (COMPLETED 2016)

PC-CS-003 1500mmø ConcPipe

CONSTRUCT PC.SB3 SEDIMENT BASIN AT STA 1+050 SEE PC.SD-03

REMOVE VEGETATION & RE-GRADE CHANNEL (COMPETED 2016) 0+010 TO 1+614

PC-CS-002 ConcBox 2370x1520

WIGNELL DRAIN

PC-CS-001 ConcBox 2570x3130

PORT COLBORNE DRAIN ORIGINAL BENCHMARK at 0+000
N 4749829.167
E 644868.665
E 177.704

OUTLETS TO WIGNELL DRAIN

PC-CS-006 600mmø HDPE-2W

PC-CS-007 750mmø PVCO (TO BE RE-LOCATED)

600mmø PVC (TO BE REMOVED)

PC-CS-008 600mmø CSP

SNIDER ROAD

CHIPPAWA ROAD

SECOND CONCESSION ROAD

BABION ROAD

CARL ROAD

HWY #3

ELIZABETH STREET

LORRAINE ROAD

WEAVER ROAD

KILLALY STREET EAST

DURHAM STREET

0 500m 1000m

NOTES:

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   - SUPPLEMENTARY SURVEY BY CofPC, 2018
   - WEIBE ENGINEERING SURVEY, 2008

BENCHMARK INFORMATION:

- 0+000 PORT COLBORNE DRAIN LOCATED ON BOX CULVERT (PC-CS-001)
- 0+000 PORT COLBORNE BRANCH DRAIN #1 LOCATED ON NW CORNER OF BOX CULVERT (PC-CS-004)

PLAN VIEW LEGEND:

- DRAINAGE AREA BOUNDARY
- DRAIN CENTERLINE
- PROPOSED DRAIN CENTERLINE
- 0+000 DRAIN CHAINAGE
- ABREAVEATED ROLL NUMBERS
- X.SD-02 SITE SPECIFIC DETAIL I.D.
- BOUNDARY OF AREA CAPTURED IN SITE DETAIL
- DRAINAGE WORK PROPOSED
- *DRAINAGE WORK COMPLETED – TO BE ASSESSED*

LICENSED PROFESSIONAL ENGINEER
PAUL C MARSH
2021-04-16
PROVINCE OF ONTARIO

NO.	REVISION DESCRIPTION	DATE
2	ISSUED FOR REPORT	APRIL 16, 2020
1	ISSUED FOR BASELINE REPORT	MAY 2019

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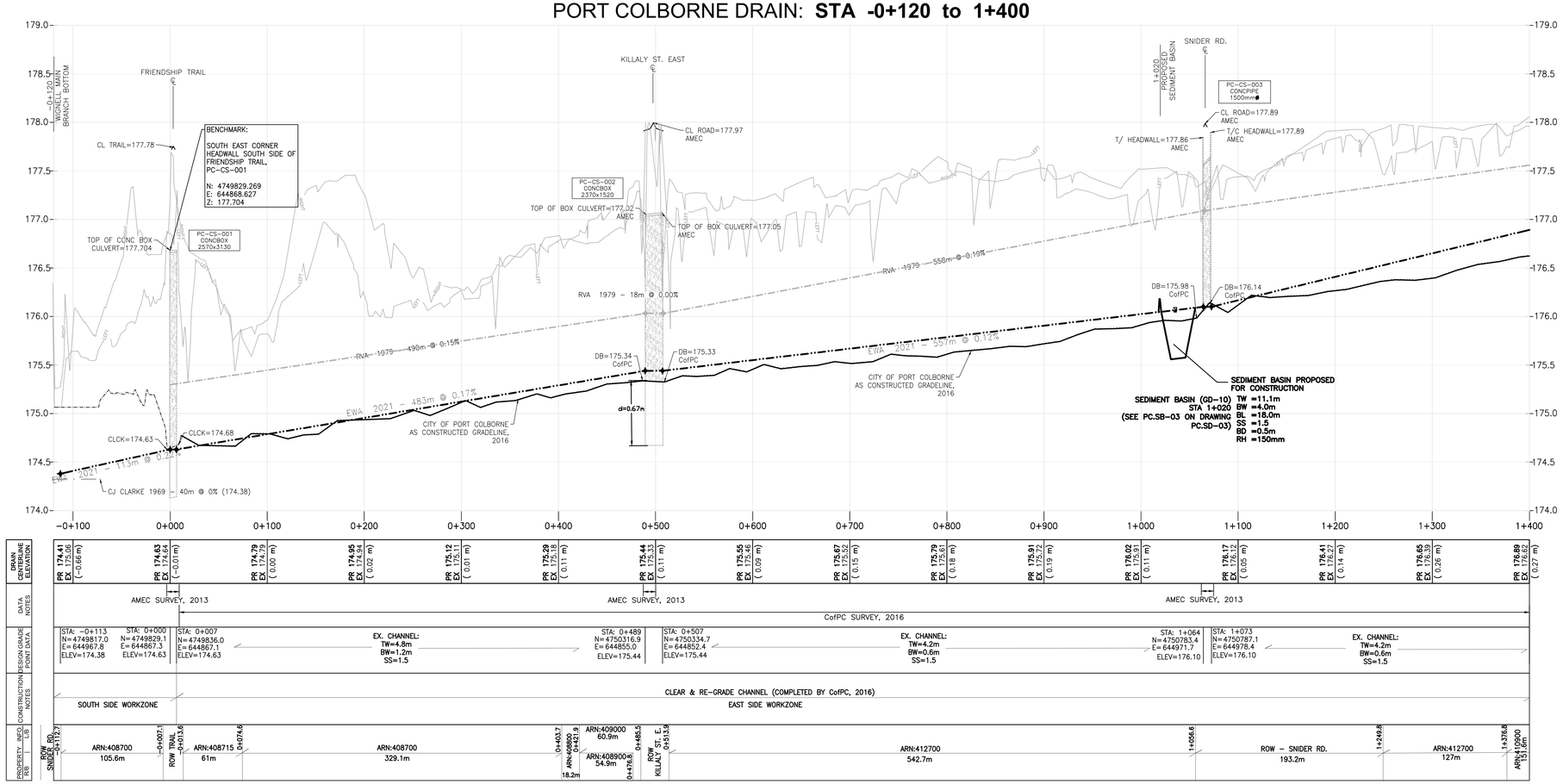
DESIGNED BY :	DATE :	SCALE :	
PCM	16-APRIL-21	F.T.P.	

PORT COLBORNE DRAIN: **STA -0+120 to 1+400**



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LEGEND

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PORT COLBORNE MUNICIPAL DRAIN
DRAIN PROFILE
STA 0-120 to 1+400

LICENCED PROFESSIONAL ENGINEER
PAUL C MARSH
2021-04-16
PROVINCE OF ONTARIO

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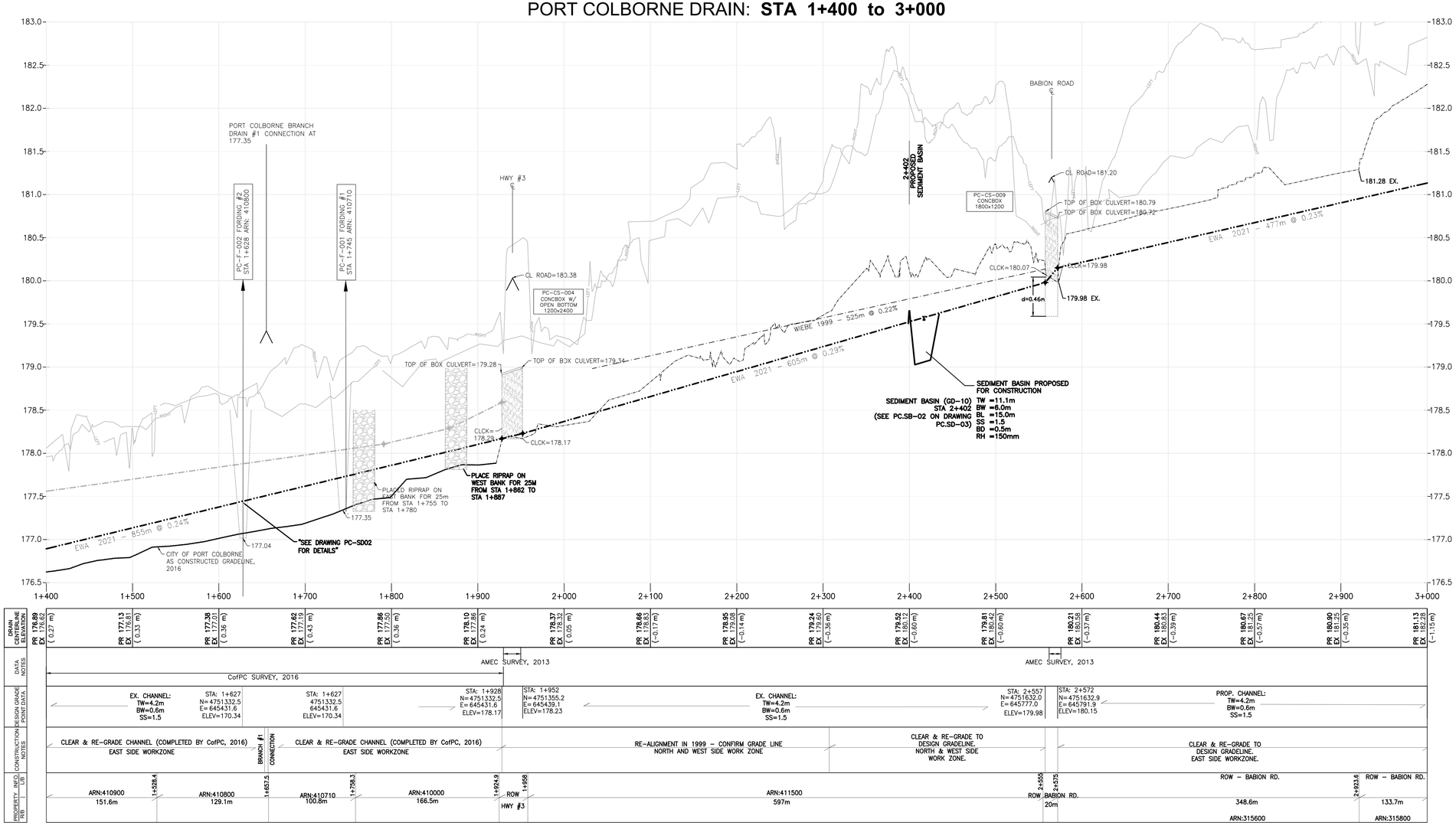
PORT COLBORNE DRAIN: **STA 1+400 to 3+000**



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PORT COLBORNE MUNICIPAL DRAIN
DRAIN PROFILE
STA 1+400 to 3+000

LICENSED PROFESSIONAL ENGINEER
PAUL C MARSH
2021-04-16
PROVINCE OF ONTARIO

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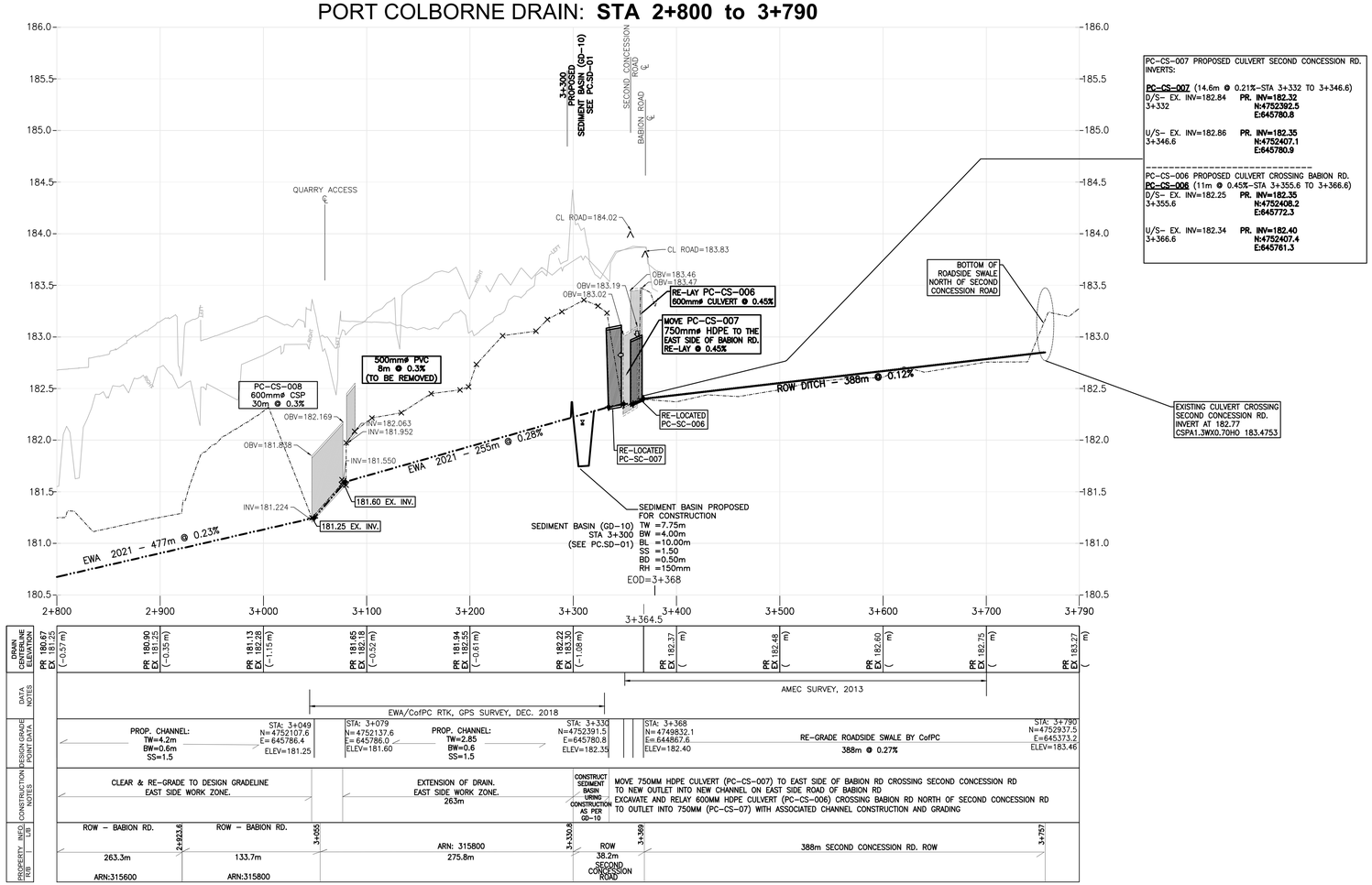
PORT COLBORNE DRAIN: **STA 2+800 to 3+790**



PC-CS-007 PROPOSED CULVERT SECOND CONCESSION RD. INVERTS:

PC-CS-007 (14.6m @ 0.21%-STA 3+332 TO 3+346.6)

D/S- EX. INV=182.84 **PR. INV=182.32**
3+332 **N:4752392.5**
E:645780.8

U/S- EX. INV=182.86 **PR. INV=182.35**
3+346.6 **N:4752407.1**
E:645780.9

PC-CS-006 PROPOSED CULVERT CROSSING BABION RD.

PC-CS-006 (11m @ 0.45%-STA 3+355.6 TO 3+366.6)

D/S- EX. INV=182.25 **PR. INV=182.35**
3+355.6 **N:4752408.2**
E:645772.3

U/S- EX. INV=182.34 **PR. INV=182.40**
3+366.6 **N:4752407.4**
E:645761.3

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PORT COLBORNE MUNICIPAL DRAIN
DRAIN PROFILE
STA 2+800 to 3+790

LICENSED PROFESSIONAL ENGINEER
PAUL C MARSH
2021-04-16
PROVINCE OF ONTARIO

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AN EXPORT OF DESIGN POINTS IN NORTHING, EASTING AND ELEVATIONS IS AVAILABLE ON REQUEST.

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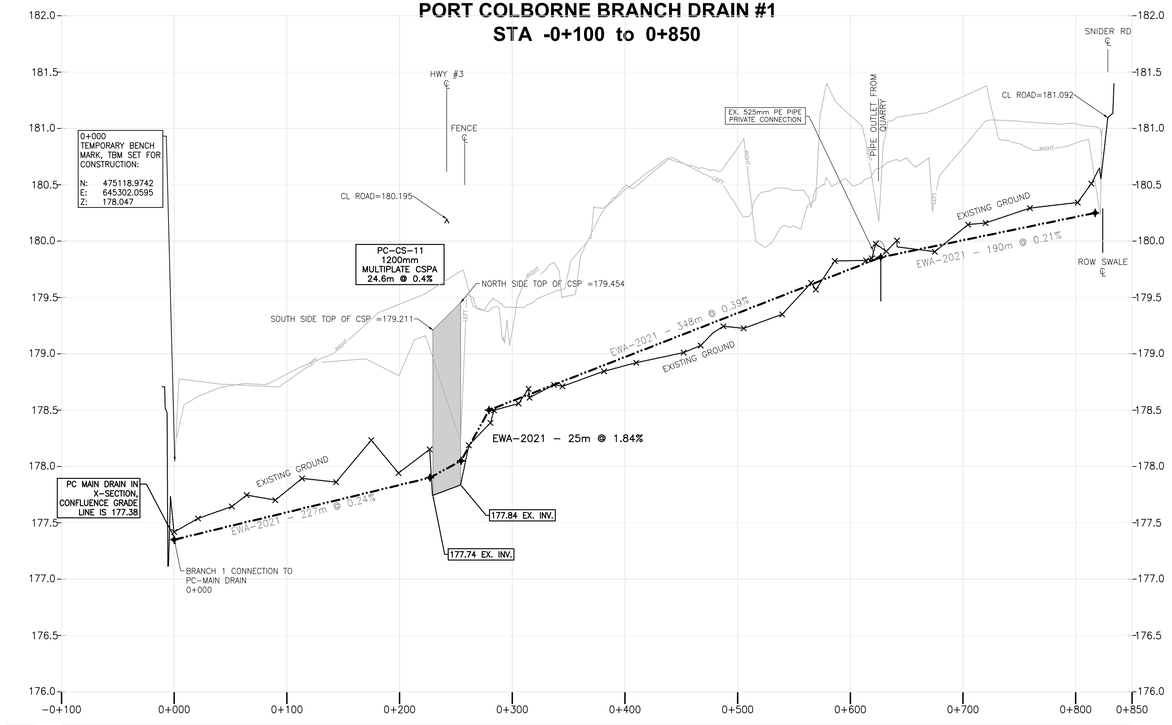
PORT COLBORNE BRANCH DRAIN #1
STA -0+100 to 0+850



DRAIN CENTERLINE ELEVATION (m)	PR / EX	177.35 / 177.52 (-0.17 m)	PR / EX	177.59 / 177.78 (-0.19 m)	PR / EX	177.83 / 177.95 (-0.12 m)	PR / EX	178.58 / 178.52 (0.06 m)	PR / EX	178.97 / 179.02 (-0.05 m)	PR / EX	179.36 / 179.22 (0.14 m)	PR / EX	179.75 / 179.96 (-0.21 m)	PR / EX	180.01 / 180.11 (-0.10 m)	PR / EX	180.21 / 180.34 (-0.13 m)	PR / EX
DATA NOTES	EWA/CofPC RTK-GPS SURVEY, DEC. 2018/ JAN.2021/ AMEC SURVEY, 2013																		
DESIGN GRADE POINT DATA	STA: 0+000 N=4751118.5 E=645305.2 ELEV=177.35	EX. CHANNEL: TW=4.1m BW=0.8m SS=1.5	STA: 0+227 N=4751345.4 E=645304.3 ELEV=177.90	STA: 0+279 N=4751374.2 E=645303.2 ELEV=178.50	STA: 0+255 N=4751392.4 E=645313.6 ELEV=178.05	EX. CHANNEL: TW=4.2m BW=0.6m SS=1.5	STA: 0+627 N=4751620.8 E=645163.4 ELEV=179.86	EX. CHANNEL: TW=3.6m BW=0.6m SS=1.5	STA: 0+817 N=4751631.7 E=644971.7 ELEV=180.25										
CONSTRUCTION NOTES	CLEAR AND RE-GRADE TO PROPOSED GRADE LINE EAST SIDE WORK ZONE		EX. CHANNEL TO REMAIN AS-IS NORTH AND EAST SIDE FUTURE WORK ZONE.				CLEAR VEGETATION & RE-GRADE TO DESIGN GRADE LINE. NORTH SIDE WORK ZONE.												
PROPERTY INFO. L/B R/B	ARN:410800	0+224.7	ROW HWY#3	0+259.6	ARN:411500	0+512.7	ARN:411000	0+570.6	ARN:411500							0+818.4	0+823.9	5.5m ROW-SNIDER ROAD	
	224.7m				253.1m		57.9m		247.8m										
	ARN:410710																		

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PORT COLBORNE BRANCH DRAIN #1
PROFILE
STA 0+000 to 0+824

LICENSED PROFESSIONAL ENGINEER
PAUL C MARSH
2021-04-16
PROVINCE OF ONTARIO

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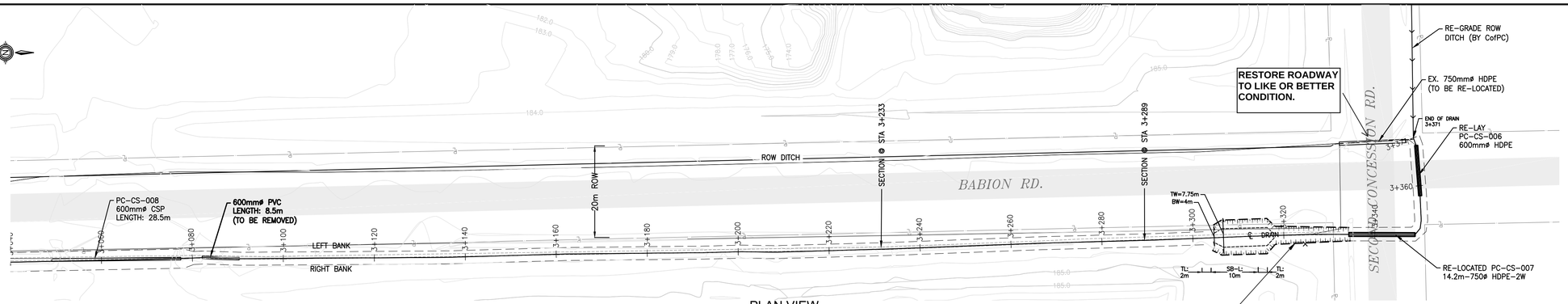
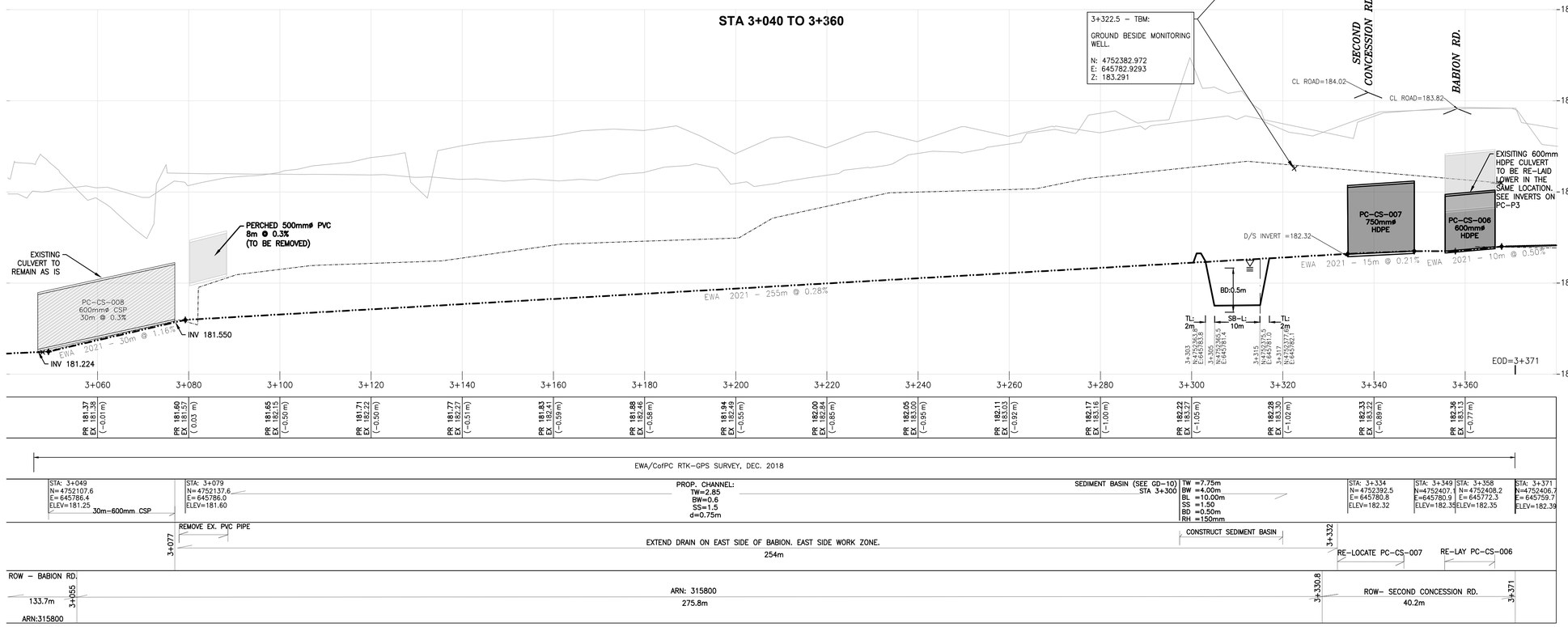
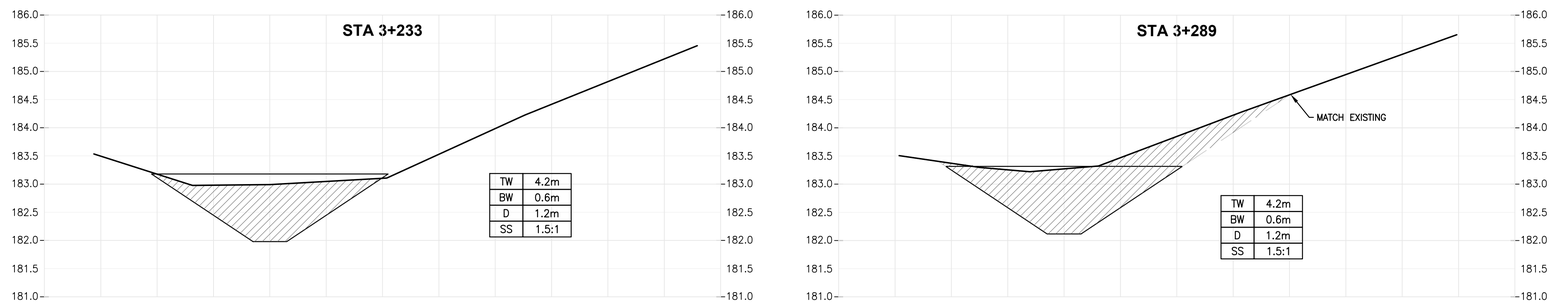


PLAN VIEW
SCALE 1:500



PROFILE VIEW
SCALE H=1:500, V=1:25



SECTION VIEWS
SCALE 1:50

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   - DRAIN CROSSINGS & SPOT CHANNELS AMEC SURVEY, 2013
   - AS CONSTRUCTED SURVEY BY CofPC, 2016 STATION 0+000-1+940
   - SUPPLEMENTARY SURVEY BY CofPC, 2018
   - WIEBE ENGINEERING SURVEY, 2008
   - WETLAND SURVEY BY CofPC RTK GPS, 2020
   - FORDING SURVEY BY CofPC RTK GPS, 2020
   - BRANCH #1 OUTLET SURVEY BY CofPC RTK GPS, 2020

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SPATIAL DATA:

DTM DATA FROM NIAGARA PENINSULA CONSERVATION AUTHORITY

- HORIZONTAL DATUM: UTM NAD83-CSRS ZONE 17N
- VERTICAL DATUM: CGVD28-1978
- ACCURACY: ABSOLUTE HORIZONTAL AND VERTICAL POSITIONAL ACCURACIES OF ±0.5m

LEGEND

	EXISTING DITCH BOTTOM (NPCA DEM DATA)
	EXISTING DITCH BOTTOM (SURVEYED)
	HISTORICAL GRADELINE
	PROPOSED DRAIN GRADELINE-EWA, 2021
LEFT	LEFT BANK
RIGHT	RIGHT BANK
	EXISTING DRAIN SECTION
	EXISTING STRUCTURE DETAILS
	ASSUMED EXISTING STRUCTURE DETAILS
OBV=175.00	EXISTING DRAIN ELEVATION
175.00 PR.	PROPOSED DRAIN CENTERLINE ELEVATION
175.00 EX.	PROPOSED DRAIN ELEVATION (WHERE MATCHES EXISTING ELEVATION)
	DATA POINT FROM HISTORICAL DESIGN GRADELINE RVA, 1979

NO.	REVISION DESCRIPTION	DATE
2	ISSUED FOR REPORT	APRIL 16, 2021
1	ISSUED FOR BASELINE REPORT	MAY 2019

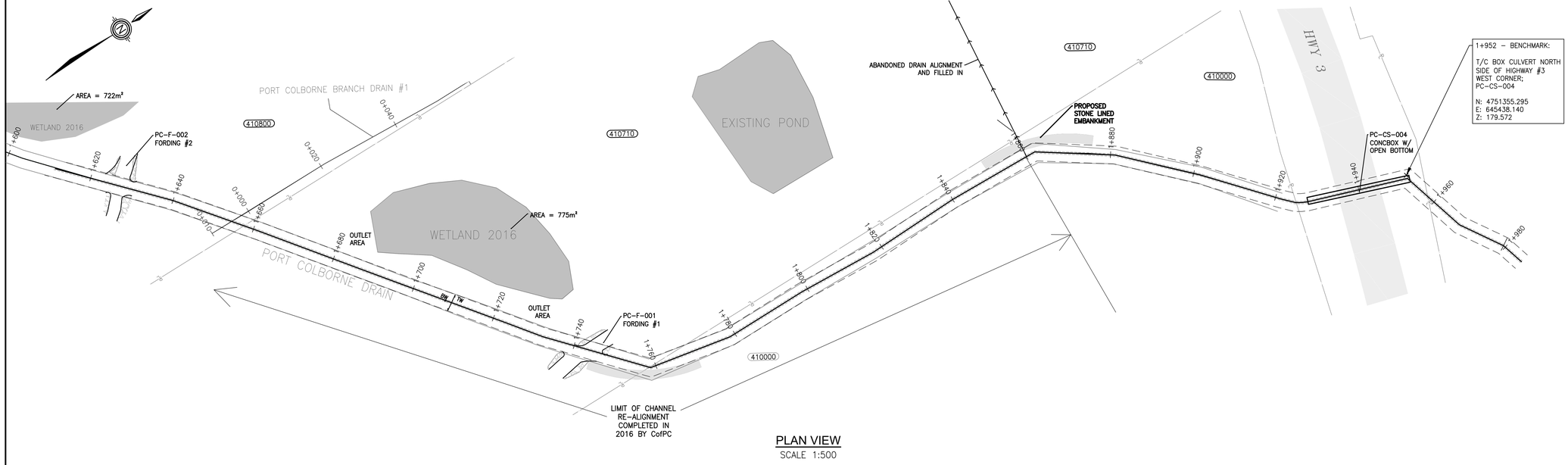
LICENSED PROFESSIONAL ENGINEER
PAUL C MARSH
2021-04-16
PROVINCE OF ONTARIO

PORT COLBORNE MUNICIPAL DRAIN
PLAN & PROFILE - SPECIFIC DETAIL
STA 3+040 to 3+371 END OF DRAIN

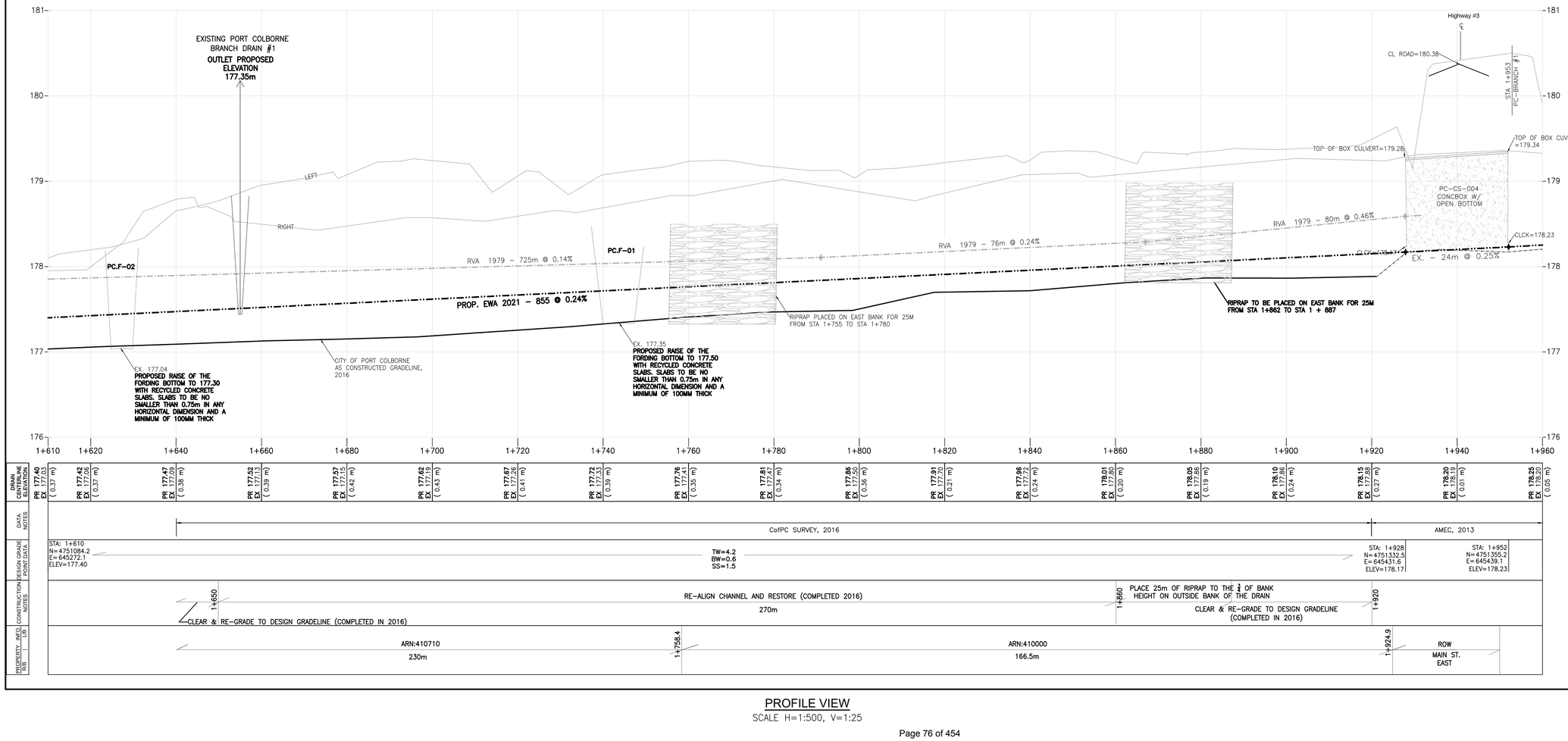
THIS DRAWING IS PREPARED FOR PRINTING ON 610mm x 914mm PAPER FOR 1:2500 SCALE.
AN EXPORT OF DESIGN POINTS IN NORTHING, EASTING AND ELEVATIONS IS AVAILABLE ON REQUEST.

EWA Engineering Inc.
647.400.2824
www.ewaeng.com

DRAWN BY :	APPROVED BY :	PROJECT NO. :	DRAWING NO. :
TJF	PCM	189999	PC.SD-01
DESIGNED BY :	DATE :	SCALE :	
PCM	16-APRIL-21	1:2500	

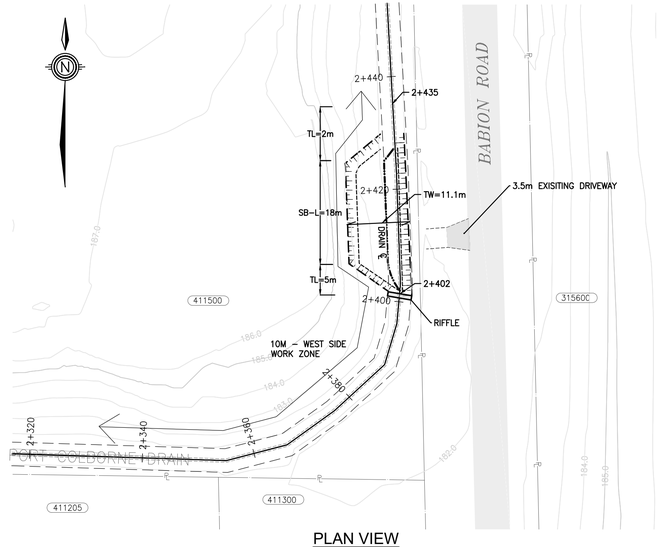


PLAN VIEW
SCALE 1:500



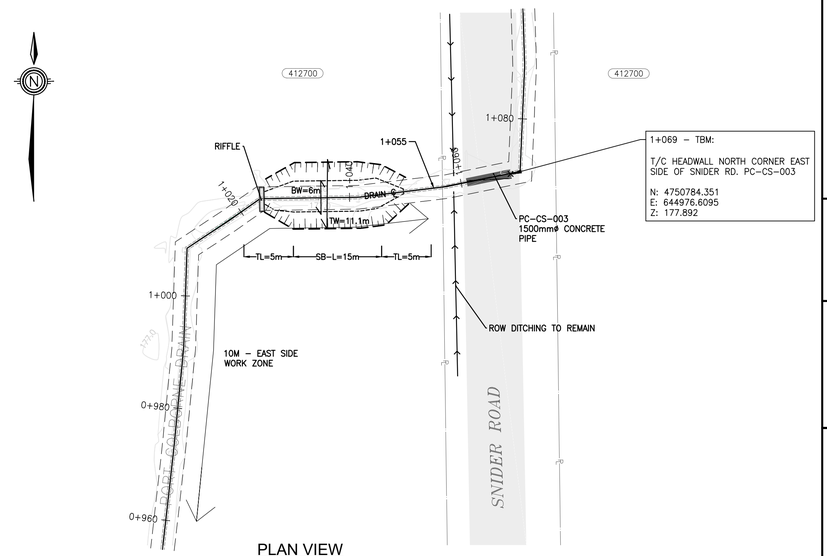
| | | |

PC.SB-02

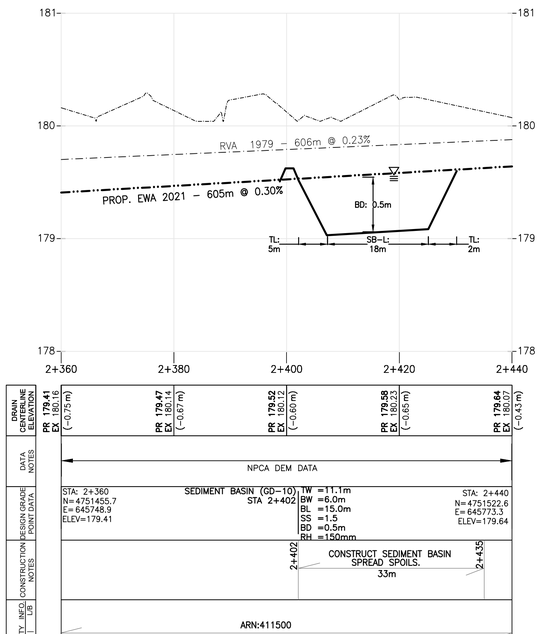


PLAN VIEW
SCALE 1:500

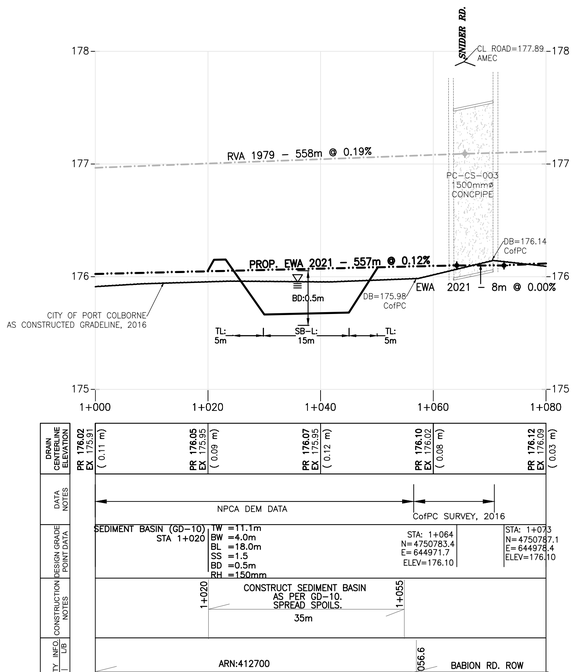
PC.SB-03



PLAN VIEW
SCALE 1:500



PROFILE VIEW
SCALE H=1:500, V=1:25



PROFILE VIEW
SCALE H=1:500, V=1:25

NOTES:

1. DIMENSIONS ARE IN METRES UNLESS OTHERWISE NOTED
2. CATCHMENT BOUNDARIES ARE BASED ON THE NPCA DIGITAL ELEVATION MODEL (DEM) 2010
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LICENSED PROFESSIONAL ENGINEER
PAUL C MARSH
2021-04-16
PROVINCE OF ONTARIO

PORT COLBORNE MUNICIPAL DRAIN

SEDIMENT BASINS – SPECIFIC DETAIL

PC.SB–02 & PC.SB–03

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647.400.2824 www.ewaeng.com

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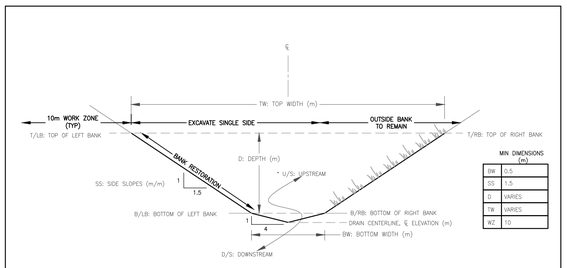
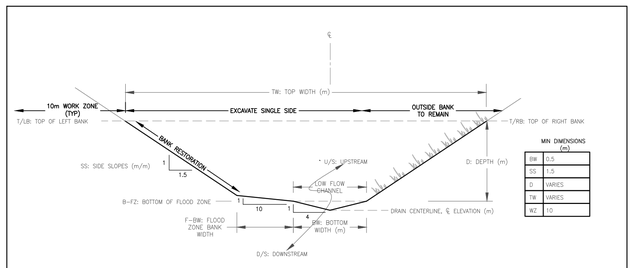
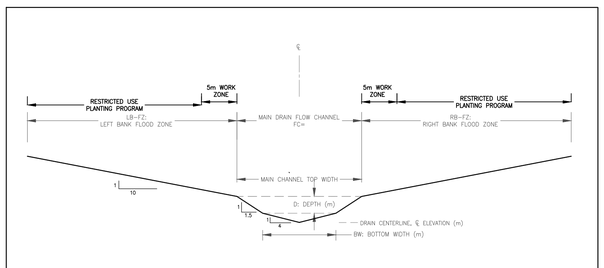
TJF	PCM	189999	PC.SD–03
DESIGNED BY :	DATE :	SCALE :	
PCM	16–APRIL–21		



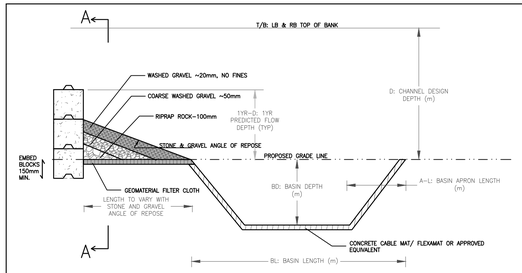
GD-01
DRAIN CHANNEL DIMENSIONS
NOT TO SCALE



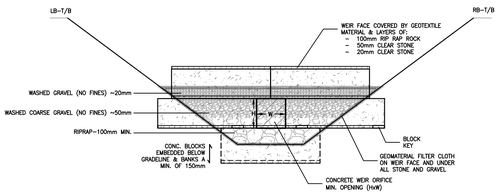
GD-02
FLOOD ZONE DRAIN CHANNEL DIMENSIONS
NOT TO SCALE



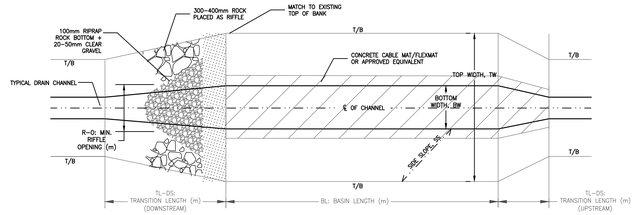
GD-03
NATURAL DRAIN CHANNEL DIMENSIONS
NOT TO SCALE



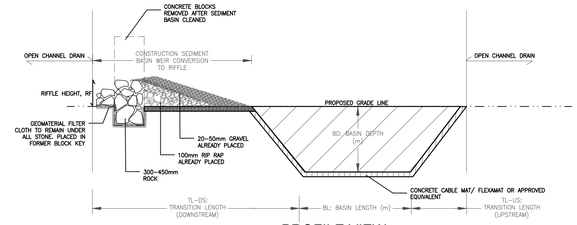
PROFILE VIEW
SEDIMENT BASIN - DURING CONSTRUCTION



SECTION A-A
SEDIMENT BASIN - DURING CONSTRUCTION

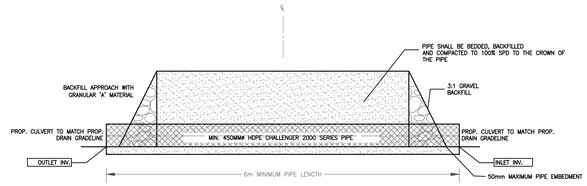


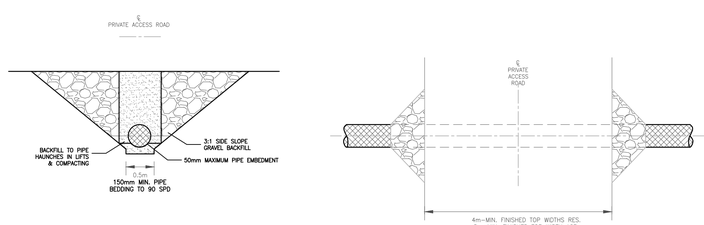
PLAN VIEW
SEDIMENT BASIN - POST-CONSTRUCTION



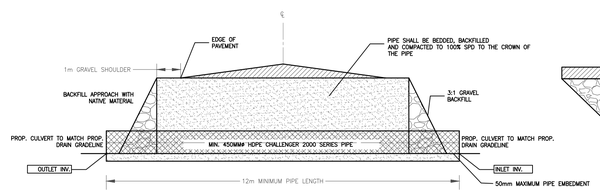
PROFILE VIEW
SEDIMENT BASIN - POST-CONSTRUCTION

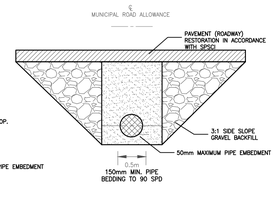
GD-10
SEDIMENT BASIN
NOT TO SCALE

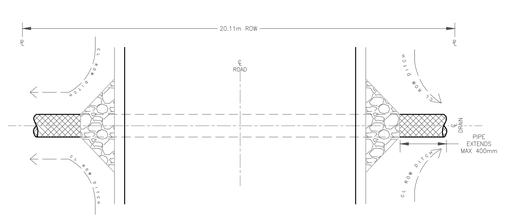




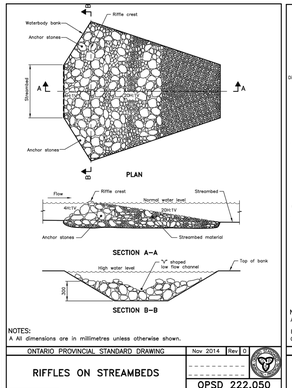
GD-05
TYPICAL PRIVATE ACCESS ROAD CIRCULAR CULVERT INSTALLATION
NOT TO SCALE





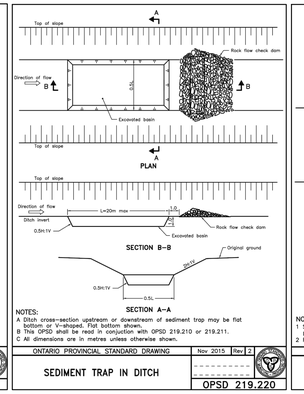


GD-06
TYPICAL MUNICIPAL ROW CULVERT INSTALLATION
NOT TO SCALE



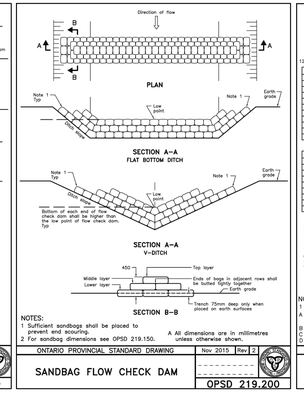
NOTES:
A All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2014	Rev 0
RIFFLES ON STREAMBEDS		OPSD 222.050



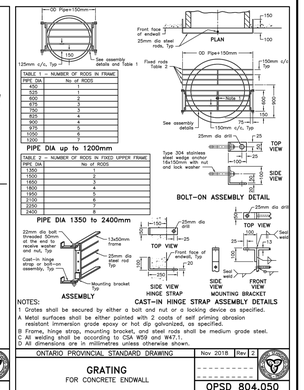
NOTES:
A Ditch cross-section upstream or downstream of sediment trap may be flat bottom or V-shaped. Flat bottom shown.
B This OPSD shall be read in conjuction with OPSD 219.210 or 219.211.
C All dimensions are in metres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2015	Rev 2
SEDIMENT TRAP IN DITCH		OPSD 219.220



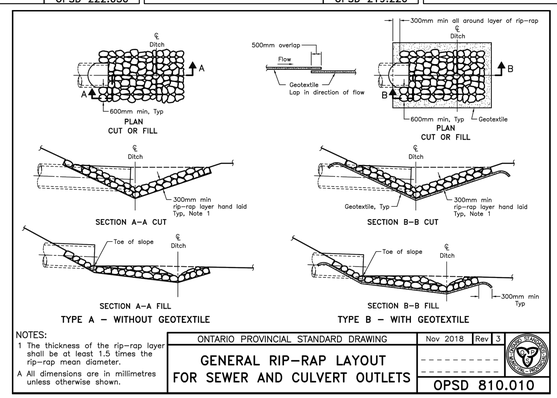
NOTES:
1 Sufficient sandbags shall be placed to prevent end scouring.
2 For sandbag dimensions see OPSD 219.150.
A All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2015	Rev 2
SANDBAG FLOW CHECK DAM		OPSD 219.200



NOTES:
1 Grates shall be secured by either a bolt and nut or a locking device as specified.
A Metal surfaces shall be either painted with 2 coats of self priming abrasion resistant immersion grade epoxy or hot dip galvanized, as specified.
B Frame, hinge strap, mounting bracket, and steel rods shall be medium grade steel.
C All welding shall be according to CSA W59 and W47.1.
D All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2018	Rev 2
GRATING FOR CONCRETE ENDWALL		OPSD 804.050



NOTES:
1 The thickness of the rip-rap layer shall be at least 1.5 times the rip-rap mean diameter.
A All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2018	Rev 3
GENERAL RIP-RAP LAYOUT FOR SEWER AND CULVERT OUTLETS		OPSD 810.010

PORT COLBORNE MUNICIPAL DRAIN GENERAL DETAILS

LICENSED PROFESSIONAL ENGINEER
PAUL C MARSH
2021-04-16
PROVINCE OF ONTARIO

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PCM	16-APRIL-21	N/A	

CITY OF PORT COLBORNE DRAINAGE CONTACTS:

APPOINTED DRAINAGE ENGINEER:
MR. PAUL C. MARSH, P.ENG.
EWA ENGINEERING INC.
84 MAIN STREET, UNIONVILLE, ON L3R 2E7
PCMARSH@EWAENG.COM
647.400.2824

DRAINAGE SUPERINTENDENT:
ALANA VANDER VEEN
DRAINAGE SUPERINTENDENT
1 KILLALY STREET WEST, PORT COLBORNE, ONTARIO L3K 6H1
TEL: 905-835-2901 EXT. 291
ALANA.VANDERVEEN@PORTCOLBORNE.CA

DEPARTMENT OF FISHERIES AND OCEANS:
867 LAKESHORE RD
BURLINGTON ON L7S 1A1
TELEPHONE: 905-336-4999
EMAIL: INFO@DFO-MPO.GC.CA

MINISTRY OF NATURAL RESOURCES AND FORESTRY
ELIZABETH REIMER
ADMINISTRATION BUILDING
4890 VICTORIA AVE N
VINELAND STATION, ON L0R 2E0
905-562-4147

NIAGARA PARKS CONSERVATION AUTHORITY, NPCA
DIRECTOR, WATERSHED MANAGEMENT
NIAGARA PENINSULA CONSERVATION AUTHORITY
250 THOROLD ROAD WEST, 3RD FLOOR
WELLAND, ON, L3C 3W2
P: 905-788-3135 EXT. 229
F: 905-788-1121
WWW.NPCA.CA

GENERAL NOTES:

THE CITY SHALL ARRANGE A PRE-CONSTRUCTION MEETING PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.

ALL CONSTRUCTION MATERIALS AND METHODOLOGIES SHALL BE IN ACCORDANCE WITH:

- SPECIAL PROVISIONS - SUPPLEMENTARY GENERAL CONDITIONS (SPSGC)
- SPECIAL PROVISIONS - SUPPLEMENTARY CONTRACT ITEMS (SPSCI)
- NIAGARA PENINSULA STANDARD CONTRACT DOCUMENTS (NPSCD)
- ONTARIO PROVINCIAL STANDARDS FOR ROADS & PUBLIC WORKS (OPSS & OPSD)

AND ANY OTHER APPLICABLE STANDARDS THAT MAY APPLY.

IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT THESE MATERIALS AND METHODOLOGIES ARE STRICTLY ADHERED TO.

THE CITY OF PORT COLBORNE AND STAFF DISCLAIMS ANY LIABILITY AS TO THE CURRENT ACCURACY OF THE DRAWINGS PROVIDED. IN USING THE INFORMATION SHOWN OR CONTAINED ON THESE DRAWINGS, THE USER AGREES IMPLICITLY AND EXPLICITLY THAT THE CITY OF PORT COLBORNE AND STAFF SHALL NOT BE LIABLE FOR SPECIAL, INCIDENTAL, CONSEQUENTIAL OR OTHER DAMAGES ARISING FOR THE USE OF SUCH INFORMATION. THE USER SHALL DO AN IN-FIELD VERIFICATION OF THE INFORMATION SHOWN ON OR CONTAINED WITHIN THESE DRAWINGS.

IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN ANY APPROVALS WHICH MAY BE REQUIRED PRIOR TO THE COMMENCEMENT OF CONSTRUCTION UNLESS DIRECTED OTHERWISE BY THE CONTRACT ADMINISTRATOR.

DIMENSIONING SHALL GOVERN OVER SCALED DIMENSIONS.

ANY WORKS COMPLETED IN SET-BACK AREAS, AND DISCHARGE TO CREEKS, STREAMS AND WATERCOURSES MAY BE SUBJECT TO FEDERAL AND PROVINCIAL APPROVALS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN SUCH APPROVALS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION IF REQUIRED FOR THE PROJECT.

PUBLIC UTILITIES:

THE CONTRACTOR SHALL NOTE THAT PUBLIC UTILITIES SHALL INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING, HYDRO, GAS, BELL, CABLE AND FIBRE OPTIC.

IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN THE NECESSARY CLEARANCES FROM SAID PUBLIC UTILITIES WHICH MAY BE IN DIRECT CONFLICT WITH THIS PROJECT.

ANY WORK REQUIRING EITHER RELOCATION/LOWERING OF SAID PUBLIC UTILITY SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT THE UTILITY, AND ANY WORKS WILL BE REQUIRED TO BE COMPLETE PRIOR TO THE INSTALLATION OF THE WORK.

ENVIRONMENTAL COMPLIANCE:

THE CONTRACTOR SHALL PREPARE AN ENVIRONMENTAL MANAGEMENT PLAN (EMP) PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITIES. THE EMP WILL ADDRESS THE FOLLOWING MAJOR SUBJECT AREAS:

- EROSION AND SEDIMENT CONTROL DURING CONSTRUCTION
- TREE PROTECTION & REMOVAL (SAR - BUTTERNUT)
- MINIMIZE AND/OR MITIGATION MEASURES FOR CONSTRUCTION IMPACTS ON SPECIES AND SPECIES HABITAT INCLUDING STOPPING CONSTRUCTION PROCEDURES.
- AGENCY CONTACTS - IDENTIFY RESOURCES & CONTACT INFO.

THE CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH SPECIES AT RISK (SAR) LEGISLATION. BY LAW, YOU MUST IMMEDIATELY:

- AVOID DRAINAGE WORK DURING REPRODUCTION AND REARING SEASONS
- PREVENT A SPECIES FROM ENTERING THE WORK AREA (E.G. PUTTING UP A FENCE)
- GIVE THE SPECIES ADEQUATE TIME TO LEAVE THE AREA, BEFORE STARTING WORK
- GET ADVICE/HELP BEFORE YOU MOVE IT
- PROTECT AREAS THAT ARE IMPORTANT TO THE SPECIES (E.G. SPAWNING AREAS)
- CONTROL EROSION AND SEDIMENT
- STABILIZE WATER BANKS IN AFFECTED AREAS

TURTLES:

- YOU CANNOT REDUCE THE AMOUNT OF WATER IN A DRAIN OR DITCH WHERE A TURTLE IS HIBERNATING.

ABREVATIONS USED:

- BD - SEDIMENT BASIN BOTTOM DEPTH (FROM GRADE LINE)
- BL - SEDIMENT BASIN LENGTH
- BOD - BEGINNING OF DRAIN
- BW - BOTTOM WIDTH OF CHANNEL
- CL - CENTRELINE OF ROAD, CHANNEL
- CLCK - CENTRELINE OF CREEK OR CHANNEL
- D - DEPTH
- D/S - DOWNSTREAM
- E - EASTING
- ELEV - ELEVATION
- EOD - END OF DRAIN
- EX. - EXISTING
- INV - INVERT
- LB - LEFT BANK, LOOKING UPSTREAM
- N - NORTHING
- PL - PROPERTY LINE
- PR. - PROPOSED
- RB - RIGHT BANK, LOOKING UPSTREAM
- RH - RIFFLE HEIGHT
- ROW - RIGHT OF WAY
- SB - SEDIMENT BASIN
- SS - SIDE SLOPE; RUN(m)/RISE, WHERE RISE=1m
- T/B - TOP OF BANK
- T/C - TOP OF CONCRETE
- TL - TRANSITION LENGTH
- TW - TOP WIDTH OF CHANNEL
- TYP - TYPICAL
- U/S - UPSTREAM
- WZ - WORK ZONE

OPSD REFERENCED DETAILS:

- OPSD 219.200
- OPSD 219.220
- OPSD 222.050
- OPSD 400.020
- OPSD 403.010
- OPSD 705.040
- OPSD 803.010

PORT COLBORNE MUNICIPAL DRAIN CONSTRUCTION NOTES

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TJF	PCM	-	PC.CN
DESIGNED BY :	DATE :	SCALE :	
PCM	10-FEB-21	N/A	

Appendix B:

Cost Estimates & Assessment Tables

Port Colborne Municipal Drain

City of Port Colborne
Regional Municipality of Niagara

Section 78 Works under the Municipal Drainage Act.

Drainage Assessment	Costs

Cover page

Port Colborne Drain

Estimated Cost of Construction				
	Port Colborne Drain	$33,332.00		
	Port Colborne General Construction Costs	$8,278.52		
	Port Colborne Contingency	$12,458.10		
	Total - Estimated Cost of Construction			$54,068.62
Previous Construction				
	Port Colborne Channel Re-alignment by Rankin Construction - 2+580 to 3+045	$26,050.00		
	Port Colborne Channel Re-Alignment - 1+660 to 1+860	$9,442.50		
	Port Colborne Channel Re-Grading and Clearing - 0+010 to 1+500	$15,300.00		
	Fording #1; ARN = 410710 - 1+740 to 1+750	$710.00		
	Fording #2; ARN = 410800 - 1+630 to 1+640	$710.00		
	Total - Previous Construction			$52,212.50
Administration				
	Engineering	$167,486.89		
	Administration Cost Allocations	$10,723.47		
		$178,210.37		
Administration Costs allocated per Drain area				
	Port Colborne Branch Drain #1	$8,052.75	4.5%	14.812
	Port Colborne Drain	$170,157.61	95.5%	327.795
	Total - Administration Port Colborne Drain			$170,157.61
Drain Allowances				
	Port Colborne Drain	$939.00		
				$939.00
	Forecasted Total Drain Costs			$277,377.74

Assessment Schedule			
Benefit Assessment (Section 22)			
	Private Lands	$763.50	
	Total - Benefit Assessment (Section 22)		$763.50
Outlet Liability Assessment (Section 23)			
	Private Lands		
	Road Right of Way Lands	$225,489.15	
	Total - Outlet Liability Assessment (Section 23)		$225,489.15
Special Benefit Assessment (Section 24)			
	Port Colborne Drain	$5,600.09	
	Total - Special Benefit Assessment (Section 24)		$5,600.09
Special Assessments (Section 26)			
	City of Port Colborne	$40,448.80	
	MINISTRY OF TRANSPORTATION ONTARIO	$5,076.19	
	Total: Port Colborne Drain	$45,525.00	
	Total - Special Assessments (Section 26)		$45,525.00
	Forecasted Total Drain Assessments		$277,377.74

Port Colborne Branch Drain #1

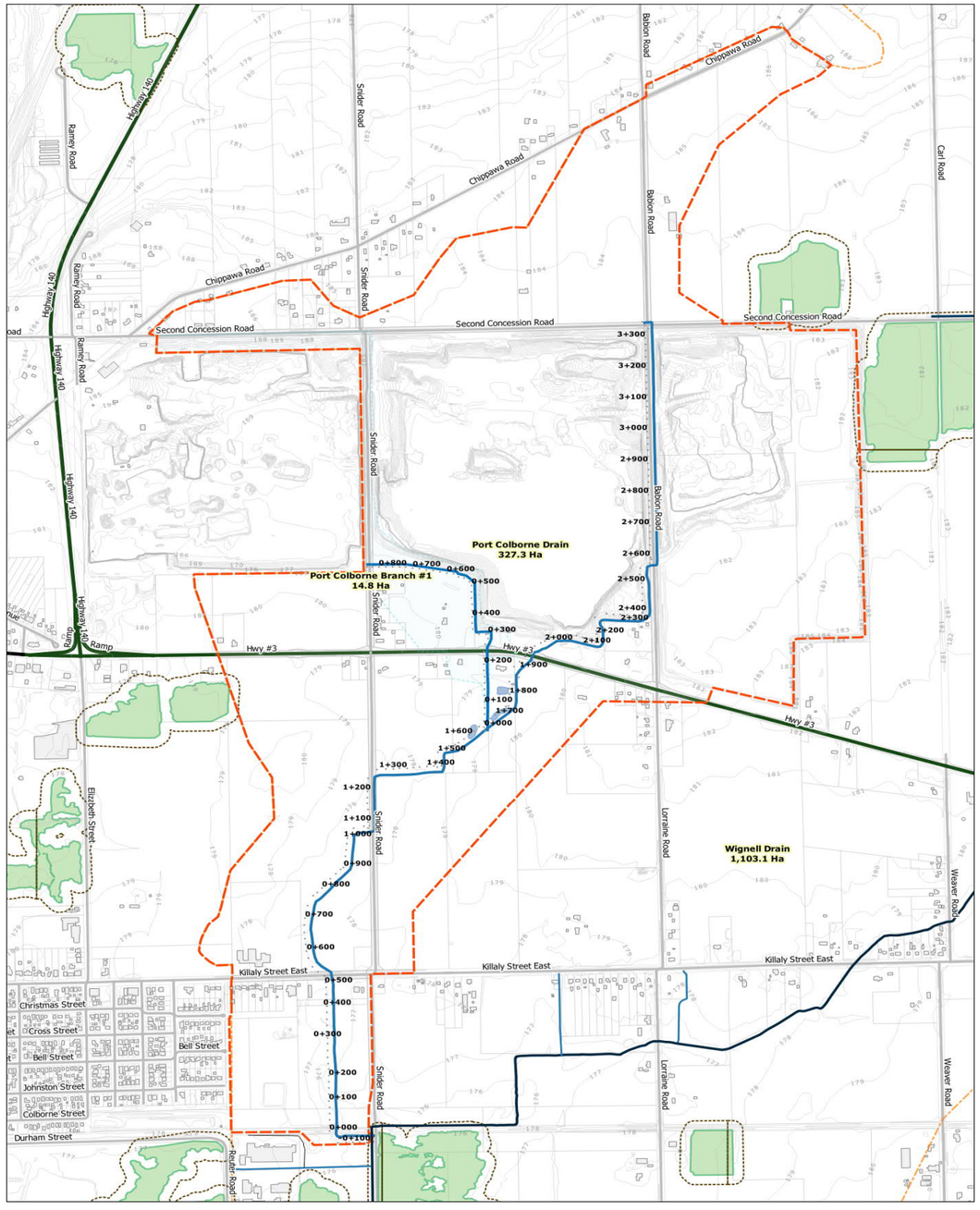
Estimated Cost of Construction	$10,340.00	
Previous Construction	$0.00	
Administration	$8,052.75	
Drain Allowances	$277.62	
		$18,670.37

Benefit Assessment (Section 22)		$0.00	
Outlet Liability Assessment (Section 23)			
	Private Lands	$3,096.49	
	Road Right of Way Lands	$1,450.25	
			$4,546.73
Special Benefit Assessment (Section 24)		$0.00	
Special Assessments (Section 26)			
	City of Port Colborne	$7,008.46	
	MINISTRY OF TRANSPORTATION ONTARIO	$7,115.18	
	Total: Section 26		$14,123.64
			$18,670.37

Prepared by: Paul C. Marsh, P.Eng.

Dated:

$296,048.11



Port Colborne Municipal Drain
City of Port Colborne
Regional Municipality of Niagara

Proposed Construction - Cost Estimate

Port Colborne Branch #1

Cost ID:	Drain	From STA	To STA	Work	Description	Linear, Each or Lump Sum Cost Type	Length	$/m	Qnty	/each	$	Notes
PC1-01	Port Colborne Branch Drain #1.	0+000	0+227	Clear and re-grade to design grade to outlet from MTO culvert crossing	Work from West Side. Spread spoil material adjacent to bank.	linear	227	$20.00			$4,540.00	
PC1-00	MTO	0+227	0+255	Existing Drain Crossing CS-100 CSPA 1070 crossing Highway #3	No work required.						$0.00	
PC1-02	Port Colborne Branch Drain #1.	0+255	0+627	Spot maintenance as required		linear	372	$5.00			$1,860.00	
PC1-03	Port Colborne Branch Drain #1.	0+627	0+824	Clear and re-grade to design grade from culvert quarry outlet to Snider Road ROW.		linear	197	$20.00			$3,940.00	
PC1-04	Port Colborne Branch Drain #1.			ROW North South Grading by others, (CofPC)							$0.00	Excluded from Drain. Work to be completed for ROW by CofPC.

SubTotal for: Port Colborne Branch #1 $10,340.00

Port Colborne Drain

Cost ID:	Drain	From STA	To STA	Work	Description	Linear, Each or Lump Sum Cost Type	Length	$/m	Qnty	/each	$	Notes
PC-00	Port Colborne Drain		3364.5	Regrade the North Side of Second Concession Rd. Ditch to drain to the East into the re-laid culvert crossing Babion Rd.	This work is not part of the drain and excluded from the cost estimate. Work is the responsibility of the City of Port Colborne as part of the road funding program.		388				$0.00	Excluded from Drain. Work to be completed for ROW by CofPC.
PC-01	Port Colborne Drain	3+364.5	3+350	Re-lay existing 600mm HDPE double wall culvert lower and to drain to the East.		Each	14.5		1	$ 2,500.00	$2,500.00	
PC-02	Port Colborne Drain	3+350	3+331	Re-locate existing 750mm HDPE double wall culvert to the East side of Babion Road, crossing Second Concession Rd. and outletting to East Side Drain Channel.	Road is to be closed to re-lay culvert in both directions. Restore road to original condition or better. Includes re-grading of open channel between culverts.	linear & each	5	$ 25.00	1	$ 2,500.00	$2,625.00	
PC-03	Port Colborne Drain	3+303	3+318	Construct Sediment Basin PC-SB01 at STA 3+300 as per Design and GD-10.	Remove material and dispose by spreading on existing berm. Sediment Basin constructed prior to commencing work upstream.	Area, m2	10	$ 75.00	77.5	$ 40.00	$3,850.00	
PC-04	Port Colborne Drain	3+080	3+331	Construct Open Channel as per Design.	Spoil removed and spread on berm.		254	$ 35.00			$8,890.00	
PC-05	Port Colborne Drain	2+595	2+960	Existing PVC Pipe to be removed.	Remove and dispose.				1	$ 500.00	$500.00	

PC-08	Port Colborne Drain			Construct Sediment Basin PC-SB02 at STA 2+400 as per Design and GD-10.	Remove material and dispose by spreading adjacent to the drain. Sediment Basin constructed prior to commencing work upstream.	Area, m2	15	$ 75.00	199.8	$ 40.00	$9,117.00	
PC-09	Port Colborne Drain			Additional Erosion Protection	Protect bank from erosion south of Highway 3 crossing				1	$ 1,500.00	$1,500.00	
PC-10	Port Colborne Drain			Construct Sediment Basin PC-SB03 at STA 1+020 as per Design and GD-10.	Remove material and dispose by spreading adjacent to the drain. Sediment Basin constructed prior to commencing work upstream.	Area, m2	18	$ 75.00	FALSE	$ 40.00	$1,350.00	
PC-11	Port Colborne Drain	2+300	2+500	Clear vegetation from Drain Channel & Construct Channel as per Design			200	$ 15.00			$3,000.00	

SubTotal for: Cost ID: $33,332.00

Construction Mgmt Port Colborne Drain

Cost ID:	Drain	From STA	To STA	Work	Description	Linear, Each or Lump Sum Cost Type	Length	$/m	Qnty	/each	$	Notes
	Port Colborne Drain			Bonding							$1,310.16	
	Port Colborne Drain			Environmental Management - Compliance with legislative requirements	Preparation of Environmental Management Plan - Exclusions for SAR incidents that require on site expertise.	Lump Sum					$2,500.00	Program budget - actual cost will vary
	Port Colborne Drain			Erosion Control During construction - including conversion of sediment ponds to permanent drain features		Lump Sum					$3,500.00	Program budget - actual cost will vary
	Port Colborne Drain			Construction Management	Traffic Control, Layout, and all compliance items for submission on construction startup.						$1,528.52	Budget
	Port Colborne Drain			Tree Replacement Program	Where private trees are removed for the drain and in lieu of compensation a 3 for 1 tree planting program is available for owners.				15	50	$750.00	Program budget - actual cost will vary

SubTotal for: Construction Mgmt Port Colborne Drain $8,278.52

SubTotal for: Port Colborne Drain $51,950.52
Contigency Allowance, (20%) $12,458.10
Cost of Construction: $74,748.62

Port Colborne Municipal Drain
City of Port Colborne
Regional Municipality of Niagara

Previous Costs - Works Already Completed

Port Colborne Branch #1	Status	From STA	To STA	Work	Description	$	Notes	Date Completed	Length	$/m	Qnty	/each
Channel Construction by appointment - Section XX		2+580	3+045	Port Colborne Channel Re-alignment by Rankin Construction		$26,050.00		27-Mar-17	465	$ 56.02		
	Completed	1+660	1+860	Port Colborne Channel Re-Alignment	Construct new alignment based on existing topography	$9,442.50	filling in Drain - $ 3,995.00 Erosion protection - $1,555.00 Misc. trucking & levelling - $3,892.50	2016	202	$ 46.75		
	Completed	0+010	1+500	Port Colborne Channel Re-Grading and Clearing	establish lower grade line	$15,300.00		2016	1490	$ 10.27		
	Completed	1+740	1+750	Fording #1; ARN = 410710	provides access to back of farm crossing new alignment	$710.00	Two crossings - $1,410.00	2016				
	Completed	1+630	1+640	Fording #2; ARN = 410800	provides access to back of farm crossing new alignment	$710.00	Two crossings - $1,410.00	2016				
						$52,212.50						

Port Colborne Municipal Drain
City of Port Colborne
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Administration Costs

	Area, Ha	Area Ratio
Michener Drain Area	135	12%
Port Colborne Drain Area	327.8	30%
Wignell Drain Area	634.4	58%
	1097.2	100.0%

Port Colborne Drain	Costs	Cost Items	Sub-totals, $	Totals, $
ADMINISTRATION				
	Interim Financing Allowance	Debenture Interest - 20007 to 2017	$8,911.40	
		Total Amount: $29,827.92		$8,911.40
		Debenture Administrative Fee	$1,812.07	
		Total Fee Amount: $6,065.29		$1,812.07
	Legal and Permitting Fees			$0.00
	Expenses, where applicable			$0.00
	Applicable Taxes			$0.00
		Total - ADMINISTRATION		$10,723.47
ENGINEERING				
	Preliminary Design and Report			$0.00
	Survey, Design, Plans, Engineer's Report and Assessment Schedule (Wiebe)*1			
		Survey; ($8,342.93) portion allocated by area	$2,492.54	
		Report Preparation; ($92,511.44) portion allocated by area	$27,638.76	
	Survey, Design, Plans, Engineer's Report (AMEC)*2	3-561-33229; 2012 to 2014; $67,147.23 portion allocated by area	$20,060.94	
	Survey, Design, Plans, Engineer's Report and Assessment Schedule (EWA Engineering)			
		Design Services	$99,811.50	
		CofPC CAD Work - 2020	$11,483.16	
		CofPC CAD Work - 2021	$2,500.00	
		Sub-total: ENGINEERING		$163,986.89
	Tribunal Costs (not estimated and assumed to be zero)			$0.00
	Tendering, Contract Administration and Construction Inspection (estimated)			$3,500.00
		Total - ENGINEERING		$167,486.89
TOTAL ADMINISTRATION AND ENGINEERING				$178,210.37

*1 Wiebe Engineering was appointed as the Drainage Engineer by Council with an approved budget. The firm declared bankruptcy after having been paid for a portion of the work. This is the amount originaly paid and not allocated.

*2 AMEC was appointed as the Drainage Engineer by Council in 2013, assuming work already completd by Wiebe and with an approved budget. After having been paid for 70% of the work, the company refused to complete the project without additional funds being allocated. The contract was cancelled.
This is the fee for service paid for partially completed work on the drain.

Allowances

Port Colborne Branch #1

Owner	Legal Text		Roll No	Area, Ha	Land and Rights of Way Section 29 Length m	Top Width	Area, Ha	$	Work Zone $	Damages Length m	Section 30 Allowance Area, Ha	$	For Existing Private Drain converted From STN	To STN	Length, m	Section 31 Allowance $	Insufficient Outlet Section 32 Allowance $	Loss of Access Section 33 Allowance $	Total of Allowances $
Konc John Andrew	CON 2 PT LOT 22 RP 59R4801		271104000410710	0.107			0.0000	$0.00		224.7	0.225	$277.62				$0.00			$277.62
Van Ruyven Josef Nicolaas	CON 2 PT LOT 22 RP 59R4801		271104000410800	1.084			0.0000	$0.00			0.000	$0.00				$0.00			$0.00
Hellinga Jack Simon	CON 2 PT LOT 22		271104000411000	5.247			0.0000	$0.00			0.000	$0.00			0	$0.00			$0.00
Port Colborne Quarries Inc	CON 2 PT LOT 21 PT LOT 22 RP		271104000411500	2.758			0.0000	$0.00			0.000	$0.00			0	$0.00			$0.00
Parsons David Scott	CON 2 PT LOT 22		271104000411600	0.413			0.0000	$0.00			0.000	$0.00				$0.00			$0.00
Leavere Larry Allan Thomas	CON 2 PT LOT 22		271104000411700	0.098			0.0000	$0.00			0.000	$0.00				$0.00			$0.00
Yanni Bill	CON 2 PT LOT 22		271104000411900	0.418			0.0000	$0.00			0.000	$0.00				$0.00			$0.00
Orlowski Jeffrey	CON 2 PT LOT 22 RP 59R4884		271104000412100	0.025			0.0000	$0.00			0.000	$0.00				$0.00			$0.00
Port Colborne Quarries Inc	HUMBERSTONE CON 2 PT LOTS 23		271104000414000	3.308			0.0000	$0.00			0.000	$0.00				$0.00			$0.00
				13.457															
City of Port Colborne	Snider Rd. from Hwy 3 to Second Conc	ROW		1.612			0.0000	$0.00			0.000	$0.00				$0.00			$0.00
City of Port Colborne	Second Concession from Snider to Babion	ROW		0.022			0.0000	$0.00			0.000	$0.00				$0.00			$0.00
City of Port Colborne	Second Concession W of Snider Rd.	ROW		0.501			0.0000	$0.00			0.000	$0.00				$0.00			$0.00
MTO	Highway #3	ROW		0.547			0.0000	$0.00			0.000	$0.00				$0.00			$0.00
				2.682															
				16.139				$0.00	$0.00			$277.62				$0.00	$0.00	$0.00	$277.62

Port Colborne Drain

Owner	Legal Text	Roll No	Area, Ha	Land and Rights of Way Section 29 Allowance Length m	Top Width	Area, Ha	$	Damages Length m	Section 30 Allowance Area, Ha	$	For Existing Private Drain converted From STN	To STN	Length, m	Section 31 Allowance $	Insufficient Outlet Section 32 Allowance $	Loss of Access Section 33 Allowance $	Total of Allowances $
Vale Canada Limited	HUMBERSTONE CON 1 PT LOTS 24	271102000718000	1.642														$0.00
McLean William Richard Samue	CON 1 PT TWP LOT 23	271102001311300	0.095														$0.00
Tomiuck Jonas	CON 1 PT TWP LOT 23	271102001311400	0.191														$0.00
Scott Gregory George	CON 1 PT TWP LOT 23	271102001311500	0.190														$0.00
Vale Canada Limited	CON 2 PT LOT 24	271102001312000	0.534														$0.00
Port Colborne Quarries Inc	CON 2 PT LOTS 19 AND 20 RP	271104000315600	30.868														$0.00
Phillips Richard Gordon	CON 2 PT LOT 20 RP 59R-1546	271104000315702	0.089														$0.00
Port Colborne Quarries Inc	CON 2 PT LOT 19 PT LOT 20	271104000315800	35.112	255.0	3.800	0.0969	$ -										$0.00
Schlenger Uszer	CON 1 PT LOT 23	271104000408700	0.583														$0.00
Schlenger Uszer	CON 1 PT LOT 23	271104000408700	6.726	0.0	0.000	0.0000	$ -										$0.00
City of Port Colborne	CON 1 PT LOTS 23, 24 RP	271104000408715	2.431														$0.00
Schlenger Uszer	CON 1 PT LOT 23	271104000408800	0.373														$0.00
Coccagna Anthony	CON 1 PT LOT 23	271104000408900	0.631														$0.00
1346618 Ontario Ltd	CON 1 PT LOT 23	271104000409000	0.463														$0.00
Ostric Milan	CON 1 PT LOT 23 RP 59R5797	271104000409100	0.201														$0.00
1108904 Ontario Limited	CON 1 PT LOT 23 PT LOT 24	271104000409200	0.779														$0.00
Favero Lidia	CON 1 PT LOT 23	271104000409300	0.202														$0.00
Ed Christensen Roofing Limited	CON 1 PT LOT 23	271104000409400	0.190														$0.00
Sauder William Edward	HUMBERSTONE CON 1 PT LOT 23	271104000409500	0.190														$0.00
Stenson Ian John	CON 1 PT LOT 23	271104000409600	0.190														$0.00
Polverari Giuseppe	CON 1 PT LOT 23	271104000409700	0.190														$0.00
Vale Canada Limited	CON 1 PT LOT 23	271104000409800	4.106														$0.00
Vale Canada Limited	CON 2 PT LOT 21 RP59R3588	271104000410000	4.963	100.000	3.800	0.0380	$ 939.00	164.4	0.000	$0.00							$939.00
Huffman John Wayne	CON 2 PT LOT 21	271104000410400	0.071														$0.00
Young Tammy Lynn	CON 2 PT LOT 21	271104000410500	0.107														$0.00
Vollick Ronald Christopher	CON 2 PT LOT 21	271104000410600	0.159														$0.00
Citrigno Angela	CON 2 PT LOT 21	271104000410700	0.168														$0.00
Stark Raymond	CON 2 PT LOT 21 RP 59R4333	271104000410705	1.936														$0.00
Konc John Andrew	CON 2 PT LOT 22 RP 59R4801	271104000410710	2.899	202.000	0.000	0.0000	$ -	202	0.000	$0.00							$0.00
Van Ruyven Josef Nicolaas	CON 2 PT LOT 22 RP 59R4801	271104000410800	4.199														$0.00
Stewart Scott James	CON 2 PT LOT 22 RP 59R 5732	271104000410810	0.407														$0.00
Powell Bradley Kenneth	CON 2 PT LOT 22 RP59R4801	271104000410900	7.711														$0.00
Hellinga Jack Simon	CON 2 PT LOT 22	271104000411000	5.411														$0.00
Kinzie Patricia Helen	CON 2 PT LOT 21 RP 59R6766	271104000411200	1.202														$0.00
Pipher Lynn Mae	CON 2 PT LOT 21 RP 59R6766	271104000411205	1.208														$0.00
Scace Wesley	CON 2 PT LOT 21	271104000411300	0.067														$0.00
Port Colborne Quarries Inc	CON 2 PT LOT 21 PT LOT 22 RP	271104000411500	73.170														$0.00
Parsons David Scott	CON 2 PT LOT 22	271104000411600	0.418														$0.00
Leavere Larry Allan Thomas	CON 2 PT LOT 22	271104000411700	0.209														$0.00
Yanni Bill	CON 2 PT LOT 22	271104000411900	0.418														$0.00
Fitzgerald Shawn Patrick	HUMBERSTONE CON 2 PT LOT 22	271104000412000	0.209														$0.00
Orlowski Jeffrey	CON 2 PT LOT 22 RP 59R4884	271104000412100	0.209														$0.00

Owner	Legal Text	Roll No	Area, Ha	Land and Rights of Way: Length m	Top Width	Area, Ha	Section 29 Allowance $	$	Damages: Length m	Area, Ha	Section 30 Allowance $	For Existing Private Drain converted: From STN	To STN	Length, m	Section 31 Allowance $	Insufficient Outlet: Section 32 Allowance $	Loss of Access: Section 33 Allowance $	Total of Allowances $
Moes Frank Allan	HUMBERSTONE CON 2 PT LOT 22	271104000412200	0.357															$0.00
Boda Terry Joseph	CON 2 PT LOT 22	271104000412400	0.186															$0.00
Elite Capital P.C Developments Inc	CON 2 PT LOT 22	271104000412600	4.110															$0.00
Vale Canada Limited	CON 2 PT LOT 22 PT LOT 23	271104000412700	10.153															$0.00
Vale Canada Limited	CON 2 PT LOT 22 PT LOT 23	271104000412700	22.189															$0.00
Vale Canada Limited	CON 2 PT LOT 23	271104000412800	0.363															$0.00
NCDSB	CON 2 PT LOT 23	271104000412900	5.947															$0.00
Dyson Patrick James	CON 2 PT LOT 23	271104000413000	0.176															$0.00
Dyson Mary Lynn	CON 2 PT LOT 23	271104000413100	0.182															$0.00
Hortobagyi Zoltan	CON 2 PT LOT 23	271104000413200	0.186															$0.00
Wakunick Deborah Ivy	CON 2 PT LOT 24	271104000413300	0.085															$0.00
Wells Donna Louise	CON 2 PT LOT 23 PT LOT 24	271104000413400	0.828			0.0000	$ -											$0.00
Vale Canada Limited	CON 2 PT LOT 23 PT LOT 24 RP	271104000413401	7.409															$0.00
Vale Canada Limited	CON 2 PT LOT 23 PT LOT 24 RP	271104000413410	10.115															$0.00
Vale Canada Limited	CON 2 PT LOT 24 RP 59R10047	271104000413435	0.631															$0.00
Port Colborne Quarries Inc	HUMBERSTONE CON 2 PT LOTS 23	271104000414000	3.326															$0.00
Vale Canada Limited	CON 2 PT LOT 24	271104000414120	0.928															$0.00
2023165 Ontario Inc	CON 3 PT LOT 19 PT LOT 20	271104000506400	1.291															$0.00
Koch Olga	CON 3 LOT 19CPT	271104000506500	0.222															$0.00
Kozelj Stif	CON 3 PT LOT 20	271104000506600	0.079															$0.00
Orsetto Aldo	CON 3 PT LOT 20	271104000506700	4.228															$0.00
Currie Michael Bruce	CON 3 PT LOT 20	271104000506702	0.085															$0.00
Fijavz David	CON 3 PT LOT 20	271104000506703	0.334															$0.00
Levitt Corie	CON 3 PT LOT 20 PLAN 59R	271104000506710	0.212															$0.00
Michaud Antonio Abel	CON 3 PT LOT 20 RP 59R8240	271104000506800	0.271															$0.00
Henderson David Marshall	CON 3 PT LOT 20	271104000506801	11.011															$0.00
Babion Gail J	HUMBERSTONE CON 3 PT LOT 21	271104000506900	15.252															$0.00
Wagner Dan Patrick	CON 3 PT LOT 21	271104000507400	3.050															$0.00
Stovell David Alan	CON 3 PT LOT 21 59R8535	271104000507500	1.238															$0.00
Cooper Collin James Lee	CON 3 S PT LOT 21 S PT LOT	271104000508100	7.613															$0.00
Henderson Drew David	CON 3 PT LOT 22	271104000508301	1.055															$0.00
Beaulieu George E	CON 3 E PT LOT 23	271104000508900	0.388															$0.00
Garner Mark Edward	CON 3 PT LOT 23	271104000509100	0.346															$0.00
Joseph Grandilli	CON 3 PT LOT 23	271104000509300	0.082															$0.00
Stefan John	CON 3 PT LOT 23	271104000509400	0.016															$0.00
Johnson Raymond Francis Jr	CON 3 PT LOT 23 RP 59R10549	271104000510200	0.208															$0.00
Vance Gregory Thomas	CON 3 PT LOT 23 RP 59R10549	271104000510202	0.417															$0.00
Saxon Ronald Joseph	CON 3 PT LOT 23 PLAN	271104000510204	0.605															$0.00
Pilkey Dean Lloyd	CON 3 PT LOT 23 PLAN	271104000510206	0.597															$0.00
Schneider Darryl Frederick	CON 3 PT LOT 23	271104000510801	2.252															$0.00
Zonneveld Bastian	CON 3 PT LOT 24	271104000510900	0.103															$0.00
Terreberry Jack	CON 3 PT LOT 24	271104000511000	0.144															$0.00
Jacak Dominik	CON 3 PT LOT 24	271104000511300	0.347															$0.00
Moore Linda Ann	CON 3 PT LOT 24	271104000511400	0.099															$0.00
Moore Linda Ann	CON 3 PT LOT 24	271104000511500	0.029															$0.00
Medvic Peter James	CON 3 PT LOT 24	271104000511600	0.356															$0.00
McIntyre Shelly	CON 3 PT LOT 24	271104000511700	0.191															$0.00
City of Port Colborne	59R11175 PART 1 59R11176	271104000699500	0.630															$0.00
			311.038				$ 939.00	$ -			$ -				$ -	$ -	$ -	$ 939.00
City of Port Colborne	Sndier Rd from Hwy 3 to Killaly St E	ROW	2.033															
City of Port Colborne	Second Concession W of Snider Rd.	ROW	1.221															
City of Port Colborne	Snider Rd. from Hwy 3 to Second Conc	ROW	2.005															
City of Port Colborne	Snider Rd. N of Second Concession	ROW	0.071															
City of Port Colborne	Second Concession Rd. E of Babion	ROW	0.595															
City of Port Colborne	Babion Rd. from Hwy 3 to Second Concess	ROW	2.308															
City of Port Colborne	Chippawa Road	ROW	0.559															
City of Port Colborne	Babion Rd. from 2nd to Chippawa	ROW	1.432															
City of Port Colborne	Snider Rd protion south of Killaly St E	ROW	0.353															
City of Port Colborne	Killaly St East W of Snider Rd	ROW	0.901															
City of Port Colborne	Killaly St E east of Snider	ROW	0.176															
City of Port Colborne	Second Concession from Snider to Babion	ROW	1.645															
MTO	Highway #3	ROW	3.281															
			16.581															
			327.619															

Drain Allowance To $ 1,216.62

Port Colborne Municipal Drain
City of Port Colborne
Regional Municipality of Niagara

Section 22: Assessed Benefit

Benefit assessments are based on the benefit value to each property and are not proportional to

Owner	Legal Text	ARN	Area Ha	Abutting Length m	BENEFIT ASSESSMENT DIRECT	BENEFIT ASSESSMENT ABUT	TOTAL BENEFIT
City of Port Colborne - Lands Assessed							
Konc John Andrew	CON 2 PT LOT 22 RP 59R4801	271104000410710	0.107	224.7			$0.00
Van Ruyven Josef Nicolaas	CON 2 PT LOT 22 RP 59R4801	271104000410800	1.084	224.7			$0.00
Hellinga Jack Simon	CON 2 PT LOT 22	271104000411000	5.247	57.9			$0.00
Port Colborne Quarries Inc	CON 2 PT LOT 21 PT LOT 22 RP	271104000411500	2.758	500.9			$0.00
Parsons David Scott	CON 2 PT LOT 22	271104000411600	0.413				$0.00
Leavere Larry Allan Thomas	CON 2 PT LOT 22	271104000411700	0.098				$0.00
Yanni Bill	CON 2 PT LOT 22	271104000411900	0.418				$0.00
Orlowski Jeffrey	CON 2 PT LOT 22 RP 59R4884	271104000412100	0.025				$0.00
Port Colborne Quarries Inc	HUMBERSTONE CON 2 PT LOTS 23	271104000414000	3.308				$0.00
Sub-Total (Lands)			13.457				
Roads							
City of Port Colborne	Snider Rd. from Hwy 3 to Second Con	ROW	1.612				$0.00
City of Port Colborne	Second Concession from Snider to Bal	ROW	0.022				$0.00
City of Port Colborne	Second Concession W of Snider Rd.	ROW	0.501				$0.00
MTO	Highway #3	ROW	0.547	34.9			$0.00
Sub-Total (Roads)			2.682				
			16.139				

Owner	Legal Text	Roll No	Area, Ha	Abutting Length m	BENEFIT ASSESSMENT DIRECT	BENEFIT ASSESSMENT ABUT	TOTAL BENEFIT
City of Port Colborne - Lands Assessed							
Vale Canada Limited	HUMBERSTONE CON 1 PT LOTS 24	271102000718000	1.642			$0	$0.00
McLean William Richard Samue	CON 1 PT TWP LOT 23	271102001311300	0.095			$0	$0.00
Tomiuck Jonas	CON 1 PT TWP LOT 23	271102001311400	0.191			$0	$0.00
Scott Gregory George	CON 1 PT TWP LOT 23	271102001311500	0.190			$0	$0.00
Vale Canada Limited	CON 2 PT LOT 24	271102001312000	0.534			$0	$0.00
Port Colborne Quarries Inc	CON 2 PT LOTS 19 AND 20 RP	271104000315600	30.868			$0	$0.00
Phillips Richard Gordon	CON 2 PT LOT 20 RP 59R-1546	271104000315702	0.089			$0	$0.00
Port Colborne Quarries Inc	CON 2 PT LOT 19 PT LOT 20	271104000315800	35.112			$0	$0.00
Schlenger Uszer	CON 1 PT LOT 23	271104000408700	0.583			$0	$0.00
Schlenger Uszer	CON 1 PT LOT 23	271104000408700	6.726			$0	$0.00
City of Port Colborne	CON 1 PT LOTS 23, 24 RP	271104000408715	2.431			$0	$0.00
Schlenger Uszer	CON 1 PT LOT 23	271104000408800	0.373			$0	$0.00
Coccagna Anthony	CON 1 PT LOT 23	271104000408900	0.631			$0	$0.00
1346618 Ontario Ltd	CON 1 PT LOT 23	271104000409000	0.463			$0	$0.00
Ostric Milan	CON 1 PT LOT 23 RP 59R5797	271104000409100	0.201			$0	$0.00
1108904 Ontario Limited	CON 1 PT LOT 23 PT LOT 24	271104000409200	0.779			$0	$0.00
Favero Lidia	CON 1 PT LOT 23	271104000409300	0.202			$0	$0.00
Ed Christensen Roofing Limited	CON 1 PT LOT 23	271104000409400	0.190			$0	$0.00
Sauder William Edward	HUMBERSTONE CON 1 PT LOT 23	271104000409500	0.190			$0	$0.00
Stenson Ian John	CON 1 PT LOT 23	271104000409600	0.190			$0	$0.00
Polverari Giuseppe	CON 1 PT LOT 23	271104000409700	0.190			$0	$0.00
Vale Canada Limited	CON 1 PT LOT 23	271104000409800	4.106			$0	$0.00
Vale Canada Limited	CON 2 PT LOT 21 RP59R3588	271104000410000	4.963	102.2		$256	$255.50
Huffman John Wayne	CON 2 PT LOT 21	271104000410400	0.071			$0	$0.00
Young Tammy Lynn	CON 2 PT LOT 21	271104000410500	0.107			$0	$0.00
Vollick Ronald Christopher	CON 2 PT LOT 21	271104000410600	0.159			$0	$0.00
Citrigno Angela	CON 2 PT LOT 21	271104000410700	0.168			$0	$0.00
Stark Raymond	CON 2 PT LOT 21 RP 59R4333	271104000410705	1.936			$0	$0.00
Konc John Andrew	CON 2 PT LOT 22 RP 59R4801	271104000410710	2.899	203.2		$508	$508.00
Van Ruyven Josef Nicolaas	CON 2 PT LOT 22 RP 59R4801	271104000410800	4.199			$0	$0.00
Stewart Scott James	CON 2 PT LOT 22 RP 59R 5732	271104000410810	0.407			$0	$0.00
Powell Bradley Kenneth	CON 2 PT LOT 22 RP59R4801	271104000410900	7.711			$0	$0.00
Hellinga Jack Simon	CON 2 PT LOT 22	271104000411000	5.411			$0	$0.00
Kinzie Patricia Helen	CON 2 PT LOT 21 RP 59R6766	271104000411200	1.202			$0	$0.00
Pipher Lynn Mae	CON 2 PT LOT 21 RP 59R6766	271104000411205	1.208			$0	$0.00
Scace Wesley	CON 2 PT LOT 21	271104000411300	0.067			$0	$0.00
Port Colborne Quarries Inc	CON 2 PT LOT 21 PT LOT 22 RP	271104000411500	73.170			$0	$0.00

Parsons David Scott	CON 2 PT LOT 22	271104000411600	0.418					$0	$0.00
Leavere Larry Allan Thomas	CON 2 PT LOT 22	271104000411700	0.209					$0	$0.00
Yanni Bill	CON 2 PT LOT 22	271104000411900	0.418					$0	$0.00
Fitzgerald Shawn Patrick	HUMBERSTONE CON 2 PT LOT 22	271104000412000	0.209					$0	$0.00
Orlowski Jeffrey	CON 2 PT LOT 22 RP 59R4884	271104000412100	0.209					$0	$0.00
Moes Frank Allan	HUMBERSTONE CON 2 PT LOT 22	271104000412200	0.357					$0	$0.00
Boda Terry Joseph	CON 2 PT LOT 22	271104000412400	0.186					$0	$0.00
Elite Capital P.C Developments Inc	CON 2 PT LOT 22	271104000412600	4.110					$0	$0.00
Vale Canada Limited	CON 2 PT LOT 22 PT LOT 23	271104000412700	10.153					$0	$0.00
Vale Canada Limited	CON 2 PT LOT 22 PT LOT 23	271104000412700	22.189					$0	$0.00
Vale Canada Limited	CON 2 PT LOT 23	271104000412800	0.363					$0	$0.00
NCDSB	CON 2 PT LOT 23	271104000412900	5.947					$0	$0.00
Dyson Patrick James	CON 2 PT LOT 23	271104000413000	0.176					$0	$0.00
Dyson Mary Lynn	CON 2 PT LOT 23	271104000413100	0.182					$0	$0.00
Hortobagyi Zoltan	CON 2 PT LOT 23	271104000413200	0.186					$0	$0.00
Wakunick Deborah Ivy	CON 2 PT LOT 24	271104000413300	0.085					$0	$0.00
Wells Donna Louise	CON 2 PT LOT 23 PT LOT 24	271104000413400	0.828					$0	$0.00
Vale Canada Limited	CON 2 PT LOT 23 PT LOT 24 RP	271104000413401	7.409					$0	$0.00
Vale Canada Limited	CON 2 PT LOT 23 PT LOT 24 RP	271104000413410	10.115					$0	$0.00
Vale Canada Limited	CON 2 PT LOT 24 RP 59R10047	271104000413435	0.631					$0	$0.00
Port Colborne Quarries Inc	HUMBERSTONE CON 2 PT LOTS 23	271104000414000	3.326					$0	$0.00
Vale Canada Limited	CON 2 PT LOT 24	271104000414120	0.928					$0	$0.00
2023165 Ontario Inc	CON 3 PT LOT 19 PT LOT 20	271104000506400	1.291					$0	$0.00
Koch Olga	CON 3 LOT 19CPT	271104000506500	0.222					$0	$0.00
Kozelj Stif	CON 3 PT LOT 20	271104000506600	0.079					$0	$0.00
Orsetto Aldo	CON 3 PT LOT 20	271104000506700	4.228					$0	$0.00
Currie Michael Bruce	CON 3 PT LOT 20	271104000506702	0.085					$0	$0.00
Fijavz David	CON 3 PT LOT 20	271104000506703	0.334					$0	$0.00
Levitt Corie	CON 3 PT LOT 20 PLAN 59R	271104000506710	0.212					$0	$0.00
Michaud Antonio Abel	CON 3 PT LOT 20 RP 59R8240	271104000506800	0.271					$0	$0.00
Henderson David Marshall	CON 3 PT LOT 20	271104000506801	11.011					$0	$0.00
Babion Gail J	HUMBERSTONE CON 3 PT LOT 21	271104000506900	15.252					$0	$0.00
Wagner Dan Patrick	CON 3 PT LOT 21	271104000507400	3.050					$0	$0.00
Stovell David Alan	CON 3 PT LOT 21 59R8535	271104000507500	1.238					$0	$0.00
Cooper Collin James Lee	CON 3 S PT LOT 21 S PT LOT	271104000508100	7.613					$0	$0.00
Henderson Drew David	CON 3 PT LOT 22	271104000508301	1.055					$0	$0.00
Beaulieu George E	CON 3 E PT LOT 23	271104000508900	0.388					$0	$0.00
Garner Mark Edward	CON 3 PT LOT 23	271104000509100	0.346					$0	$0.00
Joseph Grandilli	CON 3 PT LOT 23	271104000509300	0.082					$0	$0.00
Stefan John	CON 3 PT LOT 23	271104000509400	0.016					$0	$0.00
Johnson Raymond Francis Jr	CON 3 PT LOT 23 RP 59R10549	271104000510200	0.208					$0	$0.00
Vance Gregory Thomas	CON 3 PT LOT 23 RP 59R10549	271104000510202	0.417					$0	$0.00
Saxon Ronald Joseph	CON 3 PT LOT 23 PLAN	271104000510204	0.605					$0	$0.00
Pilkey Dean Lloyd	CON 3 PT LOT 23 PLAN	271104000510206	0.597					$0	$0.00
Schneider Darryl Frederick	CON 3 PT LOT 23	271104000510801	2.252					$0	$0.00
Zonneveld Bastian	CON 3 PT LOT 24	271104000510900	0.103					$0	$0.00
Terreberry Jack	CON 3 PT LOT 24	271104000511000	0.144					$0	$0.00
Jacak Dominik	CON 3 PT LOT 24	271104000511300	0.347					$0	$0.00
Moore Linda Ann	CON 3 PT LOT 24	271104000511400	0.099					$0	$0.00
Moore Linda Ann	CON 3 PT LOT 24	271104000511500	0.029					$0	$0.00
Medvic Peter James	CON 3 PT LOT 24	271104000511600	0.356					$0	$0.00
McIntyre Shelly	CON 3 PT LOT 24	271104000511700	0.191					$0	$0.00
City of Port Colborne	59R11175 PART 1 59R11176	271104000699500	0.630					$0	$0.00
			311.038						
City of Port Colborne	Sndier Rd from Hwy 3 to Killaly St E	ROW	2.033					$0	$0.00
City of Port Colborne	Second Concession W of Snider Rd.	ROW	1.221					$0	$0.00
City of Port Colborne	Snider Rd. from Hwy 3 to Second Con	ROW	2.005					$0	$0.00
City of Port Colborne	Snider Rd. N of Second Concession	ROW	0.071					$0	$0.00
City of Port Colborne	Second Concession Rd. E of Babion	ROW	0.595					$0	$0.00
City of Port Colborne	Babion Rd. from Hwy 3 to Second Con	ROW	2.308					$0	$0.00
City of Port Colborne	Chippawa Road	ROW	0.559					$0	$0.00
City of Port Colborne	Babion Rd. from 2nd to Chippawa	ROW	1.432					$0	$0.00
City of Port Colborne	Snider Rd protion south of Killaly St E	ROW	0.353					$0	$0.00
City of Port Colborne	Killaly St East W of Snider Rd	ROW	0.901					$0	$0.00
City of Port Colborne	Killaly St E east of Snider	ROW	0.176					$0	$0.00
City of Port Colborne	Second Concession from Snider to Bal	ROW	1.645					$0	$0.00
MTO	Highway #3	ROW	3.281					$0	$0.00
			16.581						
								$	763.50

Port Colborne Municipal Drain
City of Port Colborne
Regional Municipality of Niagara

Section 23 Outlet Benefit / Outlet Liability

Port Colborne Branch #1

$4,546.73

Owner	Legal Text	Roll No	Area, Ha	Runoff Factor 'C'	QRF	QRF Ratio	
City of Port Colborne - Lands Assessed							
Konc John Andrew	CON 2 PT LOT 22 RP 59R4801	271104000410710	0.107	30	0.21	0.0060	$27.28
Van Ruyven Josef Nicolaas	CON 2 PT LOT 22 RP 59R4801	271104000410800	1.084	20	1.41	0.0405	$184.32
Hellinga Jack Simon	CON 2 PT LOT 22	271104000411000	5.247	30	10.27	0.2945	$1,338.84
Port Colborne Quarries Inc	CON 2 PT LOT 21 PT LOT 22 RP	271104000411500	2.758	20	3.60	0.1032	$469.10
Parsons David Scott	CON 2 PT LOT 22	271104000411600	0.413	30	0.81	0.0232	$105.40
Leavere Larry Allan Thomas	CON 2 PT LOT 22	271104000411700	0.098	20	0.13	0.0037	$16.60
Yanni Bill	CON 2 PT LOT 22	271104000411900	0.418	30	0.82	0.0235	$106.65
Orlowski Jeffrey	CON 2 PT LOT 22 RP 59R4884	271104000412100	0.025	20	0.03	0.0009	$4.25
Port Colborne Quarries Inc	HUMBERSTONE CON 2 PT LOTS 23	271104000414000	3.308	30	6.47	0.1856	$844.05
		Sub-Total (Lands)	13.457				
Roads							
City of Port Colborne	Snider Rd. from Hwy 3 to Second Conc	ROW	1.612	45	4.73	0.1357	$616.77
City of Port Colborne	Second Concession from Snider to Babion	ROW	0.022	86	0.12	0.0035	$16.13
City of Port Colborne	Second Concession W of Snider Rd.	ROW	0.501	87	2.84	0.0815	$370.35
MTO	Highway #3	ROW	0.547	96	3.43	0.0983	$446.99
		Sub-Total (Roads)	2.682				
	Total Assessments for City of Port Colborne:		16.139		34.88	1.00	$4,546.73

Port Colborne Drain

$225,489.15

Owner	Legal Text	Roll No	Area, Ha	Runoff Factor 'C'	QRF	QRF Ratio	
Vale Canada Limited	HUMBERSTONE CON 1 PT LOTS 24	271102000718000	1.642	45	4.82	0.0063	$1,413.83
McLean William Richard Samue	CON 1 PT TWP LOT 23	271102001311300	0.095	25	0.16	0.0002	$45.49
Tomiuck Jonas	CON 1 PT TWP LOT 23	271102001311400	0.191	25	0.31	0.0004	$91.13
Scott Gregory George	CON 1 PT TWP LOT 23	271102001311500	0.190	25	0.31	0.0004	$91.08
Vale Canada Limited	CON 2 PT LOT 24	271102001312000	0.534	30	1.05	0.0014	$306.76
Port Colborne Quarries Inc	CON 2 PT LOTS 19 AND 20 RP	271104000315600	30.868	35	70.48	0.0917	$20,671.95
Phillips Richard Gordon	CON 2 PT LOT 20 RP 59R-1546	271104000315702	0.089	25	0.14	0.0002	$42.53
Port Colborne Quarries Inc	CON 2 PT LOT 19 PT LOT 20	271104000315800	35.112	35	80.17	0.1043	$23,514.47
Schlenger Uszer	CON 1 PT LOT 23	271104000408700	0.583	30	1.14	0.0015	$334.83
Schlenger Uszer	CON 1 PT LOT 23	271104000408700	6.726	35	15.36	0.0200	$4,504.18
City of Port Colborne	CON 1 PT LOTS 23, 24 RP	271104000408715	2.431	35	5.55	0.0072	$1,628.23

Owner	Legal Text	Roll No	Area, Ha	Runoff Factor 'C'	QRF	QRF Ratio	
Schlenger Uszer	CON 1 PT LOT 23	271104000408800	0.373	32	0.78	0.0010	$228.20
Coccagna Anthony	CON 1 PT LOT 23	271104000408900	0.631	25	1.03	0.0013	$301.99
1346618 Ontario Ltd	CON 1 PT LOT 23	271104000409000	0.463	35	1.06	0.0014	$310.00
Ostric Milan	CON 1 PT LOT 23 RP 59R5797	271104000409100	0.201	25	0.33	0.0004	$96.15
1108904 Ontario Limited	CON 1 PT LOT 23 PT LOT 24	271104000409200	0.779	35	1.78	0.0023	$521.36
Favero Lidia	CON 1 PT LOT 23	271104000409300	0.202	25	0.33	0.0004	$96.58
Ed Christensen Roofing Limited	CON 1 PT LOT 23	271104000409400	0.190	25	0.31	0.0004	$90.98
Sauder William Edward	HUMBERSTONE CON 1 PT LOT 23	271104000409500	0.190	25	0.31	0.0004	$90.98
Stenson Ian John	CON 1 PT LOT 23	271104000409600	0.190	25	0.31	0.0004	$90.98
Polverari Giuseppe	CON 1 PT LOT 23	271104000409700	0.190	25	0.31	0.0004	$90.98
Vale Canada Limited	CON 1 PT LOT 23	271104000409800	4.106	25	6.70	0.0087	$1,963.89
Vale Canada Limited	CON 2 PT LOT 21 RP59R3588	271104000410000	4.963	35	11.33	0.0147	$3,323.44
Huffman John Wayne	CON 2 PT LOT 21	271104000410400	0.071	25	0.12	0.0001	$33.82
Young Tammy Lynn	CON 2 PT LOT 21	271104000410500	0.107	25	0.17	0.0002	$51.04
Vollick Ronald Christopher	CON 2 PT LOT 21	271104000410600	0.159	25	0.26	0.0003	$76.06
Citrigno Angela	CON 2 PT LOT 21	271104000410700	0.168	25	0.27	0.0004	$80.12
Stark Raymond	CON 2 PT LOT 21 RP 59R4333	271104000410705	1.936	25	3.16	0.0041	$926.05
Konc John Andrew	CON 2 PT LOT 22 RP 59R4801	271104000410710	2.899	35	6.62	0.0086	$1,941.39
Van Ruyven Josef Nicolaas	CON 2 PT LOT 22 RP 59R4801	271104000410800	4.199	35	9.59	0.0125	$2,811.99
Stewart Scott James	CON 2 PT LOT 22 RP 59R 5732	271104000410810	0.407	25	0.66	0.0009	$194.50
Powell Bradley Kenneth	CON 2 PT LOT 22 RP59R4801	271104000410900	7.711	35	17.61	0.0229	$5,164.30
Hellinga Jack Simon	CON 2 PT LOT 22	271104000411000	5.411	25	8.83	0.0115	$2,588.33
Kinzie Patricia Helen	CON 2 PT LOT 21 RP 59R6766	271104000411200	1.202	25	1.96	0.0025	$574.94
Pipher Lynn Mae	CON 2 PT LOT 21 RP 59R6766	271104000411205	1.208	25	1.97	0.0026	$578.00
Scace Wesley	CON 2 PT LOT 21	271104000411300	0.067	25	0.11	0.0001	$31.95
Port Colborne Quarries Inc	CON 2 PT LOT 21 PT LOT 22 RP	271104000411500	73.170	37	176.62	0.2297	$51,802.13
Parsons David Scott	CON 2 PT LOT 22	271104000411600	0.418	25	0.68	0.0009	$199.95
Leavere Larry Allan Thomas	CON 2 PT LOT 22	271104000411700	0.209	25	0.34	0.0004	$100.02
Yanni Bill	CON 2 PT LOT 22	271104000411900	0.418	25	0.68	0.0009	$199.95
Fitzgerald Shawn Patrick	HUMBERSTONE CON 2 PT LOT 22	271104000412000	0.209	25	0.34	0.0004	$100.07
Orlowski Jeffrey	CON 2 PT LOT 22 RP 59R4884	271104000412100	0.209	25	0.34	0.0004	$100.02
Moes Frank Allan	HUMBERSTONE CON 2 PT LOT 22	271104000412200	0.357	25	0.58	0.0008	$170.72
Boda Terry Joseph	CON 2 PT LOT 22	271104000412400	0.186	25	0.30	0.0004	$88.88
Elite Capital P.C Developments Inc	CON 2 PT LOT 22	271104000412600	4.110	30	8.04	0.0105	$2,359.42
Vale Canada Limited	CON 2 PT LOT 22 PT LOT 23	271104000412700	10.153	30	19.87	0.0258	$5,827.80
Vale Canada Limited	CON 2 PT LOT 22 PT LOT 23	271104000412700	22.189	30	43.43	0.0565	$12,736.89
Vale Canada Limited	CON 2 PT LOT 23	271104000412800	0.363	30	0.71	0.0009	$208.54
NCDSB	CON 2 PT LOT 23	271104000412900	5.947	30	11.64	0.0151	$3,413.79
Dyson Patrick James	CON 2 PT LOT 23	271104000413000	0.176	25	0.29	0.0004	$84.14
Dyson Mary Lynn	CON 2 PT LOT 23	271104000413100	0.182	30	0.36	0.0005	$104.19
Hortobagyi Zoltan	CON 2 PT LOT 23	271104000413200	0.186	25	0.30	0.0004	$88.88
Wakunick Deborah Ivy	CON 2 PT LOT 24	271104000413300	0.085	25	0.14	0.0002	$40.85
Wells Donna Louise	CON 2 PT LOT 23 PT LOT 24	271104000413400	0.828	25	1.35	0.0018	$396.13
Vale Canada Limited	CON 2 PT LOT 23 PT LOT 24 RP	271104000413401	7.409	25	12.08	0.0157	$3,544.32

Owner	Legal Text	Roll No	Area, Ha	Runoff Factor 'C'	QRF	QRF Ratio	
Vale Canada Limited	CON 2 PT LOT 23 PT LOT 24 RP	271104000413410	10.115	35	23.10	0.0300	$6,774.19
Vale Canada Limited	CON 2 PT LOT 24 RP 59R10047	271104000413435	0.631	35	1.44	0.0019	$422.51
Port Colborne Quarries Inc	HUMBERSTONE CON 2 PT LOTS 23	271104000414000	3.326	30	6.51	0.0085	$1,909.44
Vale Canada Limited	CON 2 PT LOT 24	271104000414120	0.928	35	2.12	0.0028	$621.68
2023165 Ontario Inc	CON 3 PT LOT 19 PT LOT 20	271104000506400	1.291	25	2.11	0.0027	$617.56
Koch Olga	CON 3 LOT 19CPT	271104000506500	0.222	25	0.36	0.0005	$106.05
Kozelj Stif	CON 3 PT LOT 20	271104000506600	0.079	25	0.13	0.0002	$37.89
Orsetto Aldo	CON 3 PT LOT 20	271104000506700	4.228	30	8.27	0.0108	$2,426.75
Currie Michael Bruce	CON 3 PT LOT 20	271104000506702	0.085	25	0.14	0.0002	$40.80
Fijavz David	CON 3 PT LOT 20	271104000506703	0.334	25	0.54	0.0007	$159.58
Levitt Corie	CON 3 PT LOT 20 PLAN 59R	271104000506710	0.212	25	0.34	0.0004	$101.17
Michaud Antonio Abel	CON 3 PT LOT 20 RP 59R8240	271104000506800	0.271	25	0.44	0.0006	$129.44
Henderson David Marshall	CON 3 PT LOT 20	271104000506801	11.011	35	25.14	0.0327	$7,373.83
Babion Gail J	HUMBERSTONE CON 3 PT LOT 21	271104000506900	15.252	35	34.83	0.0453	$10,214.09
Wagner Dan Patrick	CON 3 PT LOT 21	271104000507400	3.050	35	6.97	0.0091	$2,042.84
Stovell David Alan	CON 3 PT LOT 21 59R8535	271104000507500	1.238	25	2.02	0.0026	$592.40
Cooper Collin James Lee	CON 3 S PT LOT 21 S PT LOT	271104000508100	7.613	35	17.38	0.0226	$5,098.67
Henderson Drew David	CON 3 PT LOT 22	271104000508301	1.055	35	2.41	0.0031	$706.46
Beaulieu George E	CON 3 E PT LOT 23	271104000508900	0.388	25	0.63	0.0008	$185.46
Garner Mark Edward	CON 3 PT LOT 23	271104000509100	0.346	25	0.56	0.0007	$165.65
Joseph Grandilli	CON 3 PT LOT 23	271104000509300	0.082	25	0.13	0.0002	$39.37
Stefan John	CON 3 PT LOT 23	271104000509400	0.016	25	0.03	0.0000	$7.85
Johnson Raymond Francis Jr	CON 3 PT LOT 23 RP 59R10549	271104000510200	0.208	26	0.35	0.0005	$103.68
Vance Gregory Thomas	CON 3 PT LOT 23 RP 59R10549	271104000510202	0.417	25	0.68	0.0009	$199.52
Saxon Ronald Joseph	CON 3 PT LOT 23 PLAN	271104000510204	0.605	25	0.99	0.0013	$289.50
Pilkey Dean Lloyd	CON 3 PT LOT 23 PLAN	271104000510206	0.597	25	0.97	0.0013	$285.72
Schneider Darryl Frederick	CON 3 PT LOT 23	271104000510801	2.252	25	3.67	0.0048	$1,077.11
Zonneveld Bastian	CON 3 PT LOT 24	271104000510900	0.103	25	0.17	0.0002	$49.17
Terreberry Jack	CON 3 PT LOT 24	271104000511000	0.144	25	0.24	0.0003	$68.98
Jacak Dominik	CON 3 PT LOT 24	271104000511300	0.347	25	0.57	0.0007	$166.13
Moore Linda Ann	CON 3 PT LOT 24	271104000511400	0.099	25	0.16	0.0002	$47.21
Moore Linda Ann	CON 3 PT LOT 24	271104000511500	0.029	25	0.05	0.0001	$13.78
Medvic Peter James	CON 3 PT LOT 24	271104000511600	0.356	25	0.58	0.0008	$170.06
McIntyre Shelly	CON 3 PT LOT 24	271104000511700	0.191	25	0.31	0.0004	$91.41
City of Port Colborne	59R11175 PART 1 59R11176	271104000699500	0.630	35	1.44	0.0019	$421.71
			311.038				
Roads							
City of Port Colborne	Sndier Rd from Hwy 3 to Killaly St E	ROW	2.033	85	11.27	0.0147	$3,306.62
City of Port Colborne	Second Concession W of Snider Rd.	ROW	1.221	75	5.97	0.0078	$1,752.36
City of Port Colborne	Snider Rd. from Hwy 3 to Second Conc	ROW	2.005	75	9.81	0.0128	$2,876.95
City of Port Colborne	Snider Rd. N of Second Concession	ROW	0.071	85	0.40	0.0005	$116.22
City of Port Colborne	Second Concession Rd. E of Babion	ROW	0.595	85	3.30	0.0043	$968.19
City of Port Colborne	Babion Rd. from Hwy 3 to Second Concess	ROW	2.308	85	12.80	0.0166	$3,753.26
City of Port Colborne	Chippawa Road	ROW	0.559	80	2.92	0.0038	$854.95

Owner	Legal Text	Roll No	Area, Ha	Runoff Factor 'C'	QRF	QRF Ratio	
City of Port Colborne	Babion Rd. from 2nd to Chippawa	ROW	1.432	85	7.94	0.0103	$2,329.34
City of Port Colborne	Snider Rd protion south of Killaly St E	ROW	0.353	80	1.84	0.0024	$541.04
City of Port Colborne	Killaly St East W of Snider Rd	ROW	0.901	85	4.99	0.0065	$1,464.94
City of Port Colborne	Killaly St E east of Snider	ROW	0.176	85	0.98	0.0013	$286.73
City of Port Colborne	Second Concession from Snider to Babion	ROW	1.645	85	9.12	0.0119	$2,675.64
MTO	Highway #3	ROW	3.281	85	18.19	0.0237	$5,336.02
			16.581				
			327.619		768.83	1.00	$225,489.15

Port Colborne Municipal Drain
City of Port Colborne
Regional Municipality of Niagara

Section 24 Special Benefit
Port Colborne Branch #1

Owner	Legal Text	Roll No	Area, Ha	Length	Crossings $/each	Channel Works	Culvert Works	Erosion Control	Other Works	Construction Sub-Total Assessments	Construction Total	Portion of Eng & Admin	TOTAL Special Benefit
City of Port Colborne - Lands Assessed										$0.00	$0.00		$0.00
Konc John Andrew	CON 2 PT LOT 22 RP 59R4801	271104000410710	0.107							$0.00	$0.00		$0.00
Van Ruyven Josef Nicolaas	CON 2 PT LOT 22 RP 59R4801	271104000410800	1.084							$0.00	$0.00		$0.00
Hellinga Jack Simon	CON 2 PT LOT 22	271104000411000	5.247							$0.00	$0.00		$0.00
Port Colborne Quarries Inc	CON 2 PT LOT 21 PT LOT 22 RP	271104000411500	2.758							$0.00	$0.00		$0.00
Parsons David Scott	CON 2 PT LOT 22	271104000411600	0.413							$0.00	$0.00		$0.00
Leavere Larry Allan Thomas	CON 2 PT LOT 22	271104000411700	0.098							$0.00	$0.00		$0.00
Yanni Bill	CON 2 PT LOT 22	271104000411900	0.418							$0.00	$0.00		$0.00
Orlowski Jeffrey	CON 2 PT LOT 22 RP 59R4884	271104000412100	0.025							$0.00	$0.00		$0.00
Port Colborne Quarries Inc	HUMBERSTONE CON 2 PT LOTS 23	271104000414000	3.308							$0.00	$0.00		$0.00
		Sub-Total (Lands)	13.457										$0.00
Roads													
City of Port Colborne	Snider Rd. from Hwy 3 to Second Conc	ROW	1.612							$0.00	$0.00		$0.00
City of Port Colborne	Second Concession from Snider to Babion	ROW	0.022							$0.00	$0.00		$0.00
City of Port Colborne	Second Concession W of Snider Rd.	ROW	0.501							$0.00	$0.00		$0.00
MTO	Highway #3	ROW	0.547							$0.00	$0.00		$0.00
		Sub-Total (Roads)	2.682										$0.00
	Total Assessments for City of Port Colborne:		16.139										$0.00

Port Colborne Drain

Owner	Legal Text	Roll No	Area, Ha	Length	Crossings $/each	Channel Works	Culvert Works	Erosion Control	Other Works	Construction Sub-Total Assessments		Construction Total	Portion of Eng & Admin	TOTAL Special Benefit
Vale Canada Limited	HUMBERSTONE CON 1 PT LOTS 24	271102000718000	1.642							$0.00		$0.00		$0.00
McLean William Richard Sam	CON 1 PT TWP LOT 23	271102001311300	0.095							$0.00		$0.00		$0.00
Tomiuck Jonas	CON 1 PT TWP LOT 23	271102001311400	0.191							$0.00		$0.00		$0.00
Scott Gregory George	CON 1 PT TWP LOT 23	271102001311500	0.190							$0.00		$0.00		$0.00
Vale Canada Limited	CON 2 PT LOT 24	271102001312000	0.534							$0.00		$0.00		$0.00
Port Colborne Quarries Inc	CON 2 PT LOTS 19 AND 20 RP	271104000315600	30.868							$0.00		$0.00		$0.00
Phillips Richard Gordon	CON 2 PT LOT 20 RP 59R-1546	271104000315702	0.089							$0.00		$0.00		$0.00
Port Colborne Quarries Inc	CON 2 PT LOT 19 PT LOT 20	271104000315800	35.112							$0.00		$0.00		$0.00
Schlenger Uszer	CON 1 PT LOT 23	271104000408700	0.583	105.6						$0.00		$0.00		$0.00
Schlenger Uszer	CON 1 PT LOT 23	271104000408700	6.726	329.1						$0.00		$0.00		$0.00
City of Port Colborne	CON 1 PT LOTS 23, 24 RP	271104000408715	2.431	61						$0.00		$0.00		$0.00
Schlenger Uszer	CON 1 PT LOT 23	271104000408800	0.373	18.2						$0.00		$0.00		$0.00
Coccagna Anthony	CON 1 PT LOT 23	271104000408900	0.631	60.9						$0.00		$0.00		$0.00
1346618 Ontario Ltd	CON 1 PT LOT 23	271104000409000	0.463	54.9						$0.00		$0.00		$0.00
Ostric Milan	CON 1 PT LOT 23 RP 59R5797	271104000409100	0.201							$0.00		$0.00		$0.00
1108904 Ontario Limited	CON 1 PT LOT 23 PT LOT 24	271104000409200	0.779							$0.00		$0.00		$0.00
Favero Lidia	CON 1 PT LOT 23	271104000409300	0.202							$0.00		$0.00		$0.00
Ed Christensen Roofing Limit	CON 1 PT LOT 23	271104000409400	0.190							$0.00		$0.00		$0.00
Sauder William Edward	HUMBERSTONE CON 1 PT LOT 23	271104000409500	0.190							$0.00		$0.00		$0.00
Stenson Ian John	CON 1 PT LOT 23	271104000409600	0.190							$0.00		$0.00		$0.00
Polverari Giuseppe	CON 1 PT LOT 23	271104000409700	0.190							$0.00		$0.00		$0.00
Vale Canada Limited	CON 1 PT LOT 23	271104000409800	4.106							$0.00		$0.00		$0.00
Vale Canada Limited	CON 2 PT LOT 21 RP59R3588	271104000410000	4.963	166.5				$ 187.50		$187.50		$187.50		$187.50
Huffman John Wayne	CON 2 PT LOT 21	271104000410400	0.071							$0.00		$0.00		$0.00
Young Tammy Lynn	CON 2 PT LOT 21	271104000410500	0.107							$0.00		$0.00		$0.00

Port Colborne Drain

Owner	Legal Text	Roll No	Area, Ha	Length	Crossings $/each	Channel Works	Culvert Works	Erosion Control	Other Works	Construction Sub-Total Assessments		Construction Total	Portion of Eng & Admin	TOTAL Special Benefit
Vollick Ronald Christopher	CON 2 PT LOT 21	271104000410600	0.159							$0.00		$0.00		$0.00
Citrigno Angela	CON 2 PT LOT 21	271104000410700	0.168							$0.00		$0.00		$0.00
Stark Raymond	CON 2 PT LOT 21 RP 59R4333	271104000410705	1.936							$0.00		$0.00		$0.00
Konc John Andrew	CON 2 PT LOT 22 RP 59R4801	271104000410710	2.899	100.8	$ 710.00	$ 4,702.59	$ 355.00			$5,057.59		$5,057.59		$5,057.59
Van Ruyven Josef Nicolaas	CON 2 PT LOT 22 RP 59R4801	271104000410800	4.199	129.1	$ 710.00		$ 355.00			$355.00		$355.00		$355.00
Stewart Scott James	CON 2 PT LOT 22 RP 59R 5732	271104000410810	0.407							$0.00		$0.00		$0.00
Powell Bradley Kenneth	CON 2 PT LOT 22 RP59R4801	271104000410900	7.711	151.6						$0.00		$0.00		$0.00
Hellinga Jack Simon	CON 2 PT LOT 22	271104000411000	5.411							$0.00		$0.00		$0.00
Kinzie Patricia Helen	CON 2 PT LOT 21 RP 59R6766	271104000411200	1.202							$0.00		$0.00		$0.00
Pipher Lynn Mae	CON 2 PT LOT 21 RP 59R6766	271104000411205	1.208							$0.00		$0.00		$0.00
Scace Wesley	CON 2 PT LOT 21	271104000411300	0.067							$0.00		$0.00		$0.00
Port Colborne Quarries Inc	CON 2 PT LOT 21 PT LOT 22 RP	271104000411500	73.170	597						$0.00		$0.00		$0.00
Parsons David Scott	CON 2 PT LOT 22	271104000411600	0.418							$0.00		$0.00		$0.00
Leavere Larry Allan Thomas	CON 2 PT LOT 22	271104000411700	0.209							$0.00		$0.00		$0.00
Yanni Bill	CON 2 PT LOT 22	271104000411900	0.418							$0.00		$0.00		$0.00
Fitzgerald Shawn Patrick	HUMBERSTONE CON 2 PT LOT 22	271104000412000	0.209							$0.00		$0.00		$0.00
Orlowski Jeffrey	CON 2 PT LOT 22 RP 59R4884	271104000412100	0.209							$0.00		$0.00		$0.00
Moes Frank Allan	HUMBERSTONE CON 2 PT LOT 22	271104000412200	0.357							$0.00		$0.00		$0.00
Boda Terry Joseph	CON 2 PT LOT 22	271104000412400	0.186							$0.00		$0.00		$0.00
Elite Capital P.C Developmen	CON 2 PT LOT 22	271104000412600	4.110							$0.00		$0.00		$0.00
Vale Canada Limited	CON 2 PT LOT 22 PT LOT 23	271104000412700	10.153	127						$0.00		$0.00		$0.00
Vale Canada Limited	CON 2 PT LOT 22 PT LOT 23	271104000412700	22.189	542.7						$0.00		$0.00		$0.00
Vale Canada Limited	CON 2 PT LOT 23	271104000412800	0.363							$0.00		$0.00		$0.00
NCDSB	CON 2 PT LOT 23	271104000412900	5.947							$0.00		$0.00		$0.00
Dyson Patrick James	CON 2 PT LOT 23	271104000413000	0.176							$0.00		$0.00		$0.00
Dyson Mary Lynn	CON 2 PT LOT 23	271104000413100	0.182							$0.00		$0.00		$0.00
Hortobagyi Zoltan	CON 2 PT LOT 23	271104000413200	0.186							$0.00		$0.00		$0.00
Wakunick Deborah Ivy	CON 2 PT LOT 24	271104000413300	0.085							$0.00		$0.00		$0.00
Wells Donna Louise	CON 2 PT LOT 23 PT LOT 24	271104000413400	0.828							$0.00		$0.00		$0.00
Vale Canada Limited	CON 2 PT LOT 23 PT LOT 24 RP	271104000413401	7.409							$0.00		$0.00		$0.00
Vale Canada Limited	CON 2 PT LOT 23 PT LOT 24 RP	271104000413410	10.115							$0.00		$0.00		$0.00
Vale Canada Limited	CON 2 PT LOT 24 RP 59R10047	271104000413435	0.631							$0.00		$0.00		$0.00
Port Colborne Quarries Inc	HUMBERSTONE CON 2 PT LOTS 23	271104000414000	3.326							$0.00		$0.00		$0.00
2023165 Ontario Inc	CON 3 PT LOT 19 PT LOT 20	271104000506400	1.291							$0.00		$0.00		$0.00
Koch Olga	CON 3 LOT 19CPT	271104000506500	0.222							$0.00		$0.00		$0.00
Kozelj Stif	CON 3 PT LOT 20	271104000506600	0.079							$0.00		$0.00		$0.00
Orsetto Aldo	CON 3 PT LOT 20	271104000506700	4.228							$0.00		$0.00		$0.00
Currie Michael Bruce	CON 3 PT LOT 20	271104000506702	0.085							$0.00		$0.00		$0.00
Fijavz David	CON 3 PT LOT 20	271104000506703	0.334							$0.00		$0.00		$0.00
Levitt Corie	CON 3 PT LOT 20 PLAN 59R	271104000506710	0.212							$0.00		$0.00		$0.00
Michaud Antonio Abel	CON 3 PT LOT 20 RP 59R8240	271104000506800	0.271							$0.00		$0.00		$0.00
Henderson David Marshall	CON 3 PT LOT 20	271104000506801	11.011							$0.00		$0.00		$0.00
Babion Gail J	HUMBERSTONE CON 3 PT LOT 21	271104000506900	15.252							$0.00		$0.00		$0.00
Wagner Dan Patrick	CON 3 PT LOT 21	271104000507400	3.050							$0.00		$0.00		$0.00
Stovell David Alan	CON 3 PT LOT 21 59R8535	271104000507500	1.238							$0.00		$0.00		$0.00
Cooper Collin James Lee	CON 3 S PT LOT 21 S PT LOT	271104000508100	7.613							$0.00		$0.00		$0.00
Henderson Drew David	CON 3 PT LOT 22	271104000508301	1.055							$0.00		$0.00		$0.00
Beaulieu George E	CON 3 E PT LOT 23	271104000508900	0.388							$0.00		$0.00		$0.00
Garner Mark Edward	CON 3 PT LOT 23	271104000509100	0.346							$0.00		$0.00		$0.00
Joseph Grandilli	CON 3 PT LOT 23	271104000509300	0.082							$0.00		$0.00		$0.00
Stefan John	CON 3 PT LOT 23	271104000509400	0.016							$0.00		$0.00		$0.00
Johnson Raymond Francis Jr	CON 3 PT LOT 23 RP 59R10549	271104000510200	0.208							$0.00		$0.00		$0.00
Vance Gregory Thomas	CON 3 PT LOT 23 RP 59R10549	271104000510202	0.417							$0.00		$0.00		$0.00
Saxon Ronald Joseph	CON 3 PT LOT 23 PLAN	271104000510204	0.605							$0.00		$0.00		$0.00
Pilkey Dean Lloyd	CON 3 PT LOT 23 PLAN	271104000510206	0.597							$0.00		$0.00		$0.00
Schneider Darryl Frederick	CON 3 PT LOT 23	271104000510801	2.252							$0.00		$0.00		$0.00
Zonneveld Bastian	CON 3 PT LOT 24	271104000510900	0.103							$0.00		$0.00		$0.00

Port Colborne Drain

Owner	Legal Text	Roll No	Area, Ha	Length	Crossings $/each	Channel Works	Culvert Works	Erosion Control	Other Works	Construction Sub-Total		Construction Total	Portion of Eng & Admin	TOTAL Special Benefit
						Assessments								
Terreberry Jack	CON 3 PT LOT 24	271104000511000	0.144							$0.00		$0.00		$0.00
Jacak Dominik	CON 3 PT LOT 24	271104000511300	0.347							$0.00		$0.00		$0.00
Moore Linda Ann	CON 3 PT LOT 24	271104000511400	0.099							$0.00		$0.00		$0.00
Moore Linda Ann	CON 3 PT LOT 24	271104000511500	0.029							$0.00		$0.00		$0.00
Medvic Peter James	CON 3 PT LOT 24	271104000511600	0.356							$0.00		$0.00		$0.00
McIntyre Shelly	CON 3 PT LOT 24	271104000511700	0.191							$0.00		$0.00		$0.00
City of Port Colborne	59R11175 PART 1 59R11176	271104000699500	0.630	20.7						$0.00		$0.00		$0.00
			310.110											
Roads														
City of Port Colborne	Sndier Rd from Hwy 3 to Killaly St E	ROW	2.033							$0.00		$0.00		$0.00
City of Port Colborne	Second Concession W of Snider Rd.	ROW	1.221							$0.00		$0.00		$0.00
City of Port Colborne	Snider Rd. from Hwy 3 to Second Conc	ROW	2.005							$0.00		$0.00		$0.00
City of Port Colborne	Snider Rd. N of Second Concession	ROW	0.071	28.4						$0.00		$0.00		$0.00
City of Port Colborne	Second Concession Rd. E of Babion	ROW	0.595							$0.00		$0.00		$0.00
City of Port Colborne	Babion Rd. from Hwy 3 to Second Concess	ROW	2.308							$0.00		$0.00		$0.00
City of Port Colborne	Chippawa Road	ROW	0.559							$0.00		$0.00		$0.00
City of Port Colborne	Babion Rd. from 2nd to Chippawa	ROW	1.432							$0.00		$0.00		$0.00
City of Port Colborne	Snider Rd protion south of Killaly St E	ROW	0.353							$0.00		$0.00		$0.00
City of Port Colborne	Killaly St East W of Snider Rd	ROW	0.901							$0.00		$0.00		$0.00
City of Port Colborne	Killaly St E east of Snider	ROW	0.176							$0.00		$0.00		$0.00
City of Port Colborne	Second Concession from Snider to Babion	ROW	1.645							$0.00		$0.00		$0.00
MTO	Highway #3	ROW	3.281							$0.00		$0.00		$0.00
			16.581											
													$	5,600.09

Section 26 - Special Assessments

As per Section 26 of the Drainage Act, the following costs are to be charged directly to the Road Authorities listed as SPECIAL ASSESSMENTS.

Port Colborne Branch #1

Agency	Items	A. Portion of General Construction Costs	B. Channel Improvement Works	C. Culvert Improvement Works	D. Erosion and Sediment Control Works	E. Other Improvement Works	Total Construction Costs	Portion of Administration Costs	TOTAL Special Assessment
City of Port Colborne	Assessed special benefit for improving Snider road outlet.		$ 3,940				$ 3,940	$ 3,068	$7,008.46
Regional Municipality of Niagara	No works proposed						$ -	$ -	$0.00
MINISTRY OF TRANSPORTATION ONTARIO		$ 4,000					$ 4,000	$ 3,115	$7,115.18
Utilities - Enbridge	No conflicts assessed during design						$ -	$ -	$0.00
Utilities - Other	No conflicts assessed during design						$ -	$ -	$0.00
									$14,123.64

Port Colborne Drain

City of Port Colborne	Extend drain along Babion Rd. to Second Concession. Re-lay culverts at Second Concession Rd.		$ 8,890	$ 2,563		$ 500	$ 11,953	$ 28,496	$40,448.80
Regional Municipality of Niagara	No works proposed						$ -		$0.00
MINISTRY OF TRANSPORTATION ONTARIO					$1,500.00		$ 1,500	$ 3,576	$5,076.19
Utilities - Enbridge	No conflicts assessed during design						$ -		$0.00
Utilities - Other	No conflicts assessed during design						$ -		$0.00
									$45,525.00

Appendix C:

Past Financing and Cost Reports

Fw: invoicing

1 message

alanavanderveen@portcolborne.ca <alanavanderveen@portcolborne.ca> Tue, Dec 17, 2019 at 4:02 PM
To: "Paul Marsh (pcmarsh" <pcmarsh@ewaeng.com>

Paul, as per our discussions on the Port Colborne drain wetland and fordings.

Thank you,

Alana Vander Veen
Drainage Superintendent
City of Port Colborne
alanavanderveen@portcolborne.ca
905-835-2900 x 291

"Serving You to Create an Even Better Community"

Working Smoke and Carbon Monoxide Alarms Save Lives

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----- Forwarded by Alana Vander Veen/Port_Notes on 2019-12-17 04:02 PM -----

From: Deanna Lindblad <dlindblad@npca.ca>
To: "henribennemeer@portcolborne.ca" <henribennemeer@portcolborne.ca>, "alanavanderveen@portcolborne.ca" <alanavanderveen@portcolborne.ca>
Date: 2016-01-07 09:14 AM
Subject: RE: invoicing

Hello,
Below are the reworked numbers for the invoices.
Thank you Henri for catching my mistake about the low level crossings.
deanna

KONC:
Excavation of wetland $7,571.00 (incl HST)
Low level crossing $ 1,243.00 (incl HST)
TOTAL: $8,814.00
Total will need to be in access of $ 11,800 in order for this amount to be paid by NPCA. *See details below.

VANRUYVEN:
Excavation of wetland $2,721.00 (incl HST)
Low level crossing $1,243.00 (inlc HST)
TOTAL: $3,964.00
Total will need to be in access of $5300 in order for this amount to be paid by NPCA. *See details below.

*Now because our program can only pay 75% of the cost of the project and it is our understanding that the City through your funding is covering the 25% on behalf of the landowner through your additional funding source, I will need the invoice to show that the totals above are no more than 75% of the cost. I know that the trucking of the soil off site will be more than that 25% so be sure that the invoice you send me shows that amount please.

**I will need that invoice by the end of the year in order to process by our drop dead date in the first week of January.

Deanna L. Lindblad
Restoration Project Lead
Niagara Peninsula Conservation Authority
250 Thorold Road, West, 3rd floor,
Welland, ON L3C 3W2
905-788-3135 x237
dlindblad@npca.ca

CERTIFICATE

TO: Borden Ladner Gervais LLP

IN THE MATTER OF By-law Number 71-2007 (the "**Debenture By-law**") authorizing an issue of instalment debentures of The Regional Municipality of Niagara (the "**Upper-tier Municipality**") in the aggregate principal amount of $22,809,804.00 - $845,000.00 of which relates to The Corporation of the City of Port Colborne (the "**Lower-tier Municipality**");

AND IN THE MATTER OF certain authorizing by-laws of the Lower-tier Municipality.

I, Janet Beckett, refer to my declaration declared July 5th, 2007. I hereby certify that all statements contained in such declaration are true and correct as at the date hereof.

DATED at the City of Port Colborne as at the 10th day of July, 2007.

Janet Beckett

Janet Beckett,
Clerk

City of Port Colborne

DATE: APRIL 23RD, 2007

MOVED BY COUNCILLOR G. BRUNO

SECONDED BY COUNCILLOR B. Butters

WHEREAS the Council of the Corporation of the City of Port Colborne passed By-law No. 4988/44/07 Being a By-law to Authorize the Borrowing of the Sum of Seven Hundred and Forty-Five Thousand Dollars ($745,000) Upon the Issuance of Debentures for Such Purposes, for the construction of Wignell and Michener Municipal Drains;

WHEREAS the estimated cost of construction of the Wignell and Michener Municipal Drains amount to $745,000;

WHEREAS it is deemed desirable to issue debentures in the amount of $745,000 in accordance with the terms of the various authorizing by-laws applicable to such expenditures;

NOW THEREFORE be it resolved by the Council of the Corporation of the City of Port Colborne as follows:

THAT the City Clerk be and is hereby directed to request the Council of the Regional Municipality of Niagara to issue debentures, on behalf of the said City of Port Colborne in the amount of $745,000 to finance the construction of the Wignell and Michener Municipal Drains and to be a 10 year debenture;

AND THAT the City Clerk and the Treasurer be and they are hereby directed to make available to the said Regional Municipality of Niagara certified copies of all By-laws and Orders of the Ontario Municipal Board applicable and all other information required in this connection, to ensure the issue of the said debentures in the amount of $745,000. for the construction of the Wignell and Michener Municipal Drains as described in the attached schedule.

Vance Badawey (sgd.)
MAYOR

No.....

CITY OF PORT COLBORNE
CERTIFIED TRUE AND CORRECT COPY
City Clerk Janet Beckett
05/01/07

THE CORPORATION OF THE CITY OF PORT COLBORNE

BY-LAW NO. 4988/44/07

BEING A BY-LAW TO AUTHORIZE
THE BORROWING OF THE SUM OF
SEVEN HUNDRED AND FORTY-FIVE THOUSAND DOLLARS
($745,000)
UPON THE ISSUANCE OF DEBENTURES FOR SUCH PURPOSES

WHEREAS Section 401(1) of the Municipal Act, 2001, S.O. 2001, c.25, as amended, authorizes the municipality to borrow money or incur a debt for municipal purposes and may issue debentures for the money borrowed or for the debt.

WHEREAS the Council of the Corporation of the City of Port Colborne deemed it desirable to undertake the following Capital Project in 2007 by issuance of debentures:

The construction of the Wignell and Michener Municipal Drains, as approved by Council in the Department of Operational, Planning & Development Services Report No. 2007-25, for the amount of $745,000.

WHEREAS the Treasurer of the Corporation of the City of Port Colborne has confirmed that the debt repayment limit for the City of Port Colborne has been updated and this project will not cause the Corporation to exceed its limit.

NOW THEREFORE THE COUNCIL OF THE CORPORATION OF THE CITY OF PORT COLBORNE ENACTS AS FOLLOWS:

1. In this By-law:

   "Council" means the Council of the Corporation of the City of Port Colborne.

   "Corporation" means the Corporation of the City of Port Colborne.

2. The Council authorizes and approves the Capital Project, being the construction of the Wignell and Michener Municipal Drains in 2007 for the amount of $745,000.

3. That the cost of the project, namely $745,000, to be borne by the ratepayers within the Wignell and Michener Municipal Drain Watershed, shall be paid for by the issue and sale of debentures for the amount of $745,000 over a period of ten (10) years.

4. Any debentures to be issued by the Council of the Regional Municipality of Niagara, with respect to the said project or part thereof, shall bear interest at such rate or rates as shall be determined by the Regional Council.

5. The Mayor and Treasurer are hereby authorized on behalf of the Corporation to borrow from any bank, person, firm or corporation from time to time, pending the issue and sale of debentures, any money necessary to meet the expenditures incurred up to the amount of the estimated cost thereof, and the Mayor and Treasurer are hereby authorized to execute a promissory note or notes thereof and the Clerk is hereby authorized to affix the corporate seal thereto.

6. The City Clerk of the Corporation is hereby authorized and directed to request the Council of the Regional Municipality of Niagara to borrow money for the purposes hereinbefor set out to a maximum amount of $745,000 and to issue debentures therefore to the credit of the Regional Corporation and to suggest to the Regional Municipality of Niagara that such debentures shall be payable within ten (10) years.

READ A FIRST, SECOND AND THIRD TIME AND FINALLY PASSED THIS 23rd DAY OF APRIL, 2007.

Vance Badawey
MAYOR

Janet Beckett

Janet Beckett
CITY CLERK

CITY OF PORT COLBORNE
CERTIFIED TRUE AND CORRECT COPY
City Clerk Janet Beckett
05/01/07

PORT COLBORNE

APPROVED BY COUNCIL APR 23 2007 J. BECKETT CITY CLERK CITY OF PORT COLBORNE

DEPARTMENT OF OPERATIONAL PLANNING & DEVELOPMENT SERVICES

Report No. 2007-25 **Agenda Date: April 23, 2007**

Division: Engineering Division

Subject: FINANCING OF THE WIGNELL-MICHENER MUNICIPAL DRAINS

RECOMMENDATION:

That the Council of the City of Port Colborne approve the works contained in this report for the construction of the Wignell and Michener Municipal Drains.

That the Council of the City of Port Colborne approve the attached resolution to authorize the Regional Municipality of Niagara to issue the debenture in the amount of $745,000.00 over a period of 10 years for the works related to construction for the Wignell and Michener Drains.

That the Council of the City of Port Colborne authorize the City Clerk and Mayor to sign the appropriate by-law to authorize the issuance of debentures by the Region.

Purpose of the Report

The City of Port Colborne has appointed Wiebe Engineering Group to prepare a report for the repair and improvement of the Wignell, Michener M - 1 and the Michener M - 2 Municipal Drains. The estimated cost of the work is $780,000.00 and Council should consider debenturing the cost of this project as the City cannot finance this amount on behalf of the benefiting landowners within the watershed.

Analysis

Council appointed Wiebe Engineering Group on December 21, 2001 to prepare a drainage report for the Wignell and Michener Municipal Drains, under the appropriate sections of *The Drainage Act, R.S.O 1990*. The primary reason for the Report was to amalgamate 5 different by-laws for various portions of the Wignell Municipal Drain into one by-law, to confer municipal drain status on a short section connecting two portions of the Wignell Drain, to update the assessment schedules to reflect current land use and watershed boundaries, and to provide for needed repairs and improvements.

The "on-site" meeting for this project was held the evening of January 9, 2002 and was attended by about 90 landowners as well as Councillors Butters and Bodner. Many issues were raised and discussed at the meeting, including a storm water management system to control discharge of sediment and nutrients into Lorraine Bay, the ongoing erosion problem in the muck type soils in the portion of the Wignell Drain located south of the Friendship Trail, and others.

A treatment wetlands / storm water management system was designed, however, the cost was so high that it was decided not to proceed with that as part of the Report. The concept has not been abandoned, we are trying to receive funding for the wetlands through Water Smart Niagara. Concerns were raised about contaminants in the sediment in the bottom of the drain, so soil samples of the drain bottom were taken and tested and the test results indicate that the sediment is within provincial guidelines so the excavated material is safe to spread along the side of the drain.

The existing building housing the pump at Lakeshore Road East must be replaced, the starter on the pump inside the building must be replaced, the controller for the Grindex pump on the north side of the floodgates must be moved to inside the building, "bubblers" must be installed inside the pump wetwell to prevent freezing, the existing transformer must be upgraded to provide more power, the power supply cables must be moved underground, the floodgates require remedial work, and various

electrical components and installations for the pumps and floodgates must be upgraded to meet current Hydro regulations.

Erosion continues to worsen, to the extent that we had to install a concrete block wall along the Smith property between Snider Road and the Cemetery at a cost of $226,000. Repairs and improvements are required all along the Wignell and Michener Drains to improve flows and reduce erosion.
The work has escalated beyond what was originally considered when the engineer was appointed in late 2001. The cost of the required works is now estimated at $780,000, as follows:

- Construction: Main Drain = $400,000 (includes the $226,000 for the concrete wall)
  Wignell W-1 = $38,000
  Wignell W-2 = $23,000
  Michener M-1 = $15,000
  Michener M-2 = $56,000
  Total construction & Contingency = $532,000
- Allowances = $53,000
- Engineering & Administration = $151,000
- GST = $44,000
- **TOTAL COST = $780,000**

Resource Implications

The estimated $780,000 cost will have to be borne upfront by the municipality. It is estimated that approximately 15% of that cost will be assessed to City owned lands and road allowances and the remainder will be invoiced to affected landowners within the watershed. The actual cost to be debentured, net of GST and commission/legal fees, amounts to $745,000.00.

Policies Affecting The Proposal

The attached resolution provides the authority for the Region to issue a 10 year debenture for the construction of the Wignell and Michener Drains . This confirms that the Treasurer has updated the municipalities 2006 annual repayment limit respecting long term debt and financial obligations and determined that the estimated annual amount payable in respect of the drain construction, the additional cost amount and additional debenture authority, would not cause the municipality to reach or to exceed the updated 2006 limit.

Comments From Relevant Departments, Agencies & Corporate Partners

None.

Alternatives

None

Conclusions

That the construction of the Wignell and Michener Drains be approved with financing from the issuance of debentures from the Region in the amount of $745,000.00. Costs will be recovered from the affected landowners following completion of the works.

Attachments

The attached by-law and resolution is required to authorize the borrowing of $745,000.00 upon the issuance of debentures by the Region in June, 2007.

Prepared by:

René Landry, C.E.T., CST
Drainage Superintendent
Engineering Assistant

Reviewed and Approved by:

Tim Stuart, P.Eng.
Director of Operational, Planning
and Development Services

Approved and Respectfully
Submitted by:

Robert Cotterill, P. Eng.
Chief Administrative Officer

Financing strategy reviewed and
Approved by:

Peter Senese
Director of Community & Corporate
Services

Wignell/Michener Debenture

		Debenture Fee	December 31, 2007.	**2008 TOTAL**	December 31, 2008.	**2009 TOTAL**	December 31, 2009.	**2010 TOTAL**	December 31, 2010.	**2011 TOTAL**	December 31, 2011.	**2012 TOTAL**	December 31, 2012.	**2013 TOTAL**	December 31, 2013.	**2014 TOTAL**	December 31, 2014.	**2015 TOTAL**	December 31, 2015.	**2016 TOTAL**	December 31, 2016.	**2017 TOTAL**	December 31, 2017.	**Total Interest Paid**
Total			$ 745,000.00		$ 685,773.55		$ 623,570.98		$ 558,277.98		$ 489,704.23		$ 417,715.44		$ 342,126.42		$ 262,748.73		$ 179,397.98		$ 91,889.76		$ -	
		$ 6,065.29		$ 96,388.48		$ 96,422.90		$ 96,485.90		$ 96,556.81		$ 96,577.48		$ 96,614.26		$ 96,661.28		$ 96,665.48		$ 96,613.74		$ 96,576.12		
PRINC.				$ 59,226.45		$ 62,192.57		$ 65,303.00		$ 68,573.75		$ 71,988.79		$ 75,589.02		$ 79,377.69		$ 83,350.75		$ 87,508.22		$ 91,889.76		
INT.				$ 37,162.03		$ 34,230.33		$ 31,182.90		$ 27,983.06		$ 24,588.69		$ 21,025.24		$ 17,283.59		$ 13,314.73		$ 9,105.52		$ 4,686.36		**$ 220,562.45**
2007-2009 Contract cost for Rankin Construction Retaining Wall	$241,254.45																							
Erosion Protection Wall Engineering Fee	$27,894.59	$2,191.23		$13,425.67		$12,366.52		$11,265.57		$10,109.55		$8,883.25		$7,595.87		$6,244.11		$4,810.26		$3,289.59		$1,693.06		**$79,683.45**
2001-2007 Weibe Engineering Fees	$100,750.62	$820.24		$5,025.63		$4,629.16		$4,217.04		$3,784.31		$3,325.27		$2,843.36		$2,337.36		$1,800.63		$1,231.39		$633.76		**$29,827.92**
	$369,899.66	$3,011.47		$18,451.31		$16,995.69		$15,482.61		$13,893.86		$12,208.52		$10,439.23		$8,581.47		$6,610.89		$4,520.98		$2,326.82		**$ 109,511.38**
				4.99%		4.59%		4.19%		3.76%		3.30%		2.82%		2.32%		1.79%		1.22%		0.63%		**29.61%**

Appendix D:

Supplementary Information

City of Port Colborne
Regular Committee of the Whole Meeting 16-18
Minutes

Date:	July 23, 2018
Time:	6:30 p.m.
Place:	Council Chambers, Municipal Offices, 66 Charlotte Street, Port Colborne
Members Present:	R. Bodner, Councillor B. Butters, Councillor F. Danch, Councillor A. Desmarais, Councillor D. Elliott, Councillor B. Kenny, Councillor J. Maloney, Mayor (presiding officer) Absent: Y. Doucet, Councillor (due to vacation) J. Mayne, Councillor (leave of absence)
Staff Present:	D. Aquilina, Director of Planning and Development T. Cartwright, Fire Chief A. Grigg, Director of Community and Economic Development N. Halasz, Manager of Parks and Recreation A. LaPointe, Manager of Legislative Services/City Clerk (minutes) C. Lee, Director of Engineering and Operations S. Luey, Chief Administrative Officer P. Senese, Director of Corporate Services

Also in attendance were interested citizens, members of the news media and WeeStreem.

1. Call to Order:

Mayor Maloney called the meeting to order.

2. Introduction of Addendum Items:

Nil.

3. Confirmation of Agenda:

Moved by Councillor B. Kenny
Seconded by Councillor A. Desmarais

That the agenda dated July 23, 2018 be confirmed, as circulated or as amended.

CARRIED.

2. Engineering and Operations Department, Engineering Division, Report 2018-103, Subject: Wignell, Michener, Port Colborne and Beaverdam Municipal Drains Engineer Appointment

Moved by Councillor R. Bodner
Seconded by Councillor B. Butters

That the appointment of Paul Smeltzer P. Eng. of AMEC(FW) be rescinded as per Section 39(2) Chapter D.17 of *the Drainage Act R.S.O. 1990*; and

That Paul Marsh P. Eng. of EWA Engineers Inc. be appointed under Section 78(1) Chapter D.17 of the *Drainage Act R.S.O. 1990*, and that this appointment become effective once the conditions of Section 78(2) have been met; and

That staff be authorized to execute a petition under Section 4 Chapter D.17 of the *Drainage Act R.S.O. 1990* to initiate/incorporate any new works related to municipal roads and/or property; and

That Paul Marsh P. Eng. of EWA Engineers Inc., be appointed under Section 8 Chapter D.17 of the *Drainage Act R.S.O. 1990* for the new works contemplated and any additional petitions under Section 4, related to the Wignell, Michener Port Colborne and Beaver Dam Drains, that may come forward during the Drainage Act process; and

That the Mayor and Clerk be authorized to sign the requisite Engineering Services Agreement for the preparation of new engineer(s) reports for the Wignell, Michener, Port Colborne and Beaverdam Municipal Drains.

CARRIED.

14. Notice of Motion:

Nil.

15. Adjournment:

Moved by Councillor F. Danch
Seconded by Councillor D. Elliott

That the Committee of the Whole meeting be adjourned at approximately 7:31p.m.

CARRIED.

AL/cm

WIGNELL MUNICIPAL DRAIN
W2 RELOCATION
W1 ABANDONMENT

ENGINEER'S REPORT

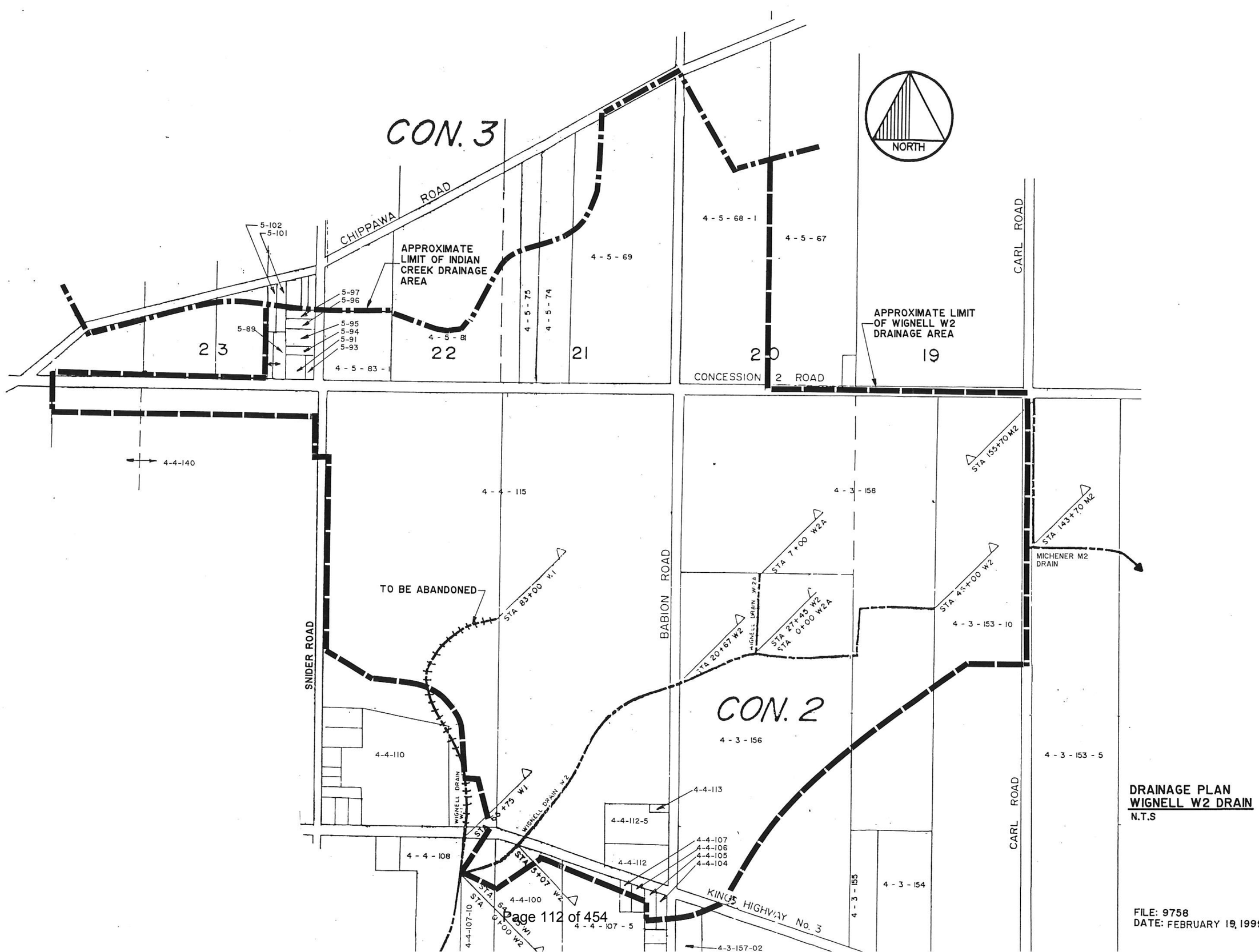
CITY OF PORT COLBORNE
Regional Municipality of Niagara

DATED: FEBRUARY 19, 1999

Copyright 1999

WIEBE ENGINEERING GROUP INC.
CONSULTING ENGINEERS & PROJECT MANAGERS

826 East Main Street
WELLAND, Ontario
L3B 3Y9
Ph. (905) 735-4522
Fax (905) 735-5355
E-mail: wiebe@vaxxine.com



DRAINAGE PLAN
WIGNELL W2 DRAIN
N.T.S

FILE: 9758
DATE: FEBRUARY 19, 1999

ENGINEERING AND OPERATIONS DEPARTMENT
ENGINEERING DIVISION

Report Number: 2013- 1 **Date: January 14, 2013**

SUBJECT: Wignell/Michener & Beaverdam Drains – Abandonments & Subsequent Connections

1. PURPOSE:

This report prepared by Henri Bennemeer, Drainage Superintendent has been authorized by Chris Lee, Manager of Projects & Design in response to a request from Port Colborne Quarries to have the Wignell 2A (W-2A) and a portion of the Wignell 2 (W-2) east of Babion Road abandoned and to have a remnant portion of the Wignell 2 watershed redirected to the Michener 2 (M2). The purpose of this report is to provide Council with background information and requisite actions.

2) HISTORY, BACKGROUND, COUNCIL POLICY, PRACTICES

Some years previous, circa 1998 the former owners of Port Colborne Quarries had requested that certain portions of the Wignell Municipal Drain system (W-1, W-2 & W-2A) be abandoned (see attached plan). An engineer's report was prepared by Wiebe Engineering Group dated February 19, 1999 dealing with an initial request to have a portion of the W-2 drain west of Babion Road, within the quarry lands, relocated as part of their rehabilitation plan, as well as the abandonment of a portion of the W-1 drain. The request to have the W-2 & W-2A drains abandoned was postponed until sometime in the future, when needed.

As Council may be aware the Wignell/Michener Municipal Drain Report has been under review for a number of years through a former appointment of Wiebe Engineering Group Inc. and more recently, combined with the Beaverdam Municipal Drain, through the appointment of AMEC Environment & Infrastructure. Throughout the review process, in discussions between AMEC and the current owner of Port Colborne Quarries (who now wish to move the abandonments forward), it was anticipated that the report, including the abandonments, would be finalized by the time quarry operations necessitated the removal of the aforementioned drains and ancillary works related to the redirection of the remnant portion of the W-2 watershed. A number of factors have affected this timing, namely the scope of the project and increased activity at the quarry that has moved the timelines forward, requiring that interim or alternate measures under the Drainage Act be taken.

3) STAFF COMMENTS AND DISCUSSIONS

Under Section 84 Chapter D.17 of the Drainage Act R.S.O. the Council of the initiating municipality may give notice on its own initiative, to the property owners affected, of its intention to abandon a drainage works or part thereof as specified in the notice, without any written request of the landowners assessed for benefit, in respect of the drainage

works. If within ten days of the mailing of the notice, no landowners receiving the notice request that an engineer's report be prepared on the proposed abandonment, then Council may by by-law abandon the drainage works or part thereof and thereafter the municipality will have no further obligation with respect to the drainage works.

In the case of the abandonment of the W-2 and W-2A east of Babion Road there are only two properties affected, that of Port Colborne Quarries, through which the drains pass and that of Mr. Paul Fehrman, who's lands drain into the W-2 at their west property line with Port Colborne Quarries. In discussions with both property owners, neither require the report of an engineer for the abandonment, provided that the drainage of the Fehrman lands can be redirected to the east into the M-2 drain.

In regard to redirecting or subsequently connecting lands to a drainage works to which the lands are not assessed, Section 65(3) & 65(5) Subsequent Connections to a Drainage Works, Chapter D.17 of the Drainage Act R.S.O. 1990, respectively provides for the clerk to instruct an engineer to inspect the subject lands and to assess it for a just proportion of the drainage works and to provide for Council authority to allow the connection. Again, similar to the abandonment, there will be no appeals as all construction costs and engineering related to the subsequent connection process are to be borne by Port Colborne Quarries. Staff is in receipt of the appropriate documentation from both parties in regard to the aforementioned requests/releases/commitments.

As a further assurance the new report by AMEC will address any oversights and or inequities that may develop as a result of this alternative measure.

4) OPTIONS AND FINANCIAL CONSIDERATIONS:

a) Do nothing.

This is an option. However, it would cause serious hardship and additional costs to Port Colborne Quarries if they were delayed until the outcome of the Engineer's Report on the Wignell/Michener Municipal Drain.

b) Other Options

None.

5) COMPLIANCE WITH STRATEGIC PLAN INITIATIVES

Municipal Drain Maintenance Strategic Planning is currently under review. This project is in compliance with all City legislative requirements.

6) ATTACHMENTS

Aerial plan of the subject area.

7) RECOMMENDATION

A. That Council receives this report as information.
B. That Council hereby authorizes the subsequent connection of the Fehrman lands identified as Roll # 2711-040-003-15310 to the Michener M-2 Municipal Drain.
C. That the City Clerk be authorized to send notice to the affected parties as defined in Section 84(2) Chapter D.17 of the Drainage Act R.S.O. 1990 and to prepare the appropriate by-law for the abandonment of those portions of the Wignell W-2 and W-2A Municipal Drains east of Babion Road, which by-law will come into effect once the conditions of Section 84(5) Chapter D.17 of the Drainage Act R.S.O. 1990 are met.

8) SIGNATURES

Prepared on January 2, 2013

Henri Bennemeer
Drainage Superintendent

Reviewed by:

Chris Lee
Manager of Projects & Design

Reviewed by:

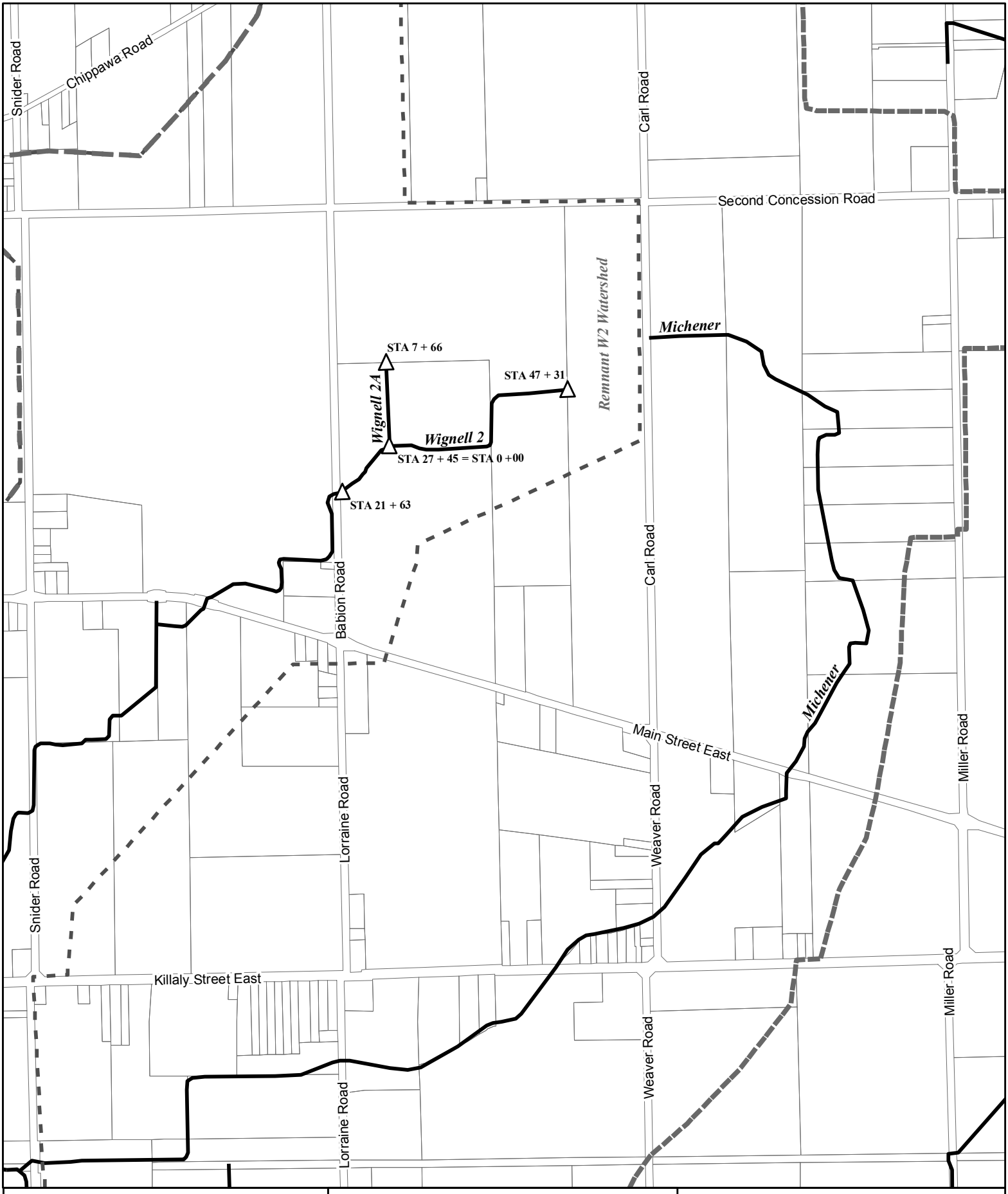
Ron Hanson, C.E.T.
Director, Engineering & Operations

Reviewed by:

Peter Senese
Director of Corporate and Community Services

Reviewed and Respectfully Submitted:

Robert J. Heil
Chief Administrative Officer



Municipal Drain

Wignell - Sub Watershed

Watershed

Wignell 2 & Wignell 2A Abandonment

N W E S

PORT COLBORNE

January 02, 2013

```
[TITLE]
Wignell Drain

[OPTIONS]
;;Options             Value
;;------------------- ------------
FLOW_UNITS           CMS
INFILTRATION         CURVE_NUMBER
FLOW_ROUTING         KINWAVE
LINK_OFFSETS         DEPTH
MIN_SLOPE            0
ALLOW_PONDING        YES
SKIP_STEADY_STATE    NO

START_DATE           11/20/2018
START_TIME           00:00:00
REPORT_START_DATE    11/20/2018
REPORT_START_TIME    00:00:00
END_DATE             11/23/2018
END_TIME             00:00:00
SWEEP_START          01/01
SWEEP_END            12/31
DRY_DAYS             0
REPORT_STEP          00:10:00
WET_STEP             00:10:00
DRY_STEP             01:00:00
ROUTING_STEP         30

INERTIAL_DAMPING     PARTIAL
NORMAL_FLOW_LIMITED  BOTH
FORCE_MAIN_EQUATION  H-W
VARIABLE_STEP        0.75
LENGTHENING_STEP     0
MIN_SURFAREA         0
MAX_TRIALS           8
HEAD_TOLERANCE       0.0015
SYS_FLOW_TOL         5
LAT_FLOW_TOL         5
MINIMUM_STEP         0.5
THREADS              4

[EVAPORATION]
;;Type          Parameters
;;------------- ----------
CONSTANT         0.0
DRY_ONLY         NO

[RAINGAGES]
;;               Rain      Time     Snow     Data
;;Name           Type      Intrvl   Catch    Source
;;-------------- --------- -------- -------- ----------
Rain Gage-01     CUMULATIVE 0:10     1.0      TIMESERIES TS-SCS24_5

[SUBCATCHMENTS]
;;                                              Total    Pcnt.             Pcnt.    Curb     S
;;Name           Raingage         Outlet          Area     Imperv   Width    Slope    Length   P
;;-------------- ---------------- --------------- -------- -------- -------- -------- -------- -
;Bower
B1               Rain Gage-01     J6              8.32     5        201      0.25     0
;Michener
M1               Rain Gage-01     J1              30.426   4.5      288      0.17     0
;Michener
M2               Rain Gage-01     J2              26.526   4.5      420      0.43     0
;Michener
```

```
M3               Rain Gage-01     J7               41.950000 4.5      411        .01       0
;Michener
M4               Rain Gage-01     J4               18.790000 4.5      469.75     .001      0
;Michener
M5               Rain Gage-01     J5               15.520000 4.5      597        .001      0
;Port Colborne
PC1              Rain Gage-01     J21              20.1163   4.5      198        0.53      0
;Port Colborne
PC10             Rain Gage-01     J18              1.98      55       40         0.4       0
;Port Colborne
PC11             Rain Gage-01     J88              3.65      45       36.5       0.4       0
;Port Colborne
PC2              Rain Gage-01     J21              41.1751   4.73     374        0.24      0
;Port Colborne
PC3-QW1          Rain Gage-01     J20              66.06     0        660        0.01      0
;Port Colborne
PC4-QE1          Rain Gage-01     J19              63.430000 0        906        0.01      0
;Port Colborne
PC5              Rain Gage-01     J17              7.7       4.5      153        0.4       0
;Port Colborne
PC6              Rain Gage-01     J14              21.44     4.5      447        0.2       0
;Port Colborne
PC7              Rain Gage-01     J15              59.555    4.5      455        0.2       0
;Port Colborne
PC8              Rain Gage-01     J16              39.25     4.5      441        0.56      0
;Port Colborne
PC9_3            Rain Gage-01     J32              8.952833  4.5      239        0.75      0
;Port Colborne
PC9_4            Rain Gage-01     J10              4.005947  85       60         0.75      0
;Wignell
W1               Rain Gage-01     J22              62.0833   4.5      511        0.77      0
;Wignell
W10              Rain Gage-01     J12              100.600000 4.5     680        .01       0
;Wignell
W11              Rain Gage-01     J8               26.230000 4.5      1380       3         0
;Wignell
W12              Rain Gage-01     J24              18.67     4.5      275        0.15      0
;Wignell
W13              Rain Gage-01     J87              28.59     4.5      342        0.36      0
;Wignell
W14              Rain Gage-01     J27              34.15     4.5      491        0.29      0
;Wignell
W2               Rain Gage-01     J23              87.36     4.5      488        0.5       0
;Wignell
W3               Rain Gage-01     J28              41.21     4.5      330        0.16      0
;Wignell
W4               Rain Gage-01     J86              42.97     4.5      511        0.6       0
;Wignell
W5               Rain Gage-01     J26              22.3      4.5      354        0.16      0
;Wignell
W6               Rain Gage-01     J25              83.88     4.5      986        0.12      0
;Wignell
W7               Rain Gage-01     J24              41.66     4.5      495        0.12      0
;Wignell
W8               Rain Gage-01     J29              6.61      4.5      220        0.33      0
;Wignell
W9               Rain Gage-01     J30              23.23     4.5      502.06     0.81      0
;Wignell
WB1              Rain Gage-01     J29              6.88      4.5      260        0.38      0
;Wignell
WB2              Rain Gage-01     J24              10.34     4.5      250        0.24      0

[SUBAREAS]
;;Subcatchment   N-Imperv   N-Perv     S-Imperv   S-Perv     PctZero    RouteTo    PctRouted
```

```
;;-------------- ---------- ---------- ---------- ---------- ---------- ---------- ----------
B1               0.015      0.1        10         5          25         OUTLET
M1               0.015      0.1        10         5          25         OUTLET
M2               0.015      0.1        10         5          25         OUTLET
M3               0.0150     0.1000     10         5.00       25         OUTLET
M4               0.0150     0.1000     10         5.00       25         OUTLET
M5               0.0150     0.1000     10         5.00       25         OUTLET
PC1              0.015      0.1        10         5          25         OUTLET
PC10             0.015      0.1        10         5          25         OUTLET
PC11             0.015      0.1        10         5          25         OUTLET
PC2              0.015      0.1        10         5          25         OUTLET
PC3-QW1          0.015      0.1        10         200        25         OUTLET
PC4-QE1          0.0150     0.1000     10         200        25         OUTLET
PC5              0.015      0.1        10         5          25         OUTLET
PC6              0.015      0.1        10         5          25         OUTLET
PC7              0.015      0.1        10         5          25         OUTLET
PC8              0.015      0.1        10         5          25         OUTLET
PC9_3            0.015      0.1        10         5          25         OUTLET
PC9_4            0.015      0.1        10         5          25         OUTLET
W1               0.015      0.1        10         5          25         OUTLET
W10              0.0150     0.1000     10         5.00       25         OUTLET
W11              0.0150     0.1000     10         5.00       25         OUTLET
W12              0.015      0.1        10         5          25         OUTLET
W13              0.015      0.1        10         5          25         OUTLET
W14              0.015      0.1        10         5          25         OUTLET
W2               0.015      0.1        10         5          25         OUTLET
W3               0.015      0.1        10         5          25         OUTLET
W4               0.015      0.1        10         5          25         OUTLET
W5               0.015      0.1        10         5          25         OUTLET
W6               0.015      0.1        10         5          25         OUTLET
W7               0.015      0.1        10         5          25         OUTLET
W8               0.015      0.1        10         5          25         OUTLET
W9               0.015      0.1        10         5          25         OUTLET
WB1              0.015      0.1        10         5          25         OUTLET
WB2              0.015      0.1        10         5          25         OUTLET

[INFILTRATION]
;;Subcatchment   CurveNum   HydCon     DryTime
;;-------------- ---------- ---------- ----------
B1               83         0.5        4
M1               73         0.5        4
M2               83         0.5        4
M3               73.00      0.5        4
M4               73.00      0.5        4
M5               73.00      0.5        4
PC1              83         0.5        4
PC10             93         0.5        4
PC11             93         0.5        4
PC2              83         0.5        4
PC3-QW1          73         0.5        4
PC4-QE1          73.00      0.5        4
PC5              83         0.5        4
PC6              83         0.5        4
PC7              83         0.5        4
PC8              83         0.5        4
PC9_3            83         0.5        4
PC9_4            95         0.5        4
W1               83         0.5        4
W10              73.00      0.5        4
W11              73.00      0.5        4
W12              83         0.5        4
W13              83         0.5        4
W14              83         0.5        4
W2               83         0.5        4
```

```
W3               83          0.5         4
W4               83          0.5         4
W5               83          0.5         4
W6               83          0.5         4
W7               83          0.5         4
W8               83          0.5         4
W9               83          0.5         4
WB1              83          0.5         4
WB2              83          0.5         4

[JUNCTIONS]
;;               Invert      Max.        Init.       Surcharge   Ponded
;;Name           Elev.       Depth       Depth       Depth       Area
;;-------------- ----------- ----------- ----------- ----------- ----------
;Michener
J1               176.34      1.87        0           0           0
J10              180.25      0.75        0           0           0
;Wignell
J11              173.85      3.5         0           0           0
;Wignell
J12              174.134     2           0           0           0
;Wignell
J13              174.345     2           0           0           0
;Wignell
J14              174.36      3.34        0           0           0
;Port Colborne
J15              175.33      2           0           0           0.00
;Port Colborne
J16              175.98      2           0           0           0.00
;Port Colborne
J17              178.43      1.74        0           0           0
;Port Colborne
J18              179.98      2.08        0           0           0
;Port Colborne
J19              181.76      2           0           0           0.00
;Michener
J2               176.377     1.2         0           0           0
;Port Colborne
J20              181.78      2           0           0           0.00
;Port Colborne
J21              182.40      2           0           0           0.00
;Wignell
J22              181.38      2           0           0           0.00
;Wignell
J23              181.36      2           0           0           0.00
;Wignell
J24              180.75      2           0           0           0.00
;Wignell
J25              178.32      2           0           0           0.00
;Wignell
J26              177.25      2           0           0           0.00
;Wignell
J27              176.5       2           0           0           0.00
;Wignell
J28              175.52      2           0           0           0.00
;Wignell
J29              175.15      2           0           0           0.00
;Michener
J3               175.26      1           0           0           0
;Wignell
J30              174.48      2           0           0           0.00
J31              177.35      2.314       0           0           0
J32              178.05      2.3         0           0           0
;Michener
```

```
J4               174.6      1.2        0          0          0
;Michener
J5               174.1      2.96       0          0          0
;Bower
J6               174.5      2          0          0          0.00
;Michener
J7               175.85     0.9        0          0          0
;Wignell
J8               174.07     3          0          0          0
;Wignell
J86              176        2          0          0          0.00
;Wignell
J87              176        2          0          0          0.00
;Wignell
J88              181.6      2.14       0          0          0
;Wignell
J9               173.888    3.512      0          0          0

[OUTFALLS]
;;               Invert     Outfall    Stage/Table      Tide
;;Name           Elev.      Type       Time Series      Gate     Route To
;;-------------- ---------- ---------- ---------------- -------- ----------------
;Wignell
J10 Outlet       173.75     FREE                        NO

[CONDUITS]
;;               Inlet            Outlet                      Manning    Inlet      Outlet     In
;;Name           Node             Node             Length     N          Offset     Offset     Fl
;;-------------- ---------------- ---------------- ---------- ---------- ---------- ---------- --
;MitchnerChannel
Link-01          J1               J7               455        0.04       0          0          0
;MitchnerChannel
Link-02          J2               J7               352        0.04       0          0          0
;MitchnerChannel
Link-04          J7               J3               533        0.04       0          0          0
;MitchnerChannel
Link-05          J3               J4               510        0.04       0          0          0
;MitchnerChannel
Link-06          J4               J5               230        0.04       0          0          0
;PortColborneChannel
Link-07          J21              J88              302        0.04       0          0          0
;PortColborneChannel
Link-08          J88              J18              500        0.04       0          0          0
;PortColborneChannel-QE1
Link-09          J19              J88              70         0.032      0          0          0
;PortColborneChannel-QW1
Link-10          J20              J18              110        0.04       0          0          0
;PortColborneChannel
Link-11          J18              J17              640        0.04       0          0          0
;PortColborneChannel
Link-12_1        J17              J31              198.542    0.04       0          0          0
;PortColborneChannel
Link-12_2        J31              J16              661.458    0.04       0          0          0
;PortColborneChannel
Link-13          J16              J15              580        0.04       0          0          0
;PortColborneChannel
Link-14          J15              J14              600        0.04       0          0          0
;WignelChannel
Link-15          J22              J23              21.42      0.04       0          0          0
;WignelChannel
Link-16          J23              J24              883.618    0.04       0          0          0
;WignelChannel
Link-17          J24              J25              1250       0.04       0          0          0
;WignelChannel
```

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Link-18          J25              J26              522.47     0.04       0          0          0
;WignelChannel
Link-19          J26              J27              313.77     0.04       0          0          0
;WignelChannel
Link-20          J27              J28              618.63     0.04       0          0          0
;WignelChannel
Link-21          J28              J29              289.09     0.04       0          0          0
;WignelChannel
Link-22          J29              J30              567        0.04       0          0          0
;WignelChannel
Link-23          J30              J14              40.77      0.04       0          0          0
;WignelChannel
Link-25          J14              J13              98.5       0.04       0          0          0
;BowerDrain
Link-26          J6               J13              25         0.04       0          0          0
;WignelChannel
Link-27          J13              J12              1364.61    0.04       0          0          0
;WignelChannel
Link-28          J12              J8               566.25     0.04       0          0          0
;WignelChannel
Link-29          J5               J8               12         0.04       0          0          0
;WignelChannel
Link-30          J8               J9               13.58      0.04       0          0          0
;WignelChannel
Link-31          J9               J11              29.42      0.04       0          0          0
;WignelChannel
Link-32          J11              J10 Outlet       231.24     0.04       0          0          0
;WignelChannel
Link-33          J87              J28              254.29     0.04       0          0          0
;WignelChannel
Link-34          J86              J29              278.16     0.04       0          0          0
PC1              J32              J31              256        0.036      0          0          0
PC2              J10              J32              680        0.036      0          0          0

[XSECTIONS]
;;Link           Shape        Geom1           Geom2      Geom3      Geom4      Barrels
;;-------------- ------------ --------------- ---------- ---------- ---------- ----------
Link-01          TRAPEZOIDAL  0.9             0.6        1.5        1.5        1
Link-02          TRAPEZOIDAL  2.000           0.600      1.5        1.5        1
Link-04          TRAPEZOIDAL  1               1          1.5        1.5        1
Link-05          TRAPEZOIDAL  1.2             1          1.5        1.5        1
Link-06          TRAPEZOIDAL  1               0.6        1.5        1.5        1
Link-07          TRAPEZOIDAL  2.000           0.600      1.5        1.5        1
Link-08          TRAPEZOIDAL  2.000           0.600      1.5        1.5        1
Link-09          TRAPEZOIDAL  2.000           0.600      1.5        1.5        1
Link-10          TRAPEZOIDAL  2.000           0.600      1.5        1.5        1
Link-11          TRAPEZOIDAL  2.000           0.600      1.5        1.5        1
Link-12_1        TRAPEZOIDAL  2               0.6        2          2          1
Link-12_2        TRAPEZOIDAL  2               0.6        2          2          1
Link-13          TRAPEZOIDAL  2.000           0.600      1.5        1.5        1
Link-14          TRAPEZOIDAL  2               0.6        1.5        1.5        1
Link-15          TRAPEZOIDAL  2.0000000000    0.600      1.5        1.5        1
Link-16          TRAPEZOIDAL  2               0.6        1.5        1.5        1
Link-17          TRAPEZOIDAL  2.0000000000    0.600      1.5        1.5        1
Link-18          TRAPEZOIDAL  2.0000000000    0.600      1.5        1.5        1
Link-19          TRAPEZOIDAL  2.0000000000    0.600      1.5        1.5        1
Link-20          TRAPEZOIDAL  2.0000000000    0.600      1.5        1.5        1
Link-21          TRAPEZOIDAL  2.0000000000    1.000      1.5        1.5        1
Link-22          TRAPEZOIDAL  2               1.65       2          2          1
Link-23          RECT_OPEN    2.57            3.13       0          0          1
Link-25          TRAPEZOIDAL  2.5             5          1.5        1.5        1
Link-26          TRAPEZOIDAL  2.0000000000    0.600      1.5        1.5        1
Link-27          TRAPEZOIDAL  2               15         1.5        1.5        1
Link-28          TRAPEZOIDAL  2               15         1.5        1.5        1
```

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Link-29          TRAPEZOIDAL  1               1.6        1.5        1.5        1
Link-30          RECT_OPEN    2.73            5.2        0          0          1
Link-31          TRAPEZOIDAL  3.5             5          1.5        1.5        1
Link-32          TRAPEZOIDAL  2.000           5.000      1.5        1.5        1
Link-33          TRAPEZOIDAL  2.0000000000    0.600      1.5        1.5        1
Link-34          TRAPEZOIDAL  2.0000000000    0.600      1.5        1.5        1
PC1              TRAPEZOIDAL  1.2             0.8        1.5        1.5        1
PC2              TRAPEZOIDAL  1.5             0.6        1.5        1.5        1

[LOSSES]
;;Link           Inlet      Outlet     Average    Flap Gate  SeepageRate
;;-------------- ---------- ---------- ---------- ---------- ----------

[INFLOWS]
;;                                                Param    Units    Scale    Baseline Baseline
;;Node           Parameter        Time Series      Type     Factor   Factor   Value    Pattern
;;-------------- ---------------- ---------------- -------- -------- -------- -------- --------
J19              FLOW             ""               FLOW     1.0      1.0      .118     Sanitary T
J20              FLOW             ""               FLOW     1.0      1.0      .057     Sanitary T

[TIMESERIES]
;;Name           Date       Time       Value
;;-------------- ---------- ---------- ----------
;10-year cumulative storm with a total rainfall amount of 81.50 mm using a SCS Type II 24-hr stor
TS-SCS24_10                 0:00       0.00000
TS-SCS24_10                 0:10       0.13697
TS-SCS24_10                 0:20       0.27620
TS-SCS24_10                 0:30       0.41769
TS-SCS24_10                 0:40       0.56145
TS-SCS24_10                 0:50       0.70747
TS-SCS24_10                 1:00       0.85575
TS-SCS24_10                 1:10       1.00631
TS-SCS24_10                 1:20       1.15912
TS-SCS24_10                 1:30       1.31419
TS-SCS24_10                 1:40       1.47154
TS-SCS24_10                 1:50       1.63114
TS-SCS24_10                 2:00       1.79300
TS-SCS24_10                 2:10       1.95714
TS-SCS24_10                 2:20       2.12354
TS-SCS24_10                 2:30       2.29219
TS-SCS24_10                 2:40       2.46312
TS-SCS24_10                 2:50       2.63631
TS-SCS24_10                 3:00       2.81175
TS-SCS24_10                 3:10       2.98947
TS-SCS24_10                 3:20       3.16945
TS-SCS24_10                 3:30       3.35169
TS-SCS24_10                 3:40       3.53620
TS-SCS24_10                 3:50       3.72297
TS-SCS24_10                 4:00       3.91200
TS-SCS24_10                 4:10       4.10450
TS-SCS24_10                 4:20       4.30146
TS-SCS24_10                 4:30       4.50288
TS-SCS24_10                 4:40       4.70896
TS-SCS24_10                 4:50       4.91950
TS-SCS24_10                 5:00       5.13450
TS-SCS24_10                 5:10       5.35412
TS-SCS24_10                 5:20       5.57829
TS-SCS24_10                 5:30       5.80688
TS-SCS24_10                 5:40       6.04007
TS-SCS24_10                 5:50       6.27784
TS-SCS24_10                 6:00       6.52000
TS-SCS24_10                 6:10       6.76684
TS-SCS24_10                 6:20       7.01807
TS-SCS24_10                 6:30       7.27388
```

TS-SCS24_10	6:40	7.53424
TS-SCS24_10	6:50	7.79912
TS-SCS24_10	7:00	8.06850
TS-SCS24_10	7:10	8.34250
TS-SCS24_10	7:20	8.62096
TS-SCS24_10	7:30	8.90387
TS-SCS24_10	7:40	9.19146
TS-SCS24_10	7:50	9.48350
TS-SCS24_10	8:00	9.78000
TS-SCS24_10	8:10	10.09035
TS-SCS24_10	8:20	10.42314
TS-SCS24_10	8:30	10.77838
TS-SCS24_10	8:40	11.15664
TS-SCS24_10	8:50	11.55735
TS-SCS24_10	9:00	11.98050
TS-SCS24_10	9:10	12.41517
TS-SCS24_10	9:20	12.84983
TS-SCS24_10	9:30	13.28450
TS-SCS24_10	9:40	13.73764
TS-SCS24_10	9:50	14.22664
TS-SCS24_10	10:00	14.75150
TS-SCS24_10	10:10	15.32254
TS-SCS24_10	10:20	15.94738
TS-SCS24_10	10:30	16.62600
TS-SCS24_10	10:40	17.37852
TS-SCS24_10	10:50	18.22068
TS-SCS24_10	11:00	19.15250
TS-SCS24_10	11:10	20.24134
TS-SCS24_10	11:20	21.54534
TS-SCS24_10	11:30	23.06450
TS-SCS24_10	11:40	27.42855
TS-SCS24_10	11:50	38.38593
TS-SCS24_10	12:00	54.03450
TS-SCS24_10	12:10	56.50151
TS-SCS24_10	12:20	58.45751
TS-SCS24_10	12:30	59.90250
TS-SCS24_10	12:40	61.02421
TS-SCS24_10	12:50	62.02938
TS-SCS24_10	13:00	62.91800
TS-SCS24_10	13:10	63.71426
TS-SCS24_10	13:20	64.44776
TS-SCS24_10	13:30	65.11850
TS-SCS24_10	13:40	65.73383
TS-SCS24_10	13:50	66.30433
TS-SCS24_10	14:00	66.83000
TS-SCS24_10	14:10	67.32449
TS-SCS24_10	14:20	67.80330
TS-SCS24_10	14:30	68.26644
TS-SCS24_10	14:40	68.71338
TS-SCS24_10	14:50	69.14465
TS-SCS24_10	15:00	69.56025
TS-SCS24_10	15:10	69.95965
TS-SCS24_10	15:20	70.34338
TS-SCS24_10	15:30	70.71144
TS-SCS24_10	15:40	71.06330
TS-SCS24_10	15:50	71.39949
TS-SCS24_10	16:00	71.72000
TS-SCS24_10	16:10	72.02954
TS-SCS24_10	16:20	72.33345
TS-SCS24_10	16:30	72.63182
TS-SCS24_10	16:40	72.92433
TS-SCS24_10	16:50	73.21129
TS-SCS24_10	17:00	73.49263
TS-SCS24_10	17:10	73.76820

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TS-SCS24_10                17:20      74.03816
TS-SCS24_10                17:30      74.30249
TS-SCS24_10                17:40      74.56114
TS-SCS24_10                17:50      74.81412
TS-SCS24_10                18:00      75.06150
TS-SCS24_10                18:10      75.30312
TS-SCS24_10                18:20      75.53914
TS-SCS24_10                18:30      75.76957
TS-SCS24_10                18:40      75.99416
TS-SCS24_10                18:50      76.21320
TS-SCS24_10                19:00      76.42663
TS-SCS24_10                19:10      76.63429
TS-SCS24_10                19:20      76.83635
TS-SCS24_10                19:30      77.03274
TS-SCS24_10                19:40      77.22345
TS-SCS24_10                19:50      77.40854
TS-SCS24_10                20:00      77.58800
TS-SCS24_10                20:10      77.76399
TS-SCS24_10                20:20      77.93886
TS-SCS24_10                20:30      78.11262
TS-SCS24_10                20:40      78.28523
TS-SCS24_10                20:50      78.45674
TS-SCS24_10                21:00      78.62713
TS-SCS24_10                21:10      78.79632
TS-SCS24_10                21:20      78.96440
TS-SCS24_10                21:30      79.13145
TS-SCS24_10                21:40      79.29722
TS-SCS24_10                21:50      79.46190
TS-SCS24_10                22:00      79.62550
TS-SCS24_10                22:10      79.78790
TS-SCS24_10                22:20      79.94919
TS-SCS24_10                22:30      80.10937
TS-SCS24_10                22:40      80.26840
TS-SCS24_10                22:50      80.42632
TS-SCS24_10                23:00      80.58313
TS-SCS24_10                23:10      80.73874
TS-SCS24_10                23:20      80.89323
TS-SCS24_10                23:30      81.04662
TS-SCS24_10                23:40      81.19886
TS-SCS24_10                23:50      81.34999
TS-SCS24_10                24:00      81.50000

;100-year cumulative storm with a total rainfall amount of 121.1 mm using a SCS Type II 24-hr sto
TS-SCS24_100               0:00       0.00000
TS-SCS24_100               0:10       0.20353
TS-SCS24_100               0:20       0.41041
TS-SCS24_100               0:30       0.62064
TS-SCS24_100               0:40       0.83426
TS-SCS24_100               0:50       1.05123
TS-SCS24_100               1:00       1.27155
TS-SCS24_100               1:10       1.49526
TS-SCS24_100               1:20       1.72232
TS-SCS24_100               1:30       1.95274
TS-SCS24_100               1:40       2.18654
TS-SCS24_100               1:50       2.42370
TS-SCS24_100               2:00       2.66420
TS-SCS24_100               2:10       2.90810
TS-SCS24_100               2:20       3.15534
TS-SCS24_100               2:30       3.40594
TS-SCS24_100               2:40       3.65992
TS-SCS24_100               2:50       3.91726
TS-SCS24_100               3:00       4.17795
TS-SCS24_100               3:10       4.44203
TS-SCS24_100               3:20       4.70946
```

TS-SCS24_100	3:30	4.98024
TS-SCS24_100	3:40	5.25441
TS-SCS24_100	3:50	5.53193
TS-SCS24_100	4:00	5.81280
TS-SCS24_100	4:10	6.09884
TS-SCS24_100	4:20	6.39150
TS-SCS24_100	4:30	6.69078
TS-SCS24_100	4:40	6.99700
TS-SCS24_100	4:50	7.30984
TS-SCS24_100	5:00	7.62930
TS-SCS24_100	5:10	7.95562
TS-SCS24_100	5:20	8.28873
TS-SCS24_100	5:30	8.62838
TS-SCS24_100	5:40	8.97488
TS-SCS24_100	5:50	9.32817
TS-SCS24_100	6:00	9.68800
TS-SCS24_100	6:10	10.05477
TS-SCS24_100	6:20	10.42808
TS-SCS24_100	6:30	10.80818
TS-SCS24_100	6:40	11.19505
TS-SCS24_100	6:50	11.58862
TS-SCS24_100	7:00	11.98890
TS-SCS24_100	7:10	12.39604
TS-SCS24_100	7:20	12.80980
TS-SCS24_100	7:30	13.23018
TS-SCS24_100	7:40	13.65750
TS-SCS24_100	7:50	14.09144
TS-SCS24_100	8:00	14.53200
TS-SCS24_100	8:10	14.99315
TS-SCS24_100	8:20	15.48764
TS-SCS24_100	8:30	16.01548
TS-SCS24_100	8:40	16.57754
TS-SCS24_100	8:50	17.17295
TS-SCS24_100	9:00	17.80170
TS-SCS24_100	9:10	18.44757
TS-SCS24_100	9:20	19.09343
TS-SCS24_100	9:30	19.73930
TS-SCS24_100	9:40	20.41262
TS-SCS24_100	9:50	21.13922
TS-SCS24_100	10:00	21.91910
TS-SCS24_100	10:10	22.76761
TS-SCS24_100	10:20	23.69604
TS-SCS24_100	10:30	24.70440
TS-SCS24_100	10:40	25.82256
TS-SCS24_100	10:50	27.07392
TS-SCS24_100	11:00	28.45850
TS-SCS24_100	11:10	30.07640
TS-SCS24_100	11:20	32.01400
TS-SCS24_100	11:30	34.27130
TS-SCS24_100	11:40	40.75580
TS-SCS24_100	11:50	57.03725
TS-SCS24_100	12:00	80.28930
TS-SCS24_100	12:10	83.95500
TS-SCS24_100	12:20	86.86140
TS-SCS24_100	12:30	89.00850
TS-SCS24_100	12:40	90.67524
TS-SCS24_100	12:50	92.16881
TS-SCS24_100	13:00	93.48920
TS-SCS24_100	13:10	94.67235
TS-SCS24_100	13:20	95.76225
TS-SCS24_100	13:30	96.75890
TS-SCS24_100	13:40	97.67321
TS-SCS24_100	13:50	98.52091
TS-SCS24_100	14:00	99.30200

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TS-SCS24_100                14:10       100.03675
TS-SCS24_100                14:20       100.74822
TS-SCS24_100                14:30       101.43639
TS-SCS24_100                14:40       102.10050
TS-SCS24_100                14:50       102.74132
TS-SCS24_100                15:00       103.35885
TS-SCS24_100                15:10       103.95232
TS-SCS24_100                15:20       104.52250
TS-SCS24_100                15:30       105.06939
TS-SCS24_100                15:40       105.59222
TS-SCS24_100                15:50       106.09175
TS-SCS24_100                16:00       106.56800
TS-SCS24_100                16:10       107.02794
TS-SCS24_100                16:20       107.47952
TS-SCS24_100                16:30       107.92287
TS-SCS24_100                16:40       108.35749
TS-SCS24_100                16:50       108.78389
TS-SCS24_100                17:00       109.20193
TS-SCS24_100                17:10       109.61140
TS-SCS24_100                17:20       110.01253
TS-SCS24_100                17:30       110.40530
TS-SCS24_100                17:40       110.78963
TS-SCS24_100                17:50       111.16552
TS-SCS24_100                18:00       111.53310
TS-SCS24_100                18:10       111.89212
TS-SCS24_100                18:20       112.24283
TS-SCS24_100                18:30       112.58522
TS-SCS24_100                18:40       112.91893
TS-SCS24_100                18:50       113.24440
TS-SCS24_100                19:00       113.56153
TS-SCS24_100                19:10       113.87009
TS-SCS24_100                19:20       114.17034
TS-SCS24_100                19:30       114.46215
TS-SCS24_100                19:40       114.74552
TS-SCS24_100                19:50       115.02054
TS-SCS24_100                20:00       115.28720
TS-SCS24_100                20:10       115.54870
TS-SCS24_100                20:20       115.80854
TS-SCS24_100                20:30       116.06672
TS-SCS24_100                20:40       116.32321
TS-SCS24_100                20:50       116.57805
TS-SCS24_100                21:00       116.83123
TS-SCS24_100                21:10       117.08263
TS-SCS24_100                21:20       117.33238
TS-SCS24_100                21:30       117.58059
TS-SCS24_100                21:40       117.82691
TS-SCS24_100                21:50       118.07161
TS-SCS24_100                22:00       118.31470
TS-SCS24_100                22:10       118.55601
TS-SCS24_100                22:20       118.79567
TS-SCS24_100                22:30       119.03367
TS-SCS24_100                22:40       119.26998
TS-SCS24_100                22:50       119.50463
TS-SCS24_100                23:00       119.73763
TS-SCS24_100                23:10       119.96885
TS-SCS24_100                23:20       120.19841
TS-SCS24_100                23:30       120.42632
TS-SCS24_100                23:40       120.65254
TS-SCS24_100                23:50       120.87710
TS-SCS24_100                24:00       121.10000

;2-year cumulative storm with a total rainfall amount of 49.8 mm using a SCS Type II 24-hr storm
TS-SCS24_2                  0:00        0.00000
TS-SCS24_2                  0:10        0.08370
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TS-SCS24_2	0:20	0.16877
TS-SCS24_2	0:30	0.25523
TS-SCS24_2	0:40	0.34307
TS-SCS24_2	0:50	0.43230
TS-SCS24_2	1:00	0.52290
TS-SCS24_2	1:10	0.61490
TS-SCS24_2	1:20	0.70827
TS-SCS24_2	1:30	0.80303
TS-SCS24_2	1:40	0.89917
TS-SCS24_2	1:50	0.99670
TS-SCS24_2	2:00	1.09560
TS-SCS24_2	2:10	1.19590
TS-SCS24_2	2:20	1.29757
TS-SCS24_2	2:30	1.40063
TS-SCS24_2	2:40	1.50507
TS-SCS24_2	2:50	1.61090
TS-SCS24_2	3:00	1.71810
TS-SCS24_2	3:10	1.82670
TS-SCS24_2	3:20	1.93667
TS-SCS24_2	3:30	2.04803
TS-SCS24_2	3:40	2.16077
TS-SCS24_2	3:50	2.27490
TS-SCS24_2	4:00	2.39040
TS-SCS24_2	4:10	2.50803
TS-SCS24_2	4:20	2.62838
TS-SCS24_2	4:30	2.75145
TS-SCS24_2	4:40	2.87738
TS-SCS24_2	4:50	3.00603
TS-SCS24_2	5:00	3.13740
TS-SCS24_2	5:10	3.27159
TS-SCS24_2	5:20	3.40858
TS-SCS24_2	5:30	3.54825
TS-SCS24_2	5:40	3.69074
TS-SCS24_2	5:50	3.83603
TS-SCS24_2	6:00	3.98400
TS-SCS24_2	6:10	4.13483
TS-SCS24_2	6:20	4.28834
TS-SCS24_2	6:30	4.44465
TS-SCS24_2	6:40	4.60374
TS-SCS24_2	6:50	4.76559
TS-SCS24_2	7:00	4.93020
TS-SCS24_2	7:10	5.09763
TS-SCS24_2	7:20	5.26778
TS-SCS24_2	7:30	5.44065
TS-SCS24_2	7:40	5.61638
TS-SCS24_2	7:50	5.79483
TS-SCS24_2	8:00	5.97600
TS-SCS24_2	8:10	6.16564
TS-SCS24_2	8:20	6.36899
TS-SCS24_2	8:30	6.58605
TS-SCS24_2	8:40	6.81719
TS-SCS24_2	8:50	7.06204
TS-SCS24_2	9:00	7.32060
TS-SCS24_2	9:10	7.58620
TS-SCS24_2	9:20	7.85180
TS-SCS24_2	9:30	8.11740
TS-SCS24_2	9:40	8.39429
TS-SCS24_2	9:50	8.69309
TS-SCS24_2	10:00	9.01380
TS-SCS24_2	10:10	9.36273
TS-SCS24_2	10:20	9.74453
TS-SCS24_2	10:30	10.15920
TS-SCS24_2	10:40	10.61902
TS-SCS24_2	10:50	11.13362

TS-SCS24_2	11:00	11.70300
TS-SCS24_2	11:10	12.36833
TS-SCS24_2	11:20	13.16513
TS-SCS24_2	11:30	14.09340
TS-SCS24_2	11:40	16.76002
TS-SCS24_2	11:50	23.45545
TS-SCS24_2	12:00	33.01740
TS-SCS24_2	12:10	34.52485
TS-SCS24_2	12:20	35.72005
TS-SCS24_2	12:30	36.60300
TS-SCS24_2	12:40	37.28841
TS-SCS24_2	12:50	37.90261
TS-SCS24_2	13:00	38.44560
TS-SCS24_2	13:10	38.93215
TS-SCS24_2	13:20	39.38035
TS-SCS24_2	13:30	39.79020
TS-SCS24_2	13:40	40.16619
TS-SCS24_2	13:50	40.51479
TS-SCS24_2	14:00	40.83600
TS-SCS24_2	14:10	41.13815
TS-SCS24_2	14:20	41.43073
TS-SCS24_2	14:30	41.71372
TS-SCS24_2	14:40	41.98683
TS-SCS24_2	14:50	42.25035
TS-SCS24_2	15:00	42.50430
TS-SCS24_2	15:10	42.74835
TS-SCS24_2	15:20	42.98283
TS-SCS24_2	15:30	43.20772
TS-SCS24_2	15:40	43.42273
TS-SCS24_2	15:50	43.62815
TS-SCS24_2	16:00	43.82400
TS-SCS24_2	16:10	44.01314
TS-SCS24_2	16:20	44.19884
TS-SCS24_2	16:30	44.38116
TS-SCS24_2	16:40	44.55989
TS-SCS24_2	16:50	44.73524
TS-SCS24_2	17:00	44.90715
TS-SCS24_2	17:10	45.07554
TS-SCS24_2	17:20	45.24049
TS-SCS24_2	17:30	45.40201
TS-SCS24_2	17:40	45.56006
TS-SCS24_2	17:50	45.71464
TS-SCS24_2	18:00	45.86580
TS-SCS24_2	18:10	46.01344
TS-SCS24_2	18:20	46.15766
TS-SCS24_2	18:30	46.29846
TS-SCS24_2	18:40	46.43569
TS-SCS24_2	18:50	46.56954
TS-SCS24_2	19:00	46.69995
TS-SCS24_2	19:10	46.82684
TS-SCS24_2	19:20	46.95031
TS-SCS24_2	19:30	47.07031
TS-SCS24_2	19:40	47.18684
TS-SCS24_2	19:50	47.29994
TS-SCS24_2	20:00	47.40960
TS-SCS24_2	20:10	47.51713
TS-SCS24_2	20:20	47.62399
TS-SCS24_2	20:30	47.73016
TS-SCS24_2	20:40	47.83564
TS-SCS24_2	20:50	47.94043
TS-SCS24_2	21:00	48.04455
TS-SCS24_2	21:10	48.14793
TS-SCS24_2	21:20	48.25064
TS-SCS24_2	21:30	48.35271

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TS-SCS24_2                  21:40      48.45401
TS-SCS24_2                  21:50      48.55463
TS-SCS24_2                  22:00      48.65460
TS-SCS24_2                  22:10      48.75383
TS-SCS24_2                  22:20      48.85239
TS-SCS24_2                  22:30      48.95026
TS-SCS24_2                  22:40      49.04744
TS-SCS24_2                  22:50      49.14393
TS-SCS24_2                  23:00      49.23975
TS-SCS24_2                  23:10      49.33483
TS-SCS24_2                  23:20      49.42924
TS-SCS24_2                  23:30      49.52296
TS-SCS24_2                  23:40      49.61599
TS-SCS24_2                  23:50      49.70833
TS-SCS24_2                  24:00      49.80000

;25-year cumulative storm with a total rainfall amount of 97.5 mm using a SCS Type II 24-hr storm
TS-SCS24_25                 0:00       0.00000
TS-SCS24_25                 0:10       0.16387
TS-SCS24_25                 0:20       0.33043
TS-SCS24_25                 0:30       0.49969
TS-SCS24_25                 0:40       0.67168
TS-SCS24_25                 0:50       0.84636
TS-SCS24_25                 1:00       1.02375
TS-SCS24_25                 1:10       1.20387
TS-SCS24_25                 1:20       1.38668
TS-SCS24_25                 1:30       1.57219
TS-SCS24_25                 1:40       1.76043
TS-SCS24_25                 1:50       1.95137
TS-SCS24_25                 2:00       2.14500
TS-SCS24_25                 2:10       2.34137
TS-SCS24_25                 2:20       2.54043
TS-SCS24_25                 2:30       2.74219
TS-SCS24_25                 2:40       2.94668
TS-SCS24_25                 2:50       3.15387
TS-SCS24_25                 3:00       3.36375
TS-SCS24_25                 3:10       3.57637
TS-SCS24_25                 3:20       3.79168
TS-SCS24_25                 3:30       4.00969
TS-SCS24_25                 3:40       4.23043
TS-SCS24_25                 3:50       4.45387
TS-SCS24_25                 4:00       4.68000
TS-SCS24_25                 4:10       4.91029
TS-SCS24_25                 4:20       5.14592
TS-SCS24_25                 4:30       5.38688
TS-SCS24_25                 4:40       5.63342
TS-SCS24_25                 4:50       5.88530
TS-SCS24_25                 5:00       6.14250
TS-SCS24_25                 5:10       6.40523
TS-SCS24_25                 5:20       6.67342
TS-SCS24_25                 5:30       6.94688
TS-SCS24_25                 5:40       7.22586
TS-SCS24_25                 5:50       7.51029
TS-SCS24_25                 6:00       7.80000
TS-SCS24_25                 6:10       8.09530
TS-SCS24_25                 6:20       8.39585
TS-SCS24_25                 6:30       8.70188
TS-SCS24_25                 6:40       9.01335
TS-SCS24_25                 6:50       9.33023
TS-SCS24_25                 7:00       9.65250
TS-SCS24_25                 7:10       9.98030
TS-SCS24_25                 7:20       10.31342
TS-SCS24_25                 7:30       10.65188
TS-SCS24_25                 7:40       10.99592
```

TS-SCS24_25	7:50	11.34530
TS-SCS24_25	8:00	11.70000
TS-SCS24_25	8:10	12.07128
TS-SCS24_25	8:20	12.46941
TS-SCS24_25	8:30	12.89438
TS-SCS24_25	8:40	13.34691
TS-SCS24_25	8:50	13.82628
TS-SCS24_25	9:00	14.33250
TS-SCS24_25	9:10	14.85250
TS-SCS24_25	9:20	15.37250
TS-SCS24_25	9:30	15.89250
TS-SCS24_25	9:40	16.43460
TS-SCS24_25	9:50	17.01960
TS-SCS24_25	10:00	17.64750
TS-SCS24_25	10:10	18.33065
TS-SCS24_25	10:20	19.07815
TS-SCS24_25	10:30	19.89000
TS-SCS24_25	10:40	20.79025
TS-SCS24_25	10:50	21.79775
TS-SCS24_25	11:00	22.91250
TS-SCS24_25	11:10	24.21510
TS-SCS24_25	11:20	25.77510
TS-SCS24_25	11:30	27.59250
TS-SCS24_25	11:40	32.81330
TS-SCS24_25	11:50	45.92182
TS-SCS24_25	12:00	64.64250
TS-SCS24_25	12:10	67.59383
TS-SCS24_25	12:20	69.93383
TS-SCS24_25	12:30	71.66250
TS-SCS24_25	12:40	73.00443
TS-SCS24_25	12:50	74.20693
TS-SCS24_25	13:00	75.27000
TS-SCS24_25	13:10	76.22257
TS-SCS24_25	13:20	77.10008
TS-SCS24_25	13:30	77.90250
TS-SCS24_25	13:40	78.63863
TS-SCS24_25	13:50	79.32113
TS-SCS24_25	14:00	79.95000
TS-SCS24_25	14:10	80.54157
TS-SCS24_25	14:20	81.11438
TS-SCS24_25	14:30	81.66844
TS-SCS24_25	14:40	82.20313
TS-SCS24_25	14:50	82.71907
TS-SCS24_25	15:00	83.21625
TS-SCS24_25	15:10	83.69407
TS-SCS24_25	15:20	84.15313
TS-SCS24_25	15:30	84.59344
TS-SCS24_25	15:40	85.01438
TS-SCS24_25	15:50	85.41656
TS-SCS24_25	16:00	85.80000
TS-SCS24_25	16:10	86.17031
TS-SCS24_25	16:20	86.53388
TS-SCS24_25	16:30	86.89083
TS-SCS24_25	16:40	87.24076
TS-SCS24_25	16:50	87.58406
TS-SCS24_25	17:00	87.92063
TS-SCS24_25	17:10	88.25031
TS-SCS24_25	17:20	88.57326
TS-SCS24_25	17:30	88.88948
TS-SCS24_25	17:40	89.19892
TS-SCS24_25	17:50	89.50156
TS-SCS24_25	18:00	89.79750
TS-SCS24_25	18:10	90.08656
TS-SCS24_25	18:20	90.36892

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TS-SCS24_25                 18:30      90.64458
TS-SCS24_25                 18:40      90.91326
TS-SCS24_25                 18:50      91.17531
TS-SCS24_25                 19:00      91.43062
TS-SCS24_25                 19:10      91.67905
TS-SCS24_25                 19:20      91.92079
TS-SCS24_25                 19:30      92.15573
TS-SCS24_25                 19:40      92.38388
TS-SCS24_25                 19:50      92.60531
TS-SCS24_25                 20:00      92.82000
TS-SCS24_25                 20:10      93.03054
TS-SCS24_25                 20:20      93.23974
TS-SCS24_25                 20:30      93.44761
TS-SCS24_25                 20:40      93.65411
TS-SCS24_25                 20:50      93.85929
TS-SCS24_25                 21:00      94.06313
TS-SCS24_25                 21:10      94.26554
TS-SCS24_25                 21:20      94.46661
TS-SCS24_25                 21:30      94.66646
TS-SCS24_25                 21:40      94.86477
TS-SCS24_25                 21:50      95.06179
TS-SCS24_25                 22:00      95.25750
TS-SCS24_25                 22:10      95.45179
TS-SCS24_25                 22:20      95.64474
TS-SCS24_25                 22:30      95.83636
TS-SCS24_25                 22:40      96.02661
TS-SCS24_25                 22:50      96.21554
TS-SCS24_25                 23:00      96.40313
TS-SCS24_25                 23:10      96.58929
TS-SCS24_25                 23:20      96.77411
TS-SCS24_25                 23:30      96.95761
TS-SCS24_25                 23:40      97.13974
TS-SCS24_25                 23:50      97.32053
TS-SCS24_25                 24:00      97.50000

;5-year cumulative storm with a total rainfall amount of 68.90 mm using a SCS Type II 24-hr storm
TS-SCS24_5                  0:00       0.00000
TS-SCS24_5                  0:10       0.11580
TS-SCS24_5                  0:20       0.23350
TS-SCS24_5                  0:30       0.35311
TS-SCS24_5                  0:40       0.47465
TS-SCS24_5                  0:50       0.59810
TS-SCS24_5                  1:00       0.72345
TS-SCS24_5                  1:10       0.85073
TS-SCS24_5                  1:20       0.97992
TS-SCS24_5                  1:30       1.11101
TS-SCS24_5                  1:40       1.24404
TS-SCS24_5                  1:50       1.37896
TS-SCS24_5                  2:00       1.51580
TS-SCS24_5                  2:10       1.65456
TS-SCS24_5                  2:20       1.79524
TS-SCS24_5                  2:30       1.93781
TS-SCS24_5                  2:40       2.08232
TS-SCS24_5                  2:50       2.22873
TS-SCS24_5                  3:00       2.37705
TS-SCS24_5                  3:10       2.52730
TS-SCS24_5                  3:20       2.67945
TS-SCS24_5                  3:30       2.83351
TS-SCS24_5                  3:40       2.98950
TS-SCS24_5                  3:50       3.14740
TS-SCS24_5                  4:00       3.30720
TS-SCS24_5                  4:10       3.46994
TS-SCS24_5                  4:20       3.63645
TS-SCS24_5                  4:30       3.80673
```

TS-SCS24_5	4:40	3.98095
TS-SCS24_5	4:50	4.15894
TS-SCS24_5	5:00	4.34070
TS-SCS24_5	5:10	4.52636
TS-SCS24_5	5:20	4.71588
TS-SCS24_5	5:30	4.90912
TS-SCS24_5	5:40	5.10627
TS-SCS24_5	5:50	5.30728
TS-SCS24_5	6:00	5.51200
TS-SCS24_5	6:10	5.72068
TS-SCS24_5	6:20	5.93307
TS-SCS24_5	6:30	6.14933
TS-SCS24_5	6:40	6.36944
TS-SCS24_5	6:50	6.59336
TS-SCS24_5	7:00	6.82110
TS-SCS24_5	7:10	7.05274
TS-SCS24_5	7:20	7.28815
TS-SCS24_5	7:30	7.52733
TS-SCS24_5	7:40	7.77045
TS-SCS24_5	7:50	8.01734
TS-SCS24_5	8:00	8.26800
TS-SCS24_5	8:10	8.53037
TS-SCS24_5	8:20	8.81171
TS-SCS24_5	8:30	9.11203
TS-SCS24_5	8:40	9.43181
TS-SCS24_5	8:50	9.77057
TS-SCS24_5	9:00	10.12830
TS-SCS24_5	9:10	10.49577
TS-SCS24_5	9:20	10.86323
TS-SCS24_5	9:30	11.23070
TS-SCS24_5	9:40	11.61378
TS-SCS24_5	9:50	12.02718
TS-SCS24_5	10:00	12.47090
TS-SCS24_5	10:10	12.95366
TS-SCS24_5	10:20	13.48189
TS-SCS24_5	10:30	14.05560
TS-SCS24_5	10:40	14.69178
TS-SCS24_5	10:50	15.40374
TS-SCS24_5	11:00	16.19150
TS-SCS24_5	11:10	17.11200
TS-SCS24_5	11:20	18.21440
TS-SCS24_5	11:30	19.49870
TS-SCS24_5	11:40	23.18807
TS-SCS24_5	11:50	32.45142
TS-SCS24_5	12:00	45.68070
TS-SCS24_5	12:10	47.76630
TS-SCS24_5	12:20	49.41990
TS-SCS24_5	12:30	50.64150
TS-SCS24_5	12:40	51.58979
TS-SCS24_5	12:50	52.43956
TS-SCS24_5	13:00	53.19080
TS-SCS24_5	13:10	53.86395
TS-SCS24_5	13:20	54.48405
TS-SCS24_5	13:30	55.05110
TS-SCS24_5	13:40	55.57130
TS-SCS24_5	13:50	56.05360
TS-SCS24_5	14:00	56.49800
TS-SCS24_5	14:10	56.91604
TS-SCS24_5	14:20	57.32083
TS-SCS24_5	14:30	57.71236
TS-SCS24_5	14:40	58.09021
TS-SCS24_5	14:50	58.45481
TS-SCS24_5	15:00	58.80615
TS-SCS24_5	15:10	59.14381

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TS-SCS24_5                  15:20      59.46821
TS-SCS24_5                  15:30      59.77936
TS-SCS24_5                  15:40      60.07683
TS-SCS24_5                  15:50      60.36104
TS-SCS24_5                  16:00      60.63200
TS-SCS24_5                  16:10      60.89368
TS-SCS24_5                  16:20      61.15061
TS-SCS24_5                  16:30      61.40285
TS-SCS24_5                  16:40      61.65014
TS-SCS24_5                  16:50      61.89273
TS-SCS24_5                  17:00      62.13058
TS-SCS24_5                  17:10      62.36355
TS-SCS24_5                  17:20      62.59177
TS-SCS24_5                  17:30      62.81523
TS-SCS24_5                  17:40      63.03390
TS-SCS24_5                  17:50      63.24777
TS-SCS24_5                  18:00      63.45690
TS-SCS24_5                  18:10      63.66117
TS-SCS24_5                  18:20      63.86070
TS-SCS24_5                  18:30      64.05550
TS-SCS24_5                  18:40      64.24537
TS-SCS24_5                  18:50      64.43055
TS-SCS24_5                  19:00      64.61098
TS-SCS24_5                  19:10      64.78653
TS-SCS24_5                  19:20      64.95736
TS-SCS24_5                  19:30      65.12338
TS-SCS24_5                  19:40      65.28461
TS-SCS24_5                  19:50      65.44108
TS-SCS24_5                  20:00      65.59280
TS-SCS24_5                  20:10      65.74158
TS-SCS24_5                  20:20      65.88941
TS-SCS24_5                  20:30      66.03631
TS-SCS24_5                  20:40      66.18224
TS-SCS24_5                  20:50      66.32723
TS-SCS24_5                  21:00      66.47128
TS-SCS24_5                  21:10      66.61431
TS-SCS24_5                  21:20      66.75641
TS-SCS24_5                  21:30      66.89763
TS-SCS24_5                  21:40      67.03777
TS-SCS24_5                  21:50      67.17699
TS-SCS24_5                  22:00      67.31530
TS-SCS24_5                  22:10      67.45259
TS-SCS24_5                  22:20      67.58895
TS-SCS24_5                  22:30      67.72436
TS-SCS24_5                  22:40      67.85881
TS-SCS24_5                  22:50      67.99231
TS-SCS24_5                  23:00      68.12488
TS-SCS24_5                  23:10      68.25643
TS-SCS24_5                  23:20      68.38704
TS-SCS24_5                  23:30      68.51671
TS-SCS24_5                  23:40      68.64541
TS-SCS24_5                  23:50      68.77318
TS-SCS24_5                  24:00      68.90000

;50-year cumulative storm with a total rainfall amount of 109.3 mm using a SCS Type II 24-hr stor
TS-SCS24_50                 0:00       0.00000
TS-SCS24_50                 0:10       0.18370
TS-SCS24_50                 0:20       0.37042
TS-SCS24_50                 0:30       0.56016
TS-SCS24_50                 0:40       0.75297
TS-SCS24_50                 0:50       0.94880
TS-SCS24_50                 1:00       1.14765
TS-SCS24_50                 1:10       1.34956
TS-SCS24_50                 1:20       1.55450
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TS-SCS24_50	1:30	1.76246
TS-SCS24_50	1:40	1.97348
TS-SCS24_50	1:50	2.18753
TS-SCS24_50	2:00	2.40460
TS-SCS24_50	2:10	2.62473
TS-SCS24_50	2:20	2.84788
TS-SCS24_50	2:30	3.07406
TS-SCS24_50	2:40	3.30330
TS-SCS24_50	2:50	3.53556
TS-SCS24_50	3:00	3.77085
TS-SCS24_50	3:10	4.00920
TS-SCS24_50	3:20	4.25057
TS-SCS24_50	3:30	4.49496
TS-SCS24_50	3:40	4.74242
TS-SCS24_50	3:50	4.99290
TS-SCS24_50	4:00	5.24640
TS-SCS24_50	4:10	5.50457
TS-SCS24_50	4:20	5.76871
TS-SCS24_50	4:30	6.03883
TS-SCS24_50	4:40	6.31521
TS-SCS24_50	4:50	6.59757
TS-SCS24_50	5:00	6.88590
TS-SCS24_50	5:10	7.18043
TS-SCS24_50	5:20	7.48107
TS-SCS24_50	5:30	7.78762
TS-SCS24_50	5:40	8.10037
TS-SCS24_50	5:50	8.41923
TS-SCS24_50	6:00	8.74400
TS-SCS24_50	6:10	9.07503
TS-SCS24_50	6:20	9.41197
TS-SCS24_50	6:30	9.75503
TS-SCS24_50	6:40	10.10420
TS-SCS24_50	6:50	10.45943
TS-SCS24_50	7:00	10.82070
TS-SCS24_50	7:10	11.18817
TS-SCS24_50	7:20	11.56161
TS-SCS24_50	7:30	11.94103
TS-SCS24_50	7:40	12.32671
TS-SCS24_50	7:50	12.71837
TS-SCS24_50	8:00	13.11600
TS-SCS24_50	8:10	13.53221
TS-SCS24_50	8:20	13.97852
TS-SCS24_50	8:30	14.45493
TS-SCS24_50	8:40	14.96222
TS-SCS24_50	8:50	15.49961
TS-SCS24_50	9:00	16.06710
TS-SCS24_50	9:10	16.65003
TS-SCS24_50	9:20	17.23297
TS-SCS24_50	9:30	17.81590
TS-SCS24_50	9:40	18.42361
TS-SCS24_50	9:50	19.07941
TS-SCS24_50	10:00	19.78330
TS-SCS24_50	10:10	20.54913
TS-SCS24_50	10:20	21.38710
TS-SCS24_50	10:30	22.29720
TS-SCS24_50	10:40	23.30640
TS-SCS24_50	10:50	24.43584
TS-SCS24_50	11:00	25.68550
TS-SCS24_50	11:10	27.14575
TS-SCS24_50	11:20	28.89455
TS-SCS24_50	11:30	30.93190
TS-SCS24_50	11:40	36.78455
TS-SCS24_50	11:50	51.47953
TS-SCS24_50	12:00	72.46590

TS-SCS24_50	12:10	75.77441
TS-SCS24_50	12:20	78.39761
TS-SCS24_50	12:30	80.33550
TS-SCS24_50	12:40	81.83983
TS-SCS24_50	12:50	83.18787
TS-SCS24_50	13:00	84.37960
TS-SCS24_50	13:10	85.44746
TS-SCS24_50	13:20	86.43116
TS-SCS24_50	13:30	87.33070
TS-SCS24_50	13:40	88.15591
TS-SCS24_50	13:50	88.92102
TS-SCS24_50	14:00	89.62600
TS-SCS24_50	14:10	90.28916
TS-SCS24_50	14:20	90.93130
TS-SCS24_50	14:30	91.55241
TS-SCS24_50	14:40	92.15181
TS-SCS24_50	14:50	92.73019
TS-SCS24_50	15:00	93.28755
TS-SCS24_50	15:10	93.82319
TS-SCS24_50	15:20	94.33781
TS-SCS24_50	15:30	94.83141
TS-SCS24_50	15:40	95.30330
TS-SCS24_50	15:50	95.75416
TS-SCS24_50	16:00	96.18400
TS-SCS24_50	16:10	96.59912
TS-SCS24_50	16:20	97.00670
TS-SCS24_50	16:30	97.40685
TS-SCS24_50	16:40	97.79913
TS-SCS24_50	16:50	98.18397
TS-SCS24_50	17:00	98.56128
TS-SCS24_50	17:10	98.93085
TS-SCS24_50	17:20	99.29289
TS-SCS24_50	17:30	99.64739
TS-SCS24_50	17:40	99.99427
TS-SCS24_50	17:50	100.33354
TS-SCS24_50	18:00	100.66530
TS-SCS24_50	18:10	100.98934
TS-SCS24_50	18:20	101.30587
TS-SCS24_50	18:30	101.61490
TS-SCS24_50	18:40	101.91609
TS-SCS24_50	18:50	102.20985
TS-SCS24_50	19:00	102.49607
TS-SCS24_50	19:10	102.77457
TS-SCS24_50	19:20	103.04556
TS-SCS24_50	19:30	103.30894
TS-SCS24_50	19:40	103.56470
TS-SCS24_50	19:50	103.81292
TS-SCS24_50	20:00	104.05360
TS-SCS24_50	20:10	104.28962
TS-SCS24_50	20:20	104.52414
TS-SCS24_50	20:30	104.75716
TS-SCS24_50	20:40	104.98866
TS-SCS24_50	20:50	105.21867
TS-SCS24_50	21:00	105.44718
TS-SCS24_50	21:10	105.67408
TS-SCS24_50	21:20	105.89949
TS-SCS24_50	21:30	106.12352
TS-SCS24_50	21:40	106.34584
TS-SCS24_50	21:50	106.56670
TS-SCS24_50	22:00	106.78610
TS-SCS24_50	22:10	107.00390
TS-SCS24_50	22:20	107.22020
TS-SCS24_50	22:30	107.43501
TS-SCS24_50	22:40	107.64829

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TS-SCS24_50                 22:50      107.86008
TS-SCS24_50                 23:00      108.07038
TS-SCS24_50                 23:10      108.27907
TS-SCS24_50                 23:20      108.48626
TS-SCS24_50                 23:30      108.69196
TS-SCS24_50                 23:40      108.89614
TS-SCS24_50                 23:50      109.09882
TS-SCS24_50                 24:00      109.30000

[PATTERNS]
;;Name           Type       Multipliers
;;-------------- ---------- -----------
Sanitary TP-03   MONTHLY    1.0   1.0   1.0   1.0   1.0   1.0
Sanitary TP-03              1.0   1.0   1.0   1.0   1.0   1.0

[REPORT]
;;Reporting Options
INPUT      YES
CONTROLS   YES
SUBCATCHMENTS ALL
NODES ALL
LINKS ALL

[TAGS]

[MAP]
DIMENSIONS       643980.4075      4747589.535      647613.9825      4754619.085
UNITS            Meters

[COORDINATES]
;;Node           X-Coord          Y-Coord
;;-------------- ---------------- ----------------
J1               645495.04        4749843.42
J10              644984.427       4751723.074
J11              645549.88        4748115.22
J12              645009.32        4748356.47
J13              644971.1         4749720.54
J14              644968.9         4749819.02
J15              644853.51        4750336.06
J16              644981.39        4750788.06
J17              645440           4751355.44
J18              645793.52        4751633.26
J19              645847.07        4752117.18
J2               645817.33        4749465.97
J20              645691.36        4751614.15
J21              645768.04        4752399.45
J22              646596.45        4752421.17
J23              646617.85        4752422.15
J24              647023.16        4751905.96
J25              646996.81        4750894.91
J26              646650.71        4750503.52
J27              646367.33        4750368.8
J28              645802.88        4750115.61
J29              645517.18        4750071.48
J3               645525.2         4748818.72
J30              644995.13        4749850.23
J31              645334.124       4751224.453
J32              645328.117       4751385.992
J4               645535.25        4748420.78
J5               645543.35        4748168.19
J6               644945.37        4749722.83
J7               645507.17        4749392.75
J8               645539.77        4748156.74
J86              645511.4         4750349.58
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J87              645881.27        4750357.52
J88              645783.96        4752124.13
J9               645545.1         4748144.25
J10 Outlet       645654.61        4747909.06

[VERTICES]
;;Link           X-Coord          Y-Coord
;;-------------- ---------------- ----------------
Link-14          644893.667       4749817.216
Link-16          646985.327       4752420.587
PC2              645290.524       4751615.308

[POLYGONS]
;;Subcatchment   X-Coord          Y-Coord
;;-------------- ---------------- ----------------
B1               644551.47        4749578.28
B1               644547.75        4749803.94
B1               644566.84        4749828.59
B1               644763.85        4749829.73
B1               644802.33        4749787.63
B1               644958.56        4749791.87
B1               644961.89        4749701.17
B1               644765.39        4749581.9
B1               644551.47        4749578.28
M1               645435.43        4749839.87
M1               645452.18        4749862.21
M1               645450.79        4749860.82
M1               645481.5         4749911.08
M1               645508.03        4749934.82
M1               645551.32        4749966.93
M1               645725.85        4750015.8
M1               645838.95        4750015.8
M1               646048.4         4749941.8
M1               646372.33        4749933.42
M1               646611.1         4749966.93
M1               646602.636       4749833.774
M1               646455.359       4749484.959
M1               646253.821       4749659.367
M1               645872.083       4749708.458
M1               645811.988       4749833.774
M1               645435.43        4749839.87
M2               645819.4         4748934.38
M2               645804.39        4749845.46
M2               645870.124       4749709.751
M2               646249.945       4749651.615
M2               646373.968       4749574.101
M2               646453.32        4749497.08
M2               646239.69        4749291.13
M2               646123.1         4749205.26
M2               646025.36        4749134.75
M2               645971.6         4749080.99
M2               645819.4         4748934.38
M3               645405.89        4748812.41
M3               645402.43        4748991.91
M3               645396.67        4749321.65
M3               645402.96        4749517.17
M3               645405.89        4749766.17
M3               645432.25        4749837.85
M3               645804.36        4749845.59
M3               645819.41        4748934.41
M3               645821.8         4748824.76
M3               645405.89        4748812.41
M4               645411.51        4748558.43
M4               645212.62        4748553.12
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M4	645208.26	4748806.9
M4	645405.9	4748812.41
M4	645821.8	4748824.76
M4	645826.82	4748560.79
M4	645536.06	4748415.38
M4	645411.51	4748558.43
M5	645411.53	4748558.42
M5	645536.09	4748415.16
M5	645826.83	4748560.79
M5	645833.72	4748170.44
M5	645837.38	4748108.39
M5	645717.47	4748076.69
M5	645617.6	4748022.84
M5	645586.18	4748160.38
M5	645572.92	4748163.43
M5	645542.81	4748165.09
M5	645521.25	4748167.97
M5	645466.01	4748171.98
M5	645420.42	4748183.11
M5	645411.53	4748558.42
PC1	645768.01	4752399.72
PC1	645752.97	4753106.77
PC1	645753.8	4753119.33
PC1	645764.14	4753127.15
PC1	645764.14	4753164.57
PC1	646166.82	4753367.59
PC1	646180.129	4753384.991
PC1	646222.761	4753341.267
PC1	646289.441	4753272.401
PC1	646315.828	4753241.681
PC1	646264.6	4753192.6
PC1	646152.9	4753133.4
PC1	645974.45	4752972.55
PC1	645860.34	4752715.56
PC1	645859.98	4752502.12
PC1	645986.2	4752413.5
PC1	645984.71	4752404.56
PC1	645768.01	4752399.72
PC10	645749.92	4751618.57
PC10	645747.66	4751635.62
PC10	645767.79	4751649.59
PC10	645757.93	4752122.27
PC10	645795.6	4752123.09
PC10	645808.1	4751624.92
PC10	645749.92	4751618.57
PC11	645784.91	4752122.95
PC11	645758.07	4752122.28
PC11	645753.18	4752381.39
PC11	644968.95	4752358.66
PC11	644967.86	4752379.94
PC11	645767.92	4752399.43
PC11	646178.1	4752406.54
PC11	646181.1	4752382.61
PC11	645802.42	4752368.7
PC11	645790.65	4752359.51
PC11	645795.6	4752123.09
PC11	645784.91	4752122.95
PC2	645767.82	4752399.5
PC2	644943.61	4752379.64
PC2	644267.53	4752363.44
PC2	644396.65	4752492.77
PC2	644704.95	4752580.74
PC2	644827.675	4752527.522
PC2	644942.842	4752467.031

PC2	644989.374	4752496.113
PC2	645031.68	4752623.46
PC2	645101.63	4752620.95
PC2	645167.4	4752613.41
PC2	645214.73	4752675.41
PC2	645377.05	4752710.59
PC2	645418.52	4752709.34
PC2	645584.71	4753023.19
PC2	645753.58	4753119.24
PC2	645752.63	4753105.58
PC2	645767.82	4752399.5
PC3-QW1	644968.95	4752358.65
PC3-QW1	645753.18	4752381.39
PC3-QW1	645766.97	4751649.78
PC3-QW1	645747.18	4751635.64
PC3-QW1	645763.08	4751486.37
PC3-QW1	645753.42	4751472.94
PC3-QW1	645635.84	4751478.6
PC3-QW1	645613.22	4751449.38
PC3-QW1	645621	4751415.69
PC3-QW1	645609.22	4751402.96
PC3-QW1	645486.69	4751411.45
PC3-QW1	645365.11	4751434.07
PC3-QW1	645293.48	4751449.15
PC3-QW1	645283.43	4751541.2
PC3-QW1	645289.4	4751615.97
PC3-QW1	645066.97	4751680.06
PC3-QW1	644991.57	4751747.92
PC3-QW1	644987.8	4751796.93
PC3-QW1	644970.84	4751881.75
PC3-QW1	644968.95	4752358.65
PC4-QE1	645818.92	4751289.45
PC4-QE1	645811.5	4751382.76
PC4-QE1	645809.03	4751607.28
PC4-QE1	645804.2	4751701.29
PC4-QE1	645796.54	4752078.29
PC4-QE1	645790.65	4752359.5
PC4-QE1	645802.43	4752368.69
PC4-QE1	645861.34	4752372.7
PC4-QE1	646181.31	4752382.6
PC4-QE1	646371.72	4752383.6
PC4-QE1	646394.02	4751593.14
PC4-QE1	646397.94	4751407.23
PC4-QE1	646384.92	4751403.62
PC4-QE1	646201.25	4751399.28
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[SYMBOLS]
;;Gage            X-Coord           Y-Coord
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Appendix E:

Specifications

SPECIAL PROVISIONS - MUNICIPAL DRAIN

I N D E X

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A1 ROLES

The Contractor is responsible for the construction site including all approvals required for compliance with applicable legislation not already completed by the City of Port Colborne.

The City of Port Colborne, who is further recognized as The Owner, shall be responsible party for allocation of resources in support of construction where required, such as road occupancy permits during construction.

The Drainage Engineer or the Drainage Superintendent shall supervise construction and the Drainage Engineer, Drainage Superintendent or their representative shall respond to any requests by the Contractor and identify any deficiencies between the Contractor's work and the Design documents.

The Drainage Engineer is the responsible designer and will provide technical direction to the Contractor on an as needed and as requested basis from the Drainage Superintendent or their representative.

A2 ENVIRONMENTAL CONDITONS AND COMPLIANCE

The Contractor is wholly responsible for the site environmental conditions, compliance with applicable approvals and existing legislation. The Owner will facilitate environmental approvals, but the Contractor shall control the site and be the responsible party for all construction activities.

General requirements to be fulfilled by Contractor:

a) Department of Fisheries and Oceans, DFO.
Requirements to protect Fish and Fish habitat.
b) Endangered Species Act, 2007 ONTARIO REGULATION 230/08
https://www.ontario.ca/page/species-risk
c) Ontario Water Resources Act, R.S.O. 1990, c. O.40
d) On-Site and Excess Soil Management, 2019 ONTARIO REGULATION 406/19 Environmental Protection Act
e) O. Reg. 675/98: Classification and Exemption of Spills and Reporting of Discharges, Environmental Protection Act, R.S.O. 1990

Any other legislation applicable to the jurisdiction of the works.

A3 CONSTRUCTION LAYOUT

Conditions stipulated in the Niagara Peninsula Standard Contract Document also apply. Failure to comply with these conditions will result in a reduction in payment to this item.

a) Stakes

Contractor is responsible for setting any layout, alignment or grade control stakes required for construction. A Stake shall be placed to mark every cross-section grade and a second stake shall be placed to mark the limits of the Working Zone. Work Zone Stake shall be 4' wooden stake painted red at the top of the stake. Grade stake shall be placed at the Work Zone Top of Bank. X-Section stakes shall be placed at a maximum spacing of 25m. A recommended spacing shall coincide with the Profile drawings. Prior to the start of Construction, the Contractor will stake and identify the difference between the existing grade and the design grade. The Drainage Engineer shall review the stakes and the measurement of the soil to be removed. Post Construction, the Contractor shall remove all stakes.

b) Project Signage

The Contractor is responsible for the installation and removal of all construction signage and is responsible for daily maintenance of all signage throughout the contract.

A5 INSTALL AND MAINTAIN SEDIMENT CONTROL DEVICES

In addition to the conditions stipulated in the Niagara Peninsula Standard Contract Document and OPSS 577, the following shall also apply:

a) SILT FENCE

Silt fence is to be placed prior to disturbing soil adjacent to the drain that could be carried by runoff into the drain. This excludes the area of the drain where The Contractor is working to re-establish Drain grade and cross-section. It includes areas adjacent to the drain impacted by clearing and grubbing for work access.(missing is a description of where a silt fence is to be placed. How frequently across the drain.)

Silt fence shall be installed in accordance with OPSD 219.190 except that the minimum height above the invert of the drain shall be 500 mm. Silt fence materials shall be in accordance with OPSS 577.05.02.02 for geotextile and OPSS 577.05.03 for stakes. Stakes shall be 1.5 m minimum height.

The silt fence shall remain in place for the duration of the section that the Contractor is working and the Contractor shall make every effort to maintain it throughout the project. The Contractor shall request Approval from the Engineer or the Drainage Superintendent for the removal of the silt fence once each section of the drain is complete. Prior to the removal of the silt fence, the accumulated silt shall be removed and leveled adjacent to the drain in accordance with the disposal of excavated material section.

b) SEDIMENT BASINS

Sediment basins have been provided along the length of the drain in an effort to minimize the transport of sediment. The Contractor shall construct the sediment basins in accordance with the construction drawings in the locations indicated. Relocation of sediment basins can only be undertaken upon approval of the Engineer.

The Sediment basin is to be constructed prior to the upstream work and shall be monitored during construction for sediment accumulation and sediment removed if the basin has more than 50% of the 0.5m depth occupied with sediment. Once the upstream work is complete, the Sediment basin shall be converted from Construction to Final as per the Design Detail Drawings. Sediment accumulated during construction shall be removed and disposed of in the manner directed by the Contract.

A5 PAYMENT; For progress payment, fifty (50) percent of the lump sum price will be paid upon installation with the balance to be paid with the final payment.

A6 ACCESS & NOTICE

The City of Port Colborne's Drainage Superintendent or designate shall provide affected landowners with notice of the commencement of construction.

It will be the Contractor's responsibility to inform the various businesses and residences of daily construction impacts in order to reduce/eliminate any problems with parked vehicles that may interfere with their operations. Ingress & egress to the abutting businesses and residences must be maintained at all times.

The Contractor shall advise the Police Department, Fire Department and Niagara Emergency Medical Service on a daily basis, with current status of the construction as it pertains to the passage of traffic within the contract limits.

The Contractor will co-ordinate with local transit to ensure minimum interruption to bus schedules. Transit, school buses and garbage and recycling service vehicles will be given priority to maintain their schedule.

The Contractor shall also maintain/provide existing pedestrian access at all times to the businesses and residents during all phases of construction in an acceptable manner.

A6 PAYMENT; Payment as a lump sum bid for this item shall be full compensation for all labour, equipment and materials necessary to meet the above requirements. Fifty (50) percent of the lump sum price will be paid on the first payment certificate. The balance will be prorated over the remainder of the working period.

B1 EARTH EXCAVATION

Work under this item shall include the supply of all labour, equipment and materials required for ditch excavation or any other type of excavation or earth work as outlined on the Contract Drawings. Ditch work involves clearing, excavation, leveling, and seeding as required. Specifications and information on the Contract Drawings shall take precedence over the standard specifications outlined below. The specifications below shall take precedence over the Niagara Peninsula Standard Contract Document Special Provisions B2.

B2 CONSTRUCTION

a) Vegetation Removal

All trees, brush, fallen timber and debris shall be moved from the ditch cross-section and to such a distance on each side to eliminate any interference with the spreading of the spoil. The roots shall be left in the banks if no bank excavation is required as part of the new channel excavation. In wooded or heavily overgrown areas all cleared material may be pushed into piles or rows along the edge of the cleared path and away from leveled spoil. All dead trees along either side of the drain that may impede the performance of the drain if allowed to remain and fall into the ditch, shall be removed prior to excavation and put in piles, unless directed otherwise by the Engineer.

Any tree removed will be offered as wood to the property owner in the form of logs from the trunk where they lay and to be moved from the site by the owner at their expense. Tree tops shall be cut and limbs stacked as piles adjacent to the drain and within the work zone.

b) Excavation

The bottom width and the side slopes of the ditch shall be as shown on the profile(s) and/or cross-sections on the Contract Drawings. Side slopes are normally one and one-half metre horizontal to one metre vertical (1.5:1) unless otherwise noted on the Contract Drawings. If a bottom width is not specified then any excavation required shall be from the bottom of the ditch without disturbing the bank slopes subject to the clearing of brush required as described in a).

c) Profile

The profile(s) on the Contract Drawings show the depth and grade for the drain improvements. The description and elevation of benchmarks that were established during the survey are shown on the profile(s) in the location for each benchmark.

d) Line

The drain shall follow the course of the existing channel and/or shall be constructed in a straight line as outlined on the Contract Drawings. A uniform grade shall be maintained in accordance with the profile(s). A variation of one hundred millimeters (100mm) above

the required grade will require the Contractor to remedy the grade to that given on the profile. The Contractor may be required to backfill any portion of the ditch that is excavated more than two hundred millimeters (200mm) below the required grade. All curves shall be made with a minimum radius of fifteen metres (15m).

e) Excavated Material

Excavated material (spoil) shall be deposited on either or both sides of the drain as directed on the Contract Drawings. Spoil upon excavation shall be placed a minimum one (1) metre back from the top of the bank, either existing or new. No excavated material shall be placed in tributary drains, depressions, or low areas, which direct or channel water into the ditch so that no water will be trapped behind the spoil bank. The excavated material shall be placed and leveled to a maximum depth of three hundred millimeters (300mm); unless otherwise instructed. The edge of the spoil bank away from the ditch shall be feathered down to existing ground. The edge of the spoil bank nearest the ditch shall have a maximum slope of 2:1. The material shall be leveled such that it may be cultivated with ordinary equipment without causing undue hardship on farm machinery and farm personnel. Wherever clearing is necessary prior to leveling, the Contractor shall remove all stumps unless the Contract Drawings specify that stumps can be covered with the leveled spoil. No excavated material shall cover any logs, brush or rubbish of any kind. Large stones or boulders in the leveled spoil that are heavier than fifteen kilograms (15kg or approximately 300mm in size roughly referred to as man stone or the size of a stone that a single person can carry.) shall be moved to the edge of the leveled spoil nearest to the ditch but in general no closer than one metre (1) to the top of bank.

Where it is necessary to straighten any unnecessary bends or irregularities in the alignment of the ditch or to relocate any portion of an existing ditch, the excavation from the new cut shall be used for backfilling the original ditch. Regardless of the distance between the new ditch and old ditch, no extra compensation will be allowed for this work. If the Contractor obtains written permission from an affected landowner stating that the owner does not wish the spoil to be leveled and such is approved by the Engineer, the Engineer may release the Contractor from the obligation to level the spoil. If spoil is not leveled that was to be leveled as part of the Contract, the Engineer shall determine the credit to be applied to the Contractor's payment. No additional compensation is provided to the owner if the spoil is not leveled.

If the affected landowner requests that the spoil be removed from the site instead of being spread adjacent to the drain within the work zone or that the grading requirement is to a higher standard than suitable for agricultural cultivation, then the Contractor shall provide trucking of the spoil including disposal at a suitable site or additional grading and shall provide the Drainage Superintendent with the specific costs for each landowner who requests such work. The Engineer shall assess the cost of the trucking of spoil to the landowner making such request.

The Engineer may require the Contractor to obtain written statements from any or all of the landowners affected by the leveling of the spoil. A written statement from the owners indicating their complete satisfaction with the leveling of the spoil is sufficient to comply

with this specification. The final decision, with respect to leveling of the spoil, shall be made by the Engineer.

f) Excavation Through Woodlots

The Contractor shall minimize disturbance through woodlots by reducing the limit of excavation to the bottom width of the drain and a minimum side slopes. The drain shall be routed around existing trees at the direction of the Drainage Superintendent or where requested by the Engineer.

Prior to performing work through a woodlot, the Contractor in coordination with the Drainage Superintendent shall mark all trees for preservation or removal within the Drain or Workzone. This mark will consist of a physical identification that will be easily understood by the landowner and consist of either colour ribbons or specific paint markings (green to keep, red mark of an ‘X’ for removal).

g) Excavation at Bridge and Culvert Sites

The Contractor shall excavate or clean through all bridges and culverts to match the grade line and the downstream channel cross-section. Bridges that span from bank to bank may be carefully removed to permit excavation below the bridge and then replaced to original condition. Permanent bridges must be left intact. All necessary care and precautions shall be taken to protect the structure. The Contractor shall notify the Engineer before completing excavation in the area of a bridge or culvert if the excavation will expose the footings or otherwise cause bridge instability.

Where the invert of any pipe culvert is above the grade line, the Contractor will be required to remove the culvert, clean and relay it, so that the invert of the culvert is one hundred and fifty millimetres (150mm) below the grade for the ditch bottom at this location.

h) Obstructions

In all cases, the Contractor shall ensure that the finished drain is clear of obstructions to flow. The contractor will ensure that trunks are cut flush and that any debris or snags are removed as part of the bid price.

i) Fences and private furniture or equipment

The contractor will use the identified work zone for access and shall restore any fences to an equivalent or better condition than before construction. Where possible the Contractor shall perverse existing fences, private equipment and furniture in place but where it must be moved, the Contractor shall in all cases restore to a like or better condition than existed before construction.

j) Tile Outlets

The location of all existing tile outlets may not be shown on the profile for the drain. The Contractor shall contact each owner and ensure that all tile outlets are marked prior to commencing excavation on the owner's property. If a marked tile outlet is damaged during, or altered due to construction, the Contractor shall repair or replace the damaged or altered outlet as part of the Contract. If an existing outlet pipe does require replacement the Contractor shall confirm the replacement outlet pipe with the Engineer. All tile outlets identified are considered part of the bid work.

Additional payment will be allowed for the repair or replacement of any unmarked tile outlets encountered during excavation. Where stone or concrete riprap protection exists at any existing tile outlet such protection shall be removed and replaced as necessary to protect the outlet after reconstruction of the channel.

If any outlet becomes plugged as a result of construction, the Contractor shall be obligated to free such outlet of any impediments. Where any damage results to tile leading to and upstream of the outlet, as a consequence of such construction, the Engineer may direct the Contractor to repair such tile and shall determine a fair compensation to be paid to the Contractor for performing the work.

B3 INSTALLATION OF NEW CULVERT

Work under this item shall include the supply of all labour, equipment and materials required for supply and installation of culverts as outlined on the Contract Drawings. The Niagara Peninsula Standard Contract Document Special Provision B7 shall apply but the specifications and information on the Contract Drawings shall take precedence over Special Provision B7.

Payment shall be as per Plan Quantity.
The size and material for any new ditch crossings shall be as specified on the Contract Drawings. Any crossings assembled on-site shall be assembled in accordance with the manufacturer's specifications for on-site assembly.

Where a new crossing replaces an existing crossing the following shall apply:

If directed on the drawings that the existing crossing is to be salvaged for the owner the Contractor shall carefully remove the existing crossing and leave along the ditch or haul to a location as specified on the Drawings.

If the existing crossing is not to be saved then the Contractor shall remove and dispose of the existing crossing. Disposal by burying on-site is not permitted.

All new pipe crossings shall be installed a minimum of 100mm below design grade (not as-constructed grade) or at the invert elevations as specified on the Drawings. If the ditch is over excavated greater than 200mm the Contractor shall confirm with the Engineer the elevations for installation of the new pipe crossing.

When an existing crossing is being replaced the contractor shall save all granular and riprap. New crossings can be backfilled with compacted on-site native material that is

free of large rocks or stones. Contractor responsible for any damage to a culvert pipe as a result of rocks or stones in the backfill.

All new crossings shall have a minimum 6m laneway width and end slopes shall be at 1:1 slope or flatter. Finished crossing elevation shall provide a minimum of 300mm cover. Finished crossing surface shall be a minimum 150mm depth of Granular A for the minimum 6m width and extending from top of bank to top of bank using salvaged granular or imported granular as required.

Installation of private crossings during construction must be approved by the Engineer before the culvert is installed.

Where riprap protection is called for at either or both ends of a new culvert, such riprap shall be in accordance with Special Provision B4.
Payment will be based on plan quantity.

Riprap to be adequately keyed in along the bottom of the slope. Riprap to extend to top of pipe or as directed on the Drawings. No riprap is required in the ditch bottom on the upstream side of a crossing. If riprap is required in the ditch bottom on the downstream side of a crossing it shall be specified on the Drawings. Any new end face slope not protected by riprap shall be seeded as per specifications for ditch bank seeding.

B4 HAND LAND RIP RAP WITH FILTER CLOTH

Rip rap complete with filter fabric underlay (geotextile) shall be placed by the Contractor at the locations shown on the drawing or as requested by the Drainage Superintendent. Rip rap shall consist of 200 – 250 mm dia. stones (min.) and shall be placed at 300 mm minimum thickness. Along upstream edges, where surface water will enter the drain, the underlay shall extend a minimum of 300 mm upstream from the rip rap and be keyed into the soil a minimum of 300 mm. The finished elevation of the rip rap shall be at design elevation or flush with the ground.

Work under this item shall include the supply of all labour, equipment and materials required for placing riprap as outlined on the Contract Drawings. The Niagara Peninsula Standard Contract Document Special Provision B20 shall apply but the specifications and information on the Contract Drawings shall take precedence over Special Provision B20.

Payment shall be as per Plan Quantity.

C1 COMPLETION

At the time of final inspection, all work in the contract shall have the full dimensions and cross-sections specified.

PAYMENT; Payment is for all work complete on the basis of a measured linear distance inclusion of all items identified above. Where a culvert is removed and reinstalled, compensation shall be in the form of a per each payment. Where a tile is discovered and constructed as an outlet, compensation will be in the form of a per each payment for tile outlets repaired.

C2 AS-CONSTRUCTED DOCUMENTATION

For the 'as-constructed' works, the Contractor must provide the City of Port Colborne with an electronic version of the final drainage works as surveyed post construction, to be imported into AutoCAD or GIS. This copy must confirm that the design grade and cross-section details for all drainage work and the invert elevations and lengths for all culverts complies with the Engineer's Report. Survey spacing shall be to a minimum of 25m.

All work must be in an acceptable electronic format that the City of Port Colborne can use and all work must be completed using the verified geodetic benchmarks. The submission of the As-Constructed works will be in a common delimited format having the form as follows:

> Numeric key, Northing, Easting, Elevation, Coded identifier & optional description
> For the coded identifiers, the City of Port Colborne will provide a table for reference along with an example file from a past project for comparison. The City will certify the as-constructed files with respect to their completeness.

Failure to provide a certified as-built file will result in the delay of substantial completion and/or contract completion. In the event that the contractor asks the City to perform the AS CONSTRUCTED SURVEY, then payment for the lump sum item is negated.
A4 PAYMENT; Payment in full at the lump sum bid price for this item shall be made only upon completion and approval by the Contract Administrator.

PORT COLBORNE

Subject: **Clerk's, Planning, and Building Update**

To: **Council**

From: **Planning and Development Department**

Report Number: 2021-210

Meeting Date: July 26, 2021

Recommendation:

That Planning and Development Department Report 2021-210 be received for information.

Purpose:

This report is to provide an annual update on the activities of the Clerk's, Planning, and Building Divisions.

Background:

This report is provided as a joint update of the Clerk's, Planning, and Building Divisions. These three divisions are located on the second floor of City Hall.

Discussion:

The Clerk's, Planning, and Building Divisions have a number of projects that they will be working on in the upcoming year. Each of these projects will help the divisions on the second floor of City Hall to reach a goal of increasing the customer experience.

Financial Implications:

Any projects discussed in this update with financial considerations will be brought forward for approval through the annual budget process.

Strategic Plan Alignment:

The initiative contained within this report supports the following pillar(s) of the strategic plan:

- Service and Simplicity - Quality and Innovative Delivery of Customer Services
- Attracting Business Investment and Tourists to Port Colborne
- People: Supporting and Investing in Human Capital
- Governance: Communications, Engagement, and Decision-Making

Conclusion:

The Department will continue to develop our processes and look for new ways to engage the public while achieving our goals.

Appendices:

a. Department Update Presentation

Respectfully submitted,

Amber LaPointe
Acting Director of Planning and Development/City Clerk
905-835-2900 x106
cityclerk@portcolborne.ca

Report Approval:

All reports reviewed and approved by the Department Director and also the City Treasurer when relevant. Final review and approval by the Chief Administrative Officer.

Clerks, Planning, and Building Update

PORT COLBORNE

1

Emergency Management

- Training
- Update Policies
- Hazard Identification and Risk Assessment (HIRA)
- Lead emergency exercise
- Provincial reporting

PORT COLBORNE

2

Emergency Management

- Community Emergency Management Coordinator (CEMC)
- Emergency Operation Centre (EOC)
- Emergency Control Group (ECG)

PORT COLBORNE

3

Legislative Services

Recently...
- Virtual meetings
- Agenda management software

Upcoming...
- eScribe (Phase 2)
- Business licensing review
- Procedural By-law review
- Delegated Authority By-law
- Election preparation

On the List...
- Council composition review
- Records retention and electronic software
- Citizen committee review
- Freedom of information - routine disclosure and training

4

Building Division

- Building fees review
- Building permit process review and software implementation
- Process review

PORT COLBORNE

5

Planning Division

- Review Committee of Adjustment
  - Processes, procedures, eScribe
- Heritage property review
- Cannabis policies
- Parkland dedication by-law review
- Affordable housing policy
- Fees review
- Development charges review

PORT COLBORNE

6

Customer Service on the Second Floor

We want to be welcoming to development and accessible for small projects

How will we achieve this?

- Plan for development
- Collect and evaluate statistics
- Review and update processes

7

We can't wait to see you again soon on the second floor ....

Until then we're only a phone call away!

PORT COLBORNE

8

PORT COLBORNE

Subject: **Recommendation Report for Proposed Zoning By-law Amendment at 650 Lorraine Road, File D14-10-21**

To: **Council**

From: **Planning and Development Department**

Report Number: 2021-208

Meeting Date: July 26, 2021

Recommendation:

That Planning and Development Department Report 2021-208 be received; and

That the Zoning By-law Amendment attached as Appendix A of Planning and Development Report 2021-208 be approved; rezoning the property from Agricultural (A) to APO-64 and Agricultural Residential (AR); and

That Planning staff be directed to circulate the Notice of Passing in accordance with the *Planning Act*.

Purpose:

The purpose of the report is to provide Council with a recommendation regarding a proposed Zoning By-law Amendment application submitted by Christopher Wilson on behalf of the owner David Roy Bankert for the lands legally known as Part of Lots 21 and 22, formerly in the Township of Humberstone, now in the City of Port Colborne, Regional Municipality of Niagara, municipally known as 650 Lorraine Road.

Background:

The application for Zoning By-law Amendment proposes to change the zoning from Agricultural (A) to Agricultural Purposes Only (APO) and Agricultural Residential (AR). The Zoning By-law Amendment is being sought to satisfy a condition of a farm-consolidation severance under consent application B09-21-PC.

The area that will be rezoned to APO is approximately 14 hectares and is presently used for agricultural purposes with an agricultural storage building. Staff have noted that a special provision of the APO zone (being APO-64) will be required to reduce the

required interior yard setback from 5m to 3m to recognize the location of the existing storage building on Part 2.

The area that will be rezoned to AR is about 6855m^2 and is presently occupied by a single-detached dwelling and three accessory buildings. No new development is proposed as a result of this application, with the exception of a new septic system on Part 1 as required by the Niagara Region.

Discussion:

City of Port Colborne Official Plan:

According to Schedule A: City Wide Land Use to the City of Port Colborne Official designates the subject property as **Agricultural**. The predominant uses of lands designated Agriculture shall include, but not be limited to; the cultivation of crops on a commercial basis; the storage and processing of produce grown on the premises; the raising of livestock; greenhouses; small-scale agri-tourism; value-added agricultural activities; specialty agricultural uses such as an agricultural research station, fertilizer or seed depot, feed mill, saw mill or kennel, provided the uses are compatible with adjacent uses; and agriculture-related accessory uses, including the sale of products from the farm operation. The Official Plan also recognizes that there are existing non-agricultural uses on agricultural lands. These uses shall continue to be permitted and expanded in accordance with the applicable Regional policies.

The Official Plan designation is not proposed to be changed as a result of this application. The Official Plan provides policies that must be consistent with the Provincial Policy Statement and Regional Official Plan. The plan provides limited opportunities for severances in areas considered to be prime agricultural lands. Section 3.5.3 (c) allows surplus dwellings to be severed from farmland that is being amalgamated with neighbouring farmland, or consolidated with an existing farm operation, so long as the following policies are met:

> i) No new residential development shall be permitted on a vacant remnant parcel of farmland created;
> ii) The surplus dwelling is of sufficient quality and value to warrant its retention as a non-farm residence and meets existing occupancy standards;
> iii) The dwelling is surplus to the owner’s present and future needs for family residence and farm help purposes;
> iv) The new lot created with the surplus farm dwelling will not be further subdivided and not more than one dwelling may be located thereon;
> v) The remnant parcel of farmland should be a substantial size to function as a significant part of the overall farm unit; and
> vi) The size of the newly created lot should be a minimum of 0.4 hectares in size, unless additional lands are required for private septic service and/or water supply.

The purpose of this Zoning By-law Amendment is to address policy “i” above.

City of Port Colborne Zoning By-law 6575/30/18:

The City of Port Colborne Zoning By-law 6575/30/18, zones the property **Agricultural**, which permits the following uses: accessory agricultural activities; agriculture use; agri-tourism and value added uses; conservation uses; dwelling, detached existing at the date of the passing of this by-law as a principal use on a new lot; dwelling, detached as a principal use on an existing lot of record; kennel; cannabis production facility; and uses, structures and buildings accessory thereto.

The application for Zoning By-law Amendment proposes to change the zoning to Agricultural Purposes Only and Agricultural Residential. Agricultural Purposes Only permits agricultural uses, conservation uses, and uses, structures and buildings accessory thereto including greenhouses. As noted above, a special provision of the APO zone will be required to recognize the existing interior side yard setback of the storage building on Part 2. Agricultural Residential permits a detached dwelling and uses, structures and buildings accessory thereto. The Zoning By-law amendment has been attached hereto as Appendix A.

Adjacent Land Uses and Zoning:

Northwest Use: Agricultural Zone: Agricultural	**North** Use: Use: Agricultural Zone: Agricultural	**Northeast** Use: Ag. Residential Zone: AR
West Use: Agricultural Zone: Agricultural	**Applicant’s Property**	**East** Use: Golf Course Zone: A-11
Southwest Use: Golf Course Zone: A-11	**South** Use: Golf Course Zone: A-11	**Southeast** Use: Golf Course Zone: A-11

A sketch of the subject property is shown in Appendix B of this report.

Internal Consultations:

The Notice of Public Meeting was circulated to required agencies and internal departments by May 26, 2021 and no comments have been received as of the date of preparing this report.

Staff note that the Niagara Region has provided comments through consent application B09-21-PC relating to this application. The Region’s concerns have been addressed through the consent, with the exception of this Zoning By-law Amendment. Zoning By-law Amendments requested by the City and Region through a consent process are

exempt from Regional review. For Council's information, the comment relating to the consent application has been attached as Appendix C.

Financial Implications:

There are no financial implications.

Public Engagement:

The Notice of Public Meeting was circulated to property owners within 120 metres of the property on May 26, 2021. A public notice sign was also posted on the property by May 1, 2021. Meeting details have been provided along with the Council Agenda on the City's website. As of the date of preparing this recommendation report, Planning staff have not received any correspondence from any members of the public.

Strategic Plan Alignment:

The initiative contained within this report supports the following pillar(s) of the strategic plan:

- Service and Simplicity - Quality and Innovative Delivery of Customer Services
- People: Supporting and Investing in Human Capital
- Governance: Communications, Engagement, and Decision-Making

Conclusion:

Based on staff's review of the application and relevant Provincial, Regional and City policies, staff conclude that this application is consistent with the Provincial Policy Statement, Regional Official Plan, and City of Port Colborne Official Plan. Planning staff recommend approval of this Zoning By-law Amendment.

Appendices:

a. Zoning By-law Amendment

b. Severance Sketch

c. Regional Comments from Consent B09-21-PC

Respectfully submitted,

David Schulz
Planner
(905) 835-2900 ext. 202
David.Schulz@portcolborne.ca

Report Approval:

All reports reviewed and approved by the Department Director and also the City Treasurer when relevant. Final review and approval by the Chief Administrative Officer.

The Corporation of the City of Port Colborne

By-law no. _____

Being a by-law to amend Zoning By-law 6575/30/18 respecting lands legally described as Part of Lots 21 and 22, formerly in the Township of Humberstone, now in the City of Port Colborne, Regional Municipality of Niagara, municipally known as 650 Lorraine Road.

Whereas By-law 6575/30/18 is a by-law of The Corporation of the City of Port Colborne restricting the use of land and the location and use of buildings and structures; and

Whereas**,** the Council of The Corporation of the City of Port Colborne desires to amend the said by-law.

Now therefore**,** and pursuant to the provisions of Section 34 of the *Planning Act, R.S.O. 1990*, The Corporation of the City of Port Colborne enacts as follows:

1. This amendment shall apply to those lands described on Schedule “A” attached to and forming part of this by-law.

2. That the Zoning Map referenced as Schedule “A5” forming part of By-law 6575/30/18 is hereby amended by changing those lands described on Schedule A from Agricultural (A) to APO-64 and Agricultural Residential (AR).

3. That Section 37 entitled “Special Provisions” of Zoning By-law 6575/30/18, is hereby further amended by adding the following:

   APO-64

   Notwithstanding the provisions of the Agricultural Purposes Only (APO) zone, the following regulations shall apply:

   a) Minimum Interior Side Yard 3 metres

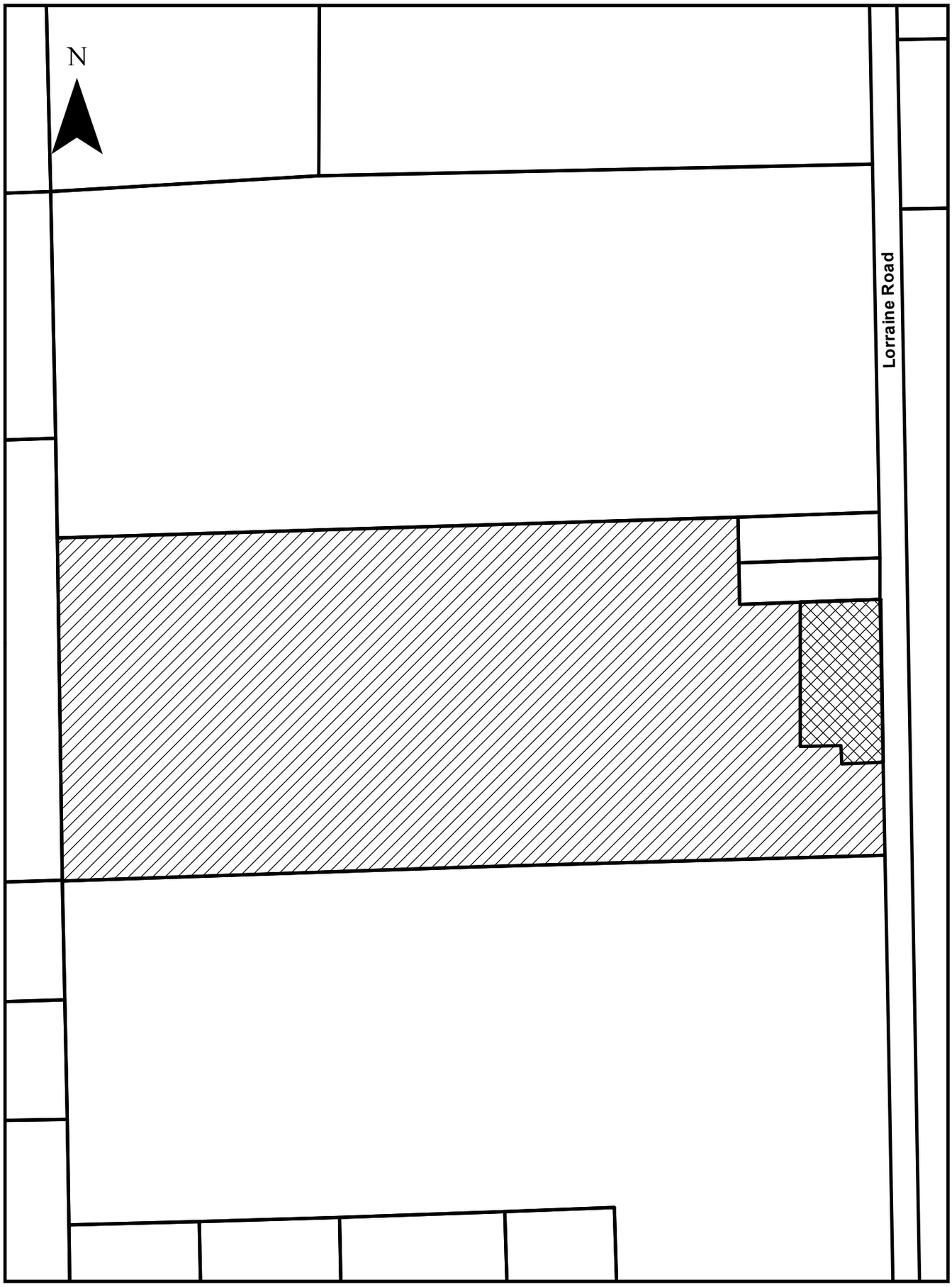
4. That this by-law shall come into force and take effect on the day that it is passed by Council, subject to the provisions of the *Planning Act*.

5. The City Clerk is hereby authorized and directed to proceed with the giving notice of the passing of this by-law, in accordance with the *Planning Act*.

Enacted and passed this day of , 2021.

_____
William C. Steele
Mayor

_____
Amber LaPointe
City Clerk



This is Schedule "A" to By-law No_____

Passed _____, 2021

_____
Mayor

_____
Clerk

Lands to be rezoned from Agricultural (A) to APO-64

Lands to be rezoned from Agricultural (A) to Agricultural Residential (AR)

June 2021

File No. D14-10-21

Drawn by: DS - City of Port Colborne
Planning Division

Not to scale

SKETCH PREPARED FOR SEVERANCE APPLICATION

THIS IS NOT A PLAN OF SURVEY AND SHALL NOT BE USED FOR ANY PURPOSE OTHER THAN CURRENT SEVERANCE APPLICATION. © THIS SKETCH IS PROTECTED BY COPYRIGHT.

PART 1 PLAN 59R–9187

±251.46

CONCESSION

LOT 22

A G R I C U L T U R A L

PART 1

±303.79

WHISKEY RUN GOLF COURSE

LINE BETWEEN LOTS 21 & 22

PART 2
±13.830 ha.

±500.56

LOT 21

PLAN 59R–8112

±301.21

FLOOD PLAIN LIMIT
AS PER NPCA MAPPING

PART 1
±6855.5 sq.m.

±64.00

RESIDENTIAL

±43.82

±106.17

±103.63

±59.81

BUILDING

PART 1
PLAN 59R–9448

EDGE OF CUT GRASS

±68.32

±188.02

±119.70

LORRAINE ROAD

ROAD ALLOWANCE BETWEEN LOTS 20 AND 21

DETAIL
(NOT TO SCALE)

LORRAINE ROAD

±13.06

±31.05

±30.35

±15.24

±3.0

BUILDING

WELL

ASPHALT DRIVEWAY

±14.2

±8.7

±8.8

±29.3

GARAGE

±9.8

BUILDINGS

±16.8

±14.7

±26.0

TWO STOREY DWELLING #650

±119.70

OVERHEAD UTILITY WIRES

PROPOSED SEPTIC LOCATION

±106.17

EDGE OF CUT GRASS

±66.2

PART 1
±6855.5 sq.m.

NOTE:

THIS SKETCH IS PREPARED FROM COMPILED AND CALCULATED INFORMATION, AND NOT FROM AN ACTUAL SURVEY.

DISTANCES SHOWN HAVE NOT BEEN VERIFIED

VOID

IF USED FOR ANY OTHER PURPOSE THAN THIS CURRENT SEVERANCE APPLICATION

PRELIMINARY ONLY

APRIL 8, 2021
DATE

MARK GILMORE
Ontario Land Surveyor

LANTHIER & GILMORE SURVEYING LTD.
173 CLARENCE ST. PORT COLBORNE, ONT. (905) 835-5477

SKETCH OF PROPOSED SEVERANCE
PART OF LOTS 21 & 22
CONCESSION 1
GEOGRAPHIC TOWNSHIP OF HUMBERSTONE, NOW IN THE
CITY OF PORT COLBORNE
REGIONAL MUNICIPALITY OF NIAGARA

DRAWN BY: CM CHECKED BY: MG
SCALE: 1:2000 SURVEY 22–522

Niagara Region

Planning and Development Services
1815 Sir Isaac Brock Way, Thorold, ON L2V 4T7
905-980-6000 Toll-free:1-800-263-7215

Via Email Only

June 7, 2021

File No.: D.06.07.CS-21-0040

Chris Roome
Secretary-Treasurer, Committee of Adjustment
City of Port Colborne
66 Charlotte Street
Port Colborne, ON L3K 3C8

Dear Mr. Roome:

Re: Provincial and Regional Comments
Consent Application B09-21-PC
Owner: David Bankert
Agent: Christopher Wilson
Address: 650 Lorraine Road, City of Port Colborne

Regional Planning and Development Services staff have reviewed the above-noted consent application, which is made to convey Part 1 (0.6855 ha) for an existing residential use (single detached dwelling). Part 2 (13.83 ha) will be retained for an existing agricultural use.

The Region received the application on May 25, 2021. A virtual pre-consultation meeting was held on November 12, 2020, with City and Regional staff and the owner in attendance. The following Provincial and Regional Comments are provided to assist the Committee in their consideration of the application from a Provincial and Regional perspective.

Provincial and Regional Policies

The subject land is located within a Prime Agricultural Area under the Provincial Policy Statement (PPS), identified as Prime Agricultural Area under the Agricultural System of the A Place to Grow: Growth Plan for the Greater Golden Horseshoe (Growth Plan), and designated Good General Agricultural Area in the Regional Official Plan (ROP). Provincial and Regional policies protect prime agricultural land and restrict new lot creation in the agricultural area, except for the following circumstances:

- agricultural uses, provided that the lots are of a size appropriate for the type of agricultural use(s) common in the area and are sufficiently large to maintain flexibility for future changes in the type or size of agricultural operations;
- agriculture-related uses, provided that any new lot will be limited to a minimum size needed to accommodate the use and appropriate sewage and water services;
- a residence surplus to a farming operation as a result of farm consolidation, provided that:
    - the new lot will be limited to a minimum size needed to accommodate the use and appropriate sewage and water services; and
    - the planning authority ensures that new residential dwellings are prohibited on any remnant parcel of farmland created by the severance. The approach used to ensure that no new residential dwellings are permitted on the remnant parcel may be recommended by the Province, or based on municipal approaches which achieve the same objective; and
- infrastructure, where the facility or corridor cannot be accommodated through the use of easements or rights-of-way; and,
- lot adjustments for legal or technical reasons.

The application has been submitted as a consent for a residence surplus to a farming operation. The PPS defines a farm consolidation as the acquisition of additional farm parcels to be operated as one farm parcel. The consent application proposes to sever the existing dwelling (Part 1) from the farmland (Part 2). Information submitted by the owner indicates that approximately 728 ha (225 acres) of land is farmed by the owner for cash crops. Provided the remnant parcel (Part 2) will be consolidated with this operation, the proposal constitutes a farm consolidation. The existing dwelling is surplus to the farming operation as the farmer's primary residence is 856 Weaver Road, Port Colborne. In this regard, the application appears to meet the policy requirement of being a residence surplus to a farming operation as a result of a farm consolidation.

The ROP specifies certain conditions that must be met for proposed residential lots that meet the criteria outlined above. Specifically, new lots should not exceed an area of 0.4 hectares (1 acre) unless additional area is required to support a well and private sewage disposal system. Part 1 is proposed to be 0.6855 hectares in area, which is larger than the maximum size permitted by the ROP. The parcel includes lands currently in agricultural production; however, as outlined below under the Hydrogeological Study and Private Servicing section, this area is required for a replacement septic system as a condition of the application, and additional area will be advantageous to ensure there is sufficient space for a future replacement system without negatively impacting the groundwater quality in the area. Although creation of the parcel as proposed would result in agricultural land being removed from production, the protection of groundwater quality is also a Provincial and Regional policy priority, and so the two goals must be balanced. Regional staff can support the consent application as currently proposed based on the private servicing and groundwater needs unique to this area.

Provided Part 2 is zoned for Agricultural Purposes Only (APO) to prohibit the construction of a new residential dwelling in perpetuity, the proposal will meet the intent of Provincial and Regional policy aimed at protecting the land for long term agricultural use. Regional staff understand that a concurrent Zoning By-law Amendment (ZBA) application has already been submitted, and a Public Meeting is scheduled for June 21, 2021. Regional staff suggest that any decision to approve the consent application be conditional on the approval of this ZBA application, to ensure the remnant parcel is rezoned to APO.

Hydrogeological Assessment and Private Servicing

Staff note that although the proposed lot meets the minimum lot size of 0.4 hectare specified in the ROP, the subject land is located within a Highly Vulnerable Aquifer area, Highly Sensitive Area and has overburden under 2 metres. As such, any new development (including consent applications) require the submission of a hydrogeological study to ensure the new lot is of sufficient size to accommodate a private septic system, while having no significant adverse impacts on ground water quality.

A Hydrogeological Assessment, prepared by Terra-Dynamics Consulting Inc. (dated February 18, 2021) was submitted by the owner. Regional staff have reviewed the report and have no objections. The report requires the location of the new septic system as shown on Figure 4 and a new water cistern to replace the existing well. The new septic system will need to be a minimum of 30 m from the existing shallow well at 672 Lorraine Road (directly north).

Private Septic System (PSS) Inspection staff also reviewed the application.
Part 1 contains a dwelling, detached garage, and some accessory buildings (barn and shed). No record was found for the existing legal non-conforming sewage system servicing the dwelling known as 650 Lorraine Road. Based on the site inspection, it could not be determined if the existing system will be wholly contained within the new proposed lot lines of Part 1. Therefore, a new sewage system will need to be installed meeting minimum Ontario Building Code (OBC) requirements and the recommendations of the above noted Hydrogeological Assessment within Part 1 to service the existing dwelling. It should be noted that Part 2 currently contains a large accessory structure with no plumbing. PSS staff have no objections to the proposed consent, provided a new system is installed meeting the above noted Hydrogeological and minimum OBC requirements to service the existing dwelling on Part 1. All proposed sewage systems for Part 1 shall meet the Hydrogeological conditions and OBC requirements when applying for the sewage system permit.

Minimum Distance Separation

The PPS and Regional policies require that new development, including lot creation, and new or expanding livestock facilities comply with the Minimum Distance Separation (MDS) formulae developed by the Ministry of Agriculture, Food and Rural Affairs (OMAFRA), which is applied in order to separate uses to reduce incompatibility

concerns about odour from livestock facilities. An MDS I setback would be required for an existing dwelling to be severed and a livestock facility/anaerobic digester located on the same lot prior to the consent; however, there is no livestock facility on the proposed remnant lot, so no MDS information was requested at the preconsultation meeting. Regional staff also note that municipalities are responsible for ensuring that MDS setbacks are met when reviewing land use planning applications or building permits. Therefore, the Committee should look for confirmation from City staff that the proposed lot creation meets the MDS setbacks.

Archaeological Resources

The PPS and ROP provide direction for the conservation of significant cultural heritage and archaeological resources. Specifically, Section 2.6.2 of the PPS and Policy 10.C.2.1.13 of the ROP state that development (including lot creation) and site alteration (activities, such as grading, excavation and the placement of fill that would change the landform and natural vegetative characteristics of the site) are not permitted on lands containing archaeological resources or areas of archaeological potential, unless significant archaeological resources have been conserved.

Based on the Ministry of Heritage, Sport, Tourism and Culture Industries' (MHSTCI) Criteria for Evaluating Archaeological Potential, the property exhibits high potential for the discovery of archaeological resources due to proximity (within 300m) to a watercourse on the property. Although the proposal constitutes "development" as defined in the PPS, as it will result in the creation of a new lot, no "site alteration" is proposed as part of this application; therefore, the Region can waive the requirement for a Stage 1 Archaeological Assessment.

Core Natural Heritage

The subject land is impacted by the Region's Core Natural Heritage System (CNHS), consisting of Type 2 (Important) Fish Habitat. Regional Official Plan (ROP) Policy 7.B.1.11 requires that an Environmental Impact Study (EIS) be completed where site alteration and/or development is proposed within 15 m of Type 2 Fish Habitat. The proposed lot is greater than 15 m from Type 2 Fish Habitat. As such, no studies are required and there are no further Environmental Planning comments.

Conclusion

In conclusion, the proposal is consistent with the PPS and conforms to the intent of Provincial or Regional policies for lot creation in the Agricultural Area, subject to the conditions below and confirmation from City staff that the lot complies with the Minimum Distance Separation. Regional staff does not object to the proposed consent, subject to the satisfaction of any local requirements and the following conditions:

1. That the Zoning By-law Amendment application to rezone Part 2 to Agricultural Purposes Only (APO), to prohibit the construction of a new residential dwelling in perpetuity, be approved and in effect;

2. That a sewage system permit be obtained for a new septic system to service the dwelling on Part 1. The permit application must comply with the recommendations of the Hydrogeological Assessment, prepared by Terra-Dynamics Consulting Inc. (dated February 18, 2021), including a new septic system meeting minimum Ontario Building Code requirements and as shown on Figure 4 of the report, as well as a new water cistern to replace the existing well. The new septic system will need to be a minimum of 30 m from the existing shallow well at 672 Lorraine Road (directly north).

Should you have any questions related to the above comments, please feel free to contact me by email at Britney.fricke@niagararegion.ca.

Please send a copy of the staff report and notice of the Committee's decision on this application when available.

Kind regards,

Britney Fricke, MCIP, RPP
Senior Development Planner

cc: Caitlin Goodale, Private Sewage System Inspector, Niagara Region
David Schulz, Planner, City of Port Colborne

PORT COLBORNE

Subject: **Consolidation of Emergency Services Dispatch**

To: **Council**

From: **Community Safety & Enforcement Department**

Report Number: 2021-201

Meeting Date: July 12, 2021

Recommendation:

That Community Safety and Enforcement Department Report 2021-201 be received;

That Council authorize the Fire Chief to investigate potential options for a dispatching service utilizing the Department's current analog radio system to replace the current service agreement with the City of St Catharines that expires on December 31, 2022; and

That Council authorize the Fire Chief to further investigate the option of switching to a digital format utilizing the P25 system and joining the consolidated dispatching system within the Niagara Region.

Purpose:

To provide Council with an update on a proposed consolidated dispatch centre that includes; Niagara Regional Police Service, Niagara Emergency Medical Services and other municipal fire departments in Niagara. Furthermore, the Fire Chief is requesting authorization to begin looking at all options for the continuation of dispatch services which include maintaining the existing analog system or switching to a digital format.

Background:

Port Colborne Fire & Emergency Services currently uses an analog radio system that has one antenna site at the fire hall and another at the Port Colborne Hospital which serves as the backup location. 911 calls are answered by St. Catharines Fire Service at their dispatching center located on Merritt Street in St. Catharines. On receipt of a 911 call, communication staff generates an alarm notifying Port Colborne Fire & Emergency Services personnel of the call's location and type of emergency.

The existing analog system has had several upgrades over the last 6 years. Including the addition of the backup antenna at the Port Colborne Hospital, along with the addition of mobile extenders in the apparatus. However, the four Motorola MTR2000 repeaters within the system have reached the end of life and are no longer supported by Motorola. Replacement costs are estimated at $15,000 per repeater.

St. Catharines Fire Service has given verbal notice that they will no longer provide dispatching services to fire service customers, including Port Colborne, after December 31, 2022.

Discussion:

In Canada, 911 technology is governed by the Canadian Radio-television and Telecommunications Commission (CRTC) and in Ontario the 911 infrastructure is provided provincially by Bell Canada. Current 911 technology is voice analogue-based with minimal data and limits the amount and type of information shared across the 911 infrastructure. New technology known as Next Generation 911 is being implemented nationally through the CRTC. The introduction of Next Generation 911 technology will greatly improve 911 services in an increasingly wireless mobile society as it is based on an Emergency Services IP Network operating on an Internet Protocol platform to serve as a national Internet Protocol platform-enabled emergency network. This platform enhances emergency number services to create a faster, more resilient system that allows voice, photos, videos and text messages to flow seamlessly from the public to and across the 911 network.

The CRTC has mandated that all provinces, municipalities and their public safety answering point providers are required to meet the Next Generation 911 standards no later than March 31, 2024, at which time the legacy systems will be disconnected. In Niagara, this will require significant technological changes to local emergency dispatch services.

Currently in Niagara, five separate emergency service dispatch centres exist. These include: St Catharines Fire, Tillsonburg Fire, Niagara Falls Fire, Niagara Regional Police Services and Niagara Emergency Medical Services. The consolidated dispatch proposal would have all but Niagara Emergency Medical Services being dispatched by the proposed new dispatching centre. The proposed go-live date for the transition to the Next Generation 911 compliant, consolidated dispatching service is March 31, 2024.

Current discussions with stakeholders suggest that to be part of the consolidated dispatch, any users on the analog system will be forced to switch to the digital format. As earlier stated, Port Colborne Fire & Emergency Services is currently operating on analog.

The recommended digital platform is the P25 system currently used by Niagara Regional Police Services and approximately six fire departments in the Region. Digital radio testing was completed in Port Colborne in March 2021 by Port Colborne Fire & Emergency Services. The P25 system worked very well within the City limits of Port Colborne. The digital testing of the rural areas appeared to provide better service than the existing analog system.

The switch to a consolidated dispatching system utulizing the digital platform is Port Colborne Fire & Emergency Services staff's preferred outcome. As little to no research and development is being done to further analog systems, the eventual transition to digital is inevitable. Also, there is currently interoperatabilty issues within the municipal fire services in Niagara. In mutual aid scenarios, responding fire departments can easily be linked to the incident's channel on the digital platform.

During stakeholder engagement, multiple funding models were discussed. At this time Port Colborne Fire & Emergency Services staff have not received any indication of the funding model to be chosen by the Region if the proposal proceeds. Regional Council report PHD-08-2021 "Consolidation of Niagara's Emergency 911 Communication Services" states that economic evaluations still need to be completed with the hopes of those reports being completed by the end of 2021.

With the Port Colborne Fire & Emergency Services service agreement with St. Catharines for dispatching expiring on December 31, 2022 and a Next Generation 911 implementation date of March 2024, staff must investigate alternative arrangements to guarantee continuation of dispatching services.

Financial Implications:

At this current time, financial implications cannot be forecasted. Funding models and actually knowing who will be providing dispatch services as of January 1, 2023, is not known. Full financial implications will be brought forward when possible to Council.

Strategic Plan Alignment:

The initiative contained within this report supports the following pillars of the strategic plan:

- Service and Simplicity - Quality and Innovative Delivery of Customer Services
- City-Wide Investments in Infrastructure and Recreational/Cultural Spaces
- Value: Financial Management to Achieve Financial Sustainability

Conclusion:

Due to the mandated changes in the 911 system by the CRTC, discussions for a consolidated dispatch service for Niagara Region's emergency services have begun. While there are benefits of the proposed new service, there remains many unknowns that staff cannot report on. Timelines of implementation are also a concern with dispatching services currently expiring at the end of 2022. Further investigation into all options is required to make an educated decision.

Appendices:

a. Regional Council Report PHD-08-2021 "Consolidation of Niagara's Emergency 911 Communication Services"

Respectfully submitted,

Scott Lawson
Fire Chief
905-834-4512 ext. 402
scott.lawson@portcolborne.ca

Report Approval:

All reports reviewed and approved by the Department Director and also the City Treasurer when relevant. Final approval is by the Chief Administrative Officer.

Niagara Region

Subject: Consolidation of Niagara's Emergency 911 Communication Services
Report to: Committee of the Whole
Report date: Thursday, July 8, 2021

Recommendations

1. That staff **BE DIRECTED** to proceed with a fulsome investigation into a consolidated dispatch model to include but not limited to:
    - Detailed capital budget necessary for the procurement of all assets for the complete delivery of a regional fire communications service;
    - Detailed operational budget necessary for the delivery of a regional fire communications service;
    - Detailed budget analysis on impacts, positive or negative, to the existing budgets for the 911 Public Safety Answering Point (PSAP), Niagara Regional Police Service (NRPS) and Niagara Emergency Medical Services (NEMS);
    - Governance structure to best provide effective and efficient delivery of consolidated 911 communications services;
    - Future facility review for the development of a Public Safety Communications Service primary dispatch centre for all agencies;
    - A recommendation to Council for decision on whether and how to advance the consolidation of emergency dispatch services to be operational no later than March 31, 2024 and that the aforementioned report is completed by the end of Q4 2021.

2. That staff **BE DIRECTED** to request the City of St. Catharines that should a decision to consolidate dispatch be approved by the end of 2021, that they will enter into agreements to continue to provide dispatch services to their respective Niagara jurisdictions and contract customers until such time that the consolidated dispatch is made operational, no later than March 31, 2024.

Key Facts

- The development of a consolidated emergency 911 communications service is a matter of public safety for our communities and emergency responders
- Consolidation is defined as the integration of dispatch technology, physical co-location and enhanced interoperability

- A time-limited window of opportunity exists to move to a consolidated dispatch model for Niagara
- Emergency services dispatch (police, fire, EMS) for Niagara currently involves five different agencies
- Niagara Regional Police and Niagara EMS are self-dispatched
- Of the twelve Niagara Municipal Fire Services, two are self-dispatched (St. Catharines and Niagara Falls) and the remaining ten municipalities are dispatched through contracted third-party services
- St. Catharines Fire Department (SCFD) is the primary contracted service provider for nine Niagara Region municipalities that include Grimsby, Lincoln, Niagara on the Lake, Pelham, Port Colborne, Thorold, Wainfleet, Welland and West Lincoln as well as two non-Niagara municipalities Norfolk County and Haldimand County
- Fort Erie Fire Department receives it's dispatch services under contract with Tillsonburg Fire Department
- SCFD has notified it customers that they will seek City Council approval to discontinue providing fire dispatch services to the other Niagara municipalities upon the expiration of current Agreements on December 31, 2022
- In 2019, the Provincial government conducted a review of shared services and amalgamation of local municipalities. Niagara's municipal and regional leaders committed to explore all opportunities for coordination of several services including 911 dispatch
- Engagement meetings with all twelve municipal CAO's, fire chiefs, NRPS chief, Police Services Board Chair, NEMS chief and Region Acting CAO form the basis of this report
- Participants are in general agreement that dispatch consolidation is a preferred model while highlighting several caveats
- Consolidation of dispatch services need to enhance safety for both the public and the responder, provide opportunities for improved interoperability and coordination of emergency resources, and offer short/long term affordability.

Financial Considerations

A number of financial considerations exist that influence the cost associated with implementation of a consolidated dispatch. The following have been identified as contributing factors to fully understanding the financial impact of such a model of service delivery.

Technology

NG911

Report CSD 3-2021 provides further detail on the mandatory implementation of Next Generation 911 (NG911) in Canada. The target date for the discontinuance of legacy 911 services was set for March 31, 2024. On June 14, the CRTC (Canadian Radio-television and Telecommunications Commission) announced that the deadline for implementation by all Canadian PSAP's has been extended to March 4, 2025 out of respect for any delays as a result of the ongoing pandemic. Despite the revised timeline, the planned implementation for Niagara's NG911 solution is in keeping with the original timeframes. The opportunity for the sharing of a common NG911 service would eliminate the need for separate contracts and installations with the various emergency communications agencies. Options for deployment of NG911 are currently being developed by a consultant and a fulsome report including cost analysis will be received in September of this year.

Voice Radio Systems

Currently the NRPS and six municipal fire services (Grimsby, Lincoln, West Lincoln, Pelham, St. Catharines and Niagara Falls) operate on the local P25 digital radio system. These agencies have invested a combined ~$4.6M in the purchase of capital equipment to operate on the digital platform. Six fire services remain on an analogue system. The provision of an analogue radio signal requires the conversion of the digital signal to analogue. This is currently done with the use of an engineered conventional channel gateway system, which is used by SCFD. Should consolidation include the discontinuance of the analogue converter and the use of a common digital voice radio system, the six remaining municipalities would be required to obtain compatible equipment. The combined cost for the purchase of this equipment is ~$3.1M. In addition to the capital investment required, a monthly user fee of $50 per communications device (mobile, portable radio etc.) results in operating costs of ~$600K per year. Should the decision be made to maintain the current model of a digital system for one set of users and a converted analogue signal for another, immediate investments will be required to ensure redundancy to mitigate against risk of analogue conversion failure. Future budget planning will be necessary for the eventual migration to digital for all users as support for analogue technology diminishes.

Fire Dispatch Infrastructure

The discontinuance of the current fire dispatch services (NFFD and SCFD) provide an opportunity to reallocate communications equipment, servers and other infrastructure to the construction of a consolidated fire dispatch service. Associated costs for relocation, installation and licence fees will need to be assessed for any required investments or possible cost savings, such as municipally owned radio towers. The procurement of future assets and operational infrastructure will provide cost savings through a single service and purchasing strength.

Operations

Human Resources

It is anticipated that there would be minimal change in the number of FTE's currently required to manage fire communications. Cost savings may be recognized for administration and support for a single communications service.

Facilities

The consolidation of fire services to be operated out of either the primary NRPS Communications Service or the back-up location will require investment in the construction and remodeling of space to accommodate the new service.

Service Delivery Structure and Funding Model

Funding for the NRPS communications service is provided through the Regional levy. The Niagara EMS communications service is funded 100% by the Province. The Niagara Falls Fire Department communications service is funded by municipal levy and the St. Catharines Fire communications is funded by municipal levy and through fee-for-service contracts with nine local municipalities and two non-local municipalities. The financial implications to the Region and local area municipalities of a consolidated dispatch model will be based on the service delivery model chosen and the selected model for funding the service delivery. This process will involve understanding and analysing existing operating budgets for the service delivery, service contracts, staffing, assets, liabilities, reserves etc. associated with current service delivery in order to assess on a comprehensive basis the opportunity or investment required for the alternative options.

With the many various factors involving the financial impact of a consolidated dispatch model, additional analysis is required to provide Council with detailed financial

information to make the necessary informed decisions. Achieving this level of assessment will rely on the provision of full financial details from all agencies and staff will endeavour to provide a complete report to be submitted no later than Q4 2021. Should consolidation be agreed as the preferred model, operating and capital budgets will be prepared for 2023-24 implementation.

Analysis

The goal of the consolidation of Niagara's emergency 911 dispatch into a Public Safety Communications Service is to ensure optimal public safety and protection through the effective and efficient activation of resources to incidents where emergency service resources are required and, to ensure the safety and protection of all responders through a high degree of coordination and integration in the provision of these resources.

The provision of emergency 911 dispatch for Niagara's regional police, regional EMS and local municipal fire services is provided by five separate communications services. These include the NRPS, NEMS, Niagara Falls Fire Department, St. Catharines Fire Department and Tillsonburg Fire Department (for Fort Erie). In 2019, the Provincial government ordered a review of several municipalities for consideration of the amalgamation to a single tier local government model. Niagara Region was identified as one of the municipalities under review, which prompted local governments to conduct their own analysis of the provision of several services in which enhancements could be made through an improved coordination in a shared service delivery model. Further information on this review and identified opportunities is detailed in report CAO 02-2021. Despite the subsequent decision of the Province to not force municipal amalgamation, local leaders recognized the value in continuing to seek opportunities for shared service that would provide enhanced public service, ideally accompanied with economic efficiencies.

In 2011-2012, Niagara Region commissioned an external review of emergency dispatch services and to develop consolidation options for consideration. Consultant firm IBI was hired and a subsequent report filed (CSD 7-2014). The findings of the review recommended an operationally integrated "Public Safety Communications" model as the one that IBI Group favours (page 81). While this was the preferred option, it was noted that "it may take a number of years to transition to this model" (page 82). The IBI report has provided a foundation for collaborative efforts that have since been undertaken in developing efficiencies in emergency service communications. As IBI highlighted that a full transition to an integrated model may take a number of years, ten years later in fact an opportunity does exist to make the move.

With the mandated implementation of NG911 in all Canadian primary and secondary PSAP's to happen no later than March 4, 2025, an opportunity exists to share this new technology across the emergency service agencies in place of the alternative to procure and manage several different systems in Niagara. A comprehensive review of the implementation of NG911 is currently underway by Federal Engineering Inc. with a final report due September 30 of this year. This report will inform the immediate benefits of dispatch consolidation though operational efficiencies as well as cost savings.

The move to a complete consolidation of emergency dispatch services is likely to be accomplished in phases. Factors influencing the progress of a unified system include governance, facilities, technology and funding model.

Governance

NEMS: Oversight of the Niagara Ambulance Communications Service is through the Ministry of Health (MOH). The Province owns and funds 100% of the capital and operating costs associated with the delivery of ambulance communications in Niagara. NEMS operates the dispatch service within a Performance Agreement with the Province and any changes to how these services are administered are at the sole discretion and approval of the MOH. The MOH continues to study provincial ambulance dispatch reform and the indication to other municipalities also looking at physical co-location of local dispatch services is that the MOH is not approving any changes at this time. As the MOH provides the necessary infrastructure for ambulance communications, including a provincial voice radio system (P25 as the standard) and the plan for a provincial NG911 system, the scope of local consolidation for NEMS would be limited at this time to the integration of provincial systems with local solutions. This work has been successful in the past, such as the CAD to CAD (Computer Aided Dispatch) interface with fire dispatch and similar initiatives will be undertaken regarding NG911 and P25 radio integration with local systems. The timeline for the implementation of the provincial NG911 and P25 is still not clear; however, staff continue to work closely with the province in these initiatives. Looking to the future, Niagara is well positioned to help lead in provincial ambulance dispatch restructuring which will benefit from the development of a Public Safety Communications Service.

NRPS: Oversight of the Niagara Regional Police Communications Service is through the Police Services Board. The NRPS provides Primary PSAP services under contract with the Region as well as emergency communications for their own service. The NRPS owns and operate their own digital voice radio system, referred to as "P25". The P25 system has been made available to the local fire communications services operated by

Niagara Falls and St. Catharines. Both of these services have switched to the P25 system and an additional four municipal fire services also use the NRPS radio system as do the Niagara Parks Police and soon the local Canada Border Services Agency as they are on boarded to the system in the coming months.

Fire: Oversight of municipal fire services is through the individual municipalities. Each fire service has the ability to determine how it will receive its dispatch services. With the possibility of the discontinuance of fee-for-service fire dispatch by St. Catharines Fire to the nine regional municipalities at the end of 2022, each municipality will be required to determine how they are to be dispatched. Despite having autonomy in procuring the provision of this service, to best serve the public at large, the communications solution procured will be required to provide interconnectivity with all other local dispatch services (NRPS and NEMS) and best support the mandatory mutual aid agreements through enhanced interoperability.

A future consolidated dispatch inclusive of the integration of technology and facilities, would maintain autonomy with respect to operational policies related to the delivery of agency-specific communications. There is consensus that service delivery, operations and policy should be completed by experienced professionals in their respective field i.e. fire dispatches fire, police dispatch police and EMS dispatches EMS. As such, a regional fire communications service would be created to ensure oversight consistent with mandated requirements and policies and procedures that meet the need of all twelve local area fire services.

Facilities

No existing dispatch facility has the required space to house all three communications services (police, fire and EMS). The NRPS main communications service located at District 2 likely has adequate space (with minor renovations) to physically accommodate hosting a regional fire communications service. With the imminent construction of the NRPS communication back-up centre, this new space is able to be scalable to also accommodate the fire communications service. Regardless of the location of the primary and back-up sites for the fire service, both locations will be required to provide the needed functional space.

With the ultimate goal of creating a completely unified communications service in which all three dispatch agencies (police, fire and EMS) are co-located, a longer-term facilities strategy is required. The implementation of an EMS facilities plan has been underway for several years, which includes the construction of a Primary Hub that could host such an integrated communications service. Information specific to the EMS Primary Hub is

being presented to Council in August of this year and will help inform the decision for dispatch consolidation as it relates to a future facility.

Technology

NG911

A key decision point in the determination of the future of dispatch consolidation is directly related to the implementation of NG911. As noted previously, NG911 must be operational across Canada, including Niagara, no later than March 4, 2025. A recommendation has been made that this technology be operational at least one year prior to the deadline to permit complete transition to the new system. A report providing options for an NG911 solution for Niagara will be presented in September of this year. Within the following quarter, a decision will be required if the NG911 system will be limited to the primary PSAP and NRPS or if it will be intended to also support a common fire communications service. Figure 1 details the parallel activities and the influence of each on outcomes.

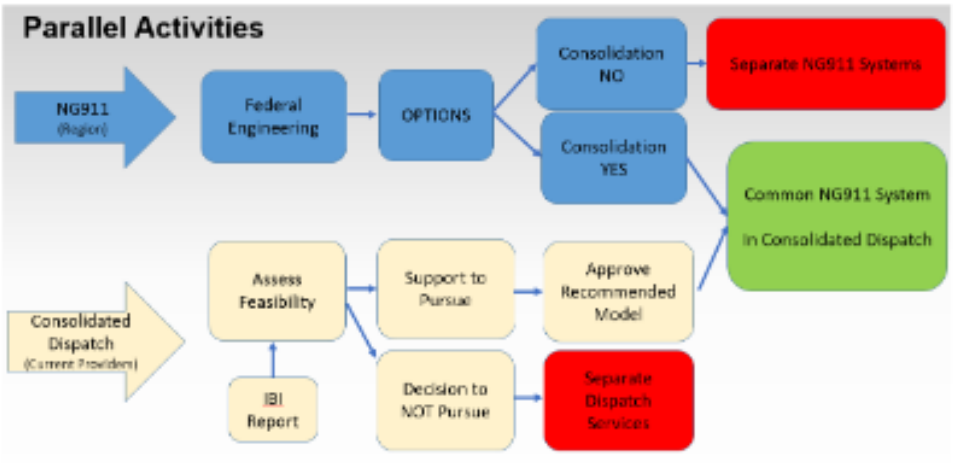


Figure 1 shows the two concurrent activities and the decision points related to NG911 and consolidation.

If a decision is made in favour of dispatch consolidation, the initial phase will include the formation of a regional fire communications service and the initiation of a common NG911 solution to serve the Primary PSAP, NRPS and regional fire. If there is no intention of pursuing a consolidated dispatch in Niagara, NG911 will be procured for the use of the primary PSAP and NRPS operations. Fire services will then be required to retain NG911 and dispatch services from alternate sources.

Voice Radio

With six of the twelve local municipal fire services operating on the P25 radio platform and six remaining on the converted analogue signal, a decision is required on the design of a consolidated dispatch system. Municipalities who have moved to the digital system for their fire agency have been pleased with the performance of the enhanced system. Other municipalities that remain on the analogue signal are also satisfied with the current system meeting their needs and do not see any immediate reason to switch to digital. It has been noted by several industry experts that there is little to no research and development of furthering analogue radio systems and the future focus is entirely on digital platforms. It is reasonable to expect the eventual transition of all voice radio communications to digital although exact timelines are unpredictable.

As previously noted, the current voice radio system for fire as supplied under service contract with the SCFD is P25 digital, however a converter is used to change the digital signal to analogue to allow those using analogue hardware to continue without switching to new P25 equipment. The issue of interoperability has been discussed with emergency service leaders and while rudimentary forms of common communications exist these methods are not true common systems where all responders have the ability to communicate with each other as required. Currently, interoperability is limited to the use of two different hand held devices (one analogue and one digital) which limits communication between the two systems only to the individual using both radios. Third party communication devices also exists such as "Base Camp", a hardware unit that allows various communication devices to be physically interconnected thereby facilitating the different systems to communicate albeit in a limited function. NFFD currently owns one of these systems and the experience is that it is not easily deployable and is cumbersome to use effectively. Industry Canada describes the gold standard of interoperability and the most effective way of achieving radio interoperability is with the use of common standards-based radio systems by all public safety agencies in the broadest geographical area.

With the likelihood of future technology being completely digital, consideration is required in the design of a new communications model, as to the need for all services to be on the common P25 digital system immediately with consolidation or if the current analogue conversion service should continue. If the option is to continue providing converted analogue radio services, investments are required to ensure redundancy in the conversion system as it is currently a single point of failure for the radio system and a risk assumed within a new dispatch model and the provider.

Options to be reviewed include the ability and agreement of all municipalities to move to P25 with the launch of a consolidated communications services, the plan to phase in P25 with the six remaining fire services within a specified time period, or to maintain analogue services until such time that municipalities independently move to P25 or the technology becomes redundant.

Service Delivery Structure

To operate a consolidated dispatch service, at least three possible options have been identified; Region owned and operated, shared service and fee for service.

Region Owned and Operated

In this model, the Niagara Region provides the necessary capital assets and operating budget to supply a regional fire communications service for all twelve municipalities. This regional dispatch would be responsible for the processing of fire-related 911 calls and ensuring communications/interoperability with all twelve fire agencies as well as NRPS and NEMS (Figure 2). A common digital radio system and equipment would be provided by the Region to the municipalities through the NRPS P25 system. The full cost of this service would be funded through the Regional tax levy.

Shared Service

This scenario separates the regional fire communications service functions from the responsibilities of the local area municipalities. In this model the Region funds and supplies regional fire communications that would include the call processing of fire-related 911 calls and delivery of communications to the local fire services. The municipalities would be responsible to provide the assets able to receive and operationalize the communications from the regional service in the manner decided by that municipality (Figure 2). Funding for the Region portion would be through the Regional tax levy and the Municipal portion through local tax levies.

Figure 2. The left graphic depicts a complete Regional Owned and Operated communications service for all 12 municipal fire services. The right image is a Shared model where the regional dispatch service provides communications to the point of the municipal agency. The municipality is then responsible for capital and operating to receive the information.

Fee for Service

This model is similar to the Region Owned and Operated option with the difference in that 100% of funding for the service (capital and operating) is recovered through proportional payments from local area municipalities.

Phased Approach

The process for dispatch consolidation would be implemented in three phases.

Phase 1: Q3-Q4 2021

Should Regional Council approve the Recommendations contained within this report, a number of activities will be advanced to develop more detailed information to assist Council in making a final decision by the end of Q4 2021. This will require a detailed economic evaluation to implement and commence operations of a consolidated communications service to start no later than March 31, 2024. Included in this assessment will be matters related to human resources to identify appropriate staffing models as well as legal guidance on the implementation of a new service provided/facilitated by the Region, a commission or new entity. Further assessment of the feasibility to physically host fire communications within NRPS District 2 and the NRPS back-up communications centre would be undertaken. During this phase, a preferred governance model will also be recommended for Council's consideration. With the receipt of the NG911 report in September of this year, the information provided will better inform aspects of technology integration while at the same time a determination of voice radio systems will also be recommended. This information will assist Council in the final decision by the end of 2021 of proceeding with consolidation, a preferred funding model and approved governance structure.

Phase 2: 2022 – Q1 2024

With a decision to proceed with consolidation, the objectives of the second phase focus on the implementation of the service no later than March 31, 2024. To accomplish this, a regional fire communications service would be developed to replace the existing dispatch service(s). This new program will design the preferred governance structure to ensure quality oversight and effective delivery of services. Capital and operational budgets will be developed for 2023. With approved budgets, facilities will be readied with capital assets to co-locate the new fire communications service, likely within District 2 of NRPS as well as the new back-up communications centre with one site being designated the primary site and the other the back-up for fire communications. This phase will also include the continued implementation of NG911 as a regional system

and ensure a voice radio system to best meet the needs of the service. While the efforts of Phase 2 focus primarily on local consolidation of fire and police, collaboration will continue with the Ministry of Health to ensure integration with provincial EMS technological systems with local solutions. This will ensure operational readiness for go-live of NG911, P25 and a regional fire communications service.

Phase 3: Post Q1 2024

With the go-live of the regional fire communications service and complete transition to NG911 no later than March 31, 2024 one year prior to the mandatory deadline, the consolidation of common fire and police facilities and communications systems will be fully operational. For long-term sustainability, a plan to co-locate all three emergency service agencies (NRPS, fire and EMS) can be considered. The EMS Primary Hub offers an opportunity to host a complete Niagara Region Public Safety model of service delivery that offers amongst other things, full emergency dispatch integration. As previous indicated, a Council report concerning the Primary Hub will be tabled in August of this year.

Alternatives Reviewed

The recommendations provided within this report are intended to move towards a preferred emergency communications service delivery model of consolidation. While a number of factors and alternatives exist that define how such an integrated service could be provided, alternatives to consolidation were considered.

Municipal Procurement of Fire Dispatch Service

Regardless of a decision for or against consolidation, the NRPS and NEMS communications services will continue operations. Municipal fire services however, will be required to procure their own dispatch service if consolidation is not agreed upon. This will require each of the twelve municipalities to determine how best to provide fire communications. Failing consolidation, St. Catharines Fire will seek their Council's approval to discontinue fee-for-service dispatch for the nine existing LAM's. Both St. Catharines Fire and Niagara Falls Fire have developed an alternative plan to consolidate the two existing fire communications services and relocate to the NRPS District 2 Communications Centre to continue to provide dispatch services for their respective communities only, using the technological integration of NRPS NG911 and P-25. It is unknown at this time if additional fire services could also provide/receive dispatching services in this configuration. In this scenario, with each fire agency developing it's own method of dispatch services, it is likely this will result in a further

fragmentation of fire communications creating ineffective interoperability and possible increased risk to public and responder safety.

This alternative is not recommended as the possibility of a further fragmentation of fire dispatch services would worsen the current situation of multiple providers. As municipalities procure fire dispatch services from other providers, the result is likely an uncoordinated compilation of an array of fire dispatch services. Each would require a level of integration with regional police and EMS making this challenging and not an optimal solution.

Partial Independence of Fire Communications

This alternative considers the majority of municipalities agreeing to consolidation however, one or more make the decision not to participate. In this scenario, if economically and practically feasible, a quasi-regional fire communications service is implemented with those municipalities choosing to participate, and the remaining services electing to procure fire dispatch services independently.

This is not recommended as it is not the most operationally effective model to ensure safety and coordination of information and is not in keeping with a "one Niagara" philosophy.

Relationship to Council Strategic Priorities

The NG911 project and dispatch consolidation supports Council Strategic Priorities of fostering Healthy and Vibrant Communities through the delivery of quality, affordable and accessible emergency services. In addition, this model contributes to a Sustainable and Engaging Government with a high quality, efficient, fiscally sustainable and coordinated core delivery of emergency dispatch services that is possible only through enhanced communication, partnerships and collaborations across agencies and governments.

Other Pertinent Reports

- CSD 07-2014 Public Safety Dispatch Review
- PHD 02-2015 Emergency Services Dispatch Update
- Memorandum C8253 Supplementary to PHD 02-2015
- PHD-08 2015 Consolidated Emergency Services Dispatch
- CSD-04 2017 NRPS 1 District Project Update
- CSD 3-2021 NG911 Updates

- CL-C 16-2021 NG911 Updates

Prepared by:
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Recommended by:
Todd Harrison, CPA, CMA
Commissioner/Treasurer
Corporate Services

Submitted by:
Ron Tripp, P.Eng.
Acting Chief Administrative Officer

This report was prepared in consultation with the Chiefs of Niagara Regional Police Services, St. Catharines Fire Services, Niagara Falls Fire Services and Regional Fire Coordinator and reviewed by M. Mustafa Hirji, Medical Officer of Health & Commissioner (Acting), Public Health & Emergency Services.

PORT COLBORNE

Subject: **Ontario Water/Wastewater Agency Response Network (OnWARN) Mutual Aid and Assistance Agreement**

To: **Council**

From: **Public Works Department**

Report Number: 2021-203

Meeting Date: July 26, 2021

Recommendation:

That Public Works Department Report 2021-203 be received;

That the Mayor and Clerk be authorized to execute the Agreement attached as Appendix B to Public Works Department Report 2021-203 with the Ontario Water/Wastewater Agency Response Network (OnWARN) for the purpose of coordinating response activities and sharing resources during emergencies; and

That a by-law to enter into an agreement with OnWARN be brought forward.

Purpose:

The purpose of this report is to inform Council of OnWARN and gain Council approval to participate in the mutual aid and assistance program for sharing emergency resources among water and wastewater agencies across the Province.

Background:

The Water/Wastewater Agency Response Network (WARN) is a program that allows utilities to cross jurisdictional boundaries to provide aid and assistance (personnel, equipment, and other resources) in preparing for, responding to, or recovering from an emergency.

WARNs were first developed in the Unites States in response to major emergency events such as 9/11 and Hurricane Katrina. It was recognized that Water and Wastewater utilities require specialized resources and specially trained staff, and that other critical infrastructure, such as fire services, rely on a functioning water system.

The purpose of a WARN system is to enable municipalities to provide mutual aid and assistance during or after a natural or man-made disaster or emergency. Such events that may require assistance include flooding events, watermain breaks or water contamination.

The WARN program has been established in 49 of 50 states in America and has expanded into Canada with a network in both Alberta and Ontario. WARN is supported by the Environmental Protection Agency and other major environmental and water agencies such as the American Water Works Association, Canadian Water and Wastewater Association, and Ontario Public Works Association. The Ontario version, “OnWARN” was developed in 2011. Participation is voluntary and there is no obligation to responds to events. There are 61 current members, including Niagara Region and Thorold. The name and location of the current members are included in Appendix A.

Discussion:

Some of the benefits of joining OnWARN include utilizing a streamlined approach to emergency response, creating a network of support in the event of an emergency, and the primary benefit is that it establishes a framework of agreements and protocols in advance of an event.

OnWARN members can put in assistance requests for additional staffing resources or specialized equipment even without formally declaring an emergency. Assistance can then be provided during minor and major events in a timely manner. OnWARN not only facilitates access to equipment, but also resources, such as templates and guides, and knowledgeable personnel.

In the event of an emergency where the required response exceeds the City’s resources, participation in OnWARN would allow the water and wastewater systems to recover as quickly as possible by using external resources as needed. Members also have access to assistance from all participating members across the entire province, which can be helpful when responding to events which impact large geographic areas (e.g. severe weather events) and when response from adjacent municipalities is not possible.

The OnWARN Agreement describes the procedures and standards for the administration of the OnWARN Program and is provided in Appendix B.

Financial Implications:

There is no cost to join or maintain participation in OnWARN. As a member of OnWARN there is no obligation to provide assistance at any time, however, should assistance be provided, all costs associated with the response are born by the municipality requesting

the assistance. The members who provide aid must be reimbursed for the services provided.

As per the Agreement, each Member shall maintain an insurance program that covers activities that it may undertake by virtue of membership in the Mutual Aid and Assistance Program.

Strategic Plan Alignment:

The initiative contained within this report supports the following pillar(s) of the strategic plan:

- Service and Simplicity - Quality and Innovative Delivery of Customer Services

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Conclusion:

As evidenced by its successful implementation and use in other parts of North America, as well as Ontario, participation in the OnWARN program is seen as a significant benefit to the City in the event of an emergency situation, building on the City's robust emergency preparedness. Emergency Management is a required part of the City's Drinking Water Quality Management System (DWQMS) and being an OnWARN member will help the city be better prepared for drinking water system emergencies.

Becoming an OnWARN member will allow the City to have access to a large network of contacts and would expedite deployment of assistance and resources in the event of an emergency. With the extra tools that are provided by this network, any water related disaster can be mitigated more effectively without having to declare a state of emergency. The mutual aid and assistance agreement is an important tool that the City can use to improve preparedness and response capabilities to emergency events.

Appendices:

a. Current OnWARN Members

b. OnWARN Agreement

Respectfully submitted,

Sydney Porte
Environmental Compliance Student
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Report Approval:

All reports reviewed and approved by the Department Director and also the City Treasurer when relevant. Final review and approval by the Chief Administrative Officer.

Current OnWARN Members

Member	Location
Asphodel Norwood (Township of)	Norwood, ON
Aurora (Town of)	Aurora, ON
Aylmer (Town of)	Aylmer, ON
Bayham (Municipality)	Straffordville, ON
Blue Mountains (Town of)	Thornburry, ON
Brockville (City)	Brockville, ON
Carleton Place (Town of)	Carleton Place, ON
Casselman (Village)	Casselman, ON
Centre Wellington (Township of)	Elora, ON
Chatham-Kent Public Utilities Commission	Chatham, ON
Clearview (Township of)	Stayner, ON
Deseronto (Town of)	Deseronto, ON
Dryden (City of)	Dryden, ON
Durham (Regional Municipality)	Whitby, ON
Dutton Dunwich (Municipality)	Dutton, ON
East Gwillimbury (Town of)	East Gwillimbury, ON
Edwardsburgh/Cardinal (Township)	Cardinal, ON
Elgin Area Primary Water Supply System	Greater London Region, ON
Erin (Town of)	Erin, ON
Gananoque Public Utilities	Gananoque, ON
Greater Napanee (Town of)	Greater Napanee, ON
Greater Sudbury (City)	Sudbury, ON
Grey Highlands (Municipality of)	Markdale, ON
Guelph (City)	Guelph, ON
Guelph/Eramosa (Township)	Rockwood, ON

Kawartha Lakes (City)	Kawartha Lakes, ON
Kincardine (Municipality)	Kincardine, ON
King (Township)	King, ON
Kingston (Utilities Kingston)	Kingston, ON
Kitchener (City)	Kitchener, ON
Lake Huron Primary Water Supply System	Greater London Region, ON
Lakefront Utilities Services Inc.	Cobourg, ON
London (City)	London, ON
Malahide (Township)	Aylmer, ON
Marmora and Lake (Municipality)	Marmora, ON
Midland (Town)	Midland. ON
Minto (Town)	Minto, ON
Mississippi Mills (Town)	Almonte, ON
Muskoka (District of)	Bracebridge, ON
Niagara (Regional Municipality)	Thorold, ON
North Glengary (Township)	Alexandria, ON
North Grenville (Municipality)	Kemptville, ON
North Perth (Municipality)	North Perth, ON
Oro-Medonte (Township)	Oro-Medonte, ON
Oxford (County)	Woodstock, ON
Perth (Municipality of the Town of)	Perth, ON
Peterborough Utilities Services Inc	Peterborough, ON
Prescott (Town of)	Prescott, ON
Quinte West (City)	Quinte West, ON
Renfrew (Town of)	Renfrew, ON
Russell Public Utilities (Township)	Emburn, ON
Severn (Township)	Orillia, ON

Smiths Falls (Town)	Smiths Falls, ON
Southgate (Township)(Dundalk Drinking Water & Wastewater Services)	Casselman, ON
Southwold (Municipality)	Fingal, ON
St. Thomas (City)	St. Thomas, ON
Stirling-Rawdon (Township)	Stirling-Rawdon, ON
Stratford (City of)	Stratford, ON
Strathroy-Caradoc (Municipality)	Strathroy, ON
Trent Hills (Municipality)	Campbellford, ON
Waterloo (City)	Waterloo, ON
Whitchurch-Stouffville (Town of)	Stouffville, ON

Mutual Aid and Assistance Agreement for an Ontario Water/Wastewater Agency Response Network (OnWARN)

Memorandum of Understanding

This Memorandum of Understanding ("Agreement") is made and entered into by public and private water and wastewater utilities, owners, and operating authorities in the Province of Ontario ("Utilities") that have, by executing this Agreement, manifested their intent to participate in an Ontario program for water/wastewater mutual aid and assistance ("Mutual Aid and Assistance Program").

Statutory Authority for Municipal Utilities: This Agreement is authorized under Section 20 of the Ontario Municipal Act, 2001 which provides that Municipal Utilities may contract with each other to provide services.

ARTICLE I
PURPOSE

Recognizing that emergencies may require aid or assistance in the form of personnel, equipment, and supplies, the signatory Members hereby establish the Mutual Aid and Assistance Program. Through the Mutual Aid and Assistance Program, Members coordinate response activities and share resources during emergencies. This Agreement sets forth the procedures and standards for the administration of the Mutual Aid and Assistance Program.

ARTICLE II
DEFINITIONS

A. Authorized Official – An employee or officer of a Member who under this Agreement is authorized to:
   1. Request assistance;
   2. Offer assistance;
   3. Decline to offer assistance; or
   4. Withdraw assistance.

B. Emergency - A natural or human caused event or circumstance causing, or imminently threatening to cause, loss of life, injury to person or property, human suffering or financial loss, or could reasonably be beyond the capability of the services, personnel, equipment, and facilities of a Member to fully manage and mitigate internally.

C. Member – Any public or private water or wastewater utility, owner, or operating authority in Ontario ("Utility") that manifests intent to participate in the Mutual Aid and Assistance Program by executing this Agreement.

   1. Requesting Member – A Member who requests aid or assistance from another Member or Members under the Mutual Aid and Assistance Program.
   2. Responding Member – A Member that provides aid or assistance during a Period of Assistance in response to a request for aid or assistance under the Mutual Aid and Assistance Program.
   3. Non-Responding Member - A Member or Associate Member that does not provide aid or assistance during a Period of Assistance under the Mutual Aid and Assistance Program.

D. Associate Member – Any participant, approved by the OnWARN Steering Committee, which provides a support role or service for the Mutual Aid and Assistance Program. (For example: any agency, or an association that does not sign this Agreement). An Associate Member is not entitled to vote on any matter as outlined and identified in this Agreement.

E. Confidential Information - Any document shared with any signatory of this Agreement that is marked confidential, including but not limited to any map, report, note, paper, opinion, letter or e-mail which relates to the system security and vulnerabilities of a Member or Associate Member, and any document that is protected under the Municipal Freedom of Information and Protection of Privacy Act, Freedom of Information and Protection of Privacy Act, Emergency Management and Civil Protection Act, Personal Information Protection and Electronic Documents Act, and Personal Health Information Protection Act, 2004.

F. Period of Assistance – A specified period of time when a Responding Member assists a Requesting Member. The period commences when personnel, equipment, and/or supplies depart from Responding Member's facility and ends when the resources return to their facility. This period also includes the utilization of Responding Member personnel that provide a direct support role or service to the Requesting Member as mutually agreed upon, and the period commences when the support personnel are assigned to the Requesting Member's emergency. All protections identified in this Agreement, including but not limited to indemnification and hold-harmless clauses, apply during this period. The specified Period of Assistance may occur during response to or recovery from an Emergency, as previously defined.

G. Incident Management System – A system, consistent with internationally recommended practices that provides standardized organizational structures, functions, processes and terminology for use at all levels of emergency response in Ontario.

ARTICLE III
ADMINISTRATION

The Mutual Aid and Assistance Program shall be administered through the OnWARN Steering Committee. In addition to representing the interests of the Members, the OnWARN Steering Committee may include Associate Members as non-voting participants. Under the leadership of the OnWARN Steering Committee Chair, the OnWARN Steering Committee shall coordinate emergency planning and response activities for the Mutual Aid and Assistance Program, and provide administrative oversight and coordination of the Agreement and the associated policies and procedures.

ARTICLE IV
PROCEDURES

The OnWARN Steering Committee shall develop operational and planning procedures for the Mutual Aid and Assistance Program, which may be undertaken in cooperation with Associate Members, at the sole discretion of the OnWARN Steering Committee. These procedures shall be reviewed at least annually and updated as needed by the OnWARN Steering Committee.

The OnWARN Steering Committee shall distribute copies of the policies and procedures to the Members when they are developed or amended.

ARTICLE V
REQUESTS FOR ASSISTANCE

A. Member Responsibility: Members shall identify an Authorized Official and alternate contacts, related contact information including 24-hour access (e.g. an after-hours number), and maintain information on resources that may be available from the Member for mutual aid and assistance response. Such contact information shall be updated annually or when changes occur, and copies provided to the OnWARN Steering Committee.

In the event of an Emergency, a Member's Authorized Official may request mutual aid and assistance from participating Members. Requests for assistance can be made orally or in writing. When made orally, the request for personnel, equipment, and supplies shall be prepared in writing as soon as reasonably practicable. Requests for assistance shall be directed to the Authorized Official of the participating Member. Specific protocols for requesting aid shall be provided in the required procedures (Article IV).

For further clarity, an Emergency under this agreement does not require the Member to declare a state of emergency in accordance with the Emergency Management and Civil Protection Act.

B. Response to a Request for Assistance – Members are not obligated to respond to a request for assistance from a Requesting Member. After a Member receives a request for assistance, the Authorized Official evaluates whether or not to respond, whether resources are available to respond, or if other circumstances would hinder response. Following the evaluation, the Authorized Representative shall inform, as soon as possible, the Requesting Member whether it will respond. If the Member is willing and able to provide assistance, the Responding Member shall inform the Requesting Member about the type of available resources and the approximate time of such assistance.

C. Discretion of Responding Member's Authorized Official – Execution of this Agreement does not create any duty to respond to a request for assistance from a Requesting Member. When a Member receives a request for assistance, the Authorized Official shall have sole and absolute discretion as to whether or not to respond, or the availability of resources to be used in such response. An Authorized Official's decisions on the availability of resources shall be final.

ARTICLE VI
RESPONDING MEMBER PERSONNEL

A. Incident Management System – When providing assistance under this Agreement, the Requesting Member and Responding Member may be organized and may function under the Incident Management System.

B. Control - While employees so provided may be under the supervision of the Responding Member, the Responding Member's employees come under the direction and control of the Requesting Member, to address the needs identified by the Requesting Member. The Requesting Member's Authorized Official shall coordinate response activities with the designated supervisor(s) of the Responding Member(s). The Responding Member's designated supervisor(s) shall keep accurate records of work performed by personnel during the specified Period of Assistance.

C. Food and Shelter – Whenever practical, Responding Member personnel shall be self-sufficient for up to 72 hours. When possible, the Requesting Member shall supply reasonable food and shelter for Responding Member personnel. If the Requesting Member is unable to provide food and shelter for Responding Member personnel, the Responding Member's designated supervisor is authorized to secure the resources necessary to reasonably meet the needs of its personnel.

Except as provided below, the cost for such resources shall not exceed the Responding Member's per diem rates or related expense policy for that area. To the extent food and shelter costs exceed the Responding Member's per diem rates for the area, the Responding Member shall demonstrate that the additional costs were reasonable and necessary under the circumstances.

Unless otherwise agreed to in writing, the Requesting Member remains responsible for reimbursing the Responding Member for all reasonable and necessary costs associated with providing food and shelter, if such resources are not provided.

D. Communication – The Requesting Member shall provide Responding Member personnel with radio equipment as available, or radio frequency information to program existing radios, in order to facilitate communications with local responders and personnel. In lieu of radio equipment, the Requesting Member may make alternative communications arrangements with the Responding Member in order to adequately facilitate coordinated communications during the Period of Assistance.

E. Status - Unless otherwise provided by law, the Responding Member's officers and employees retain the same privileges, immunities, rights, duties and benefits as provided in their respective jurisdictions.

F. Licences and Permits – To the extent permitted by law, Responding Member personnel who hold licences, certificates, or permits evidencing professional, mechanical, or other skills shall be allowed to carry out activities and tasks relevant and related to their respective credentials during the specified Period of Assistance.

G. Right to Withdraw - The Responding Member's Authorized Official retains the right to withdraw some or all of its resources at any time for any reason in the Responding Member's sole and absolute discretion. Notice of intention to withdraw shall be communicated to the Requesting Member's Authorized Official as soon as is practicable under the circumstances

ARTICLE VII
COST – REIMBURSEMENT

The Requesting Member shall reimburse the Responding Member for each of the following categories of costs incurred during the specified Period of Assistance. The Responding Member may assume, in whole or in part, any such loss, damage, expense, or other cost incurred, or may loan such equipment or donate such services to the Requesting Member without charge or cost to the Requesting Member.

A. Personnel – The Responding Member shall be reimbursed by the Requesting Member for personnel costs incurred for work performed during the specified Period of Assistance. Responding Member personnel costs shall be calculated according to the terms provided in their employment contracts or other conditions of employment. The Responding Member's designated supervisor(s) shall keep accurate records of work performed by personnel during the specified Period of Assistance. Requesting Member reimbursement to the Responding Member could consider all personnel costs, including salaries or hourly wages, costs for fringe benefits, and indirect costs.

B. Equipment – The Requesting Member shall reimburse the Responding Member for the use of equipment during the specified Period of Assistance, including, but not limited to, reasonable rental rates, all fuel, lubrication, maintenance, transportation, and loading/unloading of loaned equipment. All equipment shall be returned to the Responding Member in good working order as soon as is practicable and reasonable under the circumstances. At a minimum, rates for equipment use shall be based on the "Ontario Provincial Standard 127 Schedule of Equipment Rates". If a Responding Member uses rates different from those in the "Ontario Provincial Standard 127 Schedule of Equipment Rates", the Responding Member shall provide such rates orally or in writing to the Requesting Member prior to supplying the equipment. Mutual agreement on which rates are used shall be reached in writing prior to dispatch of the equipment. Reimbursement for equipment not referenced on the "Ontario Provincial Standard 127 Schedule of Equipment Rates" shall be developed based on actual recovery of costs. If Responding Member must lease a piece of equipment while its equipment is being repaired, Requesting Member shall reimburse Responding Member for such rental costs.

C. Materials and Supplies – The Requesting Member shall reimburse the Responding Member actual replacement cost, plus handling charges, for use of expendable, consumable, or non-returnable supplies. The Responding Member shall not charge direct fees or rental charges to the Requesting Member for other supplies and reusable items that are returned to the Responding Member in a clean, damage-free condition. Reusable supplies that are returned to the Responding Member with damage shall be treated as expendable supplies for purposes of cost reimbursement.

D. Payment Period – The Responding Member shall provide an itemized bill to the Requesting Member for all expenses incurred by the Responding Member while providing assistance under this Agreement. The Requesting Member shall send the itemized bill not later than (90) ninety days following the end of the Period of Assistance. The Responding Member may request additional periods of time within which to submit the itemized bill, and Requesting Member shall not unreasonably withhold consent to such request. The Requesting Member shall pay the bill in full on or before the forty-fifth (45th) day following the billing date. The Requesting Member may request additional periods of time within which to pay the itemized bill, and Responding Member shall not unreasonably withhold consent to such request, provided, however, that all payment shall occur not later than one-year after the date a final itemized bill is submitted to the Requesting Member.

E. Records - Each Responding Member and their duly authorized representatives shall have access to a Requesting Member's books, documents, notes, reports, papers and records which are directly pertinent to this Agreement for the purposes of reviewing the accuracy of a cost bill or making a financial, maintenance or regulatory audit. Each Requesting Member and their duly authorized representatives shall have access to a Responding Member's books, documents, notes, reports, papers and records which are directly pertinent to this Agreement for the purposes of reviewing the accuracy of a cost bill or making a financial, maintenance or regulatory audit. Such records shall be maintained for at least three (3) years after the Period of Assistance, or longer where required by law.

ARTICLE VIII
DISPUTES

If any controversy or claim arises out of, or relates to, the execution of this Agreement, including, but not limited to, alleged breach of this Agreement, the disputing Members shall first attempt to resolve the dispute by negotiation, followed by mediation and finally shall be settled by arbitration in accordance with the rules of the Ontario Arbitration Act. Any court of competent jurisdiction may enter the judgment rendered by the arbitrators as final judgment that is binding on the parties.

ARTICLE IX
REQUESTING MEMBER'S DUTY TO INDEMNIFY

The Requesting Member shall assume the defense of, fully indemnify and hold harmless, the Responding Member, its officers and employees, from all claims, loss, damage, injury and liability of every kind, nature and description, directly or indirectly arising from Responding Member's work during a specified Period of Assistance. The scope of the Requesting Member's duty to indemnify includes, but is not limited to, suits arising from, or related to, negligent or wrongful use of equipment or supplies on loan to the Requesting Member, or faulty workmanship or other negligent acts, errors or omissions by Requesting Member or the Responding Member personnel.

The Requesting Member's duty to indemnify is subject to, and shall be applied consistent with, the conditions set forth in Article X.

ARTICLE X
SIGNATORY INDEMNIFICATION

In the event of a liability, claim, demand, action, or proceeding of whatever kind or nature arising out of a specified Period of Assistance, the Requesting Member shall have a duty to defend, indemnify, save and hold harmless all Non-Responding Members, their officers, agents and employees from any liability, claim, demand, action, or proceeding of whatever kind or nature arising out of a Period of Assistance.

ARTICLE XI
WORKPLACE SAFETY AND INSURANCE

A. Workplace Safety and Insurance - The Workplace Safety and Insurance Act provides that if an Emergency is declared by the Premier of Ontario or the head of council of a municipality, and a person is sent to assist, the Crown (Government of Ontario) or the municipality, whichever declared the Emergency is considered the employer of that person for the purposes of assessing any accident costs. However, the worker's regular employer (Responding Member) continues to be responsible for:
   - Maintaining employment benefits as required by section 25 of the Workplace Safety and Insurance Act,
   - Complying with the obligation to co-operate in the early and safe return to work of the worker (section 40), and,
   - Complying with the obligation to re-employ the worker (section 41) if it applies.

Any costs incurred by the worker's regular employer (Responding Member) in meeting these obligations are reimbursed by the Crown or the municipality, whichever is applicable.

The Responding Member is responsible for providing Workplace Safety and Insurance Board (WSIB) benefits and administering WSIB for its employees. The Requesting Member shall reimburse the Responding Member for all costs, benefits, and expenses associated with WSIB and other employee claims that arise from or are related to providing assistance under this Agreement.

B. Hold Harmless - The Requesting Member shall indemnify and hold the Responding Member harmless from and against any and all liability for loss, including, but not limited to, damage, cost or expense which the Responding Member may incur by reason of bodily injury, including death, to any person or persons, or by reason of damage to or destruction of any property, including the loss of use thereof, which result from furnishing Emergency assistance and whether or not due in whole or in part to any act, omission, or negligence of the Responding Member.

Where payments are made to Responding Member's employees under WSIB or any similar law for bodily injury or death resulting from furnishing emergency assistance, Requesting Member shall make reimbursement to Responding Member to the extent such payment increases the Responding Member's WSIB or disability benefits costs, whether such increase in costs occurs in the form of an increase in premiums or contributions or in the form of reduction in dividends or premium refunds, or otherwise.

In the event any claim or demand is made or suit or action is filed against the Responding Member alleging liability for which Requesting Member shall indemnify and hold harmless the Responding Member under the above paragraphs, the Responding Member shall promptly notify the Requesting Member thereof, and the Requesting Member, at its sole cost and expense, shall settle, compromise or defend the same in such manner as it in its sole discretion deems necessary or prudent.

ARTICLE XII
NOTICE

A Member who becomes aware of a claim or suit that in any way, directly or indirectly, contingently or otherwise, affects or might affect other Members in respect of this Agreement, shall provide prompt and timely notice to the Members who may be affected by the suit or claim. Each Member reserves the right to participate in the defense of such claims or suits as necessary to protect its own interests.

ARTICLE XIII
INSURANCE

Each Member shall maintain an insurance policy or maintain a self-insurance program that covers activities that it may undertake by virtue of membership in the Mutual Aid and Assistance Program.

A. Members shall maintain at minimum the following insurance policies;
    a. Commercial General Liability (CGL) insurance for bodily injury (including death) and property damage in an amount of not less than Five Million Dollars ($5,000,000.00). This CGL insurance shall be written to a minimum of the current IBC 2100 form or the most recent version and such policy shall include:
        i. the Responding Member as an additional insured;
        ii. a cross liability clause;
        iii. products and completed operations coverage;
        iv. broad form contractual liability coverage;
        v. non-owned automobile liability coverage; and
        vi. operation of attached machinery;
    b. Automobile third party liability insurance in an amount of not less than Two Million Dollars ($2,000,000.00); and
    c. All Risk Property insurance that covers any property on loan from a Responding Member

B. In the event of a claim requiring the Responding Member to incur costs as a result of providing assistance under this Agreement, the Requesting Member shall be responsible for reimbursing the Responding Member for the payment of every deductible amount provided in the insurance described in Article XIII (A), above.

C. The Requesting Member covenants and agrees that the insurance obligations mentioned above will not be construed to and will in no manner limit or restrict the liability of the Requesting Member or its responsibility under Article IX.

ARTICLE XIV
CONFIDENTIAL INFORMATION

Subject to the terms and conditions of the Municipal Freedom of Information and Protection of Privacy Act, Freedom of Information and Protection of Privacy Act, Emergency Management and Civil Protection Act, Personal Information Protection and Electronic Documents Act and Personal Health Information Protection Act, 2004, as appropriate, Members and Associate Members shall maintain in the strictest confidence and shall take all reasonable steps necessary to prevent the disclosure of any Confidential Information under this Agreement. Except when compelled by this agreement to provide information to a Member, if any Member, Associate Member, third party or other entity requests or demands, by subpoena or otherwise, that a Member or Associate Member disclose any Confidential Information disclosed under this Agreement, the Member or Associate Member shall immediately notify the owner of the Confidential Information and shall take all reasonable steps necessary to prevent the disclosure of any Confidential Information by asserting all applicable rights and privileges with respect to such information and shall cooperate fully in any judicial or administrative proceeding relating thereto.

ARTICLE XV
EFFECTIVE DATE

This Agreement shall be effective on the Member once the Member's authorized representative executes this Agreement and the OnWARN Steering Committee Chair receives the executed Agreement. The OnWARN Steering Committee Chair shall maintain a list of all Members and Associate Members, and make the list available to all Members and Associate Members.

ARTICLE XVI
WITHDRAWAL

A Member may withdraw from this Agreement by providing written notice of its intent to withdraw to the OnWARN Steering Committee Chair. Withdrawal takes effect 60 days after the appropriate officials receive notice. Withdrawal from this Agreement shall in no way affect a Requesting Member's duty to reimburse a Responding Member for cost incurred during a Period of Assistance, which duty shall survive such withdrawal.

ARTICLE XVII
MODIFICATION

No provision of this Agreement may be modified, altered or rescinded by individual parties to this Agreement. Modifications to this Agreement may be due to programmatic operational changes to support this Agreement, legislative action, creation of a mutual aid and assistance agreement, or other developments. Modifications require a simple majority vote of Members. The OnWARN Steering Committee Chair shall provide written notice to all Members of approved modifications to this Agreement. Approved modifications take effect 60 days after the date upon which notice is sent to the Members.

ARTICLE XVIII
SEVERABILITY

The parties agree that if any term or provision of this Agreement is declared by a court of competent jurisdiction to be illegal or in conflict with any law, the validity of the remaining terms and provisions shall not be affected, and the rights and obligations of the parties shall be construed and enforced as if this Agreement did not contain the particular term or provision held to be invalid.

ARTICLE XIX
PRIOR AGREEMENTS

This Agreement supersedes all prior agreements between Members to the extent that such prior agreements are inconsistent with this Agreement.

ARTICLE XX
PROHIBITION ON THIRD PARTIES AND ASSIGNMENT OF RIGHTS/DUTIES

This Agreement is for the sole benefit of the Members and no person or entity shall have any rights under this Agreement as a third party beneficiary. Assignments of benefits and delegations of duties created by this Agreement are prohibited and shall be without effect.

ARTICLE XXI
COUNTERPARTS

This Agreement may be executed and delivered by the parties in counterparts, each of which shall constitute an original and may be delivered by facsimile, email or other functionally equivalent electronic means of communication, and those counterparts taken together shall constitute one and the same instrument.

Now, therefore, in consideration of the covenants and obligations set forth in this Agreement, the Utility listed here manifests its intent to be a Member of the Ontario Water/Wastewater Agency Response Network by executing this Mutual Aid and Assistance Agreement on this _____day of _____ 20_____.

Utility:_____

By: _____

Title: _____

_____
Please Print Name

By: _____

Title: _____

_____
Please Print Name

PORT COLBORNE

Subject: **Parkette at H.H. Knoll Lakeview Park– Concept Plans**

To: **Council**

From: **Chief Administrative Office**

Report Number: 2021-194

Meeting Date: July 26, 2021

Recommendation:

That Chief Administrative Office Report 2021-194 be received;

That Council approve the selection of concept plan Option Two for the Parkette at H.H. Knoll Lakeview Park;

That the Manager of Strategic Initiatives be directed to issue a tender to have a contractor complete the work in advance of the 2022 season; and

That Council approve the funding for this project come from the City's Federal Gas Tax Fund allocation and the 2021 Capital Budget Contingency Fund.

Purpose:

The purpose of this report is to update Council on the concept plans proposed for the Parkette at H.H. Knoll Lakeview Park and to seek Council's approval for staff's recommendation to ensure project completion by the spring of 2022.

Background:

At the June 8, 2020 meeting, Council authorized the Director of Community and Economic Development to have City staff proceed with the demolition and removal of the former mini-putt course and concession building at the parkette at H.H. Knoll Lakeview Park. City staff and contractors also installed electrical, water, and wastewater service for food trucks. These changes and upgrades created a functional landscaped site with minimal maintenance elements for the 2021 operating season.

Discussion:

Staff engaged The MBTW Group in the fall of 2020 to provide conceptual landscape plans for the parkette at H.H. Knoll Lakeview Park. The key objectives are as follows:

- Create a more attractive entry sequence to the marina that expresses the waterfront context;
- Create a plan that supports a concession program such as food truck access and a shaded seating area;
- Integrate the adjacent basin/pond area, concrete seawall and docks into the design;
- Create a simple yet functional design that maximizes flexible use of the site;
- Integrate potential partnership opportunities with other organizations (i.e. pollinator gardens with the local Conservation Authority);
- Have regard for environmental hazards related to high winds, high water levels, flooding, and wave overtopping; and
- Coordinate with the on-going business case work for the Marina being conducted by Sierra Planning & Management.

In December 2020, MBTW Group provided the City of Port Colborne with:

- Four (4) concept plans for the site including plan renderings and character sketches/sections illustrating design intent;
- High-level opinion on probable costs for each of the four plans

It is important for the parkette's design and uses to support the increase in residents and visitors anticipated in the future given the attraction of the City's waterfront, Sugarloaf Marina, H.H. Knoll Lakeview Park, premier events such as Canal Days, close proximity to the City's downtown business district, West Street promenade, and a new welcoming area for cruise ships.

Based on the concept plans provided by MBTW Group and attached to this report, the estimated cost of option two is $95,029 and this includes a contingency of $8,639. The staff project team have identified some cost saving opportunities. For example, the estimate includes a utility shed, however, there is already one in place and therefore this can be removed from the cost estimate. Also, staff intend to review the proposed cost estimates for picnic tables, umbrellas, and other options for custom asphalt paint.

The staff project team are also recommending that a new concrete pad be formed and poured to replace the existing pad that is old and deteriorating in some areas and is not level. Before new landscape amenities and various structures are fixed permanently to the concrete pad, it would be beneficial to have a new concrete pad in place that will last for several years. Engineering/Public Works have recommended that a new concrete pad be tied into the existing sidewalk in front of the pond area. The estimated cost of this concrete work is $45,000 to $50,000.

Internal Consultations:

These concept plans have been reviewed by a City Project Team comprised of key staff from Parks, Engineering/Public Works, and Economic Development and Tourism.

Financial Implications:

Staff are recommending a total project cost of $150,000. This includes the estimated cost of option two of $95,029 plus $50,000 for a new concrete pad and any unforeseen project costs that may arise. This project is recommended to be funded eighty percent (80%) or $120,000 from the Federal Gas Tax fund and twenty percent (20%) or $30,000 from the 2021 Capital Budget Contingency Fund.

If this funding is approved the remaining funds available in the Federal Gas Tax fund would be $204,679 and the estimated balance of the 2021 Capital Budget Contingency fund would be $100,000.

Public Engagement:

Not applicable.

Strategic Plan Alignment:

The initiative contained within this report supports the following pillar(s) of the strategic plan:

- City wide investments in infrastructure and recreational/cultural spaces
- Attracting Business Investment and Tourists to Port Colborne

Conclusion:

The redevelopment of the Parkette at H.H. Knoll Lakeview Park complements other upgrades made to H.H. Knoll Lakeview Park and potential investments at Sugarloaf Marina based on the new business plan. This project will also create new experiences and attract new food offerings for residents and tourists. Staff are recommending concept plan Option Two as it will enhance the site and support the initial objectives. Staff are also recommending that a new concrete pad be poured to replace the existing

pad before new permanent structures are attached. With Council approval, staff will ensure that the work is complete for the spring of 2022.

Appendices:

a. Parkette at H.H. Knoll Lakeview Park Conceptual Plans and Cost Estimates

Respectfully submitted,

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Report Approval:

All reports reviewed and approved by the Department Director and also the City Treasurer when relevant. Final approval is by the Chief Administrative Officer.

the mbtw group

DRAFT

HH Knoll Lakeview Park
Concept Plans

Prepared for the City of Port Colborne
December 21, 2020

HH Knoll Lakeview Park Concept Plans

Prepared By:

The MBTW Group
Jana Joyce, Principal
Graham MacInnes, Landscape Designer

Draft Date: December 21, 2020

Contact:
Jana Joyce OALA, CSLA, ASLA
Principal, Urban Landscapes, Special Projects
Tel: 647-402-8356
Email: jana@mbtw.com

the mbtw group

Introduction

The MBTW Group was retained by the City of Port Colborne to assist in the development of interim concept plans for the entrance parkette at HH Knoll Lakeview Park. The City has recently removed a number of obsolete structures on the site including a mini-putt course and concession building. Although the City anticipates comprehensive improvements to the overall parkette and entry drive, an interim solution is needed to provide an attractive space for seasonal food and beverage services. It is expected that this interim treatment would be in place until an overall vision is established for the area and funding has been obtained.

The following information includes conceptual design and costing for four (4) potential options for consideration. The objectives for the interim treatment are as follows:

- Provide areas for food truck parking;
- Provide a seating area with perimeter treatment that meets the requirements of the Alcohol and Gaming Commission of Ontario for seasonal licensing
- Improve the aesthetics of the remaining concrete slabs;
- Provide shade within the seating area; and
- Have regard for environmental hazards related to high winds, high water levels, flooding and wave overtopping.

A - Overall Parkette site within Sugarloaf Marina
B - Area to receive interim improvements

1.0 Concept Plans

1.1 OPTION ONE - Wood Deck

Interim design treatment includes:

- Low profile wood deck (with a ramp) constructed over both slabs, consolidating a larger seating area
- Railing at the edge of the deck
- Picnic tables with individual umbrellas
- Decorative pavement painting on the adjacent asphalt parking area
- String lights suspended between support poles
- Muskoka-style seating

Estimated probable cost: $168, 674.00
Note: Refer to Section 2.0 for costing breakdown.

1.0 Concept Plans

1.2 OPTION TWO - Basic Treatment

Interim design treatment includes:

- Existing concrete slab (resealed)
- Ramp apron
- Railing at the edge of slab
- Picnic tables with individual umbrellas
- Decorative pavement painting on the adjacent asphalt parking area
- String lights suspended between support poles
- Informal seating (wooden pallets with cushion or astroturf)

Estimated probable cost: $95,029.00
Note: Refer to Section 2.0 for costing breakdown.

1.0 Concept Plans

1.3 OPTION THREE - Tensile Shade Structure

Interim design treatment includes:

- Existing concrete slab (resealed)
- Ramp apron
- Railing at the edge of slab
- Tensile shade structure
- Picnic tables
- Decorative pavement painting on the adjacent asphalt parking area
- Muskoka-style seating
- Optional fire pit

Estimated probable cost: $136,345.00
Note: Refer to Section 2.0 for costing breakdown.

1.0 Concept Plans

1.4 OPTION FOUR - Planter Boxes

Interim design treatment includes:

- Existing concrete slab (resealed)
- Ramp apron
- Planter boxes at edge of slab
- Picnic tables
- Decorative pavement painting on the adjacent asphalt parking area
- String lights suspended between support poles
- Wooden seating platform (to cover low point in asphalt)
- Informal seating (wooden pallets with cushion or astroturf)

Estimated probable cost: $94,523.00
Note: Refer to Section 2.0 for costing breakdown.

2.0 Opinion of Probable Costs

2.1 OPTION ONE - Wood Deck

Sugarloaf Marina Parkette, Port Colborne | Site Improvements

The MBTW Group

November 20, 2020

Option 1 - Wood Deck

ITEM NO	ITEM DESCRIPTION	EST. QTY.	UNIT TYPE	UNIT PRICE	TOTAL COST
1.1	Wooden Deck and Ramp	177	m^2	$ 215.00	$ 38,055.00
1.2	Railing	58	m	$ 180.00	$ 10,440.00
1.3	Picnic Tables (Landscape Forms - Polysite)	17	ea.	$ 3,240.00	$ 55,080.00
1.4	Umbrellas (Landscape Forms)	11	ea.	$ 2,065.00	$ 22,715.00
1.5	String Lights	2	ea.	$ 150.00	$ 300.00
1.6	Exterior Metal Post (10 ft)	4	ea.	$ 350.00	$ 1,400.00
1.7	Fire Pit	1	l.s.	$ 400.00	$ 400.00
1.8	Muskoka Chairs	5	ea.	$ 250.00	$ 1,250.00
1.9	Custom Asphalt Paint	280	m^2	$ 60.00	$ 16,800.00
1.10	Utility Shed	1	l.s.	$ 6,900.00	$ 6,900.00
				SUBTOTAL 1.0 =	**$ 153,340.00**
				SUBTOTAL =	**$ 153,340.00**
				CONTINGENCY 10% =	**$ 15,334.00**
				TOTAL	**$ 168,674.00**

2.0 Opinion of Probable Costs

2.2 OPTION TWO - Basic Treatment

Sugarloaf Marina Parkette, Port Colborne | Site Improvements

The MBTW Group

November 20, 2020

ITEM NO	ITEM DESCRIPTION	EST. QTY.	UNIT TYPE	UNIT PRICE	TOTAL COST
Option 2 - Basic Treatment					
1.1	Railing	54	m	$ 180.00	$ 9,720.00
1.2	Picnic Tables (Landscape Forms - Polysite)	12	ea.	$ 3,240.00	$ 38,880.00
1.3	Umbrellas (Landscape Forms)	6	ea.	$ 2,065.00	$ 12,390.00
1.4	String Lights	2	ea.	$ 150.00	$ 300.00
1.5	Exterior Metal Post (10 ft)	4	ea.	$ 350.00	$ 1,400.00
1.6	Custom Asphalt Paint	280	m^2	$ 60.00	$ 16,800.00
1.7	Utility Shed	1	l.s.	$ 6,900.00	$ 6,900.00
				SUBTOTAL 1.0 =	**$ 86,390.00**
				SUBTOTAL =	**$ 86,390.00**
				CONTINGENCY 10% =	**$ 8,639.00**
				TOTAL	**$ 95,029.00**

2.0 Opinion of Probable Costs

2.3 OPTION THREE - Tensile Structure

Sugarloaf Marina Parkette, Port Colborne | Site Improvements

The MBTW Group

November 20, 2020

ITEM NO	ITEM DESCRIPTION	EST. QTY.	UNIT TYPE	UNIT PRICE	TOTAL COST
Option 3 - Tensile Structure					
1.1	Railing	54	m	$ 180.00	$ 9,720.00
1.2	Picnic Tables (Landscape Forms - Polysite)	12	ea.	$ 3,240.00	$ 38,880.00
1.3	Shade Sails	1	l.s.	$ 50,000.00	$ 50,000.00
1.4	Fire Pit	1	l.s.	$ 400.00	$ 400.00
1.5	Muskoka Chairs	5	ea.	$ 250.00	$ 1,250.00
1.6	Custom Asphalt Paint	280	m^2	$ 60.00	$ 16,800.00
1.7	Utility Shed	1	l.s.	$ 6,900.00	$ 6,900.00
				SUBTOTAL 1.0 =	**$ 123,950.00**
				SUBTOTAL =	**$ 123,950.00**
				CONTINGENCY 10% =	**$ 12,395.00**
				TOTAL	**$ 136,345.00**

2.0 Opinion of Probable Costs

2.4 OPTION FOUR - Planter Boxes

Sugarloaf Marina Parkette, Port Colborne | Site Improvements

The MBTW Group

November 20, 2020

Option 4 - Planter Boxes

ITEM NO	ITEM DESCRIPTION	EST. QTY.	UNIT TYPE	UNIT PRICE	TOTAL COST
1.1	Planter Boxes	35	ea.	$ 150.00	$ 5,250.00
1.2	Plants	1	l.s.	$ 1,000.00	$ 1,000.00
1.3	Picnic Tables (Landscape Forms - Polysite)	12	ea.	$ 3,240.00	$ 38,880.00
1.4	Umbrellas (Landscape Forms)	6	ea.	$ 2,065.00	$ 12,390.00
1.5	String Lights	2	ea.	$ 150.00	$ 300.00
1.6	Exterior Metal Post (10 ft)	4	ea.	$ 350.00	$ 1,400.00
1.7	Raised Wooden Seating Platform	14	m^2	$ 215.00	$ 3,010.00
1.8	Custom Asphalt Paint	280	m^2	$ 60.00	$ 16,800.00
1.9	Utility Shed	1	l.s.	$ 6,900.00	$ 6,900.00
				SUBTOTAL 1.0 =	**$ 85,930.00**
				SUBTOTAL =	**$ 85,930.00**
				CONTINGENCY 10% =	**$ 8,593.00**
				TOTAL	**$ 94,523.00**

In Summary

The interim treatments explored in this report are intended to illustrate a series of possible options for the site. Design components shown can be interchangeable depending on the municipality's preferences.

To be judicious with costs, it is recommended that whichever concept or set of components implemented be considered a permanent park feature that would be integrated into a more comprehensive vision for the park space.

It is also noted that there may be partnership/sponsorship opportunities with local businesses to assist in the supply of picnic tables, umbrellas, railings, lighting etc.

END OF REPORT

PORT COLBORNE

Subject: **2021 Beach Operations Update**

To: **Council**

From: **Corporate Services Department**

Report Number: 2021-209

Meeting Date: July 26, 2021

Recommendation:

That Corporate Services Department Report 2021-209, 2021 Beach Operations Update be received as information.

Purpose:

The purpose of this report is to provide Council with an update on Centennial-Cedar Bay Beach and Nickel Beach activity and usage during the period of June 17 to July 14.

Background:

The previous beach operations update provided to Council covered the period of May 22 – June 16, 2021.

Discussion:

At the Council meeting on June 28, Staff reported a gradual approach to increasing the total number of daily passes available to non-Port Colborne residents at Nickel Beach. On July 5, the number of daily passes for non-Port Colborne residents increased from 125 to the maximum of 150 available.

Staff highlight that there have been no observed impacts to beach operations since the increase of 25 non-Port Colborne resident daily passes available daily.

On July 16, the Province entered into Step Three in the Roadmap to Reopen Ontario. While Step Three of the reopening plan further loosens restrictions on outdoor based

activity, it is not recommended by Staff at this time to consider revising capacity limits at either Centennial-Cedar Bay Beach or Nickel Beach for the remainder of the season.

Strategic Plan Alignment:

The initiative contained within this report supports the following pillar(s) of the strategic plan:

- Service and Simplicity - Quality and Innovative Delivery of Customer Services
- Attracting Business Investment and Tourists to Port Colborne
- City-Wide Investments in Infrastructure and Recreational/Cultural Spaces
- Value: Financial Management to Achieve Financial Sustainability
- People: Supporting and Investing in Human Capital

Conclusion:

That Corporate Services Department Report 2021-209, and the June 17 – July 14 Beach Usage Metrics attached as Appendix A be received.

Appendices:

a. June 17 – July 14 Beach Usage Metrics

Respectfully submitted,

Blair Holinaty
Recreation Coordinator & Beach Supervisor
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Report Approval:

All reports reviewed and approved by the Department Director and also the City Treasurer when relevant. Final review and approval by the Chief Administrative Officer.

June 17th – July 14th Beach Usage Metrics

Note - Numbers based on carloads, not individuals.

Nickel Beach

Week	Port Colborne Residents	Niagara Residents	Non-Niagara Residents
June 17 – June 23	143	109	363
June 24 – June 30	321	221	460
July 1 – July 7	354	142	478
July 8 – July 14	111	97	396
Totals	929	569	1697

Centennial – Cedar Bay Beach

Week	Port Colborne Residents	Niagara Residents
June 17 – June 23	79	49
June 24 – June 30	93	33
July 1 – July 7	98	54
July 8 – July 14	66	37
Totals	336	173

June 17th – July 14th Areas of Improvement

During this period, Staff observed an increase in weekday visits to Nickel Beach compared to the first period of reporting, as well as an increase of 25 additional daily passes for non-Port Colborne residents available each day beginning July 5. As a result of the increased volume in usage, Staff recognized a need for additional portable washroom units, as well as an increase in weekly service dates for the portable units. These adjustments have since been made with positive results.

PORT COLBORNE

Subject: **COVID Update – July 2021**

To: **Council**

From: **Chief Administrative Office**

Report Number: 2021-207

Meeting Date: July 26, 2021

Recommendation:

That Chief Administrative Office Department Report 2021-207 be received for information.

Purpose:

This CAO generated report is provided as a follow up to the COVID-19 pandemic update that was provided to City Council on June 28, 2021.

Background:

The City's Emergency Operations Centre (EOC) was activated in response to the COVID-19 pandemic on March 13, 2020 by bringing together the City's Emergency Control Group (ECG). The COVID-19 pandemic continues to affect the nation and the City continues to prepare, respond, and plan recovery from the impacts of the pandemic to the municipality. As described in a previous staff report, the City's response is based on four principles:

- Maintaining essential City services to the community throughout the emergency;
- Continuing to ensure the safety and security of the public and City staff;
- Ensuring the organization remains financially stable throughout COVID-19; and
- Continuing to remain consistent in the City's actions with the actions of other agencies.

In order to respond appropriately to the impacts of the pandemic and adhere to these principles, the City's response has been divided into three phases:

- First phase – initial response and precautions for users and staff
- Second phase – maintaining essential services

- Third phase – recovery and reopening

Currently, the City is in the third phase, recovery and reopening, as staff continue to execute plans that were developed for reopening the City's programs, services, and facilities.

Discussion:

Since the time of the last COVID Update to Council there have been two changes in the Province's pandemic recovery plans. First, the Province moved to Step 2 of the "Roadmap to Reopen" on June 30, 2021, earlier than originally planned in response to favourable vaccination statistics and other public health conditions. Step 2 brought relaxed restrictions on indoor and outdoor gatherings and retail and hospitality businesses.

Subsequently, on July 16, 2021, the Province advanced to Step 3 of the recovery framework. This step includes even more reduced restrictions including, as in Step 2, increases in gathering limits, retail shopping, and indoor dining.

At this point, staff believes the Province will enter an additional Step, as yet unnamed, beyond Step 3 approximately 21 days after the July 16th date that began Step 3. At the July 12, 2021 Council Meeting, Council approved Report 2021-108 – Community Update on City Facilities and Programs which identified the operating status of a number of City facilities, amenities, and programs. The City's leadership team and Emergency Control Group continue to meet regularly to plan the safe reopening of these municipal services.

Financial Implications:

While the pandemic has had financial impacts on the City in 2020 and 2021, there are no new financial impacts since the most recent report to Council. City staff project a balanced budget for 2021.

Public Engagement:

The City continues to provide high-quality communication to the community by giving frequent updates of City initiatives and sharing information from other agencies such as the Federal government, the Provincial government, and the Region of Niagara and Niagara Region Public Health.

Strategic Plan Alignment:

The initiatives contained within this report support the following pillar(s) of the strategic plan:

- Service and Simplicity - Quality and Innovative Delivery of Customer Services
- Value: Financial Management to Achieve Financial Sustainability
- Governance: Communications, Engagement, and Decision-Making

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Conclusion:

The City's Emergency Control Group continues to meet during the pandemic to make operational decisions for the City's programs and services in order to maintain essential operations within the community. Staff will continue to report to Council for the duration of the pandemic.

Respectfully submitted,

Scott Luey
Chief Administrative Officer
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Report Approval:

All reports reviewed and approved by the Department Director and also the City Treasurer when relevant. Final review and approval by the Chief Administrative Officer.

Administration
Office of the Regional Clerk
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www.niagararegion.ca

June 25, 2021

CL 13-2021, June 24, 2021
PEDC 6-2021, June 16, 2021
PDS 23-2021, June 16, 2021

DISTRIBUTION LIST

SENT ELECTRONICALLY

2020 End of Year Growth Report and 5 Year Growth Trend
PDS 23-2021

Regional Council, at its meeting held on June 24, 2021, passed the following recommendation of its Planning and Economic Development Committee:

That Report PDS 23-2021, dated June 16, 2021, respecting 2020 End of Year Growth Report and 5 Year Growth Trend, **BE RECEIVED** and **BE CIRCULATED** to the Local Area Municipalities, Niagara Peninsula Conservation Authority, Niagara Home Builders Association, Niagara Industrial Association, local Chambers of Commerce and School Boards.

A copy of PDS 23-2021 is enclosed for your reference.

Yours truly,

Ann-Marie Norio
Regional Clerk
:kl

CLK-C 2021-093

Distribution List :

Local Area Municipalities
Niagara Peninsula Conservation Authority
Niagara Home Builders Association
Niagara Industrial Association
M. Balsom, President/CEO, Greater Niagara Chamber of Commerce
D. Fabiano, Executive Director, Niagara Falls Chamber of Commerce, Port Colborne/Wainfleet Chamber of Commerce, Welland/Pelham Chamber of Commerce

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M. Ladouceur, Conseil scolaire Viamonde
S. Whitwell, Niagara Catholic District School Board
A. Aazouz, Conseil Scolaire de District Catholique Centre-Sud
G. Bowie, Planner, Planning and Development Services
D. Giles, Commissioner, Planning and Development Services
N. Oakes, Executive Assistant to the Commissioner, Planning and Development Services

Subject: 2020 End of Year Growth Report and 5 Year Growth Trend

Report to: Planning and Economic Development Committee

Report date: Wednesday, June 16, 2021

Recommendations

1. That Report PDS 23-2021 **BE RECEIVED** for information; and

2. That a copy of Report PDS 23-2021 **BE CIRCULATED** to the Local Area Municipalities, Niagara Peninsula Conservation Authority, Niagara Home Builders Association, Niagara Industrial Association, local Chambers of Commerce and School Boards.

Key Facts

- The purpose of this report is to provide information on growth in Niagara in 2020, as well as a summary of growth and development trends over the past 5 years.
- Housing starts, completions and building permits have all increased since 2016 and show a growing diversification of housing types being built.
- Niagara Region's population has increased by over 26,000 people since 2016, reaching an estimated population of 485,313 as of July 1, 2020.
- The average sale price of a house in Niagara Region has increased significantly between 2016 and 2020, reaching $532,400 in 2020.
- During the early stages of the Covid-19 pandemic, population growth slowed, but development and building permits remained consistent. Notwithstanding this slower relative population growth in 2020, housing sale prices grew substantially.
- Over $6 Billion in building permits have been issued since 2016, with 2020 reaching nearly $1.5 Billion for the second consecutive year.

Financial Considerations

There are no direct financial implications associated with this report.

Metrics in this report inform Niagara's financial strategies. Increased residential, commercial and industrial development in Niagara, combined with increasing property assessments, has a direct impact on revenues collected by the Region.

Analysis

The Planning and Development Services department has been producing the annual growth report since 2016. This report focuses on the past 5 years collectively to provide a comprehensive analysis on growth metrics.

The 2020 growth report follows the same approach and methodology as the previous annual reports before it. This is important as it can be used to review impacts associated with the first nine months of the Covid-19 pandemic.

As 2021 is a Census year, the 2020 report also provides insights into development trends since the 2016 Census was conducted over 5 years ago.

Finally, the Region has experienced significant growth across all areas set out in this report. This information is being presented as a means to update Regional Council on how growth has evolved over the last half decade and feeds directly into numerous Council Strategic Priorities.

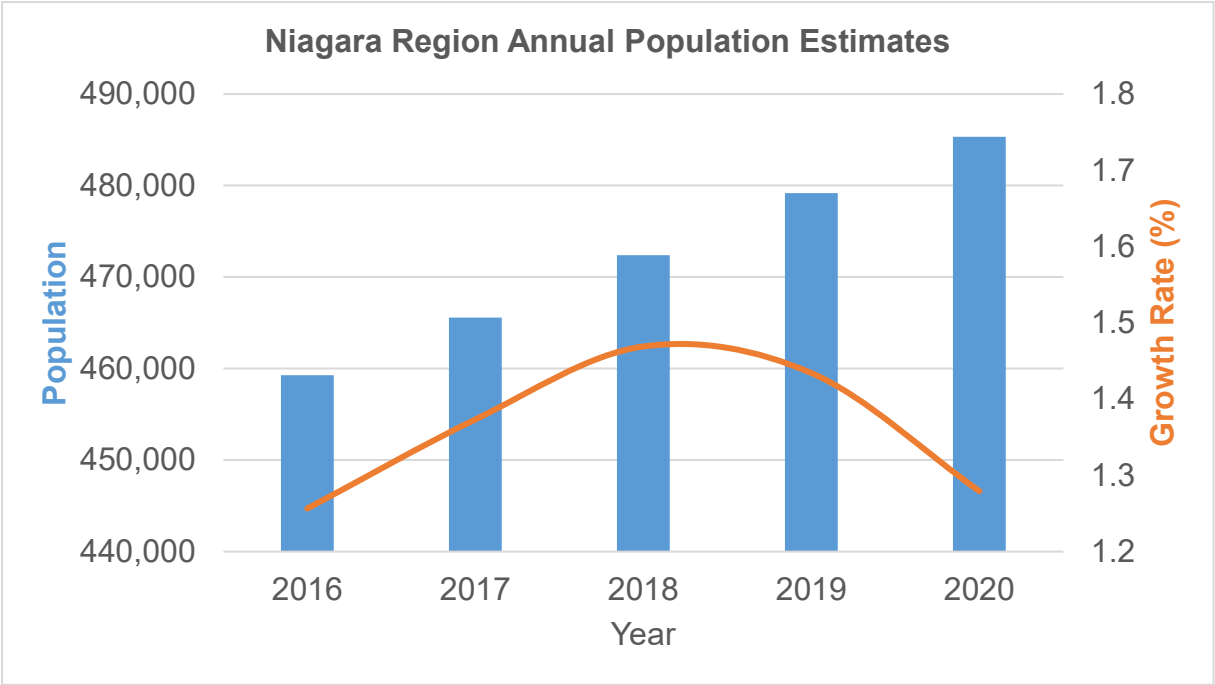
Population

Pace of Population Growth

Population growth has increased significantly for Niagara since 2016. On average, the Region's population has increased by nearly 6,500 people per year since 2016, for a total of approximately 26,000 new residents calling Niagara home. This is nearly double the pace of growth experienced in the previous 5 year period between 2011 and 2016.

Figure 1 provides a summary of population growth per year since 2016.

Figure 1: Niagara Region Annual Population Estimates



Source: Statistics Canada, Table 17-10-0140-01

As illustrated in Figure 1, the pace of population growth dropped slightly to approximately 1.4% in 2019 (compared to 2018) and more significantly to 1.3% in 2020.

Since Niagara's population growth is dependant on migration from other municipalities (intraprovincial migration) and temporary international migration (net non-permanent migration), any disruption to Ontario's broader immigration trends, availability of in-person post-secondary education options in Niagara and work availability for migrant or seasonal workers will have a direct impact on population totals.

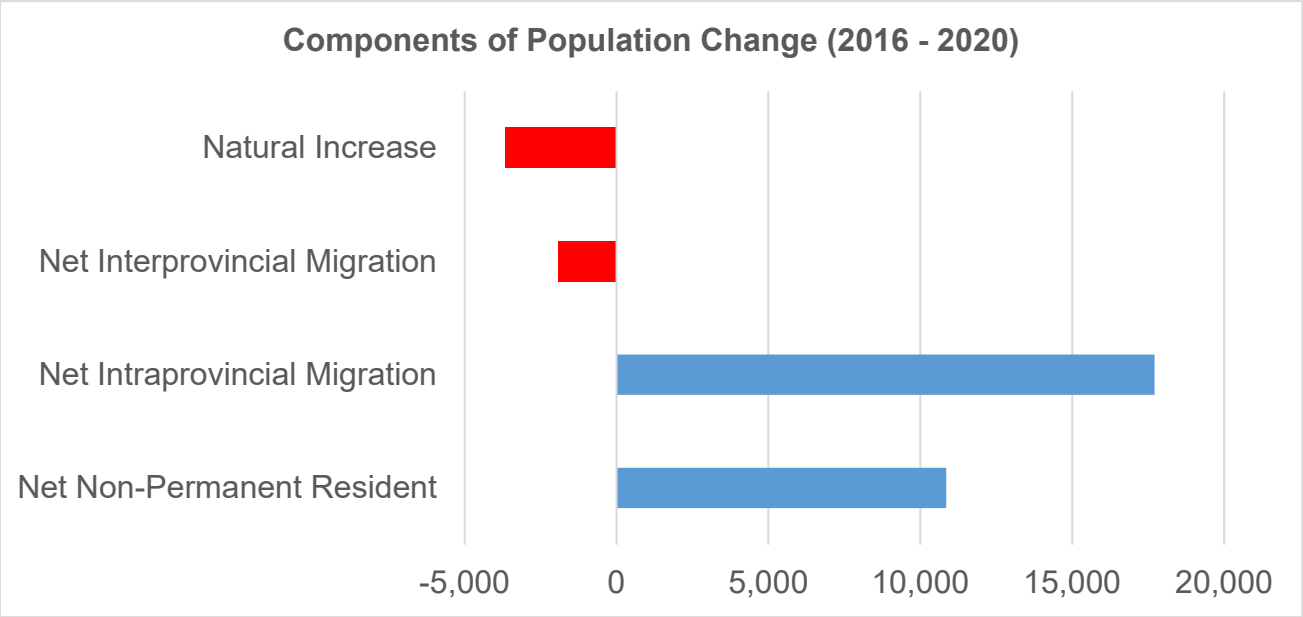
Even with the decrease in growth rate between 2019 and 2020, population growth in Niagara remains strong relative to historic averages. Only in the last 5 years has Niagara Region started to match the pace contemplated in the Provincial population forecasts provided in *A Place to Grow: Growth Plan for the Greater Golden Horseshoe, 2020.*

This is noteworthy as the Region must plan to achieve the minimum forecasts set out in the *Growth Plan* and base decisions on infrastructure and development charges on the same forecasts.

Components of Population Growth

Niagara's population growth has been driven entirely by international and intraprovincial migration since 2016, as highlighted in Figure 2.

Figure 2: Components of Population Change (2016 - 2020)



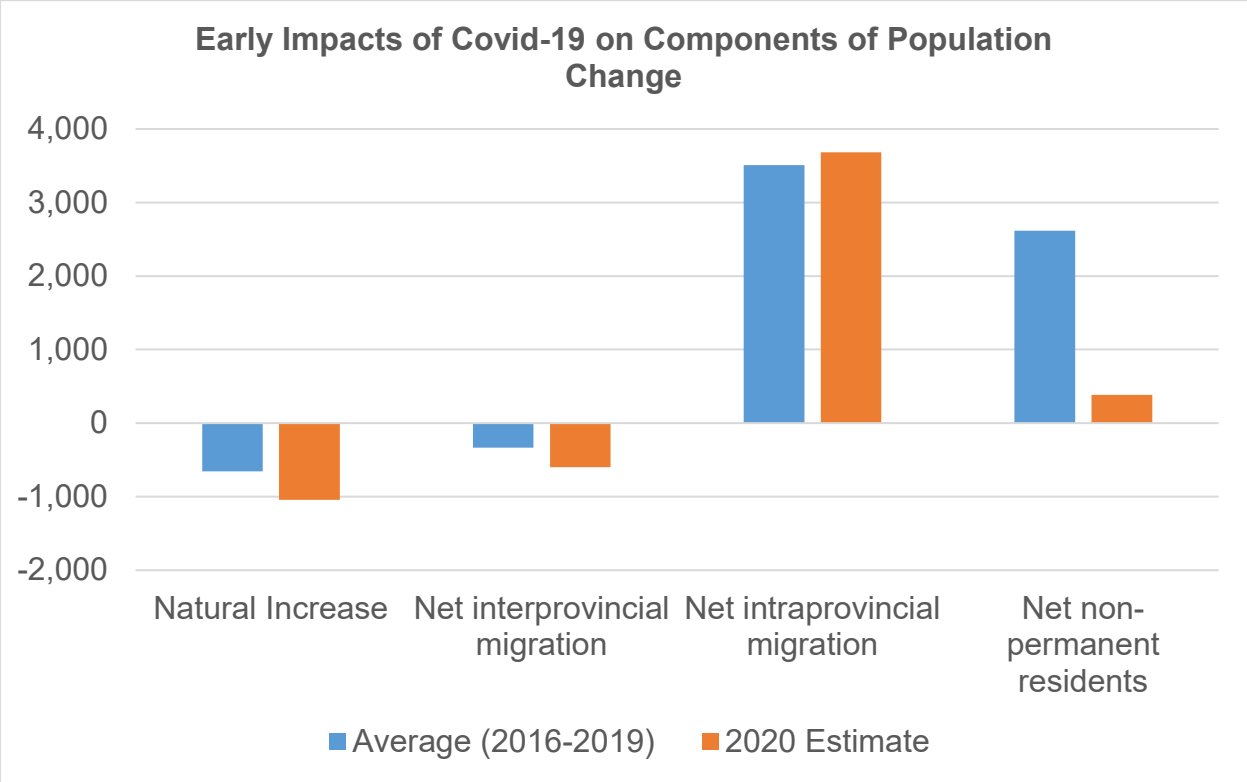
Source: Statistics Canada, Table 17-10-0140-01

Since 2016, over 17,500 people have moved to Niagara from elsewhere in Ontario. Intraprovincial migration is the most significant contributor of population growth in Niagara and non-permanent residents account for an additional increase of 11,100 people.

In 2020, with its restrictions as a result of Covid-19, Niagara had a significant decrease in the number of net non-permanent residents coming into Niagara compared to 2016-2019. As shown below in Figure 3, net non-permanent migration accounted for an increase of just over 380 people in 2020, compared to an average of over 2,600 per year between 2016 and 2019. This, coupled with a higher proportion of deaths than births and increase in interprovincial migration, contributed to the relatively lower growth rate in 2020.

Importantly, the 2020 growth rate of 1.27% is still significantly higher than the pace of growth experienced between 2001 and 2016.

Figure 3: Early Impacts of Covid-19 on Components of Population Change



Source: Statistics Canada, Table 17-10-0140-01

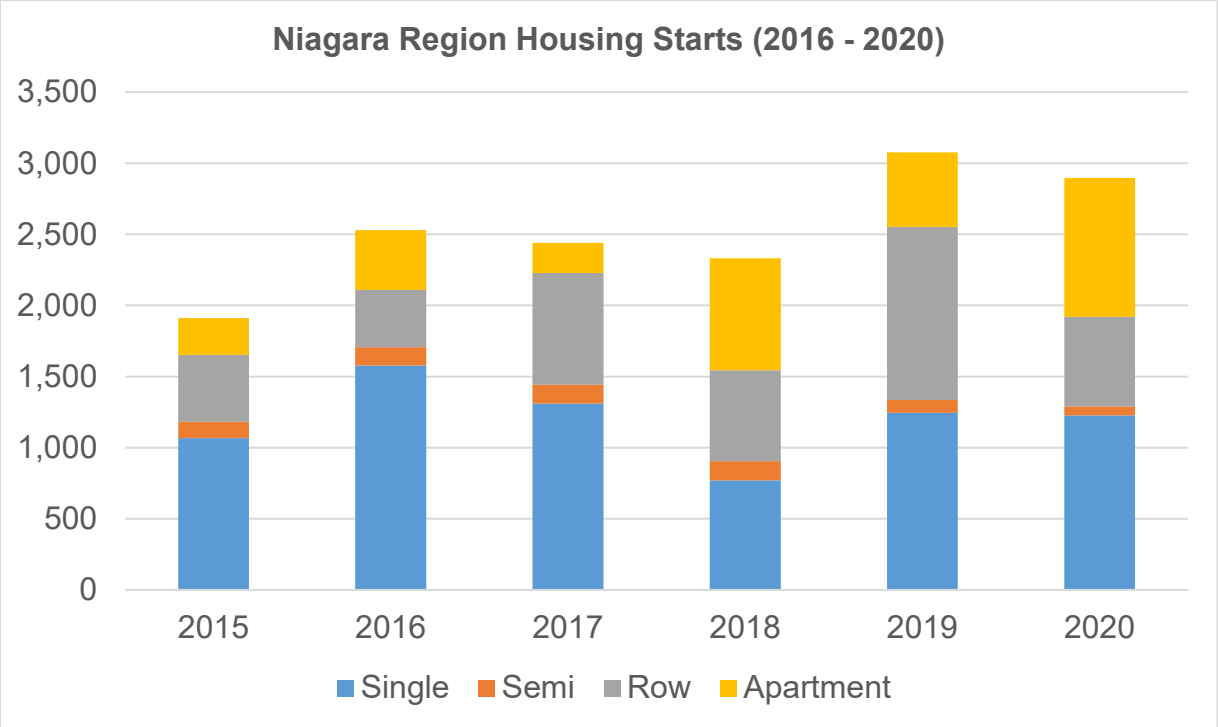
It appears Covid-19 has had a direct impact on population trends in Niagara, specifically in the category of net non-permanent resident. Impacts from Covid-19 on international travel and visas, limited tourism operations and introduction of remote learning opportunities for post-secondary education all contribute to the sharp decline in the net non-permanent resident category for 2020.

Housing Starts and Completions

Housing starts have steadily risen over the last 5 years. In 2016, there were 2,530 starts; in 2020, there were nearly 2,900 starts. Within starts, we can also see a shifting dynamic in housing choice as single-detached housing has made up less than 50% of starts over the past 3 years.

A critical factor of meeting population forecasts in the *Growth Plan* and, importantly, achieving affordable housing targets, is Niagara's ability to offer a wider range of housing options for residents. Figure 4 provides an overview of housing starts per year by housing type.

Figure 4: Niagara Region Housing Starts (2016 - 2020)

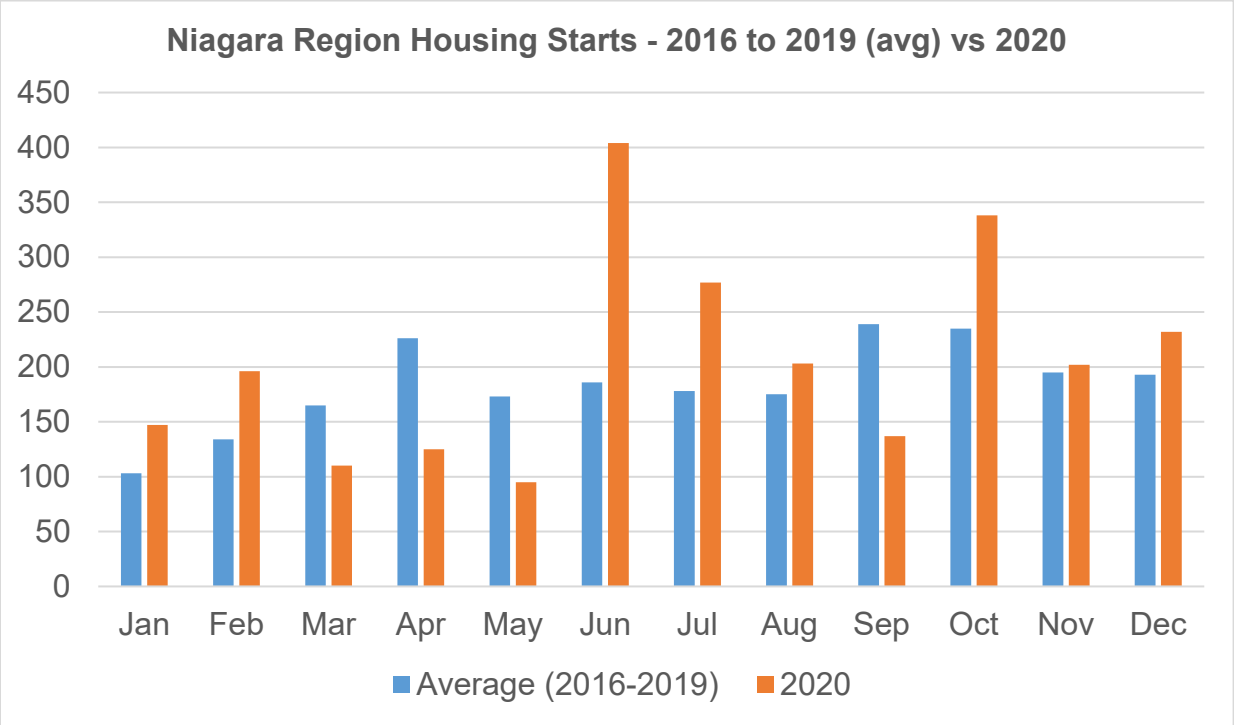


Source: CMHC, Housing Market Information Portal

Housing starts, while consistent with overall trends since 2016, were impacted early in 2020 by Covid-19. Housing starts between March and May were significantly lower than the previous four year average. During this period of time, the Province of Ontario had announced a Provincial State of Emergency (March 17, 2020) and released Bill 189 (Coronavirus (COVID-19) Support and Protection Act, 2020) on April 21, 2020).

As shown in Figure 5, housing starts rebounded strongly in June and July and settled into a comparable pattern to the previous four years throughout the second half of 2020.

Figure 5: Niagara Region Housing Starts: 2016 to 2019 (avg) vs 2020



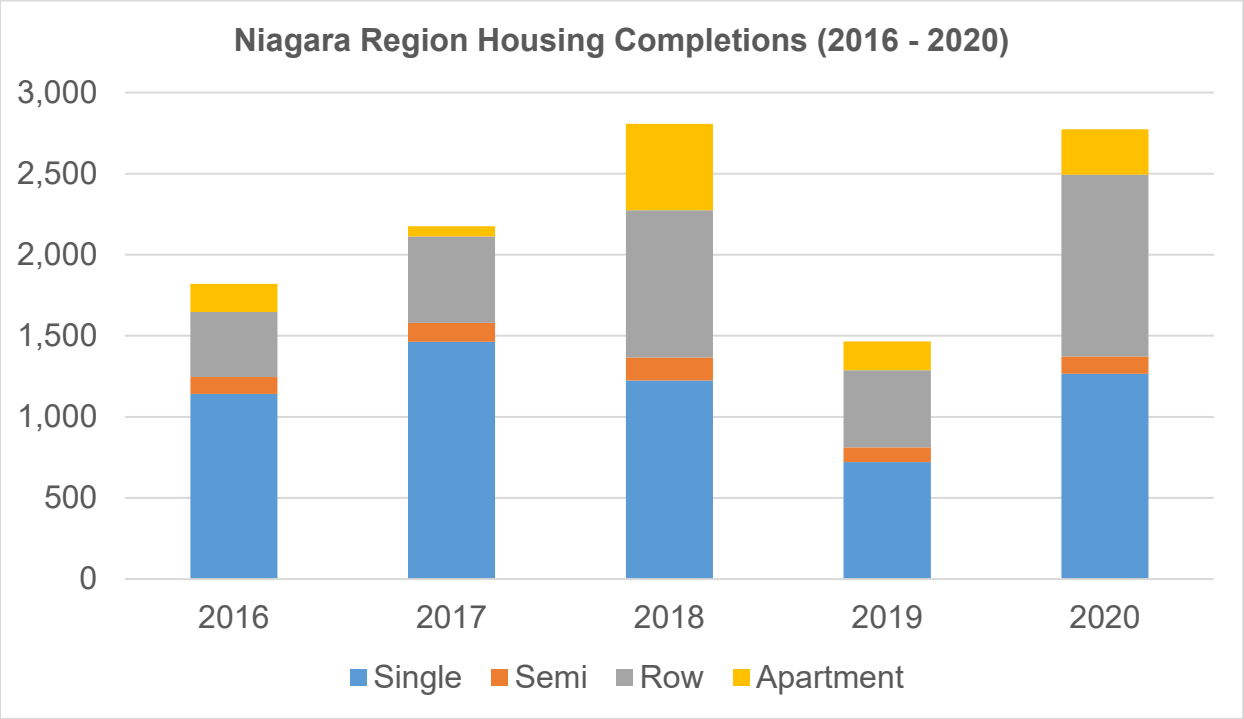
Source: CMHC, Housing Market Information Portal

Similar to housing starts, housing completions have also increased steadily over the last 5 years, including a significant increase in 2020 compared to 2019. Housing completions have greater variation on a year-to-year basis as higher density forms of development (such as apartments) tend to take longer to complete and can often start years prior to completion.

Consistent with housing starts, housing completions have begun to shift towards denser forms of development. The housing mix built since 2016 include 53% single detached, 5% semi-detached, 31% townhouse/row and 11% apartment. As a point of comparison, the 2016 Census identified an existing housing stock in Niagara of 70% single detached, 5% semi-detached, 7% townhouse/row and 17% apartment. An even greater shift towards denser forms of housing will be required in Niagara to achieve growth forecasts, reduce core housing need and improve affordability.

Figure 6 provides an overview of housing completions between 2016 and 2020.

Figure 6: Niagara Region Housing Completions (2016 – 2020)



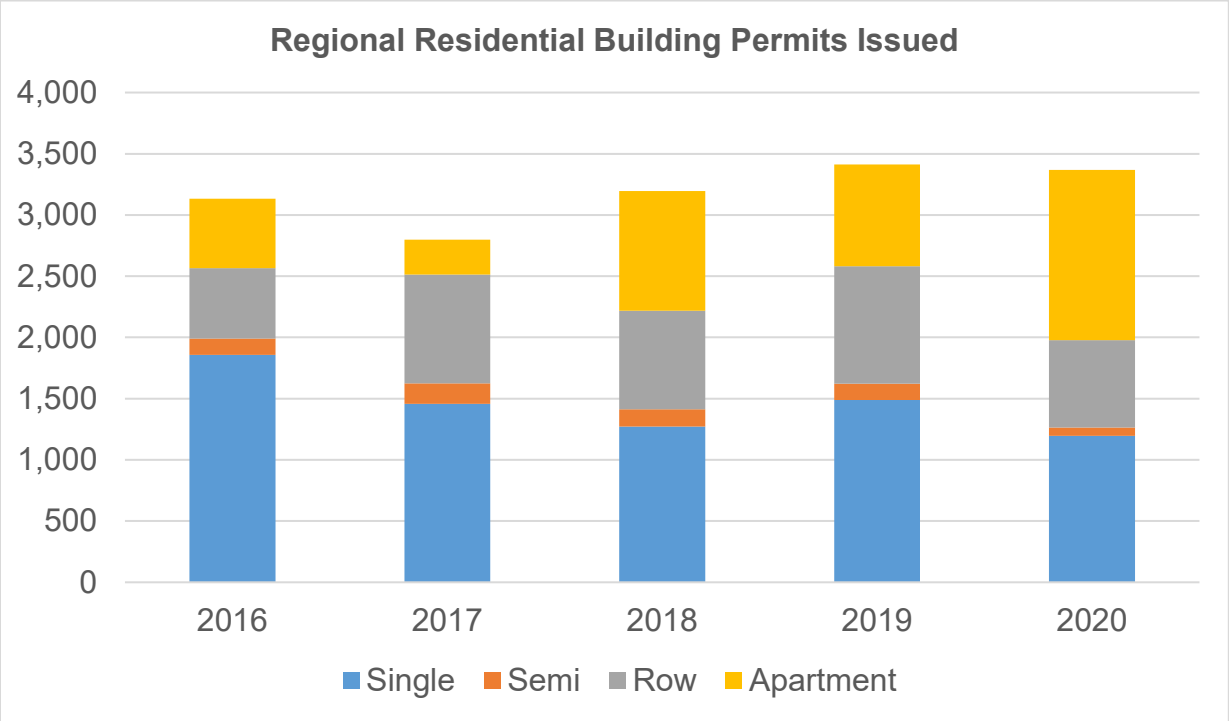
Source: CMHC, Housing Market Information Portal

New housing units, issued by building permit, also grew consistently over the previous half decade, reaching nearly 3,400 for the second consecutive year.

Similar to housing starts and completions, medium and higher density forms of housing are becoming more prevalent compared to low density. Specifically, apartment units reached nearly 1,400 units in 2020 - the highest annual volume for building permits on record at the Region.

Figure 7 provides an overview of building permits (housing units) since 2016.

Figure 7: Residential Building Permits (2016 - 2020)



Source: Niagara Region Planning and Development Services

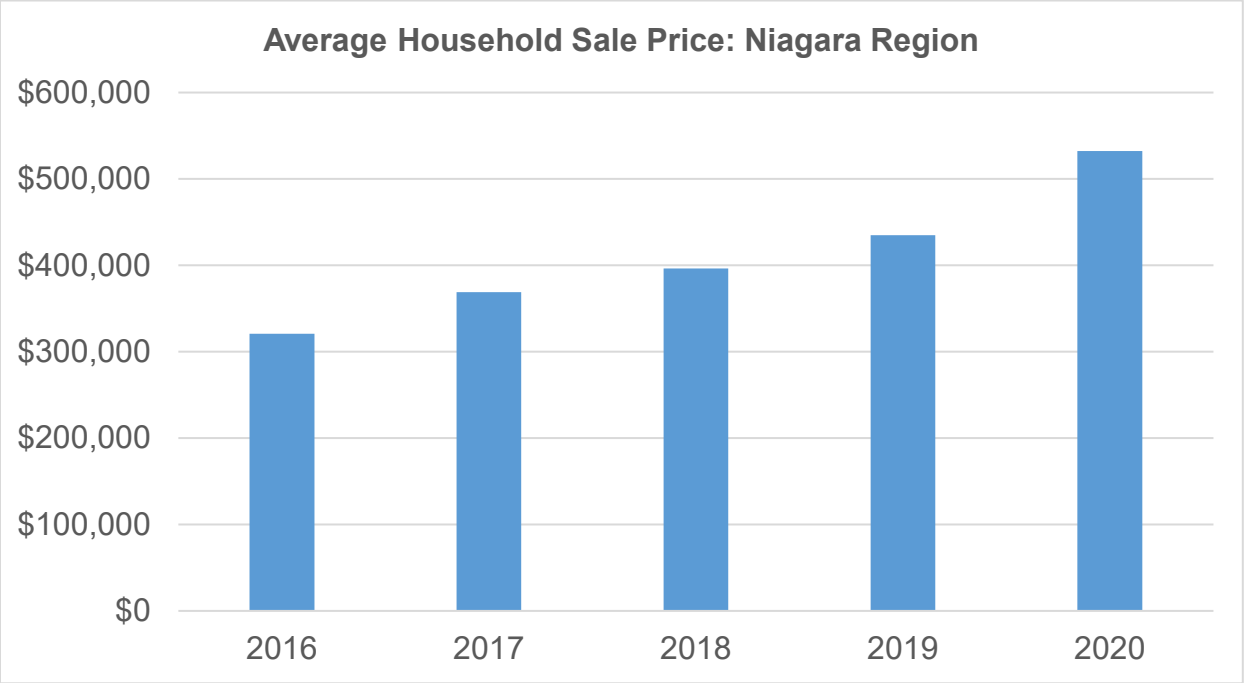
Housing Market

The housing market in Niagara has been on the rise since 2015 with significant increases to average sale price in 2016 and 2017. Between 2015 and 2017, the average sale price of a home in Niagara increased nearly 40%. Average sale price has continued to increase in 2018 and 2019 but at a lower rate of 7% and 10% respectfully. The average sale price increased significantly, again, between 2019 and 2020 by 22% reaching an average sale price of $532,400.

Overall, the average sale price for a home in Niagara increased 66% from 2016 to 2020.[1] Figure 8 provides a breakdown of average sale price by year.

[1] Average sale prices are based on information from CREA and the Niagara Realty Association.

Figure 8: Average Household Sale Price (2016 – 2020)



Source: Niagara Association of Realtors

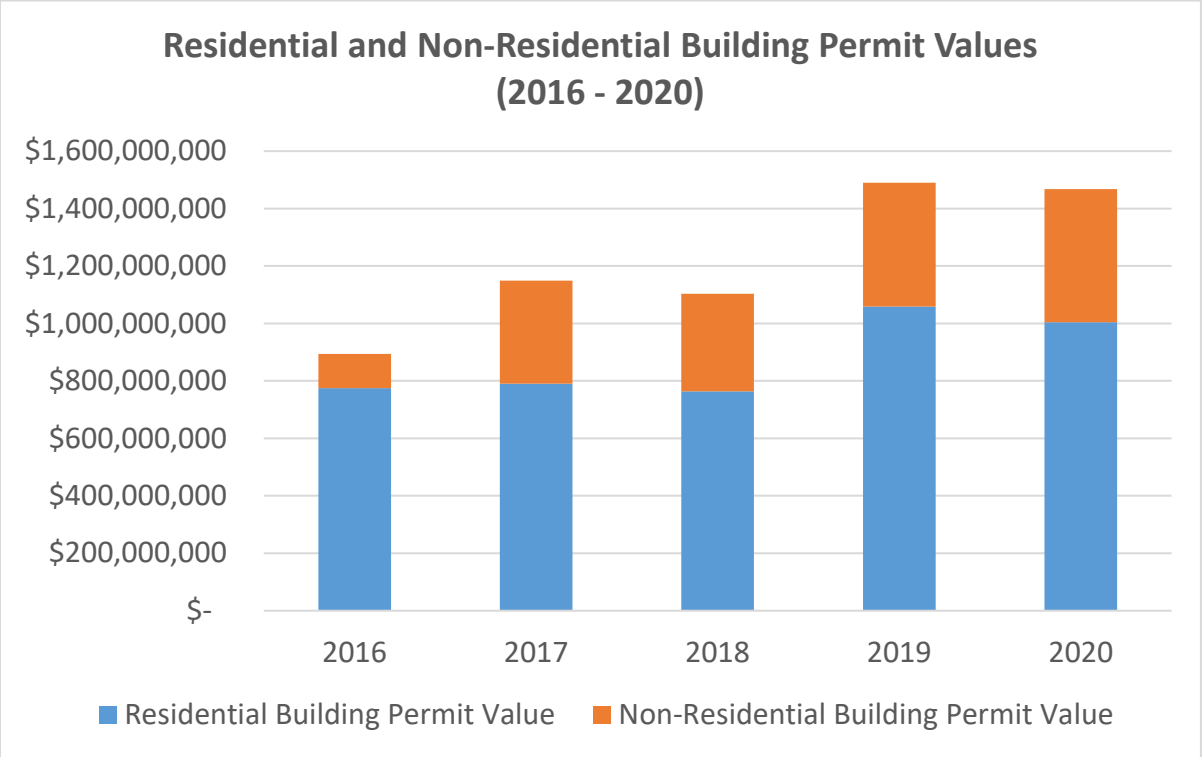
Building Permit Values

Building permit values, just like population and housing development, have increased over the past 5 years, growing from $858 million in 2016 and reaching nearly $1.5 billion in 2019 and 2020, respectively.

Similar to housing starts and completions, it appears the Covid-19 pandemic did not have a significant impact on building permit investment in 2020, relative to the previous four years.

The increased diversity of permits is particularly notable; non-residential permits grew from 15% in 2015 and 2016 to 30% from 2017 to 2020. The increased ratio of non-residential building permit values is more inline with the Region's Development Charges Background Study. Figure 9 provides an overview of building permit values from 2016 to 2020.

Figure 9: Residential and Non-Residential Building Permit Values (2016 - 2020)



Source: Statistics Canada Building Permit Values and Niagara Region Planning and Development Services

Conclusion

The scope and detail of annual growth reports will be revisited following the adoption of the forthcoming Niagara Official Plan. Future iterations of the report will provide additional metrics related to monitoring the Plan's implementation and commentary on the achievement of policy objectives and targets.

Alternatives Reviewed

No alternatives are provided. This report is prepared for information.

Relationship to Council Strategic Priorities

- Supporting Businesses and Economic Growth

- This report discusses trends in population, housing and building permit values over the past 5 years. This information is important for Regional Council to have as they make decisions that impact the Regional economy.

- Healthy and Vibrant Community
  - This report highlights trends in housing sale prices that relate directly to housing affordability in Niagara.

- Responsible Growth and Infrastructure Planning
  - The population increase over the past 5 years will be a critical component in advancing Regional Transit and GO Rail Service. A greater population, as well as increased densities around proposed GO Station areas, will support development and provide greater use of the service.
  - Tracking and reporting upon residential and economic growth provides direction on maintaining existing infrastructure and assists in asset management.

Other Pertinent Reports

- PDS 9-2017: Niagara Region Annual Growth Report
- PDS 25-2018: Niagara Region End of Year Growth Report 2017
- PDS 21-2019: Niagara Region End of Year Growth Report 2018
- PDS 19-2020: Niagara Region End of Year Growth Report 2019

Prepared by:
Greg Bowie
Planner
Planning and Development Services

Recommended by:
Doug Giles
Acting Commissioner
Planning and Development Services

Submitted by:
Ron Tripp, P.Eng.
Acting Chief Administrative Officer

This report was reviewed by Kirsten McCauley, Acting Manager of Long Range Planning and Isaiah Banach, Acting Director of Community and Long Range Planning.

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June 25, 2021

CL 13-2021, June 24, 2021
PEDC 6-2021, June 16, 2021
PDS 24-2021, June 16, 2021

DISTRIBUTION LIST

SENT ELECTRONICALLY

Development Applications Monitoring Report – 2020 Year End
PDS 24-2021

Regional Council, at its meeting held on June 24, 2021, passed the following recommendation of its Planning and Economic Development Committee:

That Report PDS 24-2021, dated June 16, 2021, respecting Development Applications Monitoring Report - 2020 Year End, **BE RECEIVED** and **BE CIRCULATED** to the Local Area Municipalities, Niagara Peninsula Conservation Authority, Niagara Home Builders Association, Niagara Industrial Association, local Chambers of Commerce and School Boards.

A copy of PDS 24-2021 is enclosed for your reference.

Yours truly,

Ann-Marie Norio
Regional Clerk
:kl

CLK-C 2021-094

Distribution List :

Local Area Municipalities
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G. Bowie, Planner, Planning and Development Services
D. Giles, Commissioner, Planning and Development Services
N. Oakes, Executive Assistant to the Commissioner, Planning and Development Services

Subject: Development Applications Monitoring Report - 2020 Year End

Report to: Planning and Economic Development Committee

Report date: Wednesday, June 16, 2021

Recommendations

1. That Report PDS 24-2021 **BE RECEIVED** for information; and,

2. That a copy of Report PDS 24-2021 **BE CIRCULATED** to Local Area Municipalities, Niagara Peninsula Conservation Authority, Niagara Home Builders Association, Niagara Industrial Association, local Chambers of Commerce and School Boards.

Key Facts

- The purpose of this report is to inform Regional Council of 2020 development application activity in Niagara Region.
- Regional Development Planning and Engineering staff reviewed 595 development applications in 2020.
- Regional Development Planning and Engineering staff provided comments for 552 pre-consultation meetings in 2020.
- The Region received $1,353,810 in review fees for development applications in 2020 (54% increase from 2019 fees).

Financial Considerations

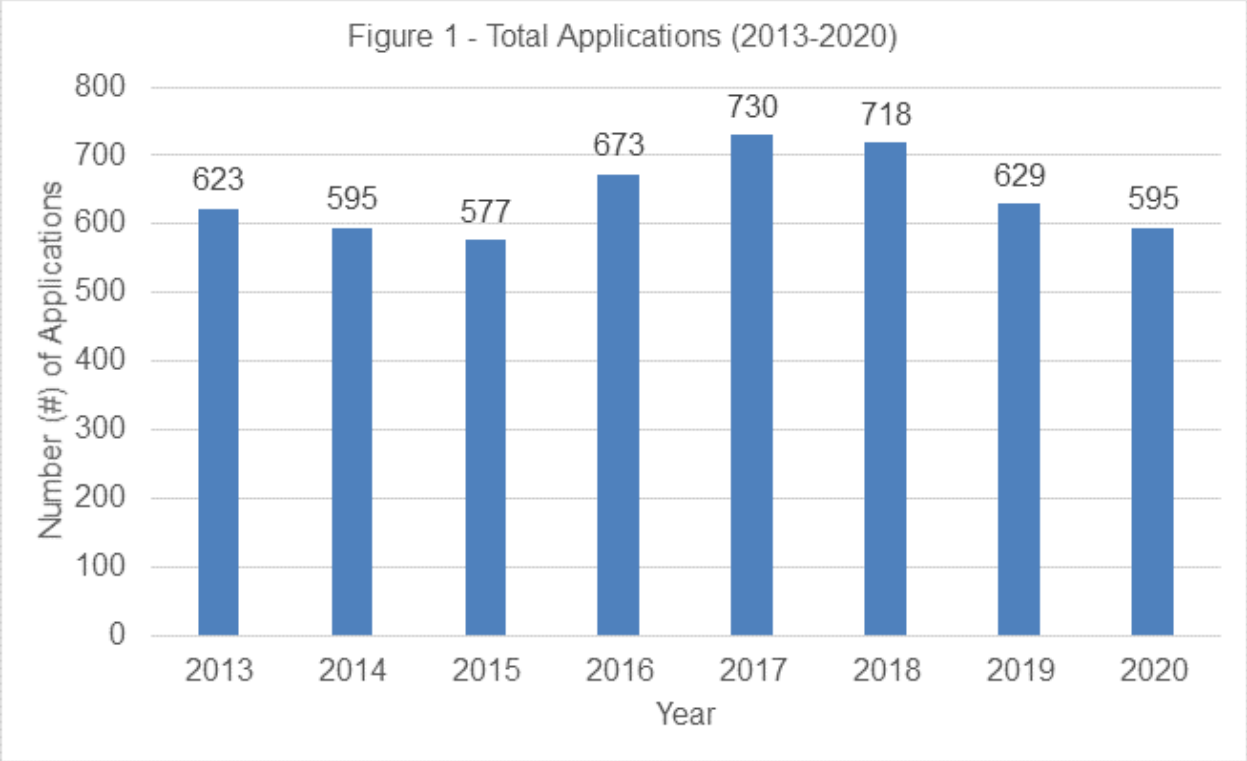
There are no direct financial implications associated with this report.

Analysis

Development Applications

Regional Development Services staff reviewed 595 development applications in 2020, representing a 5% decrease from 629 applications in 2019. Figure 1 illustrates the number of applications considered by Development Planning and Engineering staff from 2013 to 2020. These development applications are circulated to the Region based on Provincial legislation requirements and the existing Memorandum of Understanding (MOU) between the Region and Local Area Municipalities for planning in Niagara. The decrease appears to be attributed to the first wave of the COVID-19 pandemic and

adapting to the online format during the initial lockdown. The first full month after the lockdown (April 2020) there was a drop in applications, followed by a steady recovery in application volumes during subsequent months.

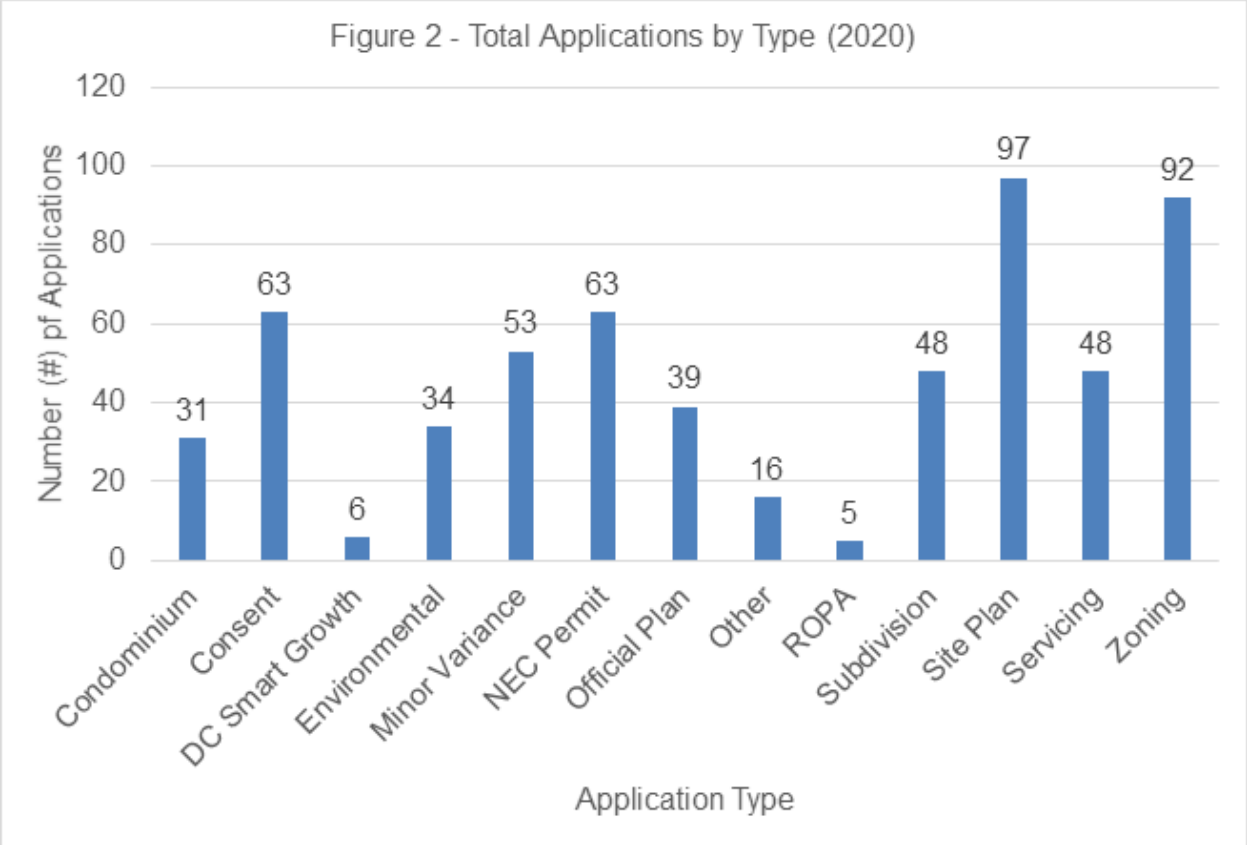


Staff expects the volume of development applications to be higher in 2021, as the trends in the fourth quarter of 2020 showed an uptake in applications by 17% compared to the fourth quarter of 2019. A look at Q1 2021 application volumes (202) reinforces this continuing trend as a 36% increase in volumes was experienced in comparison with 2020 (148). In addition, April 2021 volumes (76) was 55% above 2020 levels (49).

Additionally, the Planning and Development Services has the ability to waive its review function on certain types of minor development applications in local municipalities. This represents an effort to increase efficiency in the planning review function in Niagara and is a result of changes to the MOU.

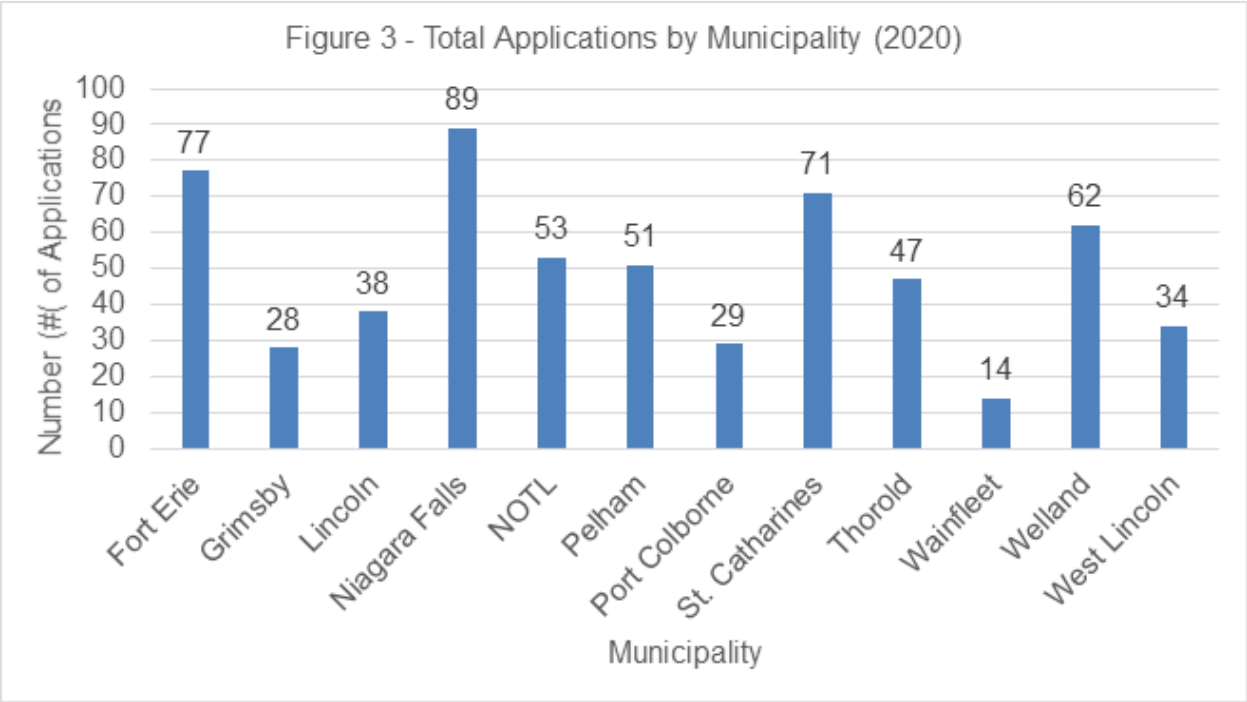
Figure 2 below provides the breakdown of development applications, by type, reviewed by Regional staff in 2020. Some complex development proposals often require multiple planning approvals. As an example, subdivision and condominium applications may also need amendments to the municipal Official Plan and/or Zoning By-law to facilitate the development. The categories with the most applications considered by Regional

staff were Site Plans (97), closely followed by Zoning By-law Amendments (92), and Consent (i.e. severances) and Niagara Escarpment Commission Development Permits (both 63).



The distribution of applications circulated to the Region by local municipalities during 2020 is shown on Figure 3. This information indicates relatively high levels of development activity in several communities. The municipalities with the most applications circulated to the Region were Niagara Falls (89), Fort Erie (77), St. Catharines (71), and Welland (62). As stated previously, application volumes were lower in 2020 compared to recent years because of the COVID-19 pandemic, however, the third and fourth quarters of 2020 saw a significant increase in volume.

Regional staff were also involved in reviewing several complex development applications in 2020, as highlighted in Appendix 1 of this report. This often requires review that is more extensive and can affect a broad range of issues (i.e. environmental impacts, traffic impacts and urban design considerations, etc.).



Pre-consultation Meetings

Development Services staff attend regular pre-consultation meeting sessions two days each month in each local municipality. These meetings are to determine complete application submission requirements and assist in the processing of applications. The COVID-19 pandemic required planning staff at the Region and the local municipalities to pivot to an online meeting format starting in April 2020. Developers, property owners, local staff and agencies were able to participate in these virtual pre-consultation meetings.

In 2020, Regional staff attended 552 pre-consultation meetings, which is an 11% decrease from the 2019 total (see Figure 4). This is likely a result of a pause in pre-consultations at the beginning of the first wave of the COVID-19 pandemic, while municipalities adopted to the online format. Pre-consultation volumes increased in the third and fourth quarters of 2020 and, generally, the number of pre-consultation meetings is an indicator of future development applications. Accordingly, staff expect development application numbers to increase in 2021.

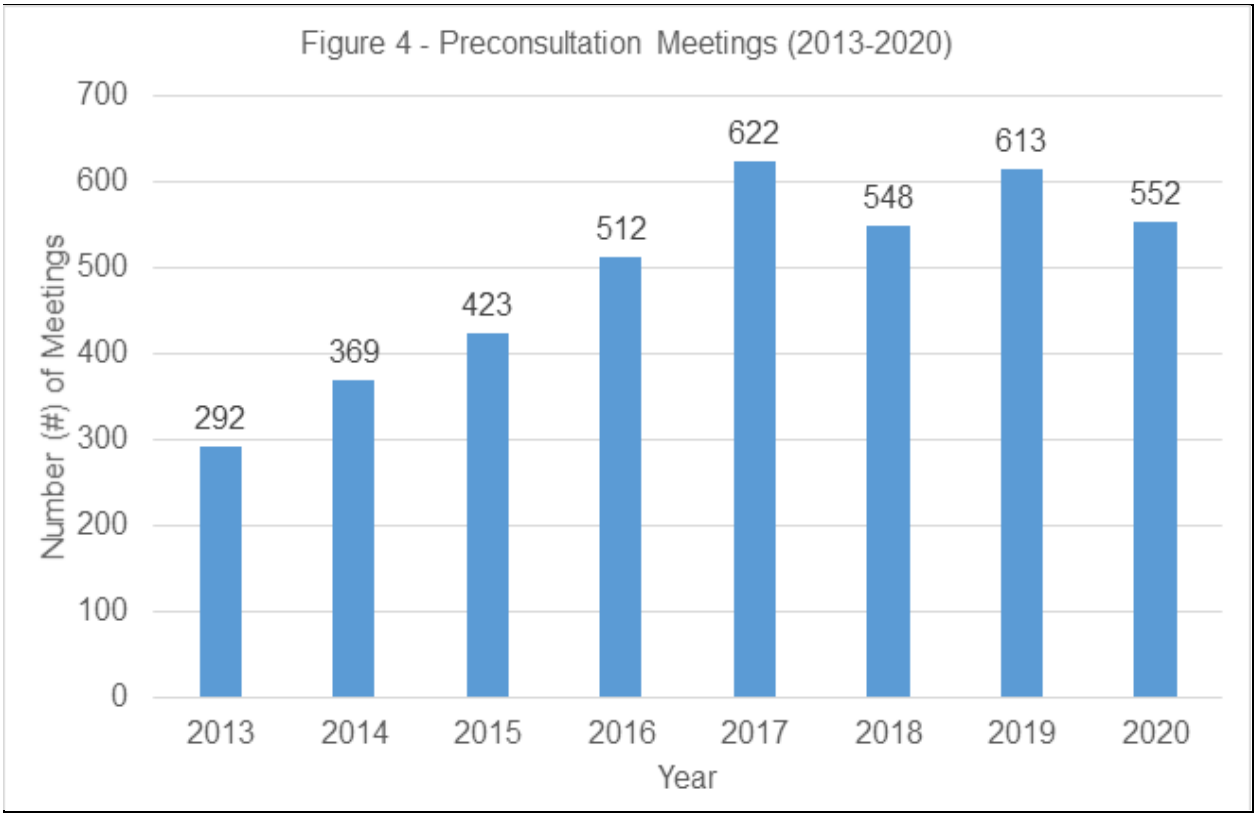
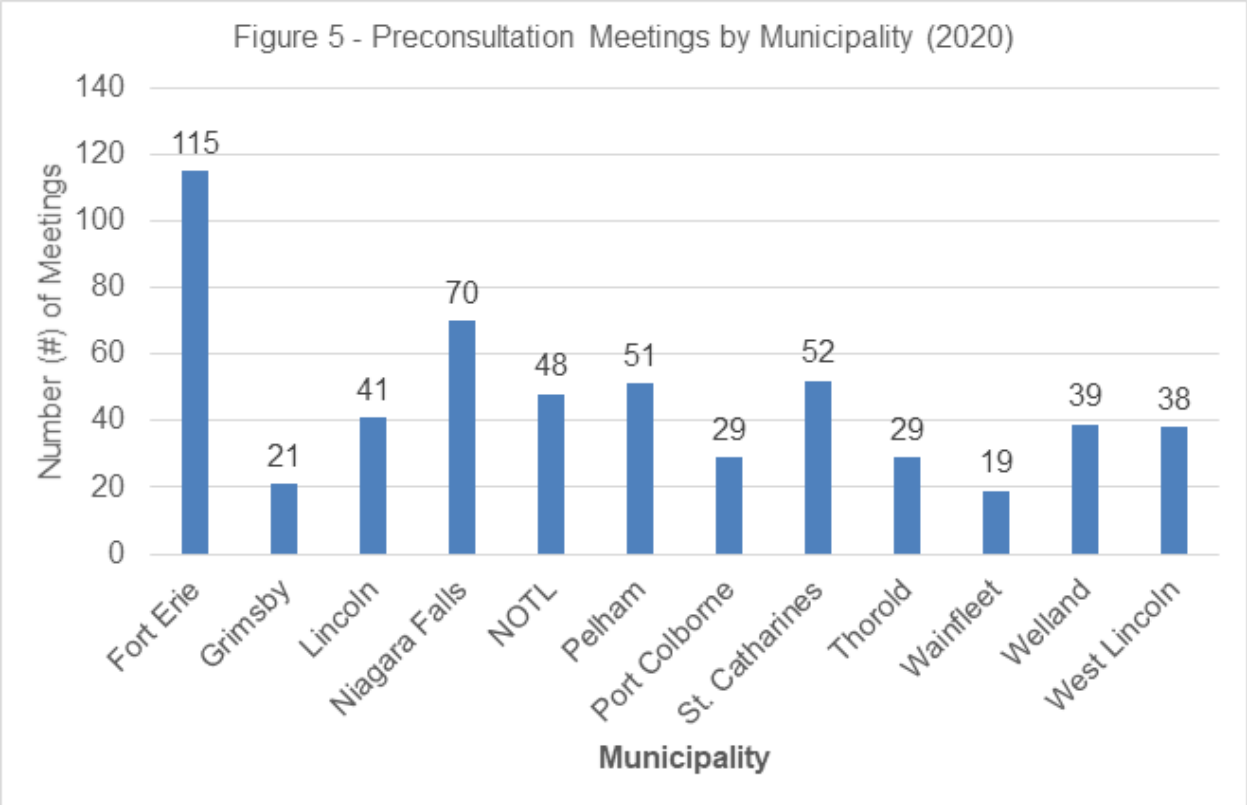


Figure 5 illustrates the number of pre-consultation meetings by municipality in 2020 that involved Regional staff. The municipalities with the highest levels of pre-consultation activity were Fort Erie (115) and Niagara Falls (70), followed by St. Catharines (52), Pelham (51), and Niagara-on-the-Lake (48).

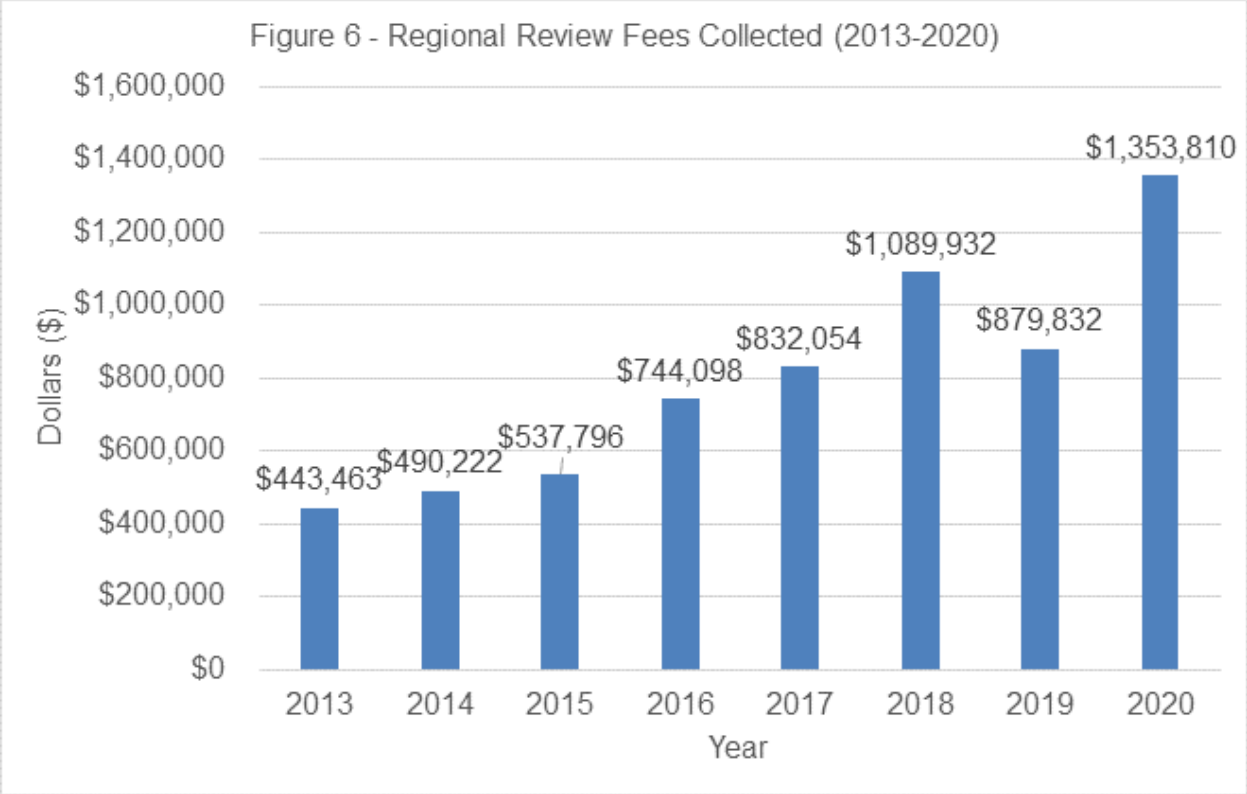


Regional Review Fees

Regional review fees are intended to offset Regional costs for the development review service. Figure 6 summarizes the fees collected between 2013 and 2020 for the Regional review of development applications. The 2020 total of $1,353,810 represents an increase of 54% from 2019. This relates to an increase in the number of complex applications received (i.e. Regional Official Plan Amendments, Official Plan Amendments and Draft Plans of Subdivision/Condominium), which generally have higher review fees. As we expect the total volume and complexity of development applications to increase from 2020 to 2021, development review fees are also expected to increase.

The Region received a Regional Official Plan Amendment (ROPA) application in March 2021 for an expansion to the Port Colborne Quarry and anticipate potentially receiving two additional ROPA applications in 2021 for a proposed new quarry and an expansion of an existing quarry. These applications are the most complex “development” applications, which are very time intensive to process with many technical studies that often require peer reviews to assist staff in areas in which the department does not have in-house expertise. The application fees approved by Regional Council reflect the

complexity and staff resources involved in reviewing quarry applications. As a best practice the Region, with participation of the affected local area municipality and the Niagara Peninsula Conservation Authority, has implemented a Joint Agency Review Team (JART) to share resources including a single peer reviewer for each technical study in order to maximize efficiencies.



2021 Outlook

As outlined earlier in this report, Staff anticipate an increase in application volumes in 2021 based on the first quarter metrics. Regional Development Services staff reviewed 202 development applications in Q1 of 2021, which is an increase of 36% compared to 148 applications in Q1 of 2020. Figure 7 illustrates the number of applications considered by Development Planning and Engineering staff in Q1 of 2019, 2020 and 2021. This increase is likely attributed to applications that were paused during the first and second wave of the pandemic, ongoing public health requirements/restrictions on the construction industry that allows for additional time to plan for development, and historically low interest rates.

As previously indicated, Staff expects the volume of development applications to continue to be high throughout 2021. The trends in pre-consultation volumes for the first quarter of 2021 show an increase in pre-consultation meetings by 60% compared to the Q1 of 2020 and 45% compared to Q1 of 2019. This is illustrated in Figure 8.

Figure 7- Overall Q1 Volumes (2019-2021)

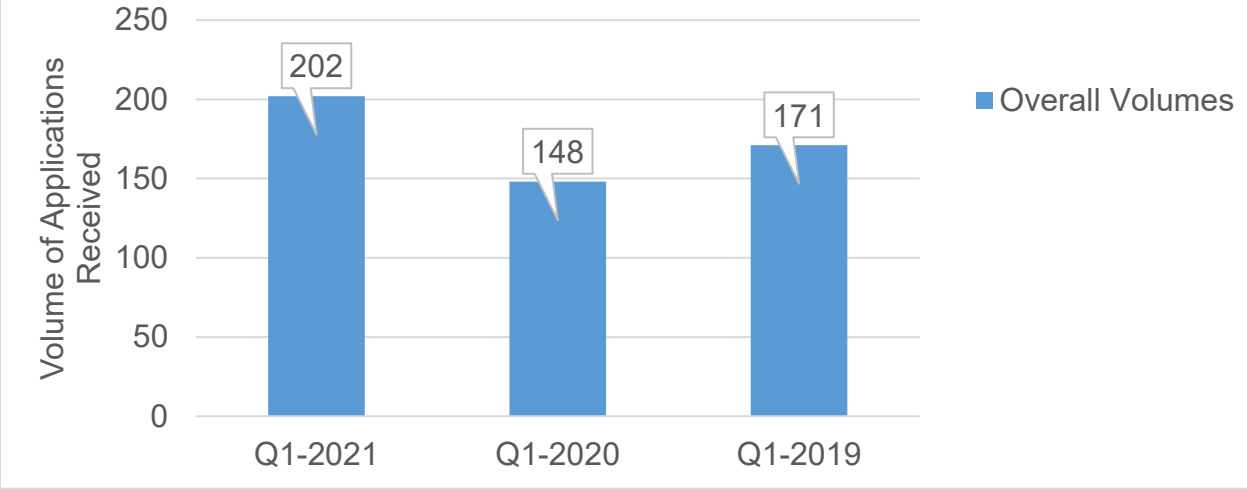
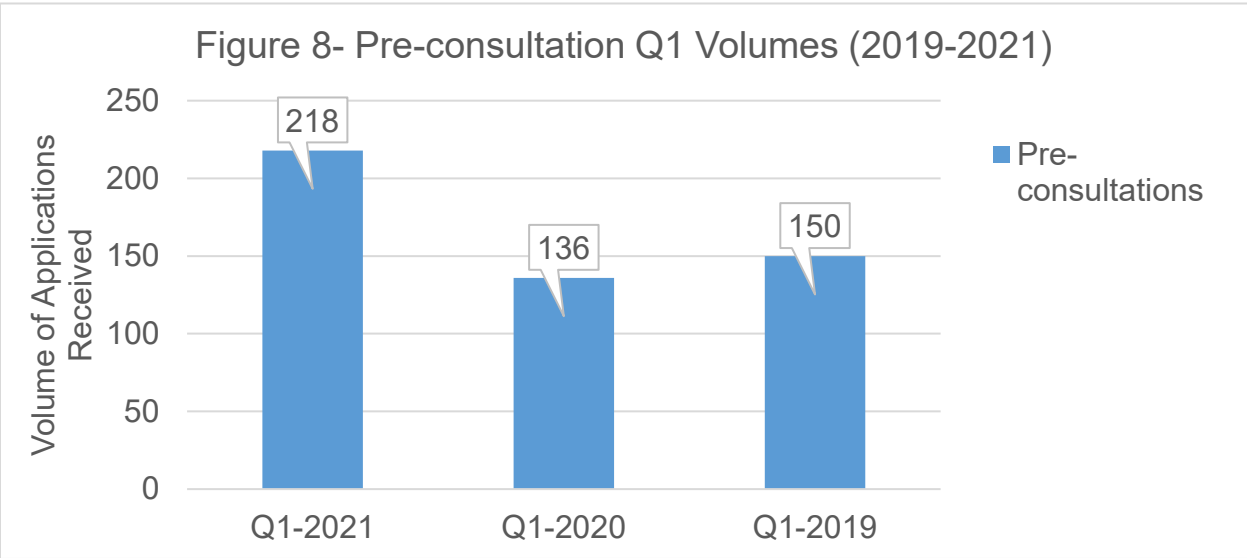


Figure 8- Pre-consultation Q1 Volumes (2019-2021)



The increased level of development in recent years represents a *"new normal"* for the Region. Regional Development Planning has adjusted its approach and practices to be solution oriented and proactive. By providing ongoing support to our local Municipalities, the Region strives to realize complete community planning outcomes that encourage the best possible development throughout the Region.

Urban Design's contribution to Development Applications

In addition to assisting in the review of development applications, the Urban Design and Landscape Architecture team also undertook several programs in 2020 that support the goals of achieving well designed built environments. These programs celebrated design excellence, provided synergies to development applications and improved development outcomes. The urban design team also assists local planning teams by providing urban design peer review to significant developments within those communities. To support local planning and urban design goals staff prepare design alternatives and contribute to the discussions with developers in support of local planning partners. In particular, the urban design team has collaborated in design charrettes to improve the design outcomes of development applications. The Urban Design review function within Development Planning is a key component to elevate the quality of development in Niagara and achieve industry leading results, reflecting positively on the Niagara brand.

Alternatives Reviewed

None.

Relationship to Council Strategic Priorities

This report provides information on development application activity that contributes to strong economic prosperity throughout the communities within the Niagara Region. This relates to Council's Strategic Priority of Supporting Business and Economic Growth, as well as Sustainable and Engaging Government through ensuring high quality, efficient and coordinated core services.

Other Pertinent Reports

- PDS 4-2020: Development Applications Monitoring Report - 2019 Year End

Prepared by:
Britney Fricke, MCIP, RPP
Senior Development Planner
Planning and Development Services

Recommended by:
Doug Giles
Acting Commissioner
Planning and Development Services

Submitted by:
Ron Tripp, P.Eng.
Acting Chief Administrative Officer

This report was prepared in consultation with Pat Busnello, MCIP, RPP, Manager, Development Planning and Diana Morreale, MCIP, RPP, Director, Development Approvals.

Appendix 1: Current Major Development Applications

Planning and Development Services Staff participated in the review of a number of major development applications in 2020. A summary of some of these major development applications are provided in the table below.

Glossary of Acronyms:

"LOPA" means Local Official Plan Amendment.

"LPAT" means Local Planning Appeal Tribunal.

"PEDC" means the Region's Planning and Economic Development Committee.

"RFP" means Request for Proposal.

"ROPA" means Regional Official Plan Amendment.

"SPA" means Site Plan Approval.

"ZBA" means Zoning By-law Amendment.

Municipality	Application	Developer	Details	Status
Fort Erie	**7 Central Avenue** Type: SPA.	Compass Land Developments Ltd.	Application is for a 12-storey mixed use building with 217 residential units and 657m² commercial space.	• LOPA and ZBA approved. • Site plan is in progress.
Grimsby	**Fifth Wheel redevelopment** Type: LOPA, ZBA, and Draft Plan of Subdivision.	Losani Homes.	Application is for 6 mixed use buildings with a total of 1,240 residential units and 46,000 ft^2 of employment space; 36 townhouse units; 19,500 ft^2 of commercial space; and 2.25 hectares of parkland and open space.	• Applications were approved by the Town on December 7, 2020. • No appeals received - decision final.
Grimsby	**West Lincoln Memorial Hospital**	Hamilton Health Sciences.	Application relates to the comprehensive redevelopment of the existing hospital.	• Regional comments were provided for Phase 1 of Site Plan.

Municipality	Application	Developer	Details	Status
	Type: SPA.			
Grimsby	**141-149 Main Street East** Type: LOPA and ZBA.	Losani Homes.	Application relates to the redevelopment of the Cole's property for a 6-7 storey mixed use building, including commercial space on the ground floor and 215 residential dwelling units with a total of 254 parking spaces (225 underground spaces and 29 surface spaces).	• Regional comments were provided for the initial application submission (February 2021).
Grimsby	**Century Condos 6 Doran & 21-23 Main Street** Type: LOPA and ZBA.	DeSantis Homes.	Application is for a 4-storey mixed use building with 92 residential units with 2 commercial units totaling of 463m^2 on the first floor.	• Appealed for non-decision (settlement pending). • A comprehensive public Urban Design Charrette with Town, Region and Applicant was completed earlier this year. • Site plan is in progress.
Grimsby	**133 Main Street east** Type: LOPA and ZBA.	Burgess Heritage Group Inc.	Application is for a new 5-storey mixed use commercial and residential apartment building consisting of 148 residential units and 305 m^2 of ground-floor commercial area. The property designated under the Part IV Section 29 of the *Ontario Heritage Act.*	• Application was appealed for non-decision. • LPAT hearing to be scheduled shortly.

Municipality	Application	Developer	Details	Status
Grimsby	**4 Windward Drive (Casablanca Inn)** Type: LOPA and ZBA.	TRG Casablanca Inc.	Application is for a 19-storey apartment building with 212 residential units, ground floor retail / restaurant commercial space, and a new hotel with conference and banquet facilities. Additionally, the existing hotel will be demolished and a new 12-storey apartment building with 208 residential units and ground floor retail commercial space with be constructed. The site will feature approximately 1,500 m^2 outdoor park area and will have a total of 909 parking spaces contained within 3 levels of underground parking.	• The statutory Public Meeting has been held. • Regional comments were provided in March 2021 on the application's resubmission with respect to design/wind. • Application is still in progress at this time.
Lincoln	**3221 North Service Road** Type: ZBA.	LJM Developments. A.J. Clarke & Associates Ltd.	Currently, the application is proposing 2 residential towers (25 and 28 storeys, respectively) that share a common 6-storey podium for a total of 510 residential units. The site is located outside of and abuts the Prudhommes Secondary Plan Area.	• The Region, Town, and Applicant are in the process of refining site and building design elements. • Regional comments on the 2nd submission were provided April 23, 2021. • A public urban design charrette is planned to be scheduled for spring / summer 2021.

Municipality	Application	Developer	Details	Status
Lincoln	**Prudhommes Landing Site Redevelopment** Type: ZBA and Draft Plan of Subdivision	FBH Ontario Inc.	Application is for approximately 1,173 residential units (consisting of a variety of single-detached, semi-detached, townhouse and apartment units), 3.92 hectares of open space, and 3.88 hectares of natural area within the Prudhommes Secondary Plan Area.	• The Town has approved the Draft Plan of Subdivision.
Niagara Falls	**New South Niagara Hospital** Type: SPA.	Niagara Health System.	Application relates to the Campus Planning for new Niagara South Hospital site.	• Campus Plan was finalized in September 2019. • Project was incorporated into Ministry of Health Functional Program Submission. • Stage 1 of the Site Plan has been completed for issuance of RFP.
Niagara Falls	**Riverfront Residential Community** Type: ZBA and Draft Plan of Subdivision.	GR (CAN) Investments Ltd.	Application is for an estimated total of 1,045 residential units (consisting of single-detached, semi-detached, townhouse and apartment units), 1.86 hectares of parkland and open space, and 17 hectares of natural area. Regional conditions of approval include servicing, natural heritage	• Draft Plan and ZBA approved by City; ZBA appealed to LPAT. • Developer proceeding to address conditions of draft approval for first phase.

Municipality	Application	Developer	Details	Status
			requirements, site remediation, etc.	
Niagara Falls	**Splendour Residential Development** Type: LOPA, ZBA and Draft Plan of Subdivision.	Cobas Developments Inc.	Application is for 104 single-detached dwellings, 16 semi-detached dwellings, 148 townhouses, and 1 block for a future school(s) site.	• City has approved the Draft Plan of Subdivision.
Niagara-on-the-Lake	**Settler's Landing (Phase 2)** Type: ZBA and Draft Plan of Subdivision	Settler's Landing Estates Ltd.	Application is for 53 single-detached dwellings on a 4.1 hectare site.	• Regional comments were provided on December 23, 2020. • Application has been Draft Approved by the Town and applicant is currently clearing conditions of Draft Approval.
Pelham	**Forest Park Subdivision** Type: ZBA and Draft Plan of Subdivision	Sterling Realty (Niagara) Inc. Upper Canada Consultants.	Application is for the creation 77 lots for single-detached dwellings, 8 blocks for 86 street townhouse dwellings, 1 block for 280 multi-family residential units, 1 block for a park, 1 block for a stormwater management pond, 1 block for a relocated watercourse, and associated roadways on a 17.03 hectare property.	• Application is in progress. • Regional comments were provided for the 1st application submission on December 22, 2020.
Pelham	**North Side of Summersides Boulevard and 1409,**	Mountainview Homes (Niagara) Ltd.	Application is for the creation of 13 lots for single-detached dwellings, 7 blocks for 30 rear lane townhouse units, 10 blocks for 44 street townhouse units, 5 blocks	• Regional comments were provided on October 1, 2020.

Municipality	Application	Developer	Details	Status
	1411, 1413, 1415 and 1419 Station Street Type: ZBA and Draft Plan of Subdivision	Upper Canada Consultants.	for 40 back-to-back townhouse units, and 1 block for a pedestrian walkway on a 4.46 hectare property.	• Town hosted a statutory Public Meeting on November 23, 2020. • Application is in progress.
Port Colborne	**118 West Street** Type: SPA.	Raimondo + Associates Architects Inc. Rankin Construction Inc. Southport Condos Inc.	Application is for a 9-storey mixed use building consisting of 74 residential units and 421m^2 of ground floor commercial space.	• Application is in progress. • Regional comments were provided on November 10, 2020 for the 2nd application submission.
St. Catharines	**Linhaven Long Term Care Facility Redevelopment (403 Ontario Street)** Type: LOPA, ZBA, Draft Plan of Subdivision, and SPA.	Regional Municipality of Niagara.	Application is to construct a 5-storey 256-bed long term care facility to replace the existing Linhaven Long Term Care facility. The existing Alzheimer Society of Niagara building will remain on-site. The development will be located adjacent to the existing Hospice Niagara building along Ontario Street and will include two interior courtyards that feature outdoor dining areas, landscaping, fitness stations, and shade structures. Site parking will be located at the rear of the site. The building will offer interior cafes, an auditorium, gym, library,	• Site plan is in progress. • Regional comments were provided on the April 27, 2021 relating to the 4th application submission. • There are no outstanding Regional requirements at this time.

Municipality	Application	Developer	Details	Status
			and chapel, and dining areas on every floor.	
Thorold	**Canada Summer Games Complex** Type: SPA.	Games Operations, 2021 Canada Summer Games.	Application relates to the Canada Summer Games Building and Playing Fields.	• Site plan has been approved. • Construction is in progress.
Thorold	**Artisan Ridge Phase 2** Type: Draft Plan of Subdivision	LANDx Developments.	Application consists of 123 single-detached and 40 townhouses and is a phase of the larger Artisan Ridge Subdivision.	• Draft Plan of Subdivision has been approved by City.
Thorold	**Legacy Port Robinson Estates (Phases 2 & 3)** Type: ZBA and Draft Plan of Subdivision.	Armstrong Planning. Legacy Communities. JTG Holdings Ltd. Maple Hill Developments Inc.	Application is for a total of 733 dwelling units that consists of 347 townhouse units, 80 semi-detached units, and 306 single-detached units.	• Draft Plan of Subdivision and Zoning By-law Amendment Approved
Welland	**Hunter's Pointe Golf Course Redevelopment** Type: LOPA, ZBA, and Draft Plan of Subdivision.	2599587 Ontario Ltd.	Application is for 735 single-detached dwellings, 250 townhouses, 170 residential units and 60,000 ft^2 of commercial space within proposed mixed use buildings.	• The application was approved by the City and has been appealed. • LPAT hearing to be scheduled shortly.
Welland	**John Deere – Dain West Subdivision**	Empire Homes.	Application is for a mixed use subdivision that allows for a maximum development of 870 residential dwelling units (consisting of detached, semi-	• Regional comments were sent April 26, 2021.

Municipality	Application	Developer	Details	Status
	Type: ROPA, LOPA, ZBA, and Draft Plan of Subdivision.		detached and townhouse dwellings), a 4 hectare mixed-use employment block, a stormwater management pond, an elementary school, parks and open space on approximately 74 hectares of land.	• Application was approved by City Council May 4, 2021. • LOPA 30 and ROPA 19 to be considered by PEDC on June 16, 2021.
West Lincoln	**Northwest Corner of South Grimsby Road 5 and Regional Road 20 (South of CP Rail Line)** Type: ZBA and Draft Plan of Subdivision	Marz Homes (Smithville West) Inc. IBI Group.	Application is for approximately 224 residential units and a recreational trail on a 10.29 hectare property.	• Application is in progress. • Regional comments were provided December 4, 2020 on the 1st submission of the application.
West Lincoln	**Station Meadows West** Type: ZBA and Draft Plan of Subdivision	P. Budd Developments	Application is for 68 lots of single-detached dwellings, 28 blocks for 163 freehold townhouse dwelling units, 3 blocks for 164 condominium townhouse dwelling units, 1 block for park space, and a multi-use trail block on a 14.84 hectare property.	• Application is in progress. • Regional comments were provided for the 3rd ZBA and Draft Plan of Subdivision submission on May 4, 2021.

Administration
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1815 Sir Isaac Brock Way, PO Box 1042, Thorold, ON L2V 4T7
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www.niagararegion.ca

June 25, 2021

CL 13-2021, June 24, 2021
PEDC 6-2021, June 16, 2021
PDS 30-2021, June 16, 2021

DISTRIBUTION LIST

SENT ELECTRONICALLY

Niagara Watershed Plan- Draft for Consultation
PDS 30-2021

Regional Council, at its meeting held on June 24, 2021, passed the following recommendation of its Planning and Economic Development Committee:

That Report PDS 30-2021, dated June 16, 2021, respecting Niagara Watershed Plan – Draft for Consultation, **BE RECEIVED** and the following recommendations **BE APPROVED**:

1. That consultation on the draft Niagara Watershed Plan (Volumes 1 & 2), **BE INITIATED** with the public and other stakeholders, Local Municipalities, and Indigenous groups; and
2. That Report PDS 30-2021 **BE CIRCULATED** to the Local Municipalities and the Niagara Peninsula Conservation Authority (NPCA).

A copy of PDS 30-2021 is enclosed for your reference.

Yours truly,

Ann-Marie Norio
Regional Clerk
:kl

CLK-C 2021-096

Distribution List :

Local Area Municipalities
Niagara Peninsula Conservation Authority
S. Norman, Senior Planner, Planning and Development Services

D. Giles, Commissioner, Planning and Development Services
N. Oakes, Executive Assistant to the Commissioner, Planning and Development Services

Subject: Niagara Watershed Plan – Draft for Consultation

Report to: Planning and Economic Development Committee

Report date: Wednesday, June 16, 2021

Recommendations

1. That consultation **BE INITIATED** on the DRAFT of the Niagara Watershed Plan (Volume 1 & 2) with the public and other stakeholders, Local Municipalities, and Indigenous groups.

2. That Report PDS 30-2021 **BE CIRCULATED** to the Local Municipalities and the Niagara Peninsula Conservation Authority (NPCA).

Key Facts

- The purpose of this report is to provide an overview of the Niagara Watershed Plan (NWP) project and to initiate the consultation and engagement process for the draft of Volume 1 & 2.

- PDS 17-2021 – Appendix 7.1 (May 12, 2012) provided the most recent update on the watershed planning program and the Niagara Watershed Plan (NWP) project. This report is a continuation of the work program outlined in Appendix 7.1.

- The Niagara Watershed Plan is being published in 3 volumes. Volume 1 (Characterization) and Volume 2 (Management) are in 'draft for consultation' format at this time. Links to Volume 1 & 2 are below and included as an appendix.
    - Volume 1 [full report] www.niagararegion.ca/projects/rural-and-natural-systems/pdf/nwp-vol1-draft.pdf
    - Volume 1 [text only] www.niagararegion.ca/projects/rural-and-natural-systems/pdf/nwp-text-draft.pdf
    - Volume 2 [full report] www.niagararegion.ca/projects/rural-and-natural-systems/pdf/nwp-vol2-draft.pdf

- Volume 3 of the NWP will analyze various growth scenarios as part of the overall Official Plan work program. Volume 3 will be completed later in summer 2021, once final growth scenarios are available.

- NPCA staff have been actively participating in the project.

Financial Considerations

The costs associated with completing the Niagara Watershed Plan project are accommodated within the Council approved project budget for the Niagara Official Plan.

Analysis

Introduction:

A watershed is defined as an area that is drained by a river and its tributaries. The Provincial Policy Statement (PPS, 2020) requires that watersheds be the "ecologically meaningful scale for integrated and long-term planning".

Watershed planning is a methodology used to define values, objectives, and targets that support the protection, enhancement, or restoration of the natural resources (with an emphasis on water resources) within a watershed through the development of management plans, policies, and other related tools.

Role of the Region in Watershed Planning:

The Provincial Growth Plan and Greenbelt Plan were updated in 2017. The updated plans place a greater emphasis on the need for watershed planning to 'inform' land-use planning. This change was accompanied by a Provincial shift in the responsibility for watershed planning.

Specifically, Section 4.2.1.1 of the 2019 *Growth Plan* states "Upper- and single tier municipalities, partnering with lower-tier conservation authorities as appropriate, will ensure that watershed planning is undertaken to support a comprehensive, integrated, and long-term approach to the protection, enhancement, or restoration of the quality and quantity of water within a watershed."

Coinciding with that change in Provincial direction, through a 2018 update to the Protocol for Environmental Planning Services in the Region, the responsibility for 'watershed planning' was transferred to the Region, and the responsibility for 'sub-watershed planning' was transferred to the Local Municipalities.

Integration with the Natural Environment Work Program for the Niagara Official Plan:

To facilitate this transfer of responsibilities, one of the background reports for the Natural Environment Work Program (NEWP), which is being completed in support of the Niagara Official Plan (NOP), was the Watershed Planning Discussion Paper (WPDP). The purpose of the WPDP was to provide a better understanding of the history; new Provincial direction; and the updated process, roles, and responsibilities related to watershed planning in the Region. The WPDP provided direction in three key areas:

- The scope of watershed planning that is required to 'inform' the NOP.
- Policies for watershed planning that should be included in the NOP.
- A framework for watershed planning in Niagara moving forward.

The previously completed Watershed Planning Discussion Paper (October 2019) can be accessed here:
https://www.niagararegion.ca/projects/rural-and-natural-systems/pdf/natural-environment-watershed-planning.pdf

The WPDP identified the need for a tertiary-level watershed plan to be completed to inform the NOP. In accordance with the direction of the WPDP a project to complete the Niagara Watershed Plan (NWP) was initiated.

Following the completion of the NOP project there will be a need for the Region to complete more detailed watershed planning at the 'quaternary-level'. The NWP has delineated 12 quaternary watersheds in the Region. Beyond that, sub-watershed planning becomes the responsibility of the Local Municipalities. Sub-watershed plans are typically completed in support of Secondary Plans or similar large-scale developments.

Niagara Watershed Plan Project:

The NWP will be published in 3 volumes:

1. Characterization
2. Niagara Watershed Management
3. Growth Analysis

Overall, several of the key outcomes of the NWP will be:

- A detailed characterization of the 3 tertiary watersheds in the Region
- A description of what features and systems should be considered required components of the water resource system (WRS) in conformance with Provincial policy
- The integration of the natural heritage system (NHS) and WRS
- Criteria to support the evaluation of various growth scenarios in the Region
- A set of goals and objectives that will inform future watershed planning in the Region
- A range of guidance on approaches that can be used to better manage natural resources in the Region
- Direction for integration with other components of the Niagara Official Plan work program

Consultation and Engagement:

The NWP project was first introduced as part of a virtual public information centre for the NOP in September 2020.

Following that, a Goals and Objectives Discussion Paper for the NWP project was shared with local municipalities, the public, and other stakeholders in November 2020 for input. This included the use of a survey which was widely shared.

The Niagara Watershed Plan – Goals and Objectives Discussion Paper (October 2020) can be accessed here:
https://www.niagararegion.ca/projects/rural-and-natural-systems/pdf/niagara-watershed-plan-discussion-paper.pdf

The results of the consultation and engagement to date are reflected in the draft documents.

The next step in the project is to undertake a consultation and engagement program on Volume 1 & 2 of the project. Volume 3 will be released for consultation later in the summer of 2021.

A consultation summary report for the entire project will be prepared and will accompany the final version of the NWP.

Alternatives Reviewed

Council could choose to not direct staff to initiate the consultation process on the draft of Volume 1 & 2. This is not recommended.

Relationship to Council Strategic Priorities

This report is being brought forward as part of the ongoing work program for the Niagara Official Plan. The Niagara Watershed Plan project aligns with Objective 3.2 Environmental Sustainability and Stewardship:

> *A holistic and flexible approach to environmental stewardship and consideration of the natural environment, such as in infrastructure, planning and development, aligned with a renewed Official Plan.*

Other Pertinent Reports

- PDS 6-2018: Natural Environment Project Initiation Report (Jan 31, 2018)
- PDS 18-2018: Natural Environment Project Framework (April 25, 2018)
- PDS 10-2019: Update on Natural Environment Work Program (Feb 19, 2019)
- PDS 32-2019: Natural Environment Background Study and Discussion Papers (Nov 6, 2019)
- PDS 26-2020: Natural Environment Work Program – Phase 4 (July 15, 2020)
- PDS 1-2021: Natural Environment Work Program – 2nd Point of Engagement (Feb 17, 2021)
- PDS 17-2021: Official Plan Update and NES Recommendation (May 16, 2021)
- PDS 3-2020: ELC Mapping Update (Feb 12, 2020)
- PDS 33-2020: ELC Mapping Final Report (Dec 9, 2020)
- CWCD 122-2019: Agriculture and Environment Groups Stakeholder Lists (Mar 29, 2019)
- CWCD 179-2019: Notice of Public Information Centres (May 19, 2019)
- CWCD 153-2020: Natural Environment Work Program Update (June 5, 2020)
- CWCD 314-2020: Update – Natural Environment Work Program (November 11, 2021)
- CWCD 2021-70: Mapping and Data for Natural Environment Options (Mar 19, 2021)

Prepared by:
Sean Norman, PMP, MCIP, RPP
Senior Planner
Planning and Development Services

Recommended by:
Doug Giles, BES, MUP
Acting Commissioner
Planning and Development Services

Submitted by:
Ron Tripp, P.Eng.
Acting Chief Administrative Officer

This report was reviewed by Erik Acs, MCIP, RPP, Manager, Community Planning and Isaiah Banach, Acting Director, Community and Long Range Planning.

Appendices

Niagara Watershed Plan - Volume 1 [full report] (Draft for Consultation)
www.niagararegion.ca/projects/rural-and-natural-systems/pdf/nwp-vol1-draft.pdf

Niagara Watershed Plan - Volume 1 [text only] (Draft for Consultation)
www.niagararegion.ca/projects/rural-and-natural-systems/pdf/nwp-text-draft.pdf

Niagara Watershed Plan - Volume 2 [full report] (Draft for Consultation)
www.niagararegion.ca/projects/rural-and-natural-systems/pdf/nwp-vol2-draft.pdf

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July 19, 2021

CL 13-2021, June 24, 2021

LOCAL AREA MUNICIPALITIES

SENT ELECTRONICALLY

Re: Motion – 16 Days of Activism against Gender-Based Violence

Regional Council, at its meeting held on June 24, 2021, passed the following motion:

WHEREAS "16 Days of Activism against Gender-Based Violence" is an annual international campaign, running from November 25 through December 10, that calls on the prevention and elimination of violence against women and girls;

WHEREAS the pandemic has been linked to an alarming increase in rates of violence against women, domestic violence reporting and domestic homicides, also known as the shadow pandemic;

WHEREAS 1 in 3 women worldwide will experience physical or sexual violence, mostly by an intimate partner, and emerging data has shown that all types of violence against women and girls has intensified during the pandemic;

WHEREAS the supply of women's shelter space has decreased due to public health measures while simultaneously there has been a 30 percent increase in the rates of gender-based violence;

WHEREAS indigenous women and girls, and racialized, minority and vulnerable communities are more likely to be the victims of assault.

NOW THEREFORE BE IT RESOLVED:

1. That Niagara Region actively **PARTICIPATE** in the 16 Days of Activism against Gender-Based Violence by flying a campaign flag in the International Plaza from November 25 to December 10, 2021;

2. That staff **BE DIRECTED** to develop a communication strategy to increase awareness of the 16 Days of Activism against Gender-Based Violence campaign; and

3. That the Regional Clerk **BE DIRECTED** to circulate a copy of this motion to the local area municipalities.

Yours truly,

Ann-Marie Norio
Regional Clerk

CLK-C 2021-108

From:	Grant Bivol
To:	clerk@hamilton.ca; Ann-Marie.Norio@niagararegion.ca; eeichenbaum@haldimandcounty.on.ca; billmatson@niagarafalls.ca; clerk@thorold.ca; clerk@welland.ca; clerk@westlincoln.ca; ptodd@notl.org; WKolasa@wainfleet.ca; jkirkelos@lincoln.ca; cschofield@forterie.ca; skim@grimsby.ca; hwillford@pelham.ca; City Clerk; bdunk@stcatharines.ca
Subject:	Distribution of the NPCA Water Quality Summary Report for the Year 2020 to Member Municipalities
Date:	July 15, 2021 4:23:39 PM
Attachments:	NPCA Water Quality Fact Sheet.pdf

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

Dear Mr./Madam Clerk;

At the June 18, 2021 meeting of the Niagara Peninsula Conservation Authority's Board of Directors, the following Resolution No. FA-124-2021 was presented and carried:

Resolution No. FA-124-2021
Moved by Member Ingrao
Seconded by Member Kawall

1. **THAT** Report No. FA-38-21 RE: Water Quality Monitoring Program Summary Report for the Year 2020 **BE RECEIVED**.

2. **THAT** the actions highlighted in the report to inform municipalities, stakeholders, and the public about the report findings and best practices to improve local water quality **BE IMPLEMENTED**.

3. **AND FURTHER THAT** a copy of this report **BE CIRCULATED** to municipalities, Ministry of Natural Resources and Forestry (MNRF), Ministry of the Environment and Parks (MECP) and the Federal Ministry of Environment and Climate Change Canada (ECCC).

CARRIED

As such, I am pleased to provide:

a. A link to Board Report No. FA-38-21 RE: Water Quality Monitoring Program Summary Report for the Year 2020 and the associated presentation: https://npca.ca/images/uploads/board_files/FA_Meeting_Agenda_Package_-_June_18%2C_2021.pdf

b. A link to the Water Quality Monitoring Program Summary Report for the Year 2020: https://npca.ca/watershed-health#water-quality-monitoring

c. The associated NPCA Water Quality Fact Sheet (attached)

At your municipality's request and convenience, the NPCA would be pleased to make a short presentation to Council and/or staff regarding the Water Quality Monitoring Program Summary

Report for the Year 2020.

Sincerely,

Grant Bivol

Grant Bivol
NPCA Clerk / Board Secretariat
Niagara Peninsula Conservation Authority (NPCA)
250 Thorold Road West, 3rd Floor, Welland, ON L3C 3W2
Tel: (905) 788-3135 ext. 250
gbivol@npca.ca
www.npca.ca

Due to the COVID-19 pandemic, the NPCA has taken measures to protect staff and public while providing continuity of services. The NPCA main office is open by appointment only with limited staff, please refer to the Staff Directory and reach out to the staff member you wish to speak or meet with directly. Our Conservation Areas are currently open, but may have modified amenities and/or regulations.

Updates regarding NPCA operations and activities can be found at Get Involved NPCA Portal, or on social media at NPCA's Facebook Page & NPCA's Twitter page.

The information contained in this communication, including any attachment(s), may be confidential, is intended only for the use of the recipient(s) named above. If the reader of this message is not the intended recipient, you are hereby notified that any disclosure of this communication, or any of its contents, is prohibited. If you have received this communication in error, please notify the sender and permanently delete the original and any copy from your computer system. Thank-you. Niagara Peninsula Conservation Authority.

NPCA 2020 Annual Water Quality Monitoring Report Fact Sheet

The Niagara Peninsula Conservation Authority regularly collects and tests water samples at 80 surface water stations and 38 groundwater stations located throughout the NPCA's jurisdiction. Surface water quality samples are analysed for several indicators such as chloride, nutrients, E. coli, suspended solids, and metals.

For more information and to review the full report, scan with your smart phone

Surface Water

What Did We Find?

- Surface water monitoring results indicate most of the watersheds in the NPCA jurisdiction have poor water quality.
- The high levels of total phosphorus, E. coli, suspended solids, and chlorides within the surface water continue to be the major causes of poor water quality.
- The sources of these pollutants are generally from both rural areas (agricultural runoff and faulty septic systems) and urban areas (combined sewer overflows and urban stormwater runoff).
- The best water quality is found in watercourses where water is introduced from Lake Erie and the Niagara River, in watercourses with significant groundwater discharges and in watersheds with substantial natural landscapes.

Groundwater

What Did We Find?

- The groundwater quality in NPCA's jurisdiction was found to be highly variable with some wells exceeding the Ontario Drinking Water Standards.
- All the Ontario Drinking Water Standards exceedances are a result of the natural conditions of the groundwater.
- Private well owners are responsible for having their well water tested regularly and to make sure that their well is properly maintained and in good condition.
- For information about private well testing, contact your municipality.

What Can You Do?

- Plant native trees, wildflowers, shrubs, and/or rainwater gardens.
- Reduce the amount of mown grass on your property.
- Reduce the amount of pesticides, herbicides and fertilizers you use.
- Conserve water by using low flow showers and toilets, high efficiency clothes washers and dishwashers.
- Install rain barrels to collect water for use around your yard.

What Can Your Community Do?

- Sponsor community clean ups to keep waste out of natural areas.
- Look for ways to expand the existing urban tree canopy.
- Reduce the amount of pesticides, herbicides and fertilizers used.

What Can Your Business Do?

- Establish a corporate volunteering program to support local initiatives such as tree plantings.
- Invest in 'greener' alternatives to current practices.
- Encourage recycling and composting in the workplace.
- Donate towards water quality and habitat improvement programs.
- Evaluate the effectiveness of environmental programs.

NPCA Restoration Grant Program

The NPCA is taking action to restore and improve water quality, wildlife habitat and forest cover across the NPCA watershed. If you have an idea for an environmental project, the NPCA welcomes you to apply for assistance through the NPCA's Restoration Grant Program. For further details, please visit the following link: *npca.ca/restoration*

From: Norma Bird <norma.wainfleetfallfair@gmail.com>
Sent: July 13, 2021 10:45 AM
To: Nancy Giles <Nancy.Giles@portcolborne.ca>
Subject: Wainfleet Fall Fair 2021

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

Nancy

Below is a letter for the Port Colborne Council announcing the 2021 Wainfleet Fall Fair.

Dear Mayor Bill Steele, Council & Staff

The Wainfleet Agricultural Society is planning the 2021 Fall Fair. In moving forward, we wish to share our plans with you.

For this year, the contests will be open to the Townships of Wainfleet and City of Port Colborne only.

There will be two focuses.

Virtual & Community Contests – The Community contests include entries that will be displayed at one's home or business. Our overall theme is "*Celebrating The Wainfleet Fair*". There will be six community entries.

Business Display Entry - theme - ***"If we were at the fair"*** Either a window display or an outdoor display.
Homes/Apartments – theme – ***"Welcome Fall"*** Family or individual. Decorate your roadside mailbox, porch, balcony, window, front flower bed.
Yard Art – theme – ***Artist Choice*** – handmade/crafted must be bigger than a breadbox (whirligig, bench)
Children - Scarecrows – theme **"*All dressed up for the Fair*"** 2 age groups Under 13 & between 14 & 18.
Farms - Theme - ***"When I was a Kid"*** Could Incorporate hay/straw bales, farm machinery old or new.

Our judges will award 1st, 2nd and third places prizes in all categories.

Day Of Event Saturday, September 25th, 2021 – a Demo Derby will be held, following all Covid 19 guidelines that are in place at the time. Tickets to be purchased online only. We will be promoting the Fair in Wainfleet and Port Colborne and hope you will tell your community about the "new" Fair. We will be at the Port Colborne Farmers Markets starting the last week of July and ending the last week of August 2021 to answer questions and collect entries.

Respectfully Submitted

Norma Bird
President
Wainfleet Agricultural
Society
905 899 4952
416 806 6313

The Corporation of the City of Port Colborne

By-Law No. _____

Being a by-law to provide for a Section 4 and Section 78 Engineer's Report for Drainage works in the City of Port Colborne In the Regional Municipality of Niagara Known as the Port Colborne Municipal Drain

Whereas the Port Colborne Drain is a municipal drain within the limits of The Corporation of the City of Port Colborne, having status under the *Drainage Act R.S.O. 1990;* and

Whereas the Port Colborne Drain is a municipal drain tributary of the Wignell Municipal Drain, situated in the City of Port Colborne; and

Whereas on the 23rd day of July, 2018, the Council of the City of Port Colborne appointed Paul Marsh, P. Eng of EWA Engineers Inc., to prepare a new report; and

Whereas pursuant to Section 78 of the *Drainage Act,* R.S.O. 1990, the Council of The Corporation of the City of Port Colborne, in the Regional Municipality of Niagara, has procured a report titled Port Colborne Municipal Drain Report, dated April 16, 2021, prepared by Paul Marsh, P. Eng., of EWA Engineering Inc., which report was filed with the City Clerk on June 11, 2021, containing plans, profiles and assessment schedules for the construction and future maintenance of the Port Colborne Municipal Drain, and is attached hereto and forms part of this by-law; and

Whereas the total estimated cost the Port Colborne Drain, inclusive of the engineer's report, construction, contract administration and HST (net) is $296,048.11; and

Whereas on the 14th day of June, 2021 the council of the City of Port Colborne directed staff, by resolution, to proceed to the "Meeting to Consider", under Section 41 of the *Drainage Act,* R.S.O. 1990, in accordance with the recommendations laid out in Public Works Department Report No. 2021-148; and

Whereas the Council of The Corporation of the City of Port Colborne, at its meeting of July 26th, 2021 approved the Public Works Department Report No. 2020-211, Port Colborne Municipal Drain Meeting to Consider, whereby the proposed drainage works was deemed necessary and desirable;

Now therefore the Municipal Council of The Corporation of the City of Port Colborne under the *Drainage Act* R.S.O. 1990, enacts as follows:

1. The report dated April 16, 2021, may be amended by pronouncement(s) of Courts of Revision and Final Decisions/Orders of the Agriculture, Food and Rural Affairs Appeals Tribunal and/or Referee, and appended hereto as Schedule "A" is hereby adopted and the drainage works as therein indicated and set forth is hereby authorized and shall be maintained in accordance therewith.

2. The Corporation of the City of Port Colborne may borrow on the credit of the Corporation the amount of $296,048.11, excluding HST, being the amount necessary for payment of the cost of the said drainage works.

3. The Corporation may arrange for the issue of debentures on its behalf for the amount borrowed less the total amount of,

    a) grants received under Section 85 of the Act;

    b) commuted payments made in respect of lands and roads assessed within the municipality;

    c) money paid under subsection 61(3) of the Act,

and such debentures shall be made payable within 5 years from the date of the debenture and shall bear interest at a rate not higher than the rate charged by The Ontario Municipal Improvement Corporation on the date of sale of such debentures.

4. 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 Schedule “B” hereto to be collected in the same manner and at the same time as other taxes are collected.

5. If the actual of the drainage works varies from the estimated costs as set out in schedule “B” forming part of this By-law, the actual cost shall be assessed, levied and collected upon and from the said parcels of lands and roads and parts of parcels in the same proportions and in the same manner as provided in the Schedule “B” forming part of this by-law, as revised by the Court of Revision and Final Decisions of the Agriculture, Food and Rural Affairs Appeal Tribunal and/or Referee.

6. That all assessments of $50.00 or less are payable the first year in which the assessment is imposed upon the land assessed, as provided for under Section 61(3) of the *Drainage Act*, R.S.O. 1990.

7. This By-law may be cited as “The Port Colborne Municipal Drain By-law” and shall come into force on the day of its final passing.

Read a first and second time and provisionally adopted this 26th day of July, 2021.

_____
William C. Steele
Mayor

_____
Amber LaPointe
City Clerk

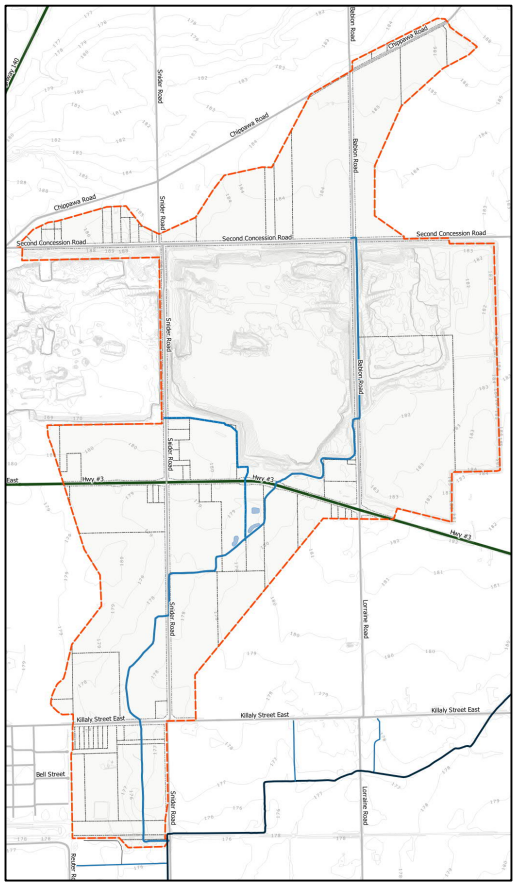
Read a third time and enacted this _____ day of _____20___.

_____
Head of Council

_____
Clerk

Port Colborne Municipal Drain Report

City of Port Colborne



April 16, 2021

Project No: EWA-189999

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EWA Engineering Inc.
84 Main Street, Unionville, Ontario
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Revision and Version Tracking

Title: Port Colborne Drain Report
Submission Date: April 16, 2021

Version #	Issued As:	Prepared by	QA/QC	Editor	Date:
103	Issued For Report	P.Marsh	K. Graham	P.Marsh	Apr 16, 2021
102	Issued For Final Review	P.Marsh	A.Vander Veen		Dec. 7, 2020
101		P.Marsh		P.Marsh	Nov 13, 2020
100	Issued as Final	P.Marsh	A.Vander Veen		May 15, 2020
99	Issued for Final Review	P.Marsh	A. Vander Veen	P.Marsh	Dec. 13, 2019
95	95% Issued For Review	P.Marsh		P.Marsh	April 12, 2019
070	70% Issued For Review	P.Marsh		P.Marsh	
025	25% Outline IFR				Sept. 18, 2018

FileName: 189999_PortColborneDrainReport_v103Final.docx

Seal Page:

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The conclusions, analysis and interpretations are based on the data and information available and in the condition and accuracy provided. EWA Engineering assumes no responsibility for data provided by others and has not reviewed nor verified the reliability, accuracy or representation of the data provided.

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1 Executive Summary

The Port Colborne Municipal Drain is located in the eastern portion of the City of Port Colborne. It has an outlet into the Wignell Drain, immediately south of the Friendship Trail and ends at the Second Concession Road and Babion Rd.

The City of Port Colborne retained Paul Marsh, P.Eng of EWA Engineers Inc. to prepare a Drainage Report under the Drainage Act R.S.O. 1990 for the Port Colborne Drain. See appointment resolution of Council included in Appendix D.

This report includes a description of all work, associated plans, cost estimates, and assessment schedules for the proposed work for the Port Colborne Drain, as well as the proposed Branch Drain. The report has been prepared in accordance with the requirements of the Drainage Act, Chapter D.17 of the Revised Statutes of Ontario, Section 4 and 78. The works are described as predominately maintenance with specific improvements identified.

This report includes drain improvements, including drain maintenance, to ensure suitable channel design flows are achieved and extending the drain to the Second Concession to match the original inflow prior to the expansion of the quarry. The drain improvements have been developed through plan and profile drawings. The drawings include As Constructed data for drain improvements already constructed by the City of Port Colborne in 2016 including re-alignment of the drain south of Highway #3.

The following are summary descriptions of the planned improvements:

1. Extension of the drain along the east side of Babion Rd.
2. Re-laying the culverts at the intersection of Babion Rd. and Second Concession Rd.
3. Using the existing outlet (called Wignell Drain in past reports) for the Port Colborne Branch #1 Drain.
4. Maintenance of the Port Colborne Branch Drain #1 to the Snider Rd. ROW.

The following is a summary of the project financial values as prepared in the attached Assessment Schedule included in Appendix C.

Items	Costs
Port Colborne Drain	
Estimated Construction Costs	$54,068.
Previous Works – completed prior to 2018	$52,212.
Eligible Administration Costs	$170,157.
Calculated Allowances	$939.
Sub-Total Port Colborne Drain	**$277,376.**
Port Colborne Branch #1 Drain	
Estimated Construction Costs	$10,340.
Eligible Administration Costs	$8,052.
Calculated Allowances	$277.
Sub-total Port Colborne Branch #1 Drain	**$18,669.**
Total:	**$296,045.**

The Port Colborne Drain is organized into two distinct catchments as follows:

- Port Colborne Drain serving 327.8Ha, with an open channel drain including private crossings and having a Drain length of 3,368m.
- Branch Drain #1 serving 14.8Ha with an open channel drain length of 823m.

The Port Colborne Drain Assessment Summary is as follows:

Benefit Assessment (Section 22)		
Private Lands	$763.50	
Total - Benefit Assessment (Section 22)		**$763.50**
Outlet Liability Assessment (Section 23)		
Private Lands		
Road Right of Way Lands	$225,489.15	
Total - Outlet Liability Assessment (Section 23)		**$225,489.15**
Special Benefit Assessment (Section 24)		
Port Colborne Drain	$5,600.09	
Total - Special Benefit Assessment (Section 24)		**$5,600.09**
Special Assessments (Section 26)		
City of Port Colborne	$40,448.80	
MINISTRY OF TRANSPORTATION ONTARIO	$5,076.19	
Total: Port Colborne Drain	**$45,525.00**	
Total - Special Assessments (Section 26)		**$45,525.00**
Forecasted Total Drain Assessments		**$277,377.74**

The Port Colborne Branch #1 Drain Assessment Summary is as follows:

Outlet Liability Assessment (Section 23)		
Private Lands	$3,096.49	
Road Right of Way Lands	$1,450.25	
Total - Outlet Liability Assessment (Section 23)		$4,546.74
Special Assessments (Section 26)		
City of Port Colborne	$7,008.46	
MINISTRY OF TRANSPORTATION ONTARIO	$7,115.18	
Total - Special Assessments (Section 26)		$14,123.64
		$18,670.38

This report and the proposed improvements are based on instructions from the City of Port Colborne and in consultation with the local landowners. The cost of these improvements is shared across all areas that use the Drain by way of allowances and assessments consistent with the Drainage Act of Ontario.

2 Introduction

The City of Port Colborne retained Paul Marsh, P.Eng of EWA Engineers Inc. to prepare a Drainage Report under the Drainage Act R.S.O. 1990 for the Port Colborne Municipal Drain formerly the Wignell Municipal Drain.

In addition to the Port Colborne Drain Report, there are other Drain Reports being prepared concurrently and they are:

- Wignell Drain, outlets to Lake Erie across Lakeshore Rd. East and proceeds northerly for 7.2km.

- Michener Drain, outlets to Wignell at 0+010 north of the Lakeshore Rd. East and proceeds northerly for 1.7km, ending south of the Friendship Trail.

The Port Colborne Drain originally had an outlet to Lake Erie but was diverted to the Wignell Drain by a previous Engineer's report. The remaining portion has been referred to as a branch of the Wignell Drain, but by the preparation of this Engineer's Report with a revised Assessment Schedule, it will be recognized as the Port Colborne Drain with an outlet to the Wignell Drain south of the Friendship Trail. This report also recognizes the already existing channel as a Branch Drain west to Snider Rd. called Port Colborne Branch Drain #1. The following Figure presents the proposed drain names and drainage boundaries.

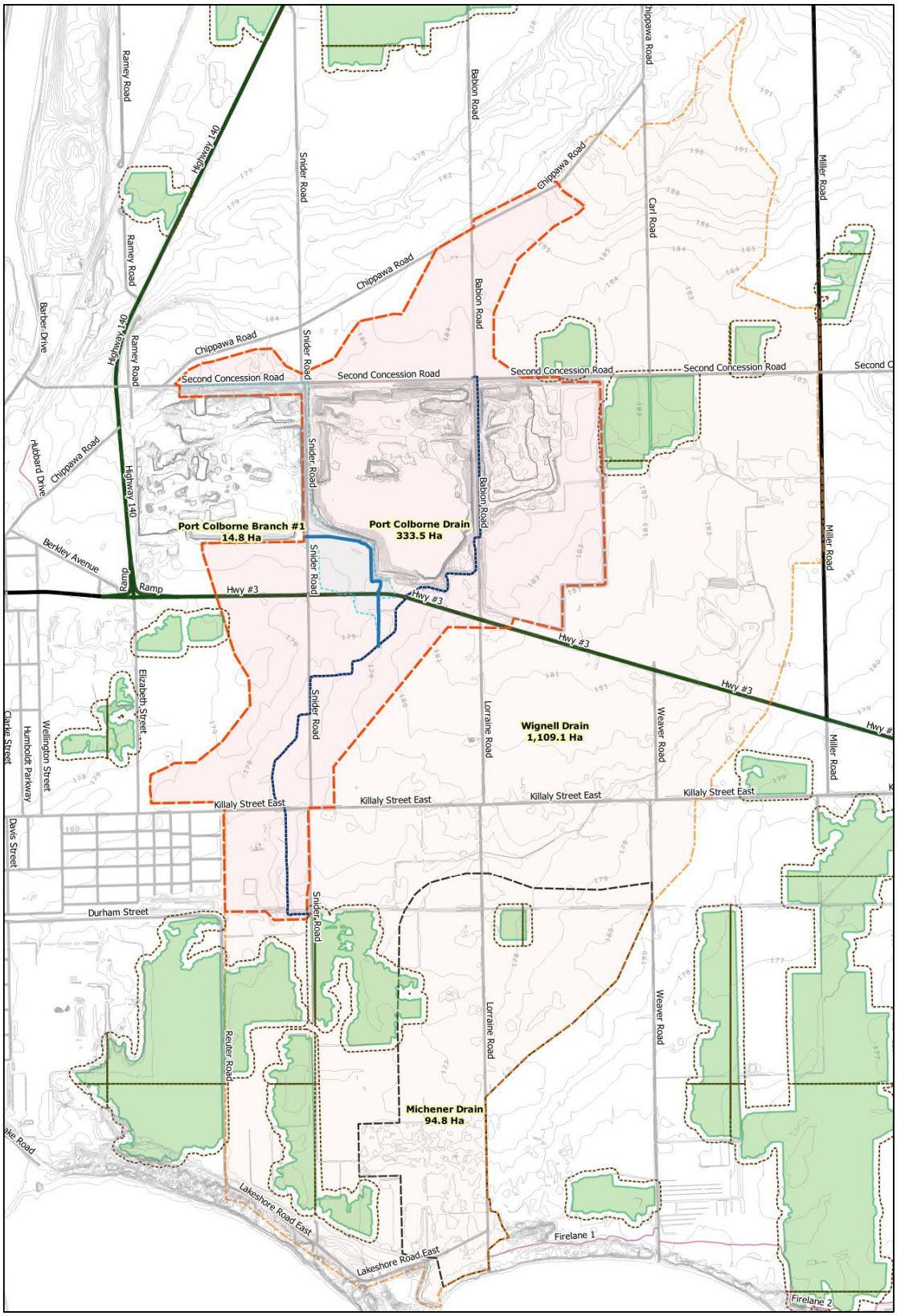

Figure 1 Wignell Watershed; Michener, Port Colborne and Wignell Drains

This report includes a description of all work, associated plans, cost estimates, and assessment schedules for the proposed work on the existing Port Colborne Drain, as

well as for the proposed Branch Drain. The report has been prepared in accordance with the requirements of the Drainage Act, Chapter D.17 of the Revised Statutes of Ontario, Sections 4 and 78.

The proposed improvement work for the Port Colborne Drain is prepared as a Section 78 (1.1) of the Drainage Act. The works are described as maintenance with the exception of re-alignments, which are deemed to be required but not requiring a Section 4 application of the Act. The Port Colborne Branch Drain #1 is prepared as a Section 4 petition by the Road Authority.

2.1 Objective

The Port Colborne Drain already exists and has for many years. Originally known as the Port Colborne Drain, it was renamed and made part of the Wignell/Michener Drain during the 1970s. As of this report, it is being named the Port Colborne Drain again. The objective is to maintain the existing drain in a State of Good Repair (SOGR). The municipal drains have been impacted by changes in land use practices that affect their function. The drain capacity is degraded through growth of vegetation within the banks of the drain.

There are specific new channels proposed to improve drain function recognizing the impacts to the original drain alignments. From Highway #3 to Second Concession is quarry land that has affected the drain alignment with corresponding relocation including quarry boundary and berming.

The Drain channel was relocated to the east side of Babion Road but has not been fully constructed to Second Concession Road. Physical changes to the drain are needed for continued service and proposed improvements have necessitated a new Engineer’s report be prepared under Section 78 of the Drainage Act R.S.O. 1990.

Previous maintenance work conducted in 2016, and other dates, is included in this report and will be assessed as part of the cost of the works.

2.2 Drain History and Past Reports

The Port Colborne Drain Engineer's Report is prepared as follows:

- Baseline Drainage Report; provides an assessment of current drainage problems and identifies the extent of the drainage area to be serviced by the municipal drain. Baseline report includes a history of drainage and presents historical information such as grade lines.

- Wignell Watershed Assessment Report; provides an assessment of existing capacity through the use of hydrologic and hydraulic modelling which identifies the options for resolving problems and recommends a preferred option to improve drainage.

The final Engineer's Report is composed of the two previous reports along with supporting documentation and final drainage cost estimates and assessment schedule or table.

The exact previous alignment of the upper portion of the Port Colborne Drain is not completely clear. With the expansion of the quarry, efforts to abandon portions of the Drain and to re-align the Drain were provided by report to Port Colborne Council, see review in Baseline Report. For this report, based on the information reviewed, the Port Colborne Branch Drain #1 is presumed to have existed previously by drain report. The following figure shows Constructed Drains as presented in the OMAF AgMaps application.

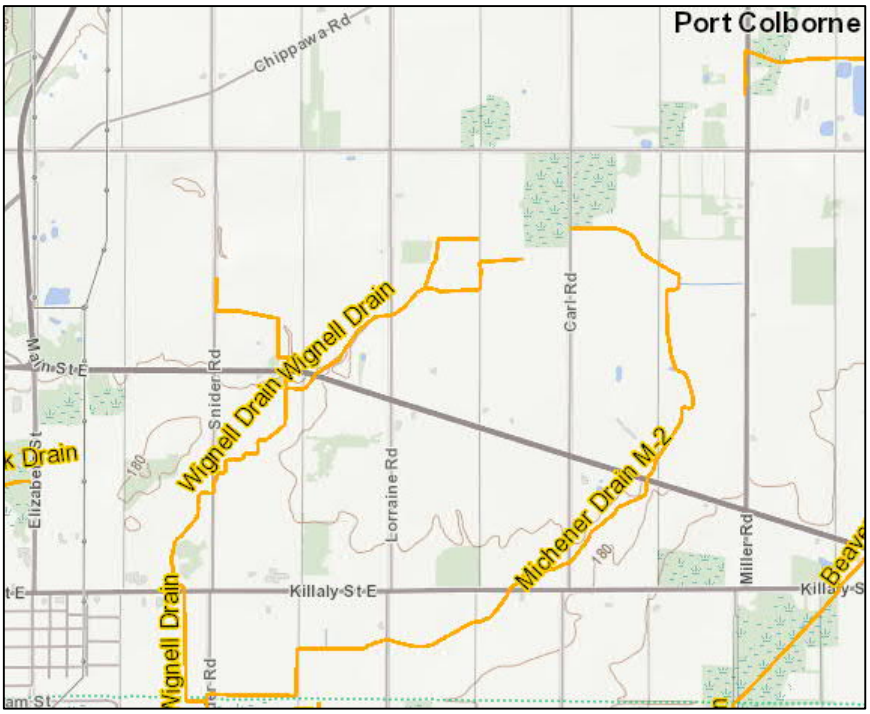

Figure 2 OMAF AgMaps - Constructed Drains

What is clearly shown in the figure are the two (actually three) top branches of the drain. A branch that turns west north of Highway #3 and is shown along the Snider Rd. ROW to a point north along the eastern edge of the roadway. Also a branch that proceeds eastward to Babion Rd (labeled as Lorraine Rd. in the figure) and ending before Carl Rd.

The alignments were substantially changed by report in 1999, in favour of re-alignments to allow the quarry properties to expand rock removal within this area.

2.3 Port Colborne Drain Watershed

The Port Colborne Drain watershed is composed of a single distinct municipal drain that outlets to the Wignell Drain just south of the Friendship Trail.

The Port Colborne Drain serves an area of 327.8 hectares based on the defined drain boundary, refer to Figure 2. The main branch of the drain is 3,368m in length from the drain origin, which is defined as the south end of culvert headwall crossing the Friendship Trail and is 110m to the outlet into Wignell Drain at STA 2+055 for a total main drain length of 3478m.

The watershed boundary is south of Chippawa Rd. with a high point of 190m. The upper portion of the drain is defined to end at the intersection of Babion Rd. and Second Concession Rd. at an approximate elevation of 182m.

- Watershed average fall (slope, height from furthest point in the watershed to lowest point at outlet) is given as 0.32% or 3.17m per 1000m

- Drain average fall (slope) is given as 0.258% or 2.58m per 1000m

It is worth noting that a portion of the upper watershed, the square edge on the west side of the catchment boundary along Snider Road, is removed by a municipal storm sewer that flows west and outlets into the canal.

This slope characterises the Port Colborne Drain as an average sloped watershed, with greater fall than the Wignell Drain at 0.11% average slope. The lower reach of the drain, where it connects to the Wignell Drain, has very little grade and standing water is a common occurrence.

The Port Colborne Drain can be segregated into distinct geographic areas as shown in Figure 3 Drainage Catchment of Port Colborne Drain.

1. The outlet through the Friendship Trail is defined by the low slope and standing water with considerable phragmites growth. This portion of the drain is only 160m in length from the outlet to a point just north of the Friendship Trail.

2. Above the Friendship Trail to Highway #3 Crossing. This section was cleaned and a segment re-aligned by the City of Port Colborne in 2016, as shown in the Baseline Report. The resulting grade line is shown as an “As Constructed” grade line on the Plan & Profile Drawings. There are two constructed wetlands adjacent to the drain. They are located on two properties north of the drain and hydraulically above the drain at STA 1+600 and 1+735 respectively. Two fordings were added to the drain during the 2016 works at STA 1+745 and 1+628, which replaced a culvert in poor condition and with the agreement of the property owner.

3. North of Highway #3, the main channel of the drain follows the edge of the quarry and crosses Babion Rd. to the east side of the ROW. Historically, RV Anderson Drain Report1979, this drain continued east of Babion Rd., but a portion was abandoned by a Drain Report adopted by council in 1999. Since that 1979 report, the channel has been re-routed along Babion Rd. on the west and east side, but not to Second Concession Rd. Currently the channel stops at the Quarry access lanes with an existing culvert underneath the private access road. An existing PVC culvert appears perched and currently blocking the flow path. There’s no defined outlet for the existing culverts located at Second Concession Rd.

4. Two culverts are located at the Second Concession Road; one crossing from east to west of Babion Rd. on the north side of Second Concession (600 HDPE) and a second culvert currently on the west side of Babion Rd. graded to the south but not connecting to the Port Colborne Drain. By this report, the culverts will be reset to provide positive drainage

from west to east and north to south on the north and east sides of the ROW. The Port Colborne Drain will end at the north east corner of the intersection and connect for outlet east of Babion Rd. This change will serve lands to the north of Second Concession Rd. that would otherwise drain south but are blocked by the road and the quarry.

5. The existing channel of the Branch Drain #1 serves west to Snider Rd. at the north edge of the property, ARN = 411000. From the current Highway #3 crossing to a point on Branch Drain #1 roughly at STA 0+480, the drain channel is quite clear and the cross-section well defined. From that point to Snider Rd. ROW, the drain is overgrown with vegetation and the cross-section disappears before the ROW. This section of Branch Drain #1 is to be improved to the edge of the Snider ROW. The portion of the drain shown on Snider Rd. is to be abandoned in favour of municipal roadside swales.

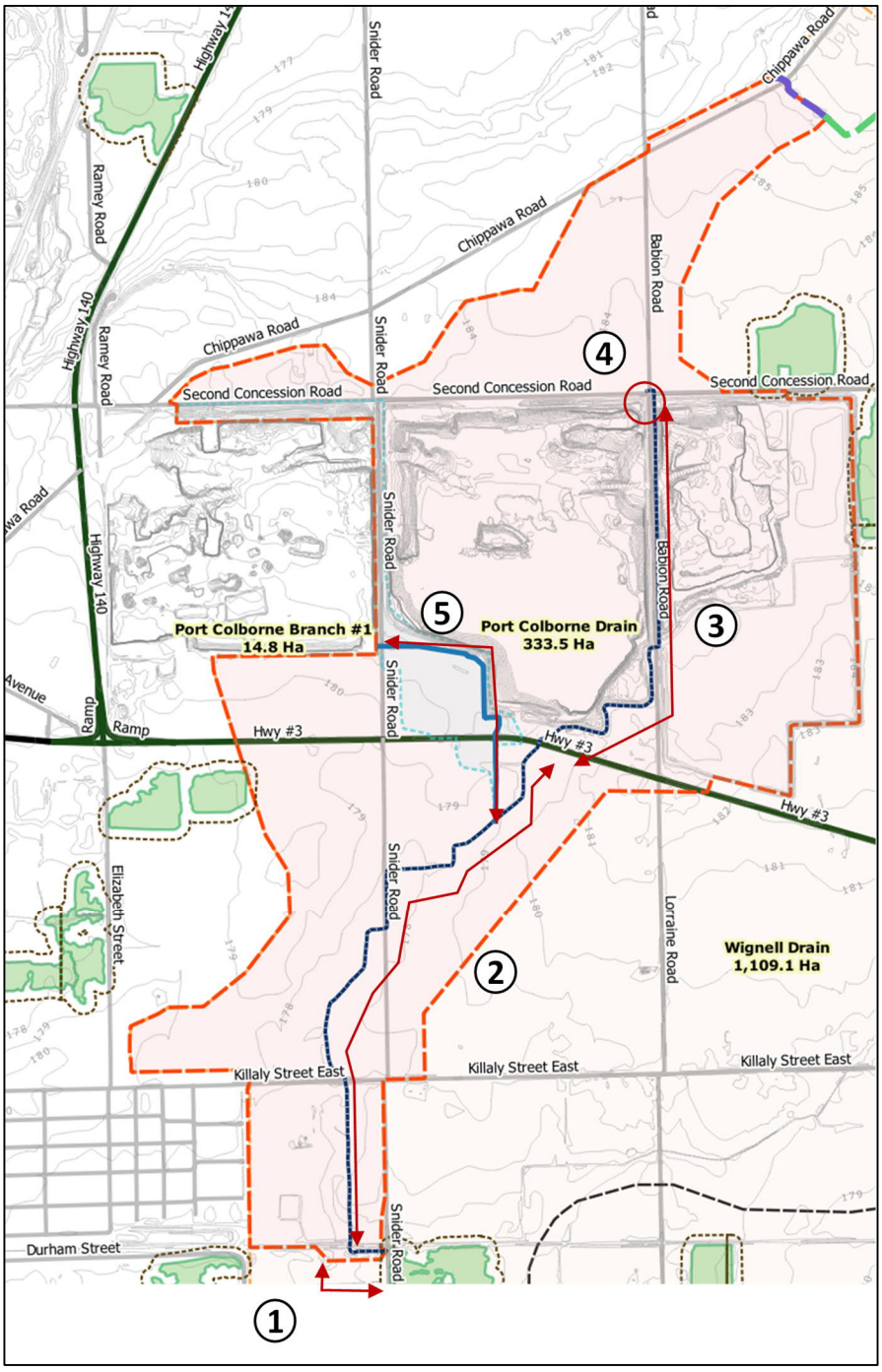

Figure 3 Drainage Catchment of Port Colborne Drain

3 Design Considerations

The analysis of the Port Colborne Drain, part of the Wignell Drain watershed, is based on Hydrologic and Hydraulic analysis to predict runoff flow requirements and to match channel capacity. Water monitoring, gauge measurements, have not been practiced and thus calibration or validation of the computer based model results is limited to historical anecdotal comparisons.

3.1 Watershed Characterization and Use

The Port Colborne Drain watershed is characterized through land use as a design consideration in the following ways:

1. The upper portion of the watershed land use is agricultural with mainly row crops; soya, corn or cereal grains grown. The design service level for agricultural land is flooding with low velocities and drainage of ponding areas over 48 to 72 hours. Drainage is provided to improve working time and an overall goal to reduce the risk of crop drowning.

2. Fringe or rural residential properties are the other major land use with estate sized lots with houses, buildings, wells and septic beds.
   Urban expectations of no ponding on residential lots in rural areas can not be met without extensive costs. Acceptable flooding without damage to property contents is the reasonable design service level similar to agricultural service levels.

3. Gravel and stone quarry operation makes up a significant portion of the drainage area and affects the drain through runoff capture and pumping. The Quarry has several permits to take water granted from the MOE that impact on the function of the drain.

4. Port Colborne Outlet.
   The primary design service level for the outlet is merely to have a positive slope to the Wignell Drain with a clear and clean flow path to outlet.

3.2 Former Drain Changes

The Port Colborne Drain has been in use for a very long time. Over that time, changes have occurred and been abandoned. These changes are described in the Baseline Report. A summary of significant changes are as follows:

- Expansion of the quarry impacting site runoff, changing from stormwater runoff to pumped flow.

- Municipal Drain abandonment:

    - Wignell W1 in 1999 north of Highway #3.

    - Wignell W2a & W2 in 2013 east of Babion Rd.

- Drain Re-alignments:
    - North of Highway #3 and west of Babion Rd. in 1999.
    - South of Highway #3 in 2016
    - Roadside swales along Babion Rd.

3.3 Design

The following describes the design basis for this drain. Descriptions of design criteria are intended to meet the requirements of O. Reg. 588/17: Asset Management Planning for Municipal Infrastructure specifically Table 3.

3.3.1 Criteria

The following section establishes the level of service for the Port Colborne Drain. Channel size is confirmed to be based on a 1 in 5 year return period storm, which is expressed as a design storm as follows:

- 5-year cumulative storm with a total rainfall amount of **68.90 mm** using a Soil Conservation Service (SCS) Type II **24-hr** storm distribution.

The design storm is used to forecast a predicted runoff for identified catchments. Each channel section is designed to convey this runoff.

The existing MTO crossings are to meet the MTO standard criteria of 1:25 year storm. As these are existing crossings with no changes proposed, no analysis of performance is undertaken and available capacity is as it was before this report was prepared. From the original catchments, the quarry lands expansion, previous report abandonments and other watershed changes, the contributory catchments upstream of the MTO crossings are as follows:

- PC1-CS-01; West culvert 1880x1260 (1550x1200) CSPA
    - Original Catchment: 154 Ha
    - Revised Catchment: 14.8 Ha
- PC-CS-04; East culvert, Conc. Box 1200x2400 open bottom
    - Original Catchment: 111Ha
    - Revised Catchment: 61Ha

The Port Colborne Drain outlets to the Wignell Drain and is wholly dependent on the Wignell Drain for sufficient outlet.

3.3.2 Drain Capacity Design

The Wignell Watershed Report describes the modelling used to assess the existing watershed. A revised model was implemented for the design and capacity

determination of the existing channels based on the design drawings attached to this report.

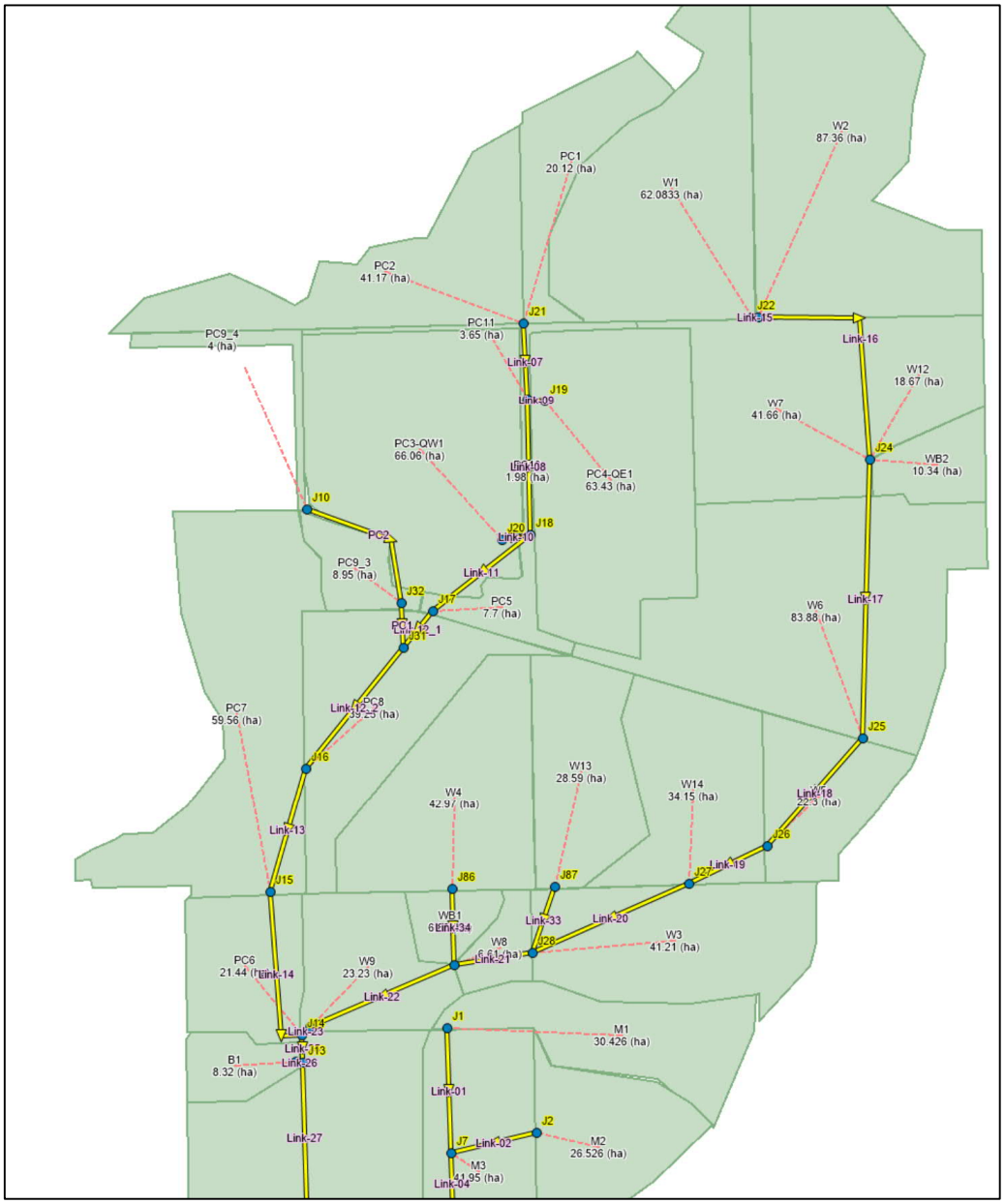

Figure 4: Wignell PC-SWMM Model with Port Colborne

The specific results for the Port Colborne Drain are included in the following table.

The details of the model are included in Appendix D, including the input file.

4 Drain Works Recommendations

The Port Colborne Drain is not a new drain, but an old name for an existing drain. The watershed served has been dramatically altered by the quarry lands and the long term plan for those lands is not referenced in this design. The rest of the watershed is a mixture of rural residential and farm land, which ispredominately row crop.

4.1 Description of the Works

The following presents a program of proposed improvement works for the Port Colborne Drain. As a program, some works are staged at various times and may not proceed in a step-by-step manner, but on an as-and-when available basis that best meets environmental and regulatory requirements.

A significant portion of the works is already complete. The original drain alignment has been compromised by the expansion of the quarry on both sides of Babion Road. A new alignment for the drain extending the open channel to the Second Concession Rd. to provide an outlet for overland flows is required.

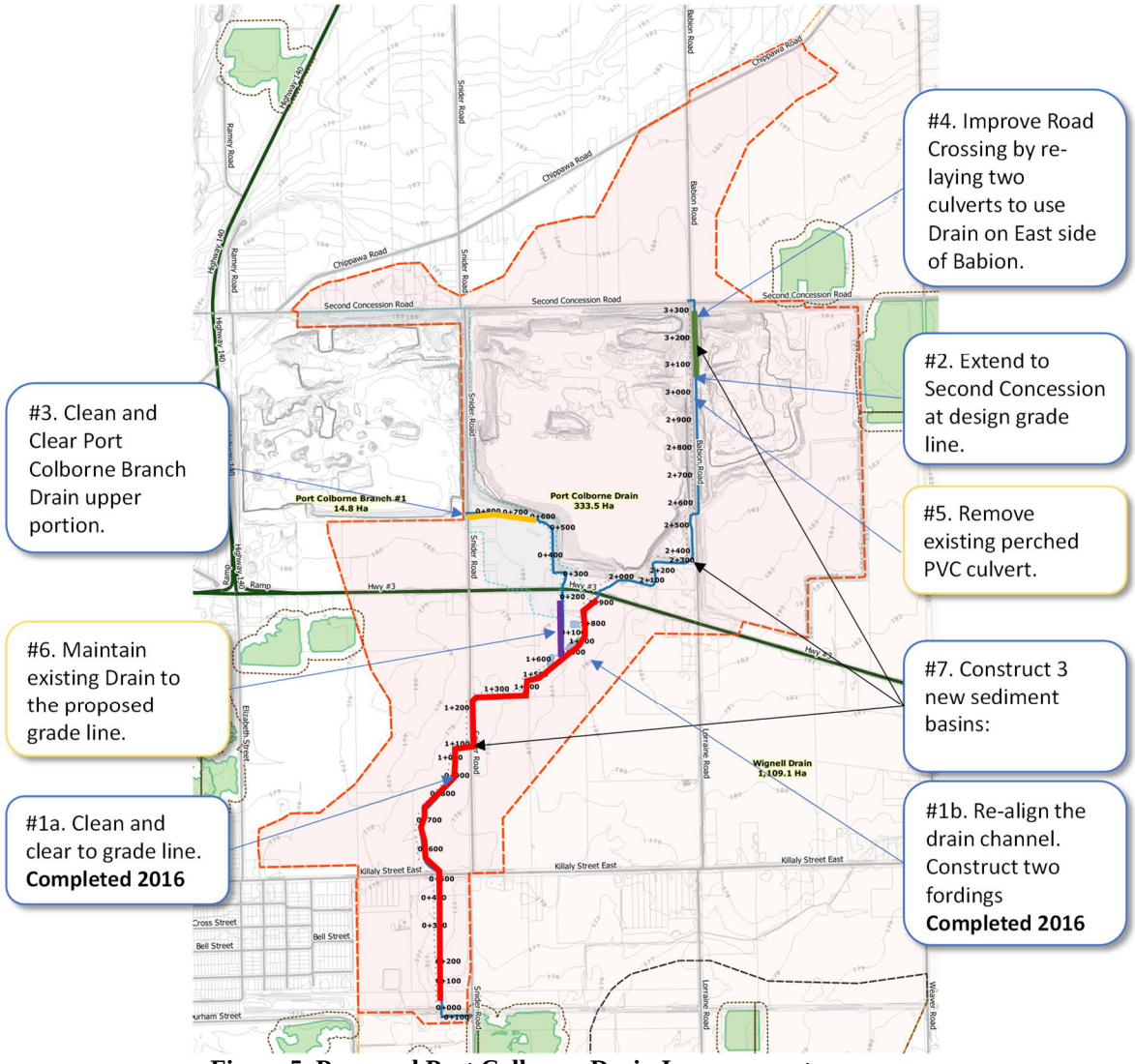

Figure 5 Proposed Port Colborne Drain Improvements

4.1.1 Port Colborne Drain Flow Improvement

The primary function of the proposed works is maintenance of channel section and reduction of flow restrictions. This is for two key restoration efforts as follows:

Restoration works #1 is the removal of vegetation from top-of-bank to top-of-bank. This removal is targeted at tree and shrub growth that limits or could obstruct primary flow paths. Every effort to retain trees, not in the channel, and understory growth will be made to reduce environmental impacts of the maintenance work. A work zone, presumed from previous drain reports, is required for the channel improvements and the maintenance works will seek to minimize the removal of trees and understory growth adjacent to the drain to that required for machine access.

Restoration works #2 is to remove any deposition humps or deviations that are impeding flow. This does not include any changes to grades that were already over deep, past the calculated grade line, but does include channel bank stabilization where slips or excessive erosion is evident during the restoration works. Channel restoration is done from one side with effort to reduce existing stable bank cover damage on the opposite side of the work zone.

Most of the proposed work is to re-establish the original drain capacity and function through the cutting of trees and vegetation that has grown up through the drain. The following figure illustrates a typical cross-section view of the work and work zone required to do the work.

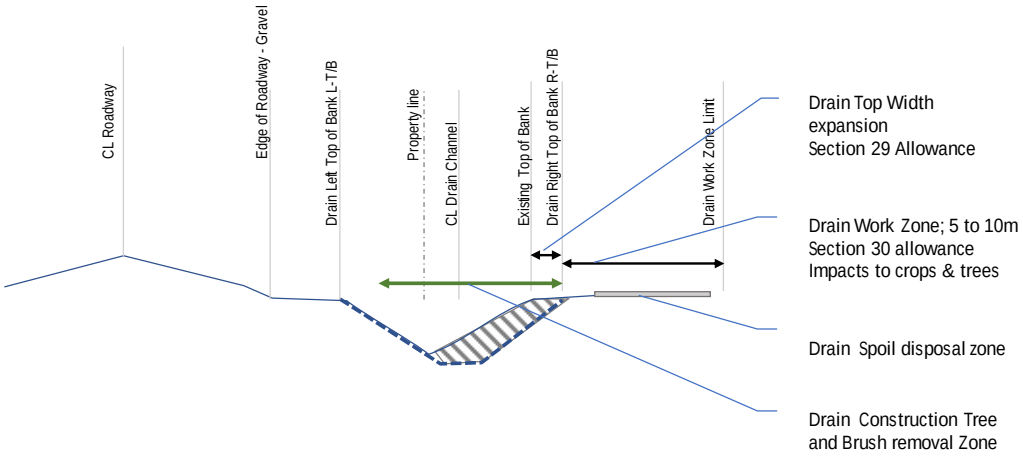

Figure 6 Typical Drain Work and Work Zones

The main work program for the drain is to clean down to the proposed grade line and a design capacity is achieved through removal of bottom and one bank. It is beneficial to only disturb one bank and leave low vegetation in place to reduce risk of erosion. Trees through the drain top of bank (T/B) to top of bank (T/B) are removed leaving stump and roots in place if the removal negatively impacts the grade.

Living trees that are removed from the work zone are eligible for the canopy preservation program, replacement of 2 saplings for each removed tree with a DBH

of 150mm or greater. Trees within the established banks, top of bank to top of bank, are not eligible unless for a new drain or a re-located drain.

4.1.2 Port Colborne Drain Extension to Second Concession Rd.

The original Port Colborne drain alignment to the east has been consumed by the expansion of the quarry. The extension of the drain to the Second Concession was previously identified but not yet completed. This report provides plans and profile drawings for the completion of the extension.

4.1.3 Port Colborne Branch Drain #1

The original Port Colborne Drain alignment is shown in the following figure as circa 1934.

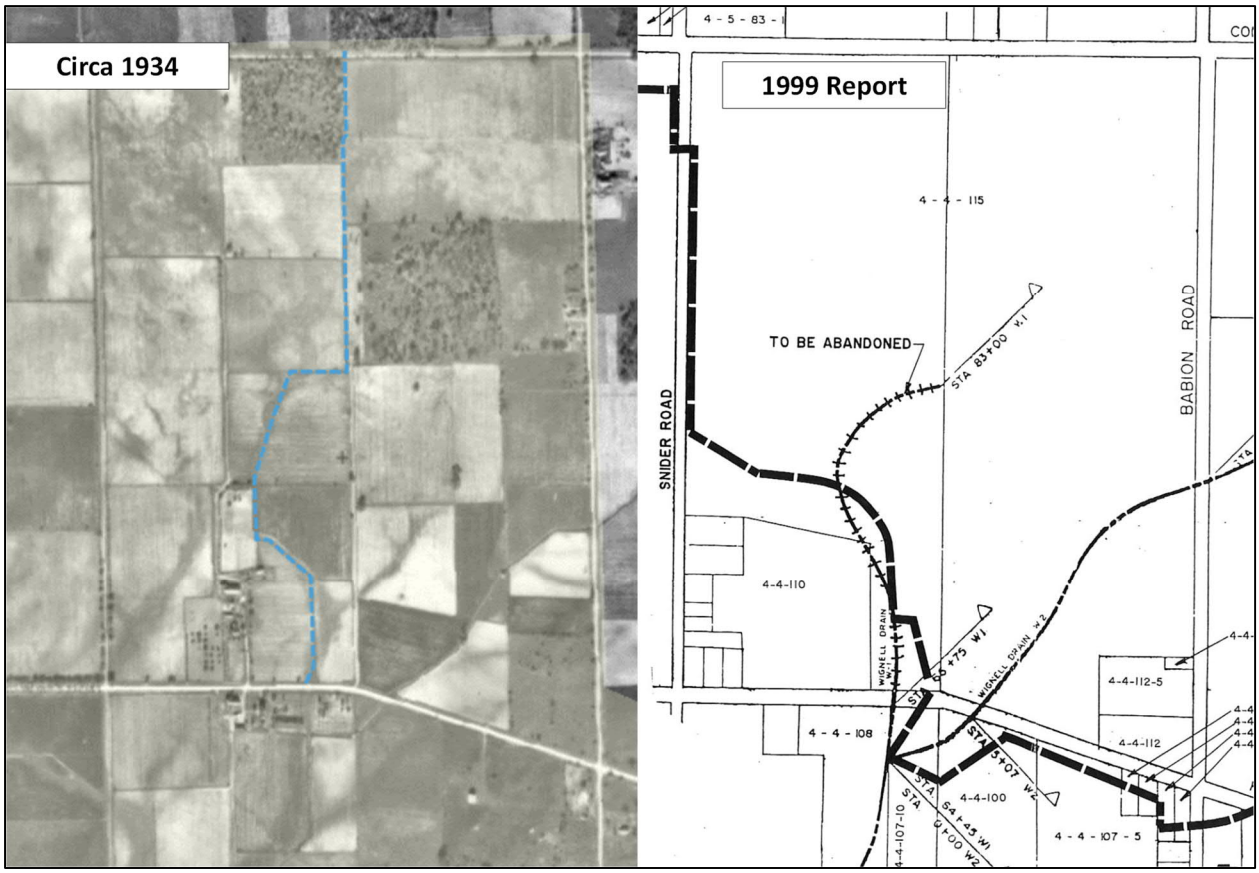

Figure 7 Port Colborne Branch Drain History

Figure 2 OMAF AgMaps - Constructed Drains shows the Port Colborne Branch Drain #1 as existing and proceeding west to Snider. However, there is a bylaw from 1999 showing a portion of the original alignment was abandoned to the north side of Highway #3. This portion is illustrated above in Figure 7 Port Colborne Branch Drain History. By adoption of this report, the City of Port Colborne, recognises that this drain does exist and is formally proposed as a newly named drain, hereafter called the Port Colborne Branch Drain #1. See drawings in Appendix A.

The branch drain is proposed to be 824m in length. The following describes the three proposed sections of work.

1. The existing channel from the outlet at Port Colborne Drain STA 1+654 and proceeding north to Highway #3 requires regrading to design grade line and vegetation clearing with bank re-seeding.

2. The existing CSPA crossing Highway #3 does not require work, nor does the existing channel north of Highway #3. The drainage superintendent may undertake spot maintenance works on as needed basis and where needed basis.

3. Above 0+627 to the end of the drain, requires vegetation clearing and channel excavation to cross-section and grade.

Figure 2 OMAF AgMaps - Constructed Drains shows a final portion or leg of the drain proceeding north along the eastern side of Snider ROW. This Drainage Report proposes for Port Colborne Branch #1 to end on entry to the ROW and any further north or south drainage structures will be municipal roadside swales/channels and not included as part of the Drain Schedule.

4.1.4 Road Crossings

There are 7 road crossings from the outlet of the drain to Second Concession Road. Of those crossings, one is a Provincial highway crossing, (Highway #3) and the others are municipal road crossings (6). There is one crossing for the proposed Port Colborne Branch Drain #1.

There is no additional work proposed for the existing crossings with the exception of the two culverts located at Babion Rd. and Second Concession Rd. which are to have the following changes:

- The west to east culvert crossing Babion Rd. (600mm HDPE) is to be lowered with the grade changed to outlet east.

- The north-south culvert crossing Second Concession Rd. (750mm HDPE) is to be re-located from the west side of Babion Rd. to the east side and connecting to the downstream extension of the drain along the east side of Babion Rd.

All other crossings were surveyed (Amec 2013) and the grade points used to establish the design grade line (see drawings Appendix A).

4.1.5 Private Crossings

Additional survey, CofPC/EWA 2018, showed an existing 30m culvert placed on the east side of Babion Rd. and PVC 6m culvert perched above the grade line. The existing PVC culvert is to be removed and a new channel constructed on the design grade line to the outlet invert of the relocated culvert crossing Second Concession Rd.

Two fordings were constructed in 2016 on two properties south of Highway #3. Amending the fording bottom crossing height using existing concrete slabs (sidewalk removals) is recommended.

4.1.6 Abandonments

A portion of the Port Colborne Drain is to be abandoned through this report. As a part of the drain-re-alignment of the Port Colborne Drain completed in 2016, the proposed outlet for Port Colborne Branch #1 Drain is to be re-aligned north of Highway #3 and outlet to the Port Colborne Main Drain.

Past Abandonments

There were two abandonments adopted by By-Law in 1999 for the Wignell Drain (referred to in this report as the Port Colborne Drain). The part of the Wignell identified as W1, north of Highway #3, was abandoned by adopted By-Law No. 3740/26/99. Additionally, the prepared report also identified that the Wignell, identified as W2a and W2b were abandoned by By-Law No. 5895/02/13.

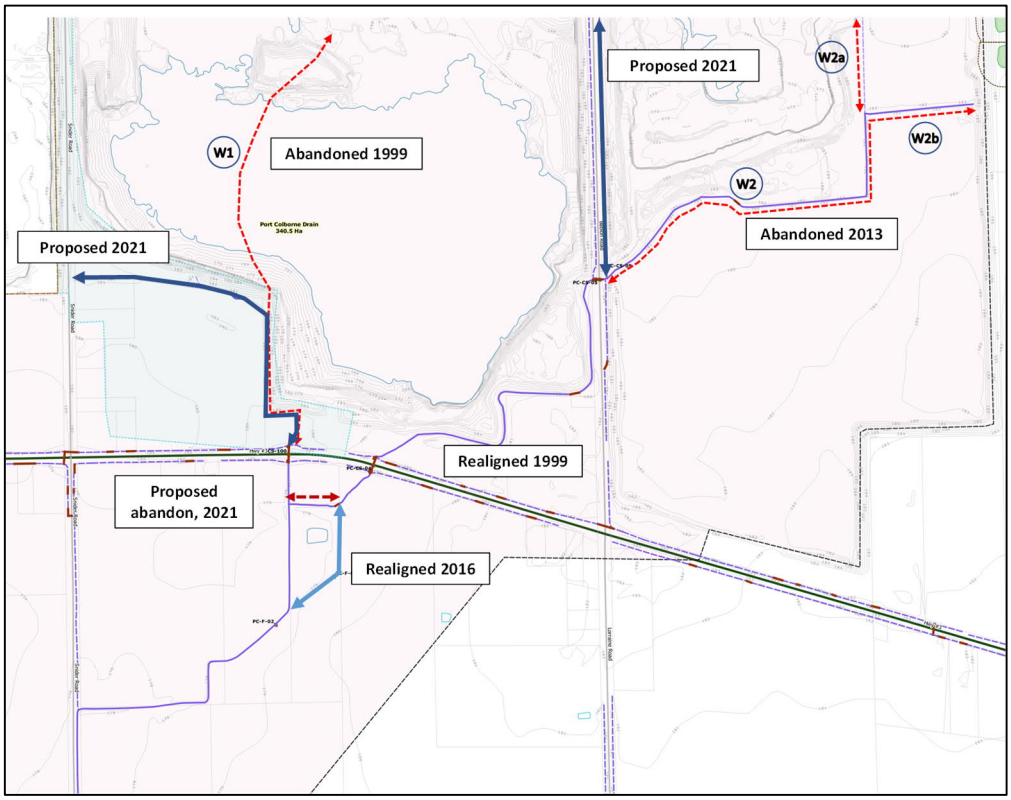

Figure 8 Port Colborne (formerly Wignell) Abandoned Segments

The portion of the original Wignell, W1 drain north of the Highway #3 multiplate culvert (CS-100) was abandoned as a municipal drain by a report in 1999. Since these documents were not included in the Baseline Report, they are included in Appendix D.

4.1.7 Utility Conflicts & Coordination

Utility conflicts may exist with gas lines and telecommunication lines as identified by the exchange of utility information. No direct grade conflicts were identified on the drawings. Where conflicts are identified in the field, relocation of the utilities will be performed following requirements set forth by the utility and charged at cost to each affected utility as per the Drainage Act, R.S.O. 1990.

4.1.8 Plans, Profiles & Specifications

The proposed Port Colborne Drain works are described in the attached Plans, Profile drawings and Specific Design Drawing and Standard Detail Drawings attached as Appendix A.

Project Specifications are included in Appendix E.

4.2 Construction and Constructability

The following describes the specific requirements for drain construction.

4.2.1 Vegetation Removal

Vegetation, specifically trees are to be cut down outside of any bird nesting periods. The remaining stumps are to remain in place unless they obstruct flow or they are Ash trees with re-growth from the lower truck already established. In those cases, the stump will be ground down to match the existing channel section.

Tree removal within the top-of-bank to top-of-bank is to be 100 percent; however, tree removal within the work zone is at the discretion of the drainage superintendent while making every effort to preserve trees where possible. Where live trees are removed in the work zone, they qualify for the tree replacement program as per the tree qualifying criteria. Where a mature live tree is already established and is an individual tree, it can remain on the work zone adjacent to the drain provided there is a working space to provide future maintenance to the drain.

Trees with a DBH greater than 150mm and alive, such trees will be replaced with 2 trees as saplings for future growth in lieu of a damage allowance for the existing tree that is removed. The tree that is removed will be provided to the owner as stacked branches adjacent to the drain and outside of the working zone along with the trunk. The owner shall be wholly responsible for the wood once cut.

New trees can be planted adjacent to a drain following two key criteria:

- The trees are planted back from the top of bank, (the exact distance is determined by tree type and local conditions).
- The trees are planted with adequate space to provide future maintenance access for the drain. Grouping of planted trees is encouraged given that the spacing of the trees and the arrangement permits future maintenance. This is accomplished by providing an angled approach along the tree edge line to

the drain and increasing the tree plant density only as the distance from the drain increases.

- Individual hardwood trees may be allowed every 25m. Trees of any type shall not be planted within 6m of an existing drain (solid tile, wrap joints) or 4.5m from existing open drain.

- In certain circumstances where an owner owns property on both sides of the open drain, upon consultation with the Drainage Superintendent, a windbreak may be permitted on one side. On existing drains where windbreaks exist, costs due to trucking material will be the direct responsibility of the owner and not the upstream ratepayers.

- Replacement trees will be selected from a list of available preferred species at the time of construction for owners eligible for replacements to select their preferred species. Species will be from the identified list of approved Carolinian species typical for the Region. Owners can select any location for the planting of replacement trees excepting within the work zone.

4.2.2 Spoil Material

All spoils and spoil handling practices will comply with applicable legislation including O. Reg. 406/19: ON-SITE AND EXCESS SOIL MANAGEMENT filed December 4, 2019 under Environmental Protection Act, R.S.O. 1990, c. E.19

Where specified, excavated spoil material shall be disposed of and levelled a minimum of 2.5 m from the top of bank to ensure that sediment does not re-enter the drain. Spoil placed next to the drain shall be spread to permit access across the berm area and shall be placed to a maximum height of 0.6m. Spoil excavated along existing travelled road allowances, and on private property where requested, shall be disposed of by the Contractor off site. The cost of spoil trucked from the property shall be borne by the benefiting property owner.

Spoil shall be disposed of as noted in the description of the proposed work. Generally, the spoil will be disposed of adjacent to the drain unless otherwise specified. Should any property owner require that all or a portion of the spoil be trucked away from their property, the cost of trucking spoil shall be assessed totally to the property owner requesting same and will not form part of the total cost of the drainage system. The cost of trucking away spoil from any future maintenance work will be assessed directly to the property owner requesting the same. Vegetation debris from the drain is preferred to be arranged adjacent to the drain to decay but will be removed from the property or disposed of in accordance with agreement of the property owner at the owner’s cost.

With respect to the reaches of drain that are within travelled Municipal road allowances, the spoil will be trucked away during both the initial construction and any future maintenance work where there is no opportunity to dispose of the material on site should the road allowance be the working side.

Access channels shall be provided through the levelled spoil material at every location where existing drainage outlets are visible and/or identified during construction by the Drainage Superintendent. The invert of the access channels shall be consistent with the drain cross-section at that location.

Spoil excavated from the drain shall be levelled in a manner that is suitable for cultivation of crops where crops were previously cultivated. Where the drain is adjacent to a grassed area maintained by the owner, the spoil shall be levelled and re-seeded with grass so that the area is restored to a like or better condition than prior to construction.

4.2.2.1 Contaminated Spoils

Where soils are known to be contaminated but have been assessed to pose no human health risk, on site spreading adjacent to the drain will be the practice and acknowledge that the soils are not be 'moved' off the property.

Where soils are to be removed from the property, then a sample will be collected and analyzed for contamination prior to the commencement of removal. Where that sample is shown to be contaminated and disposal of the soil will require disposal at a registered facility in compliance with O.Reg 406/19, the owner will be responsible for the costs to dispose of the contaminated soil from their property.

Once a contaminated sample is returned, the owner will be given the opportunity to retain the soil on site instead of trucking for disposal.

4.2.3 Sediment Control Basins

The addition of sedimentation basins to the Port Colborne Drain in three locations is to assist with controlling sediment during maintenance and re-grading to the identified design grade line. Post – Construction these basins remain and continue to provide sedimentation control during precipitation events.

Sediment basins are to be constructed at the locations and to the specifications indicated on the drawings. The Contractor will maintain these sediment basins during construction, as directed by the Engineer and/or their designate. The basins are considered to be part of the Municipal Drain and will be maintained in future by the Municipality at the expense of all upstream land and roads owners herein assessed as shown on the attached assessment schedule. Properly maintained sediment basins reduce the incidents of drain maintenance clean out and therefore reduce overall maintenance costs for property owners. The basins will be inspected annually for an assessment of sediment depth and sediment removed where that depth exceeds half the constructed depth of the basin. The inspection schedule may be adjusted after some experience with the sediment basins within the watershed.

4.2.4 Revegetation

Drain banks and exposed soil areas disturbed during the maintenance of the drain are to be seeded as quickly as possible by the Contractor to reduce the risk of soil erosion. The Contractor will seed spoil areas after leveling and shall seed channels at the same time. The Contractor will schedule levelling to reduce the time of bare soil, but where the duration of leveling exceeds 2 weeks, then channels will be seeded immediately after channel maintenance.

Seeding should take place in a manner that optimizes seed germination and establishment of vegetation prior to mid October and after late April.

Seed mixture used shall be applied at a rate of 40 kg/ha in the following proportions:

Creeping red fescue	20 kg	50%
Perennial rye grass	8 kg	20%
Birdsfoot trefoil	12 kg	30%
Total	40 kg/ha	100%

Where working zone adjacent to the drain is grass and this is affected by construction, this area shall be reseeded with a suitable grass mix to restore to a like or better condition.

4.2.5 Private Drain Connections

Where private connections are made to the Municipal Drain, the connections are to be compliant with the City of Port Colborne's standards connection designs. This includes the following connection types:

- Open channel connection – minimal allowance for grade and freeboard.
- Surface water flows – rip rap rock requirements for reducing or amending sites of potential or evident erosion.
- Tile drain connections – use of PE pipe to connect to a receiving channel.
- Berm and Orifice Flow Control - connections designed to control runoff to specified rates of flow.

Private connections are not part of the drain but owned and the responsibility of the landowner for construction and maintenance. Where a deficiency is identified by the Drainage Superintendent or Engineer, the landowner is to make good the connection. Deficiencies can be eroded connections, blocked connections or poor connections and the landowner can accept to have work done by the City on their behalf to make good the connection based on a 50/50 cost sharing basis. Where the City identifies a deficiency and the repairs are not made by the landowner by the next cycle of drain maintenance, the City can make the required repairs and 100% of the cost will be assessed to the landowner.

4.3 Future Maintenance and Repair Provisions

The Drainage Act, Chapter D.17, Sections 74 through 84 governs future maintenance, improvement and repair to any Drainage Works constructed under a By-Law passed under this Act, or any predecessor of this Act.

Upon completion of this report and the works described in the Engineer's Report, the City of Port Colborne will be responsible for future maintenance of the drain with the costs of future maintenance assessed to the upstream lands and roads using the Assessment Schedule in Appendix B, and pro-rating the assessment based on the actual cost using the Outlet Liability Assessment – Section 23. Special Assessment shall not apply to maintenance work. Special Benefit or Special Assessment, Section 24 or Section 26, shall not apply to maintenance work except where maintenance works are related to culvert/bridge replacement or upgrades.

4.4 Construction Summary

The following table provides a list of construction activities by property starting from the outlet and proceeding upstream.

Table 1 Port Colborne Drain Construction Summary

Property / Owner	From STA	To STA	Work Description	Access & Disposal
271104000408700 SCHLENGER USZER	-0-112.7	-0-007.5		Access from Friendship Trail. A 10m Workzone is on the North and east side of the Drain. This Workzone is presumed to already exist from past reports.
271104000699500 PORT COLBORNE CITY	-0-007.5	0+012.5		Work from both sides where required.
271104000408715 PORT COLBORNE CITY	0+012.5	0+053.4		10m Workzone east side
271104000408700 SCHLENGER USZER	0+053.4	0+403.6		10m Workzone east side
271104000408800 SCHLENGER USZER	0+403.6	0+422		10m Workzone east side
271104000409000 HILL KERRY	0+422	0+477		10m Workzone east side
271104000408900 ANNETT SYLVIA	0+477	0+485.7		10m Workzone east side
ROW - Killaly St East City of Port Colborne	0+485.7	0+514.1		
271104000412700 VALE CANADA LIMITED	0+514.1 1+020	1+056.4 1+055	Construct Sediment Basin PC-SB03 at 1+020	10m Workzone east side Excess soil disposal is adjacent to the basin for 10m of Workzone on the south side.
ROW - Snider Rd. City of Port Colborne	1+056.4	1+249.6		10m Workzone
271104000412700 VALE CANADA LIMITED	1+249.6	1+376.8		10m Workzone east side
271104000410900 POWELL BRADLEY KENNETH	1+376.8	1+528.4		10m Workzone east side
271104000410800 VAN RUYVEN JOSEF NICOLAAS	1+528.4	1+657.5		10m Workzone east side
271104000410710 KONC JOHN ANDREW	1+657.5	1+758.3		10m Workzone east side
271104000410000 VALE CANADA LIMITED	1+758.3	1+924.9		10m Workzone east side
Highway#3 ROW MTO	1+924.9	1+958		

Property / Owner	From STA	To STA	Work Description	Access & Disposal
271104000411500 PORT COLBORNE QUARRIES INC	1+958	2+555	commencing at 2+300, clear and re-grade to design grade line and spread spoil on bank. Construct Sediment Basin PC-SB02 at 2+402	10m Workzone north and west side Spread spoil adjacent to drain.
Babion Rd. ROW	2+555	2+575		
271104000315600 PORT COLBORNE QUARRIES INC	2+575	2+923.6		10m Workzone east side
271104000315800 PORT COLBORNE QUARRIES LIMIT	2+923.6	3+330.8	Construct new drain starting at 3+079 to 3+330 Remove existing 500mm PVC culvert. Construct Sediment Basin, PC-SB01 @ 3+300. Spread spoil on adjacent east bank.	10m Workzone east side
ROW-Babion Rd and Second Concession	3+330.8	3+368	Move PC-CS-07 Culvert from West side of Babion Rd. to East side of Babion Rd. at the indicated grade. Excavate PC-CS-06 600mm HDPE culvert and re-lay in the same trench at design grade to drain from West to East.	Work within existing ROW

Port Colborne Branch Drain #1

The following table provides a list of construction activities by property starting from the outlet and proceeding upstream.

Table 2 Port Colborne Branch Drain Construction Summary

Property / Owner	From STA	To STA	Work Description	Access & Disposal
271104000410800 Van Ruyven Josef Nicolaas	0+000	0+224.7	Clear tree vegetation from top of bank to top of bank and re-grade the bottom of the drain to the design grade line. Re-establish the drain bottom width.	Work zone is the east side.
271104000410710 Konc John Andrew	0+000	0+224.7	Clear tree vegetation from top of bank to top of bank and re-grade the bottom of the drain to the design grade line. Re-establish the drain bottom width.	Access from East side and dispose of spoils adjacent to the drain. Spread to match existing field.
MTO Highway #3	0+224.7	0+259.6	No work planned through the MTO Right of Way.	
271104000411500 PORT COLBORNE QUARRIES INC	0+259.6	0+512.7	Spot clean up where required as determined by field inspection.	Work from east side 10m Workzone
271104000411000 HELLINGA JACK SIMON	0+512.7	0+570.6	No work planned.	10m east side workzone
271104000411500 PORT COLBORNE QUARRIES INC	0+570.6	0+818.4	200m - Brush and excavate to extend and re-grade to Snider Rd. ROW	Work from north side 10m Workzone

5 Drainage Works Financing

5.1 Cost of Works

As required by the Drainage Act, Chapter D.17, Section 59(1), Council may call a meeting if the contract price exceeds 133 percent of the estimated construction costs.

5.1.1 Admin & Engineering Costs

Administration costs identified with the Port Colborne Drain are included for the interest payable over the 20 year period of the debenture along with a debenture fee. This total fee is allocated to the Port Colborne Drain on a percentage basis calculated by the total area of each drain. (See Table 3)

There are three engineering costs related to the works for the Port Colborne Drain. These costs are from three separate engineering companies who have worked to prepare the report.

Wiebe Engineering was first hired to prepare the report. Wiebe was paid $92,511.44 for work completed on the Wignell, Michener and Port Colborne Drains and a survey fee of $8,342.93 was paid to a survey firm. A portion of this fee, allocated by area of the drain, is charged to the Port Colborne Drain. (See Table 3 Drain Area Ratios)

Amec Foster Wheeler (formerly Amec and now Wood Plc) was appointed to conclude the report after Wiebe Engineering. They prepared a draft of the report, invoiced and were paid $67,147.23 but they did not finalize the report and ceased to work on the project.

These costs have been allocated to the respective drains using a drain area ratio as per the following table.

Table 3 Drain Area Ratios

Drain	Area, Ha	Area Ratio
Michener Drain Area	135	12%
Port Colborne Drain Area	327.8	30%
Wignell Drain Area	634.4	57%
Total:	**1097.2**	

The result is a cost allocation from past works to Port Colborne Drain for the portion of administration and engineering fees as follows.

Table 4 Past Admin and Engineer Costs

Administration (Debenture) (interest + fees) $35,893.21	Wiebe $92,511.44 + $8,342.93	Amec $67,147.23
$10,723.47	$30,131.30	$20,060.94

The fees for EWA Engineering Inc. are recorded for the fees in the preparation of each individual report. For Port Colborne the EWA Engineering fee is $ 99,812. The total Administration and Engineering fee including estimates for engineering effort remaining for construction oversight is assessed against the Port Colborne Watershed for $178,210.

5.1.2 Capital Construction Cost

The estimated cost of construction is shown in the following table.

Table 5 Port Colborne Estimated Cost of Construction

Estimated Cost of Construction	
Port Colborne Branch #1 – new outlet and grade improvement to Snider Rd.	$10,340.
Port Colborne Drain – Extending to Second Concession Rd. on East Side of Babion, including culverts.	$33,332.
Port Colborne General Construction Costs	$8,279
Port Colborne Contingency	$12,458.
Total - Estimated Cost of Construction	**$74,749**

5.1.3 Previous Works Completed

Additional to this estimate of construction cost is the cost for work already completed.

5.1.3.1 Construction Already Completed

There are two distinct areas of construction that were already completed and they are as follows:

1. Drain adjacent to and downstream of the Babion Rd. Crossing by Rankin Construction. The cost of the cleaning is included in Appendix D as $26,050.

2. Additional to this work was construction of a re-aligned portion and re-grading of the Friendship Trail to MTO Highway #3.

    a. Re-grading and clearing to design grade from STA 0+010 to 1+500

    b. Drain channel re-alignment from STA 1+500 to 1+860 including stone protection on outside channel bends.

    c. Fording # 1 providing private property access.

    d. Fording #2 providing private property access.

Additional work included two constructed wetlands which were externally funded and are not part of the drain.

Table 6 Previous Construction Costs

Previous Construction Costs	
Channel maintenance by Rankin Construction - 2+580 to 3+045	$ 26,050.00
Channel Re-Alignment - 1+660 to 1+860	$ 9,442.50
Channel Re-Grading and Clearing - 0+010 to 1+660	$ 15,300.00
Fording #1; ARN = 410710 - 1+740 to 1+750	$ 710.00
Fording #2; ARN = 410800 - 1+630 to 1+640	$ 710.00
Total Previous Construction:	**$ 52,212.50**

5.2 Maintenance & Program Costs

Included in the estimated cost of construction are allocations for costs related to drain maintenance works including vegetation removal and re-grading.

5.3 Principles of Assessment

The following are general and specific principles used to assess costs according to the Regulations formed under the Drainage Act using our understanding of the Act and seeking the most fair methods to share costs to rate payers within the Port Colborne Drain part of the Wignell Drain Watershed.

1. Assessments are a method to calculate a contributing property's share of drainage works, hereafter referred to as a Drain.

2. The Drain is defined by a fixed point of commencement that traverses to a fixed Outlet, which may be a receiver or another Drain.

3. A property contributes to a drainage work if any portion of the property contributes a runoff flow directly or indirectly to the Drain.

4. A Drain is any constructed or existing natural method of conveyance or stormwater management function that moves or controls water from one point of collection to a discharge point, an Outlet.

5. The use of a property; farming, residential, or vacant does not define benefit of the Drain. The benefit of a Drain is realized among all properties with runoff to the Drain.

6. An excess or additional benefit is realized for any property or group of properties for which a higher standard of drainage service is required for the specific use of a property for which a higher value is realized.

As an example, where a market garden farm requires additional pumping for either irrigation or reducing the water surface in the drain, then the additional costs for those works to provide a higher level of service are borne by the benefitting lands.

7. Similarly, where a property or group of properties is provided with a lower standard of drainage service or where such property or properties provides a stormwater management function within the drainage works of the Drain, the value of the lower service or function is determined at a rate commensurate with the benefit to the drain.

As an example, where a property converts a portion of their lands (or the entire property) to a wetland or other stormwater management feature that reduces the peak flow of the runoff, thereby reducing or enhancing the capacity of the Drain to improve drainage and reduce flooding, then a commensurate benefit is realized to the volume of water removed from the runoff hydrograph.

Where the volume of detained runoff is small relative to the capacity of the drain, this contribution is deemed to be negligible. Where the volume detained is below 1% of the total runoff volume for the Drain, there is no real benefit realized for an individual Stormwater Management Feature.

8. The capacity of the Drain is determined based on a hydrologic model forecast of precipitation event based runoff. Therefore each property realizes a drain benefit based on the proportion of predicted runoff for their property. Predicted runoff is a product of the following attributes, which are determined for each property:

a. Area contributing to runoff;
b. Land use as it relates to runoff;
c. Land topography;
d. Proportion of hard surfaces vs soft surfaces as they relate to infiltration; and
e. Stormwater management features specially built to reduce the rate of runoff.

9. A benefit is realized for a property that causes a physical change in the Drain works to serve a particular use or surface water benefit to the property. An example of this is a culvert, which provides access to a property across a drain.

10. A benefit/assessment is realized for Municipal, Regional or Provincial lands held as Rights of Way that cause or require additional infrastructure, effort or costs related to the Drain. (Section 26)

11. Where a cost to the drain is realized through effort during construction or otherwise for the protection of flora, fauna or quantity or quality of stormwater runoff, this cost is born proportionally amongst all watershed contributing owners at the same proposal rate as established for Drain Maintenance.

12. For the Port Colborne Drainage works being considered, a Drain already exists and the proposed assessment is to recognize a service or benefit that already exists and is being confirmed to exist through the creation of the report and assessment schedule. Section 31 allowances for existing channels are not considered for allowance granted by Assessment schedule in this report.

13. Utilities that require additional works, changes in design or protection during construction, those costs are borne by the owner of the utility.

While efforts within the drain design and assessment have been made to address water quality as well as quantity, there are limits within the Drainage Act to incorporate these features. The assessment tables are proposed for using those regulations within the Drainage Act to address stormwater management features as recognized works as part of the Drain.

Benefit (Section 22)

This Assessment is based on lands, roads, buildings, utilities or other structures that are increased in value or are more easily maintained as a result of the construction, improvement, maintenance or repair of a drainage works may be assessed for benefit. Section 23 benefits specifically require the creation of increased value through the creation of a new or additional drainage systems including natural drainage systems such as wetlands. The Port Colborne Drain work consists of maintenance and drain improvements within existing flow paths.

The Drain improvements are not a new service of additional drainage but maintenance of the existing system. The re-alignments completed do not create new drainage with the possibility of enhanced service level but merely address the current decreased function by restoring a functioning drainage system.

The Drain works has no Benefit Assessment proposed on the main channel of the Port Colborne Drain or for the proposed Branch Drain #1.

Outlet Liability (Section 23)

This is the primary basis for the assessment of the maintenance and drain works. Assessment is based on each individual property's contributing runoff. This is determined from the area flowing to the drain and from the runoff factor C. The runoff factor C is the Rational Method for predicting peak runoff and does not predict volume of runoff (note special benefit used for Site Specific SWM facilities).

The C factor for assessing property runoff is selected based on the property zoning. Where a property is not currently farmed but is zoned for farming, then a C factor is selected based on the potential use of the property. C factors are not adjusted for variations in Residential properties. Residential properties with or without buildings are assigned the same C factor. Thus, the C factor is not a current prediction of runoff for an individual property but a Factor to assess the potential runoff based on the property's potential use in the present and in the future. The attached Table will be used for the determination of C Factor values used in the Runoff Outlet Factor assessment.

Table 7 Land Use and C Factors

PropCode	CATEGORY	DESCRIPTION	C-Factor Low	C-Factor High
100	LAND	Vacant residential land not on water	10	25
105	LAND	Vacant commercial land		
110	LAND	Vacant residential/recreational land on water		
200	FARM	Farm property without any buildings/structures	20	55
201	FARM	Farm with residence - with or without secondary structures; no farm outbuildings		
210	FARM	Farm without residence - with secondary structures; with farm outbuildings		

PropCode	CATEGORY	DESCRIPTION	C-Factor Low	C-Factor High
211	FARM	Farm with residence - with or without secondary structures; with farm outbuildings		
221	FARM	Farm with residence - with commercial/industrial operation		
228	FARM	Farm with gravel pit	12	50
230	FARM	Intensive farm operation - without residence	20	50
231	FARM	Intensive farm operation - with residence		
234	FARM	Large scale poultry operation	20	55
244	FARM	Managed forest property, residence not on water	20	30
260	FARM	Vacant residential/commercial/ industrial land owned by a non-farmer with a portion being farmed	20	55
261	FARM	Land owned by a non-farmer improved with a non-farm residence with a portion being farmed		
301	RESIDENTIAL	Single family detached (not on water)	15	40
302	RESIDENTIAL	More than one structure used for residential purposes with at least one of the structures occupied permanently		
303	RESIDENTIAL	Residence with a commercial unit		
313	RESIDENTIAL	Single family detached on water year round residence		
322	RESIDENTIAL	Semi-detached residence with both units under one ownership two residential homes sharing a common center wall.		
332	RESIDENTIAL	Typically a Duplex residential structure with two self-contained units.		
334	RESIDENTIAL	Residential property with four self-contained units		
383	RESIDENTIAL	Bed and breakfast establishment		
391	RESIDENTIAL	Seasonal/recreational dwelling - first tier on water		
392	RESIDENTIAL	Seasonal/recreational dwelling - second tier to water		
405	COMMERCIAL	Office use converted from house	20	65
410	COMMERCIAL	Retail - one storey, generally under 10,000 s.f.		
421	COMMERCIAL	Specialty automotive shop/auto repair/ collision service/car or truck wash		
441	COMMERCIAL	Tavern/public house/small hotel		
490	COMMERCIAL	Golf course	12	35
510	INDUSTRIAL	Heavy manufacturing (non-automotive)	45	85
518	INDUSTRIAL	Smelter/ore processing		
520	INDUSTRIAL	Standard industrial properties not specifically identified by other industrial Property Codes		
590	INDUSTRIAL	Water treatment/filtration/water towers/pumping station	*	*
593	INDUSTRIAL	Gravel pit, quarry, sand pit	*	*
597	INDUSTRIAL	Railway right-of-way	40	65
598	INDUSTRIAL	Railway buildings and lands described as assessable in the Assessment Act		
605	INSTITUTIONAL	School (elementary or secondary, including private)	35	50
702	SPECIAL PURPOSE	Cemetery	35	65
710	SPECIAL PURPOSE	Recreational sport club - non commercial (excludes golf clubs and ski resorts)	35	85
715	SPECIAL PURPOSE	Racetrack - auto	45	85
735	SPECIAL PURPOSE	Assembly hall, community hall	30	85
	ROW	Single lane Municipal Roadway	75	95
	ROW	unopened road allowance	65	85
	ROW	Regional or MTO	90	98

* C factor values are situationally assigned based on land use.

The following drain features are part of the whole system and are paid for through the outlet assessment:

- Channel Clearing and Re-grading

- Sediment Basins

In addition to assessed costs considered for special benefits, there is also recognition for stormwater management facilities within the watershed that reduce the peak flow used to determine the outlet assessment. These facilities that may already exist in the watershed and are recognized as having a benefit in the reduction of peak flow by determining the available volume is greater than the 24 hour peak flow volume predicted for the 1:100 year design storm.

- Site Specific Stormwater Management (SWM) Facilities
  - Wetlands,
  - Ponds, (natural and stormwater)
- Natural occurring features
  - Kettle lakes, and
  - Bog lands.
- Artificial runoff capture; such as Quarry lands or other features that collect runoff but do not outlet it to the Drain during the peak flow of the event.

Table 8 Section 23 Runoff Factor Determination - QRF Ratio

Area Ha	Soil Type	Gradient	Land Factor	Runoff Factor 'C'	QRF	SWM	SWMF	QRF-SWMF	QRF Ratio
2.176	Bookton (BOK2) - 40to100 cm sandy textures over lacustrine silty clay - Well Drained - Brunisolic Gray Brown Luvisol	0.20%	COMMERCIAL	17	2.41	0	0	2.41	**0.1760**
1.201	Bookton (BOK2) - 40to100 cm sandy textures over lacustrine silty clay - Well Drained - Brunisolic Gray Brown Luvisol	0.20%	RESIDENTIAL	15	1.18	0	0	1.18	**0.0857**
1.084	Bookton (BOK2) - 40to100 cm sandy textures over lacustrine silty clay - Well Drained - Brunisolic Gray Brown Luvisol	0.20%	ROW - paved 2 lane	85	6.01	0	0	6.01	**0.4382**
0.848	Bookton (BOK2) - 40to100 cm sandy textures over lacustrine silty clay - Well Drained - Brunisolic Gray Brown Luvisol	0.20%	RESIDENTIAL	15	0.83	0	0	0.83	**0.0605**
0.729	Bookton (BOK2) - 40to100 cm sandy textures over lacustrine silty clay - Well Drained - Brunisolic Gray Brown Luvisol	0.20%	RESIDENTIAL	15	0.71	0	0	0.71	**0.0521**
0.560	Bookton (BOK2) - 40to100 cm sandy textures over lacustrine silty clay - Well Drained - Brunisolic Gray Brown Luvisol	0.20%	RESIDENTIAL	15	0.55	0	0	0.55	**0.0400**
0.517	NM - Sandy well drained	0.20%	LAND	12	0.41	0	0	0.41	**0.0295**

QRF is a predicted runoff factor based on the following variables:

- Area, Ha – each property's connected area
- Runoff Factor 'C' – Coefficient of Runoff of generally accepted values
  - Soil Type – from Niagara Soil Report
  - Gradient – General Value from NPCA contours
  - Land Factor – reflects the impact of landuse on Runoff

QRF =0.0028* Runoff Factor 'C' * Avg Intensity mm/hr * Area, Ha

QRF-SWMF is the adjusted Runoff Factor used to represent the impact of owner implemented stormwater management facilities.

- SWM is the reduction achieved by the stormwater management facility as determined by the Drainage Engineer / Drainage Superintendent.
- SWMF is the reduction in QRF to be applied.
- QRF-SWMF = QRF - SWMF

QRF Ratio is QRF-SWMF divided by the Sum of all QRF-SWMF for each cost allocated area. The QRF Ratio is the value for each property contribution to the outlet liability cost as a portion of all other contributors.

QRF-SWMF and QRF Ratio is to be used for all future Maintenance assessments.

Special Benefit (Section 24)

The following are assessed costs considered special benefits:
- Culverts,
- Fordings,
- Closed Conduit conveyance (piped flow)
- Channel re-alignment for property use, such as quarry expansion.

The cost of a culvert is assessed against the property owner based on the incremental cost of the drain. A new culvert is paid for by the owner less the cost of drain construction on a per metre basis. The drain per metre construction cost will be estimated for the report but the actual cost will be used to calculate the final value.

Culvert construction costs are shared between the landowner and the rest of the watershed on a 50/50 split basis. Construction costs are based on the City's typical design standard. Additional costs, headwalls, etc. are at the owners cost unless required by the Engineer to meet requirements.

Special Assessment (Section 26)

There are special assessments, as recognized under the Act, for public (not private) roads and utilities that have or require additional costs to the drainage system.

In addition to the projected assessments for Right of Way lands as determined by the outlet assessment, any other costs for road crossings or protection of utilities during construction are assessed to the road owner or utility owner. In the case of Port Colborne Drain, some of the existing Road culverts are to be changed and additional costs are planned or identified. The two new culverts providing road crossings proposed for the Second Concession Rd. are other examples of Section 26 assessments that apply to Port Colborne Drain.

Also included are costs related to impacted utilities such as Enbridge. These costs are additional effort during construction to protect or meet site supervision requirements by the utility. Also included are costs to move infrastructure, if required by site conditions. Actual costs will be assigned to the project as this is merely an estimate of costs during design.

5.3.1 Allowances:

1. Where a drain assessment schedule already exists and a prior maintenance and assessment schedule is known to exist, then a Schedule 29 allowance is accepted and recognized through a past report and schedule unless it can be shown otherwise.

2. Where a drain is re-aligned to a new path, then a Section 29 allowance for land taken is recognized. This can be amended by the restoration of any lands to the same owner by the same re-alignment. Thus, a net allowance can be recognized where that is shown to be the case.

3. Where previously no drain was recognized but already existed as a flow path, then a Section 31 allowance can be realized along with a one time creation of a current and future easement for drain maintenance activities as a Section 29 allowance. This is used in the creation of branch drains.

4. All property valuations are based on the same basic valuation, as per the Schedule of Costs. This single valuation is based on the agricultural land value in the Region of Niagara.

5. Any tree or feature planted within a drainage works right of access for maintenance is not eligible for compensation in any form. Trees within the work zone are eligible for the 2 for 1 tree replacement program.

Section 29 Allowance
(One time payment for land taken)

Where a drain already exists and has had maintenance in the past, then a work zone is assumed to already exist and a one time payment for the work zone easement has been made. No further payment for a work zone or easement is deemed to be required based on the pre-existing work zone regardless of whether that is known to exist or shown to exist in an explicit reference in a previous Engineer's report.

Where a drain re-alignment or a branch drain is proposed, then a Section 29 allowance is determined. The determination is based on a 10m work zone running parallel to one side of the drain commencing at the Top of Bank. The side from which work is done is determined by the Drainage Engineer and shown on the Plans for Construction. In the case of a close conduit the work zone can be reduced to a 5m zone or a 10m zone with 5m on each side. The value is based on a single value of land figure as shown in the Schedule of Costs and because the access is intermittent with the owner retaining ownership and access / use of the land for farming or otherwise, then a factor in the assessment value of land is applied. Since the work zone is likely to be occupied on a 10 year cycle for maintenance a 1/10 factor is to be applied using the land purchase value.

Where a buffer is established that restricts use of the land adjacent to the drain in favour of permanent vegetation, then a full payment for land taken based on the value established is made. For a buffer, a registered easement on title is recommended.

Section 30 Allowance
(Payment for damages during construction)

This allowance is to compensate landowners for economic damages due to construction and recognizes two types of injury. Immediate loss of crop as a result of working corridor for construction and longer-term damage to crops as a result of spoil spreading.

An allowance is made where work on the drain, such as construction or maintenance, damages crops which can not be restored. Compensation in the form of an allowance does not apply to grass or any other ornamental feature that is restored to similar condition as existed pre-construction for the tree canopy program. Compensation is paid for the work zone width multiplied by the length affected at the rate of $4,300 per Hectare.

For any trees removed for construction that have a greater diameter than 150mm at breast height, (DBH) a compensation program of replacement saplings is proposed.

Where a tree is removed and 2 trees of a variety native to the area and available through the canopy program are planted outside the work zone as compensation, then no award for damage is made.

A damage allowance for fences can be paid where the fence is not restored. In any of the planned work for the Drain, fences are to be restored to a like or better condition and no allowance for payment is planned.

Section 31 Allowance
(Incorporate a Private Drain)

This type of allowance is to credit the construction effort of a private drain once the private drain is incorporated into a municipal Drain.

The value of the private drain is dependent on condition and contribution to the function of the Drain. For valuation purposes, the cost to construct a similar channel would be made based on the Schedule of Prices. The cost to maintain it would be subtracted.

This does not apply within the Port Colborne Drain watershed.

Section 32 Allowance
(Insufficient Outlet)

This provides compensation to affect owners for whom lands are not sufficiently drained by the service level provided by the Drain or where lands are discharged into instead of having a sufficient outlet.

There are no known occurrences of this within the Port Colborne Drain.

Section 33 Allowance
(Loss of Access)

Where a re-aligned Drain crosses property and cuts off access, an allowance can be granted. There is one known such occurrence, property 410900 has a portion that is naturally severed by the crossing of the drain. It is assumed that this historical severance would have a loss of access payment made at the time of the severance and is not required to be recognized by this report.

5.3.2 General Instructions to Property Owners, Road Authorities and Public Utilities

The principles of the Drainage Act are:

- Drainage is a collective good that benefits all landowners. However, drainage does not have to benefit all landowners equally.
- All landowners cooperatively fund the drainage works proposed. There is no direct financial government role in the drainage works other than administrative.

- Landowners are assessed a financial share of the cost for the drainage works based on their respective drainage benefit.

- All drainage costs are born by landowners including allowances.

- Drainage is provided on the basis of an identified service level for a specified size of storm. The standard storm, 1 in 5 year frequency, for basic open channel design is 68.9mm over 24 hours. A storm of a larger size or intensity may cause flooding. Tile placed in the bottom of an open channel is provided for drainage and not conveyance capacity.

  For more details, refer to the Wignell Watershed Hydrology and Hydraulics Report.

A best effort has been made to compose a fair and reasonable assessment of costs to each portion of the contributing lands.

5.3.3 Grants

Owners of qualifying agricultural land are presently eligible for a grant of up to one-third of the cost of their assessment from the Ontario Ministry of Agriculture and Food. This grant will be applied for by the City of Port Colborne, and applied to the property owners' assessment at the time of final billing. The Port Colborne Assessment Schedule indicates lands that, based on information provided by the municipality, qualify for the agricultural land use grant. The final determination of eligibility is the decision of the Ontario Ministry of Agriculture and Food. To be eligible for a grant, the property owner must have a Farm Property Class Tax Rate or in combination with the Managed Forest Tax Incentive Program or the Conservation Land Tax Incentive Program for the lands to be drained by the Drain.

For additional information on the Agricultural Drainage Infrastructure Program refer to the OMAFRA website at www.omafra.gov.on.ca.

5.4 Port Colborne Drain Improvements & Maintenance

Added to the cost of maintenance is the full engineering and administration costs less any costs directly assigned to specific Section 22, Section 24 benefit assessments.

With the Runoff Ratio, there is a Stormwater Management Facility reduction in Section 23 that can be applied for those properties that can demonstrate a runoff amendment structure that reduces peak flow contributions to the drain subject to evaluation and confirmation by the Drainage Superintendent and the Engineer.

For the purposes of the submission of the report, no SWMF assessments are recognized and the individual property owners can make a request for assessment and this will be recognized by the Engineer on project completion.

A cycle of review and update of the SWMF assessments is planned to update and address private property runoff improvements made by homeowners. At present this cycle is set to once every 5 years but this will be reviewed and adjusted by the City

of Port Colborne and can be triggered at any point using a Section 76 assessment change process.

5.4.1 Drain Improvement to Second Concession

The re-alignment of the former Wignell W1 and W2 did not appear to be constructed to Second Concession. This report provides the design and report information to complete that work and achieve a full replacement of the original drain pathway around the quarry. The City of Port Colborne had constructed the roadside ditches down the ROW's to help provide some drainage.

As part of this work, a sediment basin is proposed to 'treat' runoff from the farmland upland of the Babion Rd. and Second Concession Rd. intersection culvert crossings.

5.4.2 Drain Crossings

There are no new drain crossing planned; however, the two crossings located at Babion Rd. and Second Concession Rd. are to be changed in grade and/or flow direction. The costs for this work is to be borne by the Municipality.

These re-worked crossings are proposed to pass the former flows crossing Second Concession Rd. and passing into the now quarry lands to the East and crossing Babion Rd. first then Second Concession Rd. and connecting to the extended Drain along the east side of Babion.

5.4.3 Port Colborne Branch #1 Drain Improvement

The majority of the Port Colborne Branch Drain #1 is functioning well but the portion that provides drainage to Snider Rd. is no longer functioning as intended. A removal of the vegetation growth is required along with a re-grading of the channel to connect and serve the roadside swale.

In addition, the outlet is proposed to be re-aligned along the north side of Highway #3 to outlet into the main Drain channel at a connection point north of the existing culvert crossing identified on Plans as PC-CS-004 crossing Highway #3. This new outlet will be the primary channel for Port Colborne Branch Drain #1; however, the original flow path will remain without being a part of the Municipal Drain but as an overflow path should a large runoff event occur. The berm directing runoff to the new outlet is set to overtop prior to the full flow occurring at the PC-CS-004 culvert.

5.4.4 Sediment Basins

There are three sediment basins planned for construction. Each is located adjacent to a road right of way to provide access for future maintenance.

The cost of constructing sediment basins are shared among upstream landowners through a Section 23 assessment including assessed cost for ROW runoff.

5.4.5 2016 Grading and Re-alignment

The City conducted work on the drain to re-grade the channel from station 0+007, North of the Friendship Trail to station 1+928, South of Highway #3. This included some rock removal.

The resulting graded works is shown on the Profile drawings; P1, P2 as an As Constructed drawing record.

A re-alignment of the drain starting at 1+650 to 1+860 was constructed. There were two fordings constructed through this area to provide farm crossings. Each is to be treated in a similar manner to a culvert and the costs shared between the watershed and the landowner on a 50/50 basis.

Two wetlands were constructed on private property using grants. These wetlands are not part of the Municipal Drain and remain with the landowners for future maintenance.

5.5 Allowance and Assessment Schedules

The Assessment calculation Tables are included in Appendix B. The following sections provide a summary reporting of those calculations.

5.5.1 Drain Allowances

5.5.1.1 Port Colborne Drain

The improvement of the Port Colborne Drain using Section 78 is to make specific changes in the drain and assign the cost for the same using an updated schedule and to achieve enhanced stormwater management functions.

The channel is presumed to have an allowance under Section 29 for land taken as well as a work zone allowance for future access. The original land required for the drain is recognized by previous report and an assumed work zone of 30ft (9.14m) already exists. An additional 1m work zone, (0.76m) to be added to the 9.14m existing work zone is declined.

A section 30 allowance is recognized for the damage to crops during construction and is paid at the rate of $4,300 per hectare applied to the 10m work zone.

An allowance paid to the property for the re-alignment is made under Section 29 for land taken on the re-location of the drain path. The other properties are not recognized on the basis of a like for like move of the drain. No other allowances are recognized for the maintenance of this existing drain.

Table 9 Port Colborne Allowances

Drain	Section 29	Section 30	Section 31	Section 32	Section 33
Port Colborne	$939.00	$0.00	$0.00	$0.00	$0.00
				Sub-Total of Allowances:	**$939.00**

Additional to these costs will be Administration and Engineering Costs related to the design.

5.5.1.2 Port Colborne Branch Drain #1

As discussed previously, this drain already existed and is presumed to have been a Municipal Drain previously. All required land is presumed to have been previously assessed for both land taken for the drain and for access for maintenance, which is a 10m work zone.

Table 10 Port Colborne Branch #1 Allowances

Drain	Section 29	Section 30	Section 31	Section 32	Section 33
Port Colborne Branch #1	$0.00	$277.62	$.00	$0.00	$0.00
				Sub-Total of Allowances:	**$277.62**

5.5.2 Port Colborne Assessment Schedules

The assessment tables show the resulting assessment schedules for the past construction works and the proposed construction works based on the calculations performed and included in Appendix B. Past costs are presented by summary reports in Appendix C.

Table 11 Port Colborne Drain Assessment Schedule of Costs

Port Colborne Municipal Drain
City of Port Colborne
Regional Municipality of Niagara

Section 22: Assessed Benefit
Section 23 Outlet Benefit / Outlet Liability
Section 24 Special Benefit

	Owner	Legal Text	Roll No	Area, Ha	Assessment			Total	Allowance	Net
					Benefit	Outlet Liability	Special			
	City of Port Colborne - Lands Assessed									
	Vale Canada Limited	HUMBERSTONE CON 1 PT LOTS 24	271102000718000	1.642	$0	$1,413.83	$0.00	$1,413.83	$0.00	$1,413.83
	McLean William Richard Samue	CON 1 PT TWP LOT 23	271102001311300	0.095	$0	$45.49	$0.00	$45.49	$0.00	$45.49
	Tomiuck Jonas	CON 1 PT TWP LOT 23	271102001311400	0.191	$0	$91.13	$0.00	$91.13	$0.00	$91.13
	Scott Gregory George	CON 1 PT TWP LOT 23	271102001311500	0.190	$0	$91.08	$0.00	$91.08	$0.00	$91.08
	Vale Canada Limited	CON 2 PT LOT 24	271102001312000	0.534	$0	$306.76	$0.00	$306.76	$0.00	$306.76
	Port Colborne Quarries Inc	CON 2 PT LOTS 19 AND 20 RP	271104000315600	30.868	$0	$20,671.95	$0.00	$20,671.95	$0.00	$20,671.95
	Phillips Richard Gordon	CON 2 PT LOT 20 RP 59R-1546	271104000315702	0.089	$0	$42.53	$0.00	$42.53	$0.00	$42.53
	Port Colborne Quarries Inc	CON 2 PT LOT 19 PT LOT 20	271104000315800	35.112	$0	$23,514.47	$0.00	$23,514.47	$0.00	$23,514.47
	Schlenger Uszer	CON 1 PT LOT 23	271104000408700	0.583	$0	$334.83	$0.00	$334.83	$0.00	$334.83
	Schlenger Uszer	CON 1 PT LOT 23	271104000408700	6.726	$0	$4,504.18	$0.00	$4,504.18	$0.00	$4,504.18
	City of Port Colborne	CON 1 PT LOTS 23, 24 RP	271104000408715	2.431	$0	$1,628.23	$0.00	$1,628.23	$0.00	$1,628.23
	Schlenger Uszer	CON 1 PT LOT 23	271104000408800	0.373	$0	$228.20	$0.00	$228.20	$0.00	$228.20
	Coccagna Anthony	CON 1 PT LOT 23	271104000408900	0.631	$0	$301.99	$0.00	$301.99	$0.00	$301.99
	1346618 Ontario Ltd	CON 1 PT LOT 23	271104000409000	0.463	$0	$310.00	$0.00	$310.00	$0.00	$310.00
	Ostric Milan	CON 1 PT LOT 23 RP 59R5797	271104000409100	0.201	$0	$96.15	$0.00	$96.15	$0.00	$96.15
	1108904 Ontario Limited	CON 1 PT LOT 23 PT LOT 24	271104000409200	0.779	$0	$521.36	$0.00	$521.36	$0.00	$521.36
	Favero Lidia	CON 1 PT LOT 23	271104000409300	0.202	$0	$96.58	$0.00	$96.58	$0.00	$96.58
	Ed Christensen Roofing Limited	CON 1 PT LOT 23	271104000409400	0.190	$0	$90.98	$0.00	$90.98	$0.00	$90.98
	Sauder William Edward	HUMBERSTONE CON 1 PT LOT 23	271104000409500	0.190	$0	$90.98	$0.00	$90.98	$0.00	$90.98
	Stenson Ian John	CON 1 PT LOT 23	271104000409600	0.190	$0	$90.98	$0.00	$90.98	$0.00	$90.98
	Polverari Giuseppe	CON 1 PT LOT 23	271104000409700	0.190	$0	$90.98	$0.00	$90.98	$0.00	$90.98
	Vale Canada Limited	CON 1 PT LOT 23	271104000409800	4.106	$0	$1,963.89	$0.00	$1,963.89	$0.00	$1,963.89
	Vale Canada Limited	CON 2 PT LOT 21 RP59R3588	271104000410000	4.963	$256	$3,323.44	$187.50	$3,766.44	$939.00	$2,827.44
	Huffman John Wayne	CON 2 PT LOT 21	271104000410400	0.071	$0	$33.82	$0.00	$33.82	$0.00	$33.82
	Young Tammy Lynn	CON 2 PT LOT 21	271104000410500	0.107	$0	$51.04	$0.00	$51.04	$0.00	$51.04
	Vollick Ronald Christopher	CON 2 PT LOT 21	271104000410600	0.159	$0	$76.06	$0.00	$76.06	$0.00	$76.06
	Citrigno Angela	CON 2 PT LOT 21	271104000410700	0.168	$0	$80.12	$0.00	$80.12	$0.00	$80.12
	Stark Raymond	CON 2 PT LOT 21 RP 59R4333	271104000410705	1.936	$0	$926.05	$0.00	$926.05	$0.00	$926.05
	Konc John Andrew	CON 2 PT LOT 22 RP 59R4801	271104000410710	2.899	$508	$1,941.39	$5,057.59	$7,506.97	$0.00	$7,506.97
F	Van Ruyven Josef Nicolaas	CON 2 PT LOT 22 RP 59R4801	271104000410800	4.199	$0	$2,811.99	$355.00	$3,166.99	$0.00	$3,166.99
	Stewart Scott James	CON 2 PT LOT 22 RP 59R 5732	271104000410810	0.407	$0	$194.50	$0.00	$194.50	$0.00	$194.50
F	Powell Bradley Kenneth	CON 2 PT LOT 22 RP59R4801	271104000410900	7.711	$0	$5,164.30	$0.00	$5,164.30	$0.00	$5,164.30
	Hellinga Jack Simon	CON 2 PT LOT 22	271104000411000	5.411	$0	$2,588.33	$0.00	$2,588.33	$0.00	$2,588.33
	Kinzie Patricia Helen	CON 2 PT LOT 21 RP 59R6766	271104000411200	1.202	$0	$574.94	$0.00	$574.94	$0.00	$574.94
	Pipher Lynn Mae	CON 2 PT LOT 21 RP 59R6766	271104000411205	1.208	$0	$578.00	$0.00	$578.00	$0.00	$578.00
	Scace Wesley	CON 2 PT LOT 21	271104000411300	0.067	$0	$31.95	$0.00	$31.95	$0.00	$31.95
	Port Colborne Quarries Inc	CON 2 PT LOT 21 PT LOT 22 RP	271104000411500	73.170	$0	$51,802.13	$0.00	$51,802.13	$0.00	$51,802.13
	Parsons David Scott	CON 2 PT LOT 22	271104000411600	0.418	$0	$199.95	$0.00	$199.95	$0.00	$199.95
	Leavere Larry Allan Thomas	CON 2 PT LOT 22	271104000411700	0.209	$0	$100.02	$0.00	$100.02	$0.00	$100.02
	Yanni Bill	CON 2 PT LOT 22	271104000411900	0.418	$0	$199.95	$0.00	$199.95	$0.00	$199.95
	Fitzgerald Shawn Patrick	HUMBERSTONE CON 2 PT LOT 22	271104000412000	0.209	$0	$100.07	$0.00	$100.07	$0.00	$100.07
	Orlowski Jeffrey	CON 2 PT LOT 22 RP 59R4884	271104000412100	0.209	$0	$100.02	$0.00	$100.02	$0.00	$100.02
	Moes Frank Allan	HUMBERSTONE CON 2 PT LOT 22	271104000412200	0.357	$0	$170.72	$0.00	$170.72	$0.00	$170.72
	Boda Terry Joseph	CON 2 PT LOT 22	271104000412400	0.186	$0	$88.88	$0.00	$88.88	$0.00	$88.88
F	Elite Capital P.C Developments Inc	CON 2 PT LOT 22	271104000412600	4.110	$0	$2,359.42	$0.00	$2,359.42	$0.00	$2,359.42
	Vale Canada Limited	CON 2 PT LOT 22 PT LOT 23	271104000412700	10.153	$0	$5,827.80	$0.00	$5,827.80	$0.00	$5,827.80
	Vale Canada Limited	CON 2 PT LOT 22 PT LOT 23	271104000412700	22.189	$0	$12,736.89	$0.00	$12,736.89	$0.00	$12,736.89
	Vale Canada Limited	CON 2 PT LOT 23	271104000412800	0.363	$0	$208.54	$0.00	$208.54	$0.00	$208.54
	NCDSB	CON 2 PT LOT 23	271104000412900	5.947	$0	$3,413.79	$0.00	$3,413.79	$0.00	$3,413.79
	Dyson Patrick James	CON 2 PT LOT 23	271104000413000	0.176	$0	$84.14	$0.00	$84.14	$0.00	$84.14
	Dyson Mary Lynn	CON 2 PT LOT 23	271104000413100	0.182	$0	$104.19	$0.00	$104.19	$0.00	$104.19
	Hortobagyi Zoltan	CON 2 PT LOT 23	271104000413200	0.186	$0	$88.88	$0.00	$88.88	$0.00	$88.88
	Wakunick Deborah Ivy	CON 2 PT LOT 24	271104000413300	0.085	$0	$40.85	$0.00	$40.85	$0.00	$40.85
	Wells Donna Louise	CON 2 PT LOT 23 PT LOT 24	271104000413400	0.828	$0	$396.13	$0.00	$396.13	$0.00	$396.13
	Vale Canada Limited	CON 2 PT LOT 23 PT LOT 24 RP	271104000413401	7.409	$0	$3,544.32	$0.00	$3,544.32	$0.00	$3,544.32
	Vale Canada Limited	CON 2 PT LOT 23 PT LOT 24 RP	271104000413410	10.115	$0	$6,774.19	$0.00	$6,774.19	$0.00	$6,774.19
	Vale Canada Limited	CON 2 PT LOT 24 RP 59R10047	271104000413435	0.631	$0	$422.51	$0.00	$422.51	$0.00	$422.51
	Port Colborne Quarries Inc	HUMBERSTONE CON 2 PT LOTS 23	271104000414000	3.326	$0	$1,909.44	$0.00	$1,909.44	$0.00	$1,909.44
	Vale Canada Limited	CON 2 PT LOT 24	271104000414120	0.928	$0	$621.68	$0.00	$621.68	$0.00	$621.68
	2023165 Ontario Inc	CON 3 PT LOT 19 PT LOT 20	271104000506400	1.291	$0	$617.56	$0.00	$617.56	$0.00	$617.56
F	Koch Olga	CON 3 LOT 19CPT	271104000506500	0.222	$0	$106.05	$0.00	$106.05	$0.00	$106.05
	Kozelj Stif	CON 3 PT LOT 20	271104000506600	0.079	$0	$37.89	$0.00	$37.89	$0.00	$37.89
F	Orsetto Aldo	CON 3 PT LOT 20	271104000506700	4.228	$0	$2,426.75	$0.00	$2,426.75	$0.00	$2,426.75
	Currie Michael Bruce	CON 3 PT LOT 20	271104000506702	0.085	$0	$40.80	$0.00	$40.80	$0.00	$40.80
F	Fijavz David	CON 3 PT LOT 20	271104000506703	0.334	$0	$159.58	$0.00	$159.58	$0.00	$159.58
	Levitt Corie	CON 3 PT LOT 20 PLAN 59R	271104000506710	0.212	$0	$101.17	$0.00	$101.17	$0.00	$101.17
	Michaud Antonio Abel	CON 3 PT LOT 20 RP 59R8240	271104000506800	0.271	$0	$129.44	$0.00	$129.44	$0.00	$129.44
F	Henderson David Marshall	CON 3 PT LOT 20	271104000506801	11.011	$0	$7,373.83	$0.00	$7,373.83	$0.00	$7,373.83
F	Babion Gail J	HUMBERSTONE CON 3 PT LOT 21	271104000506900	15.252	$0	$10,214.09	$0.00	$10,214.09	$0.00	$10,214.09
	Wagner Dan Patrick	CON 3 PT LOT 21	271104000507400	3.050	$0	$2,042.84	$0.00	$2,042.84	$0.00	$2,042.84
	Stovell David Alan	CON 3 PT LOT 21 59R8535	271104000507500	1.238	$0	$592.40	$0.00	$592.40	$0.00	$592.40
F	Cooper Collin James Lee	CON 3 S PT LOT 21 S PT LOT	271104000508100	7.613	$0	$5,098.67	$0.00	$5,098.67	$0.00	$5,098.67
F	Henderson Drew David	CON 3 PT LOT 22	271104000508301	1.055	$0	$706.46	$0.00	$706.46	$0.00	$706.46
	Beaulieu George E	CON 3 E PT LOT 23	271104000508900	0.388	$0	$185.46	$0.00	$185.46	$0.00	$185.46
	Garner Mark Edward	CON 3 PT LOT 23	271104000509100	0.346	$0	$165.65	$0.00	$165.65	$0.00	$165.65
	Joseph Grandilli	CON 3 PT LOT 23	271104000509300	0.082	$0	$39.37	$0.00	$39.37	$0.00	$39.37
	Stefan John	CON 3 PT LOT 23	271104000509400	0.016	$0	$7.85	$0.00	$7.85	$0.00	$7.85
	Johnson Raymond Francis Jr	CON 3 PT LOT 23 RP 59R10549	271104000510200	0.208	$0	$103.68	$0.00	$103.68	$0.00	$103.68
	Vance Gregory Thomas	CON 3 PT LOT 23 RP 59R10549	271104000510202	0.417	$0	$199.52	$0.00	$199.52	$0.00	$199.52
	Saxon Ronald Joseph	CON 3 PT LOT 23 PLAN	271104000510204	0.605	$0	$289.50	$0.00	$289.50	$0.00	$289.50
	Pilkey Dean Lloyd	CON 3 PT LOT 23 PLAN	271104000510206	0.597	$0	$285.72	$0.00	$285.72	$0.00	$285.72
F	Schneider Darryl Frederick	CON 3 PT LOT 23	271104000510801	2.252	$0	$1,077.11	$0.00	$1,077.11	$0.00	$1,077.11
	Zonneveld Bastian	CON 3 PT LOT 24	271104000510900	0.103	$0	$49.17	$0.00	$49.17	$0.00	$49.17
	Terreberry Jack	CON 3 PT LOT 24	271104000511000	0.144	$0	$68.98	$0.00	$68.98	$0.00	$68.98
	Jacak Dominik	CON 3 PT LOT 24	271104000511300	0.347	$0	$166.13	$0.00	$166.13	$0.00	$166.13
	Moore Linda Ann	CON 3 PT LOT 24	271104000511400	0.099	$0	$47.21	$0.00	$47.21	$0.00	$47.21
	Moore Linda Ann	CON 3 PT LOT 24	271104000511500	0.029	$0	$13.78	$0.00	$13.78	$0.00	$13.78
	Medvic Peter James	CON 3 PT LOT 24	271104000511600	0.356	$0	$170.06	$0.00	$170.06	$0.00	$170.06
	McIntyre Shelly	CON 3 PT LOT 24	271104000511700	0.191	$0	$91.41	$0.00	$91.41	$0.00	$91.41
	City of Port Colborne	59R11175 PART 1 59R11176	271104000699500	0.630	$0	$421.71	$0.00	$421.71	$0.00	$421.71
				311.038	$763.50	$199,226.89	$5,600.09	$205,590.48	$939.00	$204,651.48

Owner	Legal Text	Roll No	Area, Ha	Assessment Benefit	Outlet Liability	Special	Total	Allowance	Net
Roads									
City of Port Colborne	Snider Rd. N of Second Concession	ROW	0.071		$3,306.62	$0.00	$3,306.62		
City of Port Colborne	Killaly St E east of Snider	ROW	0.176		$1,752.36	$0.00	$1,752.36		
City of Port Colborne	Snider Rd portion south of Killaly St E	ROW	0.353		$2,876.95	$0.00	$2,876.95		
City of Port Colborne	Second Concession Rd. E of Babion	ROW	0.596		$116.22	$0.00	$116.22		
City of Port Colborne	Killaly St East W of Snider Rd	ROW	0.920		$968.19	$0.00	$968.19		
City of Port Colborne	Chippawa Road	ROW	1.016		$3,753.26	$0.00	$3,753.26		
City of Port Colborne	Second Concession W of Snider Rd.	ROW	1.221		$854.95	$0.00	$854.95		
City of Port Colborne	Babion Rd. from 2nd to Chippawa	ROW	1.432		$2,329.34	$0.00	$2,329.34		
City of Port Colborne	Second Concession from Snider to Babion	ROW	1.645		$541.04	$0.00	$541.04		
City of Port Colborne	Snider Rd. from Hwy 3 to Second Conc	ROW	2.005		$1,464.94	$0.00	$1,464.94		
City of Port Colborne	Sndier Rd from Hwy 3 to Killaly St E	ROW	2.033		$286.73	$0.00	$286.73		
City of Port Colborne	Babion Rd. from Hwy 3 to Second Concess	ROW	2.308		$2,675.64	$0.00	$2,675.64		
							$20,926.24		
MTO	Highway #3	ROW	3.281		$5,336.02	$0.00	$5,336.02		
			17.058		$26,262.26	$0.00	$26,262.26		
Section 26 - Special Assessments									
City of Port Colborne	Extend drain along Babion Rd. to Second Concession. Re-lay culverts at Second Concession Rd.						$40,448.80		
MINISTRY OF TRANSPORTATION ONTARIO							$5,076.19		
Utilities - Enbridge	No conflicts assessed during design						$0.00		
Utilities - Other	No conflicts assessed during design						$0.00		
							$45,525.00		
Port Colborne Drain									
	Total Assessed:						$277,377.74		

Notes:
1. The above lands marked "F" are currently classified as agricultural according to the OMAFRA and are therefore entitled to a 1/3 grant.
2. Section 21 of the Drainage Act, RSO 1990 requires that assessments be shown for each parcel of land and road affected. The affected parcels of land are identified using the roll number received from the City. For convenience only, the owners' names are shown by the last revised assessment roll.
3. The value of the assessments identified in this schedule are estimates only, and should not be considered final.

Port Colborne Branch #1 Municipal Drain

City of Port Colborne
Regional Municipality of Niagara

Section 22: Assessed Benefit
Section 23 Outlet Benefit / Outlet Liability
Section 24 Special Benefit

Owner	Legal Text	Roll No	Area, Ha	Assessment Benefit	Outlet Liability	Special	Total	Allowance	Net
City of Port Colborne - Lands Assessed									
Konc John Andrew	CON 2 PT LOT 22 RP 59R4801	271104000410710	0.107	$0	$27.28	$0.00	$27.28	$277.62	-$250.35
Van Ruyven Josef Nicolaas	CON 2 PT LOT 22 RP 59R4801	271104000410800	1.084	$0	$184.32	$0.00	$184.32	$0.00	$184.32
Hellinga Jack Simon	CON 2 PT LOT 22	271104000411000	5.247	$0	$1,338.84	$0.00	$1,338.84	$0.00	$1,338.84
Port Colborne Quarries Inc	CON 2 PT LOT 21 PT LOT 22 RP	271104000411500	2.758	$0	$469.10	$0.00	$469.10	$0.00	$469.10
Parsons David Scott	CON 2 PT LOT 22	271104000411600	0.413	$0	$105.40	$0.00	$105.40	$0.00	$105.40
Leavere Larry Allan Thomas	CON 2 PT LOT 22	271104000411700	0.098	$0	$16.60	$0.00	$16.60	$0.00	$16.60
Yanni Bill	CON 2 PT LOT 22	271104000411900	0.418	$0	$106.65	$0.00	$106.65	$0.00	$106.65
Orlowski Jeffrey	CON 2 PT LOT 22 RP 59R4884	271104000412100	0.025	$0	$4.25	$0.00	$4.25	$0.00	$4.25
Port Colborne Quarries Inc	HUMBERSTONE CON 2 PT LOTS 23	271104000414000	3.308	$0	$844.05	$0.00	$844.05	$0.00	$844.05
			12.267	$0.00	$3,096.49	$0.00	$3,096.49	$277.62	$2,884.89
Roads									
City of Port Colborne	Snider Rd. from Hwy 3 to Second Conc	ROW	1.612	$0	$616.77	$0.00	$616.77		
City of Port Colborne	Second Concession from Snider to Bab	ROW	0.022	$0	$16.13	$0.00	$16.13		
City of Port Colborne	Second Concession W of Snider Rd.	ROW	0.501	$0	$370.35	$0.00	$370.35		
							$1,003.25		
MTO	Highway #3	ROW	0.547	$0	$446.99	$0.00	$446.99		
			2.682	$0.00	$1,450.25	$0.00	$1,450.25		
			14.948				$4,546.73		
Section 26 - Special Assessments									
City of Port Colborne	Assessed special benefit for improving Snider road outlet.						$7,008.46		
Regional Municipality of Niagara	No works proposed						$0.00		
MINISTRY OF TRANSPORTATION ONTARIO							$7,115.18		
Utilities - Enbridge	No conflicts assessed during design						$0.00		
Utilities - Other	No conflicts assessed during design						$0.00		
							$14,123.64		
Port Colborne Branch #1 Drain									
	Total Assessed:						$18,670.37		

Notes:
1. The above lands marked "F" are currently classified as agricultural according to the OMAFRA and are therefore entitled to a 1/3 grant.
2. Section 21 of the Drainage Act, RSO 1990 requires that assessments be shown for each parcel of land and road affected. The affected parcels of land are identified using the roll number received from the City. For convenience only, the owners' names are shown by the last revised assessment roll.

5.5.3 Port Colborne Drain Maintenance Schedules

The maintenance schedules for use with future maintenance work conducted in each of the Drain catchments.

From the Port Colborne Outlet to the upstream limit of the Drain at the Friendship Trail, STA 0-112.7 to 0+010 basic drain maintenance is required as the Drainage Superintendent determines.

From 0+010 to 1+928, was maintained by the City of Port Colborne in 2016 including work to re-align the channel from 1+650 to 1+860.

Added to the cost of maintenance is the full engineering and administration costs less any costs directly assigned to specific Section 22, and Section 24 benefit assessments.

With the Runoff Ratio, there is a Stormwater Management Facility reduction in Section 23 that can be applied for those properties that can demonstrate a stormwater management facility (SMWF) on property that reduces peak flow contributions to the drain subject to evaluation and confirmation by the Drainage Superintendent and the Engineer.

For the purposes of the submission of the report, no SWMF assessments are recognized and the individual property owners can make a request for assessment and this will be recognized by the Engineer on project completion.

5.5.3.1 Port Colborne Drain Maintenance Schedule

The following is the Maintenance Assessment table for assigning future maintenance costs using Section 23, refer to Appendix B for the calculations.

Table 13 Port Colborne Drain Maintenance Assessment Schedule

Port Colborne Drain

Owner	Legal Text	Roll No	Area, Ha	Runoff Factor 'C'	QRF	QRF Ratio
Vale Canada Limited	HUMBERSTONE CON 1 PT LOTS 24	271102000718000	1.642	45	4.82	**0.0063**
McLean William Richard Samue	CON 1 PT TWP LOT 23	271102001311300	0.095	25	0.16	**0.0002**
Tomiuck Jonas	CON 1 PT TWP LOT 23	271102001311400	0.191	25	0.31	**0.0004**
Scott Gregory George	CON 1 PT TWP LOT 23	271102001311500	0.190	25	0.31	**0.0004**
Vale Canada Limited	CON 2 PT LOT 24	271102001312000	0.534	30	1.05	**0.0014**
Port Colborne Quarries Inc	CON 2 PT LOTS 19 AND 20 RP	271104000315600	30.868	35	70.48	**0.0917**
Phillips Richard Gordon	CON 2 PT LOT 20 RP 59R-1546	271104000315702	0.089	25	0.14	**0.0002**
Port Colborne Quarries Inc	CON 2 PT LOT 19 PT LOT 20	271104000315800	35.112	35	80.17	**0.1043**
Schlenger Uszer	CON 1 PT LOT 23	271104000408700	0.583	30	1.14	**0.0015**
Schlenger Uszer	CON 1 PT LOT 23	271104000408700	6.726	35	15.36	**0.0200**
City of Port Colborne	CON 1 PT LOTS 23, 24 RP	271104000408715	2.431	35	5.55	**0.0072**
Schlenger Uszer	CON 1 PT LOT 23	271104000408800	0.373	32	0.78	**0.0010**
Coccagna Anthony	CON 1 PT LOT 23	271104000408900	0.631	25	1.03	**0.0013**
1346618 Ontario Ltd	CON 1 PT LOT 23	271104000409000	0.463	35	1.06	**0.0014**
Ostric Milan	CON 1 PT LOT 23 RP 59R5797	271104000409100	0.201	25	0.33	**0.0004**
1108904 Ontario Limited	CON 1 PT LOT 23 PT LOT 24	271104000409200	0.779	35	1.78	**0.0023**
Favero Lidia	CON 1 PT LOT 23	271104000409300	0.202	25	0.33	**0.0004**
Ed Christensen Roofing Limited	CON 1 PT LOT 23	271104000409400	0.190	25	0.31	**0.0004**
Sauder William Edward	HUMBERSTONE CON 1 PT LOT 23	271104000409500	0.190	25	0.31	**0.0004**
Stenson Ian John	CON 1 PT LOT 23	271104000409600	0.190	25	0.31	**0.0004**
Polverari Giuseppe	CON 1 PT LOT 23	271104000409700	0.190	25	0.31	**0.0004**
Vale Canada Limited	CON 1 PT LOT 23	271104000409800	4.106	25	6.70	**0.0087**
Vale Canada Limited	CON 2 PT LOT 21 RP59R3588	271104000410000	4.963	35	11.33	**0.0147**
Huffman John Wayne	CON 2 PT LOT 21	271104000410400	0.071	25	0.12	**0.0001**
Young Tammy Lynn	CON 2 PT LOT 21	271104000410500	0.107	25	0.17	**0.0002**
Vollick Ronald Christopher	CON 2 PT LOT 21	271104000410600	0.159	25	0.26	**0.0003**
Citrigno Angela	CON 2 PT LOT 21	271104000410700	0.168	25	0.27	**0.0004**
Stark Raymond	CON 2 PT LOT 21 RP 59R4333	271104000410705	1.936	25	3.16	**0.0041**

Owner	Legal Text	Roll No	Area, Ha	Runoff Factor 'C'	QRF	QRF Ratio
Konc John Andrew	CON 2 PT LOT 22 RP 59R4801	271104000410710	2.899	35	6.62	**0.0086**
Van Ruyven Josef Nicolaas	CON 2 PT LOT 22 RP 59R4801	271104000410800	4.199	35	9.59	**0.0125**
Stewart Scott James	CON 2 PT LOT 22 RP 59R 5732	271104000410810	0.407	25	0.66	**0.0009**
Powell Bradley Kenneth	CON 2 PT LOT 22 RP59R4801	271104000410900	7.711	35	17.61	**0.0229**
Hellinga Jack Simon	CON 2 PT LOT 22	271104000411000	5.411	25	8.83	**0.0115**
Kinzie Patricia Helen	CON 2 PT LOT 21 RP 59R6766	271104000411200	1.202	25	1.96	**0.0025**
Pipher Lynn Mae	CON 2 PT LOT 21 RP 59R6766	271104000411205	1.208	25	1.97	**0.0026**
Scace Wesley	CON 2 PT LOT 21	271104000411300	0.067	25	0.11	**0.0001**
Port Colborne Quarries Inc	CON 2 PT LOT 21 PT LOT 22 RP	271104000411500	73.170	37	176.62	**0.2297**
Parsons David Scott	CON 2 PT LOT 22	271104000411600	0.418	25	0.68	**0.0009**
Leavere Larry Allan Thomas	CON 2 PT LOT 22	271104000411700	0.209	25	0.34	**0.0004**
Yanni Bill	CON 2 PT LOT 22	271104000411900	0.418	25	0.68	**0.0009**
Fitzgerald Shawn Patrick	HUMBERSTONE CON 2 PT LOT 22	271104000412000	0.209	25	0.34	**0.0004**
Orlowski Jeffrey	CON 2 PT LOT 22 RP 59R4884	271104000412100	0.209	25	0.34	**0.0004**
Moes Frank Allan	HUMBERSTONE CON 2 PT LOT 22	271104000412200	0.357	25	0.58	**0.0008**
Boda Terry Joseph	CON 2 PT LOT 22	271104000412400	0.186	25	0.30	**0.0004**
Elite Capital P.C Developments Inc	CON 2 PT LOT 22	271104000412600	4.110	30	8.04	**0.0105**
Vale Canada Limited	CON 2 PT LOT 22 PT LOT 23	271104000412700	10.153	30	19.87	**0.0258**
Vale Canada Limited	CON 2 PT LOT 22 PT LOT 23	271104000412700	22.189	30	43.43	**0.0565**
Vale Canada Limited	CON 2 PT LOT 23	271104000412800	0.363	30	0.71	**0.0009**
NCDSB	CON 2 PT LOT 23	271104000412900	5.947	30	11.64	**0.0151**
Dyson Patrick James	CON 2 PT LOT 23	271104000413000	0.176	25	0.29	**0.0004**
Dyson Mary Lynn	CON 2 PT LOT 23	271104000413100	0.182	30	0.36	**0.0005**
Hortobagyi Zoltan	CON 2 PT LOT 23	271104000413200	0.186	25	0.30	**0.0004**
Wakunick Deborah Ivy	CON 2 PT LOT 24	271104000413300	0.085	25	0.14	**0.0002**
Wells Donna Louise	CON 2 PT LOT 23 PT LOT 24	271104000413400	0.828	25	1.35	**0.0018**
Vale Canada Limited	CON 2 PT LOT 23 PT LOT 24 RP	271104000413401	7.409	25	12.08	**0.0157**
Vale Canada Limited	CON 2 PT LOT 23 PT LOT 24 RP	271104000413410	10.115	35	23.10	**0.0300**
Vale Canada Limited	CON 2 PT LOT 24 RP 59R10047	271104000413435	0.631	35	1.44	**0.0019**
Port Colborne Quarries Inc	HUMBERSTONE CON 2 PT LOTS 23	271104000414000	3.326	30	6.51	**0.0085**
Vale Canada Limited	CON 2 PT LOT 24	271104000414120	0.928	35	2.12	**0.0028**
2023165 Ontario Inc	CON 3 PT LOT 19 PT LOT 20	271104000506400	1.291	25	2.11	**0.0027**

Owner	Legal Text	Roll No	Area, Ha	Runoff Factor 'C'	QRF	QRF Ratio
Koch Olga	CON 3 LOT 19CPT	271104000506500	0.222	25	0.36	**0.0005**
Kozelj Stif	CON 3 PT LOT 20	271104000506600	0.079	25	0.13	**0.0002**
Orsetto Aldo	CON 3 PT LOT 20	271104000506700	4.228	30	8.27	**0.0108**
Currie Michael Bruce	CON 3 PT LOT 20	271104000506702	0.085	25	0.14	**0.0002**
Fijavz David	CON 3 PT LOT 20	271104000506703	0.334	25	0.54	**0.0007**
Levitt Corie	CON 3 PT LOT 20 PLAN 59R	271104000506710	0.212	25	0.34	**0.0004**
Michaud Antonio Abel	CON 3 PT LOT 20 RP 59R8240	271104000506800	0.271	25	0.44	**0.0006**
Henderson David Marshall	CON 3 PT LOT 20	271104000506801	11.011	35	25.14	**0.0327**
Babion Gail J	HUMBERSTONE CON 3 PT LOT 21	271104000506900	15.252	35	34.83	**0.0453**
Wagner Dan Patrick	CON 3 PT LOT 21	271104000507400	3.050	35	6.97	**0.0091**
Stovell David Alan	CON 3 PT LOT 21 59R8535	271104000507500	1.238	25	2.02	**0.0026**
Cooper Collin James Lee	CON 3 S PT LOT 21 S PT LOT	271104000508100	7.613	35	17.38	**0.0226**
Henderson Drew David	CON 3 PT LOT 22	271104000508301	1.055	35	2.41	**0.0031**
Beaulieu George E	CON 3 E PT LOT 23	271104000508900	0.388	25	0.63	**0.0008**
Garner Mark Edward	CON 3 PT LOT 23	271104000509100	0.346	25	0.56	**0.0007**
Joseph Grandilli	CON 3 PT LOT 23	271104000509300	0.082	25	0.13	**0.0002**
Stefan John	CON 3 PT LOT 23	271104000509400	0.016	25	0.03	**0.0000**
Johnson Raymond Francis Jr	CON 3 PT LOT 23 RP 59R10549	271104000510200	0.208	26	0.35	**0.0005**
Vance Gregory Thomas	CON 3 PT LOT 23 RP 59R10549	271104000510202	0.417	25	0.68	**0.0009**
Saxon Ronald Joseph	CON 3 PT LOT 23 PLAN	271104000510204	0.605	25	0.99	**0.0013**
Pilkey Dean Lloyd	CON 3 PT LOT 23 PLAN	271104000510206	0.597	25	0.97	**0.0013**
Schneider Darryl Frederick	CON 3 PT LOT 23	271104000510801	2.252	25	3.67	**0.0048**
Zonneveld Bastian	CON 3 PT LOT 24	271104000510900	0.103	25	0.17	**0.0002**
Terreberry Jack	CON 3 PT LOT 24	271104000511000	0.144	25	0.24	**0.0003**
Jacak Dominik	CON 3 PT LOT 24	271104000511300	0.347	25	0.57	**0.0007**
Moore Linda Ann	CON 3 PT LOT 24	271104000511400	0.099	25	0.16	**0.0002**
Moore Linda Ann	CON 3 PT LOT 24	271104000511500	0.029	25	0.05	**0.0001**
Medvic Peter James	CON 3 PT LOT 24	271104000511600	0.356	25	0.58	**0.0008**
McIntyre Shelly	CON 3 PT LOT 24	271104000511700	0.191	25	0.31	**0.0004**
City of Port Colborne	59R11175 PART 1 59R11176	271104000699500	0.630	35	1.44	**0.0019**
			311.038			
Roads						
City of Port Colborne	**Snider Rd from Hwy 3 to Killaly St E**	ROW	2.033	85	11.27	**0.0147**

Owner	Legal Text	Roll No	Area, Ha	Runoff Factor 'C'	QRF	QRF Ratio
City of Port Colborne	**Second Concession W of Snider Rd.**	ROW	1.221	75	5.97	**0.0078**
City of Port Colborne	**Snider Rd. from Hwy 3 to Second Conc**	ROW	2.005	75	9.81	**0.0128**
City of Port Colborne	**Snider Rd. N of Second Concession**	ROW	0.071	85	0.40	**0.0005**
City of Port Colborne	**Second Concession Rd. E of Babion**	ROW	0.595	85	3.30	**0.0043**
City of Port Colborne	**Babion Rd. from Hwy 3 to Second Concess**	ROW	2.308	85	12.80	**0.0166**
City of Port Colborne	**Chippawa Road**	ROW	0.559	80	2.92	**0.0038**
City of Port Colborne	**Babion Rd. from 2nd to Chippawa**	ROW	1.432	85	7.94	**0.0103**
City of Port Colborne	**Snider Rd protion south of Killaly St E**	ROW	0.353	80	1.84	**0.0024**
City of Port Colborne	**Killaly St East W of Snider Rd**	ROW	0.901	85	4.99	**0.0065**
City of Port Colborne	**Killaly St E east of Snider**	ROW	0.176	85	0.98	**0.0013**
City of Port Colborne	**Second Concession from Snider to Babion**	ROW	1.645	85	9.12	**0.0119**
MTO	**Highway #3**	ROW	3.281	85	18.19	**0.0237**
			16.581			
			327.619		**768.83**	**1.00**

5.5.3.2 Port Colborne Branch Drain #1 Maintenance Schedule

The Maintenance Assessment table is for assigning current and future maintenance costs using Section 23, refer to Appendix B for the calculations.

Table 14 Port Colborne Branch Drain #1 Maintenance Schedule

Owner	Legal Text	Roll No	Area, Ha	Runoff Factor 'C'	QRF	QRF Ratio
City of Port Colborne - Lands Assessed						
Konc John Andrew	CON 2 PT LOT 22 RP 59R4801	271104000410710	0.107	30	0.21	**0.0060**
Van Ruyven Josef Nicolaas	CON 2 PT LOT 22 RP 59R4801	271104000410800	1.084	20	1.41	**0.0405**
Hellinga Jack Simon	CON 2 PT LOT 22	271104000411000	5.247	30	10.27	**0.2945**
Port Colborne Quarries Inc	CON 2 PT LOT 21 PT LOT 22 RP	271104000411500	2.758	20	3.60	**0.1032**
Parsons David Scott	CON 2 PT LOT 22	271104000411600	0.413	30	0.81	**0.0232**
Leavere Larry Allan Thomas	CON 2 PT LOT 22	271104000411700	0.098	20	0.13	**0.0037**
Yanni Bill	CON 2 PT LOT 22	271104000411900	0.418	30	0.82	**0.0235**
Orlowski Jeffrey	CON 2 PT LOT 22 RP 59R4884	271104000412100	0.025	20	0.03	**0.0009**
Port Colborne Quarries Inc	HUMBERSTONE CON 2 PT LOTS 23	271104000414000	3.308	30	6.47	**0.1856**
		Sub-Total (Lands)	**13.457**			
Roads						
City of Port Colborne	Snider Rd. from Hwy 3 to Second Conc	ROW	1.612	45	4.73	**0.1357**
City of Port Colborne	Second Concession from Snider to Babion	ROW	0.022	86	0.12	**0.0035**
City of Port Colborne	Second Concession W of Snider Rd.	ROW	0.501	87	2.84	**0.0815**
MTO	Highway #3	ROW	0.547	96	3.43	**0.0983**
		Sub-Total (Roads)	**2.682**			
		Total:	**16.139**		**34.88**	**1.00**

6 Port Colborne Drain Report Conclusions

This report has identified a series of drain improvements that include drain maintenance to ensure suitable channel design flows are achieved. The drain improvements have been developed through plan and profile drawings, and includes the results of works already undertaken by the City.

The following is a summary description of the planned improvements:

1. Extension of the drain along the East side of Babion Rd. from the Quarry crossing to Second Concession Rd. for 254m.
2. Re-laying the two culverts at the intersection of Babion Rd. and Second Concession Rd.
3. Construction of a new outlet for the Port Colborne Branch #1 Drain to reach the Port Colborne Drain along the North side of Highway #3.
4. Maintenance of the Port Colborne Branch Drain #1 to the Snider Rd. ROW.
5. Construction of 3 sediment basins along the Drain.

Previous Work completed by others is also being assessed.

1. Work already completed for the Port Colborne Drain involving vegetation removal and re-grading to design grade line from 0+010 to 1+928.

Construction of these works is to be recognized as a Section 29 allowance for land access, which has been assumed to already be in place for the Port Colborne Drain and Port Colborne Branch #1. Damages for construction are not expected except as the adjacent lands are to be restored to an equal or better condition.

Assessment for the Drain is based on Section 23 with special benefit assessed for new drain crossings (fordings) and for the cost of channel re-alignment.

Damages for construction, Section 30 allowances, are implemented for economic harm for crop damage from construction work impacts for farming properties only. All other construction impacts are to be restored to an equal or better condition.

The proposed new sediment basins are a Section 23 outlet liability benefit along with the overall construction costs and are shared across the watershed on a pro-rated basis.

This report and the proposed improvements are based on instructions from the City of Port Colborne and the local landowners within the Port Colborne Drain catchment. The cost of these improvements are shared across all areas that contribute runoff to the Drain by way of allowances and assessments consistent with the Drainage Act of Ontario.

Appendix A: Plans, Profiles

100 0 100 200 300 400 m

Map Scale 1:2811

CofPC-Port Colborne Drain 10-FEB-21
- CofPC-Port Colborne Drain 10-FEB-21 entities

CofPC-Port Colborne Drain 10-FEB-21 entities
- __01_PC_MainDrain
- _dc-chainage for sd ONLY
- PC_catch

- PC_ROW_rev4
- PC_Drain_Xroll_rev4
- PC MapBook_index2500
- Contours

NPCA_ENV
- GR_WetlandAllowance_NPCA

- GR_RegulatedWetlands_NPCA
- AssessmentParcels

DrainC
- Port Colborne Drain
- Port Colborne Branch #1
- Wignell Drain

Road_Segments
- MUN
- ON
- BuildingFootprints

This page is formated for printing on ANSI E size portrait, 863.6mm x 1117.6mm

1

Port Colborne Drain

Assessed Properties by Drainage Area and ARN

EWA Engineering Inc.
647.400.2824 www.ewaeng.com

Printed on: 2021-04-12

Port Colborne Drain
327.3 Ha

Port Colborne Branch #1
14.8 Ha

Wignell Drain
1,103.1 Ha

Snider Road
Babion Road
Lorraine Road
Reuter Road
Hwy #3
Main Street East
Ramp
Killaly Street East
Durham Street
Lincoln Avenue
Mercury Avenue
James Avenue
Christmas Street
Cross Street
Bell Street
Johnston Street

0+800 0+700 0+600 0+500 0+400 0+300 0+200 0+100 0+000 -0+100
1+900 1+800 1+700 1+600 1+500 1+400 1+300 1+200 1+100 1+000 0+900 0+800 0+700 0+600 0+500 0+400 0+300 2+700 2+600 2+500 2+400 2+300 2+200 2+100 2+000

411500 73.17 Ha
411900 0.42 Ha
411600 0.42 Ha
411700 0.21 Ha
411000 5.41 Ha
412000 0.21 Ha
412100 0.21 Ha
412200 0.36 Ha
412400 0.19 Ha
413435 0.63 Ha
413410 10.12 Ha
413400 0.83 Ha
413300 0.09 Ha
413200 0.19 Ha
413100 0.18 Ha
413000 0.18 Ha
413401 7.41 Ha
410810 0.41 Ha
410900 7.71 Ha
410800 4.20 Ha
410710 2.90 Ha
410000 4.96 Ha
411300 0.07 Ha
411205 1.21 Ha
411200 1.20 Ha
410700 0.17 Ha
410600 0.16 Ha
410500 0.11 Ha
410400 0.07 Ha
410705 1.94 Ha
315702 0.09 Ha
315800 35.11 Ha
315600 30.87 Ha
412600 4.11 Ha
412700 22.19 Ha
412700 10.15 Ha
414120 0.93 Ha
412900 5.95 Ha
312000 0.53 Ha
412800 0.36 Ha
409200 0.78 Ha
409100 0.20 Ha
409000 0.46 Ha
408900 0.63 Ha
408800 0.37 Ha
408700 6.73 Ha
409800 4.11 Ha
718000 1.64 Ha
408715 2.43 Ha
699500 0.63 Ha
408700 0.58 Ha
312300 0.04 Ha
312400 0.04 Ha
312500 0.05 Ha
409700 0.19 Ha
409600 0.19 Ha
409400 0.19 Ha
409300 0.20 Ha

100 0 100 200 300 400 m

Map Scale 1:2783

This page is formated for printing on ANSI E size portrait, 863.6mm x 1117.6mm

CofPC-Municipal Drain-Wignell9_2020-09-01
CofPC-Municipal Drain-Wignell9_2020-09-01 entities
__03_W_Branch_Drain2
__04_W_Branch_Drain3
__10_W_PrivateDrain
AET-CL-WIGNELL MAIN BRANCH DRAIN CL
CofPC-Port Colborne Drain 10-FEB-21
CofPC-Port Colborne Drain 10-FEB-21 entities

CofPC-Port Colborne Drain 10-FEB-21 entities
__01_PC_MainDrain
__02_PC_BranchDrain1
_dc-chainage for sd ONLY
AET-CL-PCD Branch 1- N and S-TXT
PC_catch
W_ponds
PC_ROW_rev4

PC_Drain_Xroll_rev4
PC MapBook_index2500
Contours
NPCA_ENV
GR_WetlandAllowance_NPCA
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AssessmentParcels
DrainC
Port Colborne Drain

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Road_Segments
MUN
ON
BuildingFootprints

2

Port Colborne Drain

Assessed Properties by Drainage Area and ARN

EWA Engineering Inc.
647.400.2824 www.ewaeng.com

Printed on: 2021-04-12

Port Colborne Municipal Drain

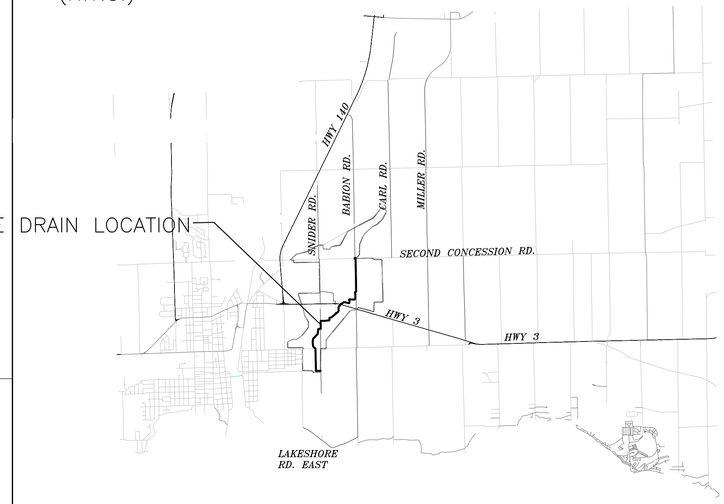
City of Port Colborne

APRIL 16, 2021

PORT COLBORNE MUNICIPAL DRAIN - 2021

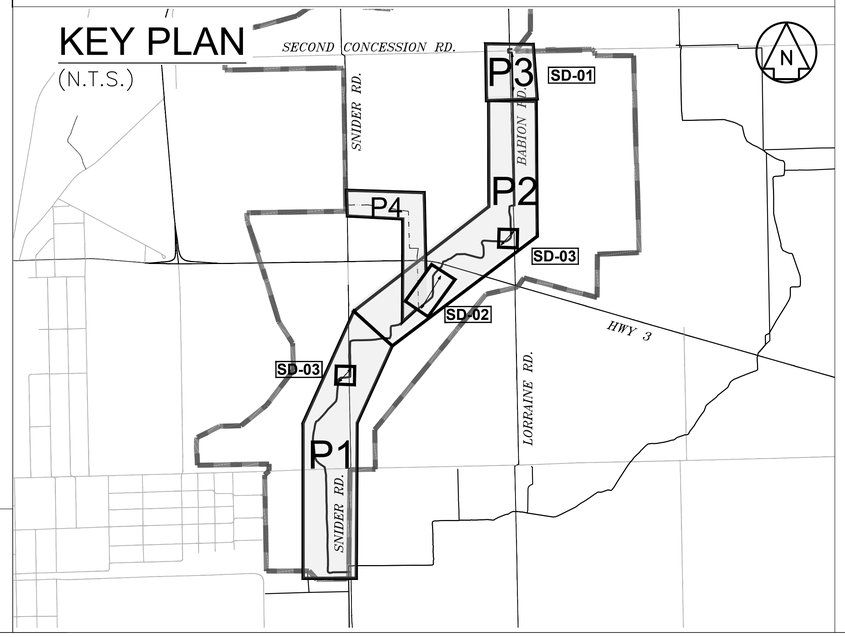
LOCATION PLAN

(N.T.S.)



KEY PLAN

(N.T.S.)



LEGEND

	EXISTING DITCH BOTTOM (NPCA DEM DATA)
	EXISTING DITCH BOTTOM (SURVEYED)
	HISTORICAL GRADELINE
	PROPOSED DRAIN GRADELINE–EWA, 2021
LEFT	LEFT BANK
RIGHT	RIGHT BANK
	EXISTING DRAIN SECTION
	EXISTING STRUCTURE DETAILS
	ASSUMED EXISTING STRUCTURE DETAILS
OBV=175.00	EXISTING DRAIN ELEVATION
175.00 PR.	PROPOSED DRAIN CENTERLINE ELEVATION
175.00 EX.	PROPOSED DRAIN ELEVATION (WHERE MATCHES EXISTING ELEVATION)
	DATA POINT FROM HISTORICAL DESIGN GRADELINE RVA, 1979

DRAWING INDEX

DWG I.D.	DWG TITLE
PC.PLAN	PLAN VIEW
PC.P1	PROFILE STA: –0+120 to 1+400
PC.P2	PROFILE STA: 1+400 to 3+000
PC.P3	PROFILE STA: 2+800 to 3+757 END OF DRAIN
PC.P4	PROFILE BRANCH DRAIN #1: 0+000 to 824
PC.SD–01	PLAN & PROFILE SPECIFIC DETAIL STA 3+040 to 3+368
PC.SD–02	PLAN & PROFILE SPECIFIC DETAIL STA 1+610 to 1+960
PC.SD–03	PLAN & PROFILE SPECIFIC DETAIL– SEDIMENT BASIN 02 & 03
PC.GD	GENERAL DETAILS
PC.CN	CONSTRUCTION NOTES

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PORT COLBORNE DRAIN

RE-GRADE FOR 388m TO 600mmØ CULVERT CROSSING SECOND CONCESSION RD. (BY CofPC) SEE PC.P3

RE-LAY 600mmØ CULVERT TO DRAIN TO EAST

PC.SD-01

CONSTRUCT SEDIMENT BASIN AT STA 3+300 SEE PC.SD-01

EXCAVATE TO DESIGN GRADE LINE 3+079 TO 3+340

EXISTING 600mmØ PVC PIPE TO BE REMOVED

MOVE EXISTING 750mmØ HDPE CULVERT FROM WEST TO EAST INTERSECTION SEE DRAWING PC.P3 AND PC.SD-01

RE-ALIGNMENT CREATED IN 1999 2+000 TO 2+575

DRAIN MOVED OFF ROW 2+595 TO 2+960

EXTEND DRAIN TO WEST SIDE OF BABION RD. NORTH OF SECOND CONCESSION 2+595 TO 3+371

CLEAR & RE-GRADE 197m TO SNIDER RD. 0+627 TO 0+824

PORT COLBORNE BRANCH DRAIN #1

CONSTRUCT PC.SB2 SEDIMENT BASIN AT STA 2+402 & RE-GRADE FOR 250m SEE PC.SD-03

CLEAR & RE-GRADE 277m EXISTING CHANNEL TO DESIGN GRADE LINE. MAINTANCE WORK- SECTION 74 0+000 TO 0+277

RE-ALIGN CHANNEL & RESTORE (COMPLETED 2016) 1+650 TO 1+860 SEE PC.SD-02

2 CONSTRUCTED WETLANDS (COMPLETED 2016)

2 FORDINGS (COMPLETED 2016)

CONSTRUCT PC.SB3 SEDIMENT BASIN AT STA 1+050 SEE PC.SD-03

REMOVE VEGETATION & RE-GRADE CHANNEL (COMPETED 2016) 0+010 TO 1+614

WIGNELL DRAIN

PC-CS-001 ConcBox 2570x3130

PC-CS-002 ConcBox 2370x1520

PC-CS-003 1500mmø ConcPipe

PC-CS-004 ConcBox Open Bottom

PC-CS-005 ConcBox 1800x1200

PC-CS-006 600mmø HDPE-2W

PC-CS-007 750mmø PVCO (TO BE RE-LOCATED)

PC-CS-008 600mmø CSP

600mmø PVC (TO BE REMOVED)

CSP-100 Pipe Arch Multiplate 1070

PC-F-001 Fording#1

PC-F-002 Fording#2

WORK ZONE SWITCHES TO NORTH AND WEST SIDES AT 1+952

PORT COLBORNE DRAIN ORIGINAL BENCHMARK at 0+000
N 4749829.167
E 644868.665
E 177.704

OUTLETS TO WIGNELL DRAIN

SNIDER ROAD
CHIPPAWA ROAD
SECOND CONCESSION ROAD
BABION ROAD
CARL ROAD
HWY #3
ELIZABETH STREET
LORRAINE ROAD
WEAVER ROAD
KILLALY STREET EAST
DURHAM STREET

0 500m 1000m

NOTES:

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   - AS CONSTRUCTED SURVEY BY CofPC, 2016 STATION 0+000–1+940
   - SUPPLEMENTARY SURVEY BY CofPC, 2018
   - WEIBE ENGINEERING SURVEY, 2008

BENCHMARK INFORMATION:

- 0+000 PORT COLBORNE DRAIN LOCATED ON BOX CULVERT (PC–CS–001)
- 0+000 PORT COLBORNE BRANCH DRAIN #1 LOCATED ON NW CORNER OF BOX CULVERT (PC–CS–004)

PLAN VIEW LEGEND:

- DRAINAGE AREA BOUNDARY
- DRAIN CENTERLINE
- PROPOSED DRAIN CENTERLINE
- 0+000 DRAIN CHAINAGE
- ABREAVEATED ROLL NUMBERS
- X.SD-02 SITE SPECIFIC DETAIL I.D.
- BOUNDARY OF AREA CAPTURED IN SITE DETAIL
- DRAINAGE WORK PROPOSED
- *DRAINAGE WORK COMPLETED – TO BE ASSESSED*

LICENSED PROFESSIONAL ENGINEER
PAUL C MARSH
2021-04-16
PROVINCE OF ONTARIO

NO.	REVISION DESCRIPTION	DATE
2	ISSUED FOR REPORT	APRIL 16, 2020
1	ISSUED FOR BASELINE REPORT	MAY 2019

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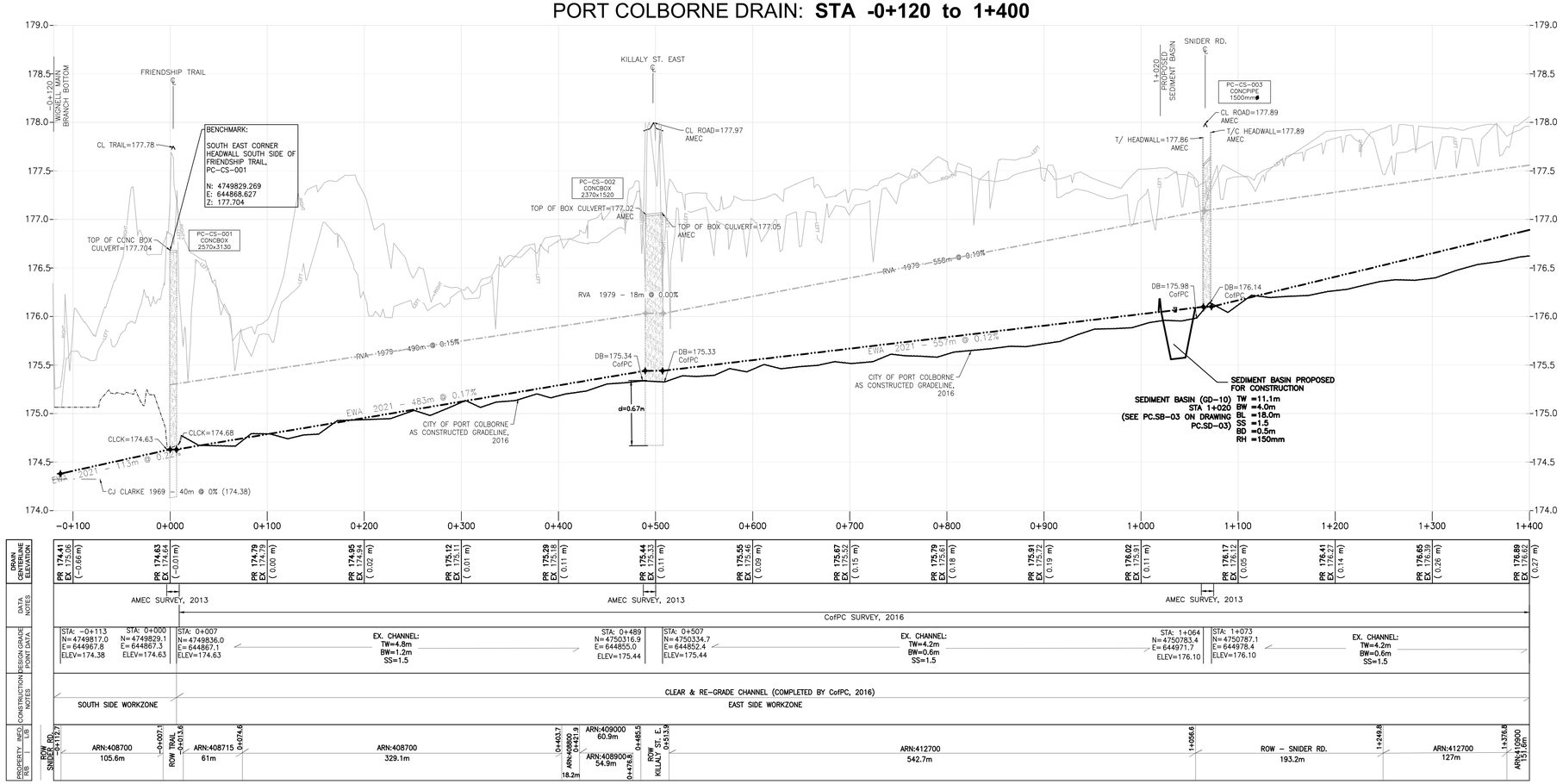
TJF	PCM	–	PC.PLAN
DESIGNED BY :	DATE :	SCALE :	
PCM	16–APRIL–21	F.T.P.	

PORT COLBORNE DRAIN: **STA -0+120 to 1+400**



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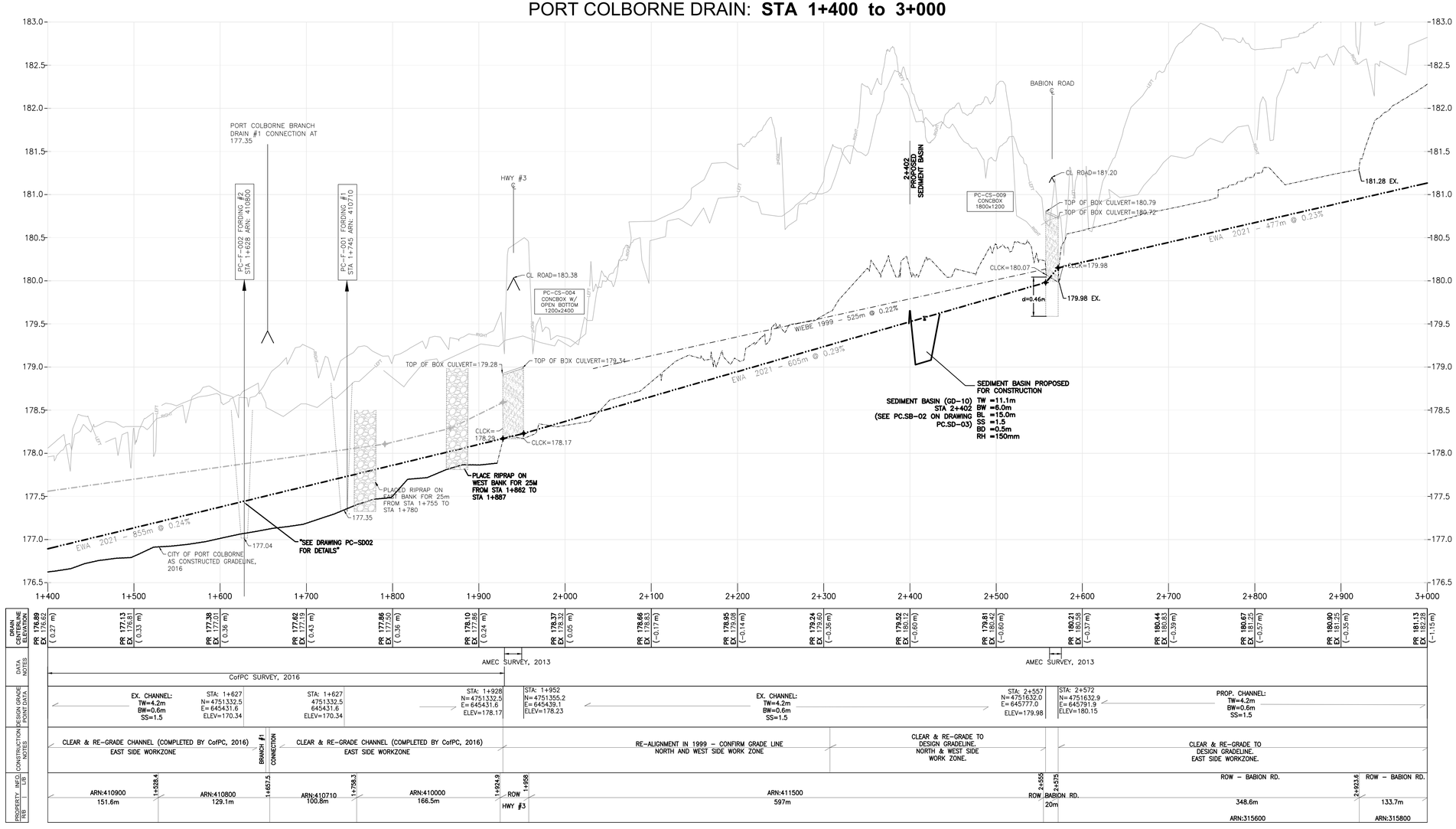
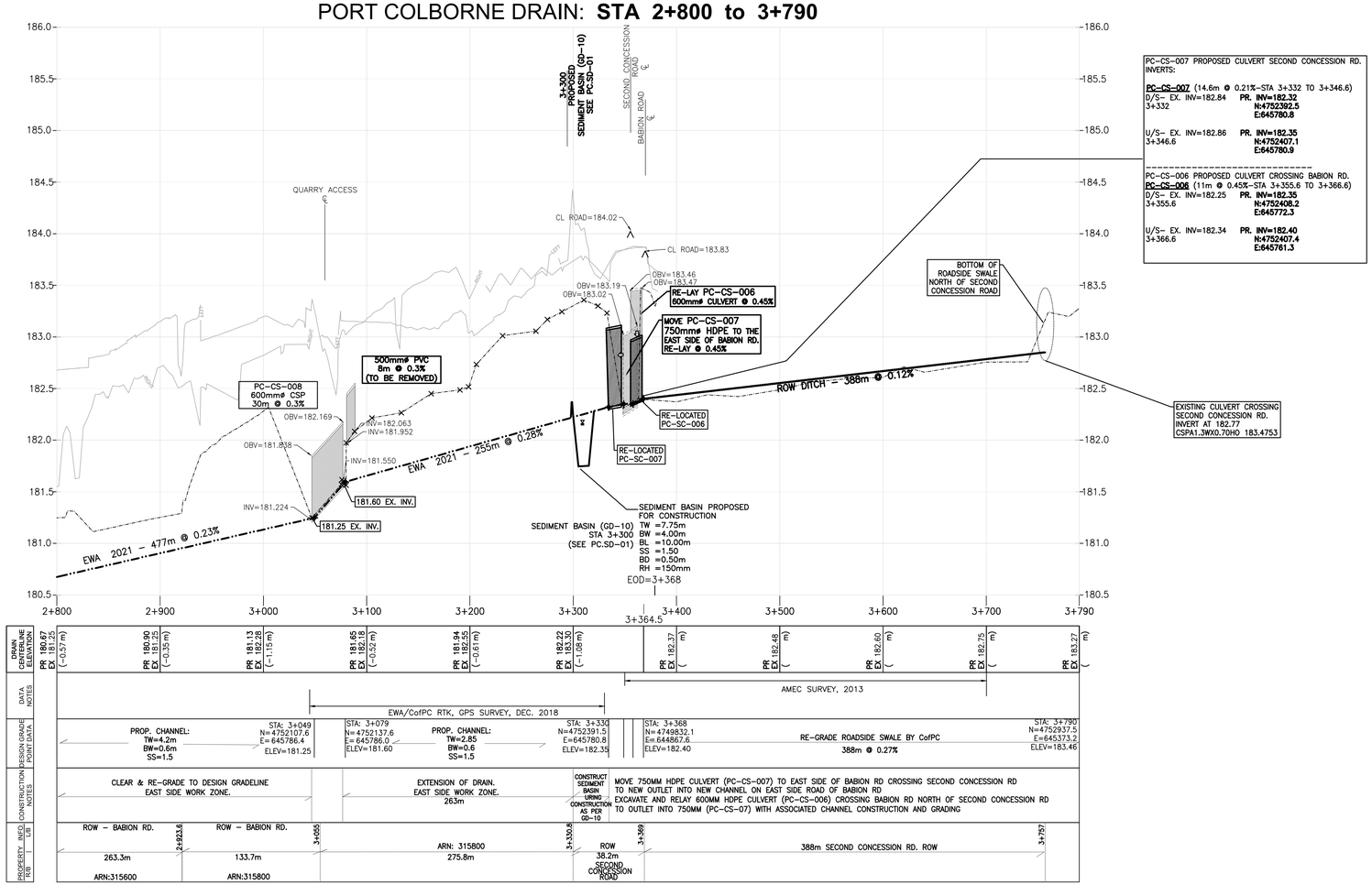
PORT COLBORNE DRAIN: **STA 1+400 to 3+000**



| | | |

PORT COLBORNE DRAIN: **STA 2+800 to 3+790**



PC-CS-007 PROPOSED CULVERT SECOND CONCESSION RD. INVERTS:

PC-CS-007 (14.6m @ 0.21%-STA 3+332 TO 3+346.6)

D/S- EX. INV=182.84 **PR. INV=182.32**
3+332 **N:4752392.5**
E:645780.8

U/S- EX. INV=182.86 **PR. INV=182.35**
3+346.6 **N:4752407.1**
E:645780.9

PC-CS-006 PROPOSED CULVERT CROSSING BABION RD.

PC-CS-006 (11m @ 0.45%-STA 3+355.6 TO 3+366.6)

D/S- EX. INV=182.25 **PR. INV=182.35**
3+355.6 **N:4752408.2**
E:645772.3

U/S- EX. INV=182.34 **PR. INV=182.40**
3+366.6 **N:4752407.4**
E:645761.3

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SPATIAL DATA:

DTM DATA FROM NIAGARA PENINSULA CONSERVATION AUTHORITY

- HORIZONTAL DATUM: UTM NAD83-CSRS ZONE 17N
- VERTICAL DATUM: CGVD28-1978
- ACCURACY: ABSOLUTE HORIZONTAL AND VERTICAL POSITIONAL ACCURACIES OF ±0.5m

LEGEND

	EXISTING DITCH BOTTOM (NPCA DEM DATA)
	EXISTING DITCH BOTTOM (SURVEYED)
	HISTORICAL GRADELINE
	PROPOSED DRAIN GRADELINE-EWA, 2021
LEFT	LEFT BANK
RIGHT	RIGHT BANK
	EXISTING DRAIN SECTION
	EXISTING STRUCTURE DETAILS
	ASSUMED EXISTING STRUCTURE DETAILS
OBV=175.00	EXISTING DRAIN ELEVATION
175.00 PR.	PROPOSED DRAIN CENTERLINE ELEVATION
175.00 EX.	PROPOSED DRAIN ELEVATION (WHERE MATCHES EXISTING ELEVATION)
	DATA POINT FROM HISTORICAL DESIGN GRADELINE RVA, 1979

NO.	REVISION DESCRIPTION	DATE
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PORT COLBORNE MUNICIPAL DRAIN
DRAIN PROFILE
STA 2+800 to 3+790

LICENSED PROFESSIONAL ENGINEER
PAUL C MARSH
2021-04-16
PROVINCE OF ONTARIO

THIS DRAWING IS PREPARED FOR PRINTING ON 610mm x 914mm PAPER FOR 1:2500 SCALE.
AN EXPORT OF DESIGN POINTS IN NORTHING, EASTING AND ELEVATIONS IS AVAILABLE ON REQUEST.

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www.ewaeng.com

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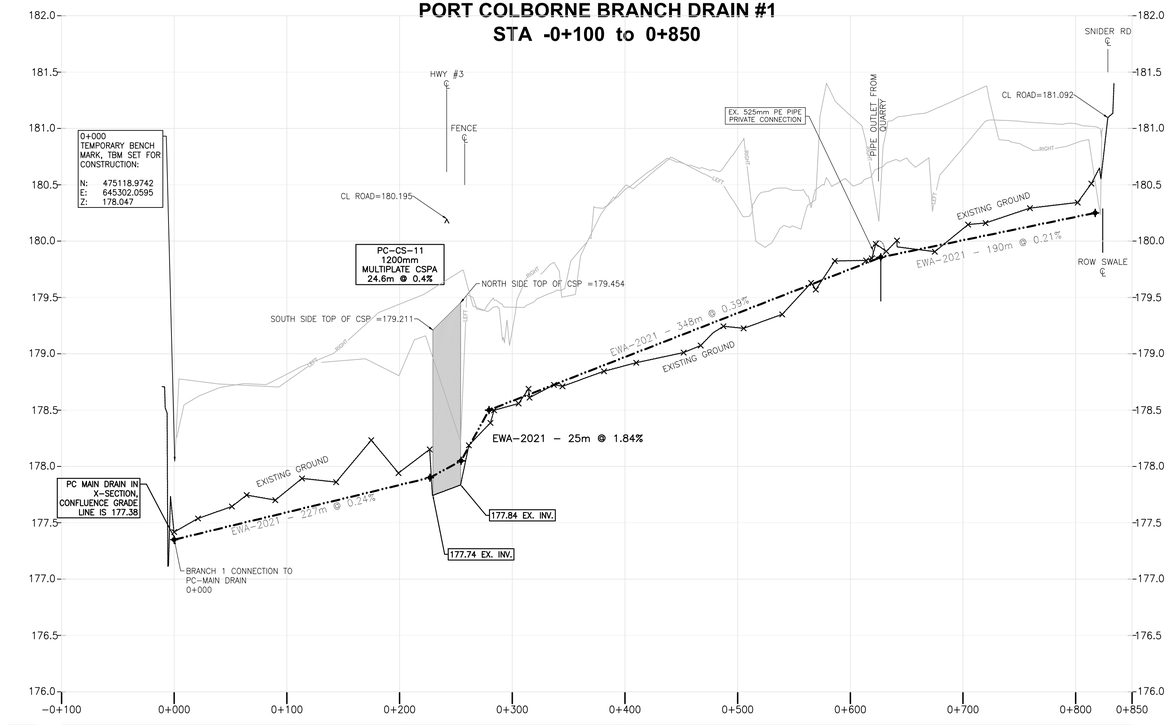
DESIGNED BY :	DATE :	SCALE :	
PCM	16-APRIL-21	1:2500	

PORT COLBORNE BRANCH DRAIN #1
STA -0+100 to 0+850



DRAIN CENTERLINE ELEVATION	PR / EX (m)	PR 177.35 EX. 177.52 (-0.17 m)	PR 177.59 EX. 177.78 (-0.19 m)	PR 177.63 EX. 177.85 (-0.21 m)	PR 178.58 EX. 178.52 (0.06 m)	PR 178.97 EX. 179.02 (-0.05 m)	PR 179.36 EX. 179.22 (0.14 m)	PR 179.75 EX. 179.96 (-0.21 m)	PR 180.01 EX. 180.11 (-0.10 m)	PR 180.21 EX. 180.34 (-0.13 m)	PR / EX (m)
DATA NOTES	EWA/CofPC RTK-GPS SURVEY, DEC. 2018/ JAN.2021/ AMEC SURVEY, 2013										
DESIGN GRADE POINT DATA	STA: 0+000 N=4751118.5 E=645305.2 ELEV=177.35	EX. CHANNEL: TW=4.1m BW=0.8m SS=1.5	STA: 0+227 N=4751345.4 E=645304.3 ELEV=177.90	STA: 0+279 N=4751374.2 E=645303.2 ELEV=178.50	STA: 0+255 N=4751392.4 E=645313.6 ELEV=178.05	EX. CHANNEL: TW=4.2m BW=0.6m SS=1.5	STA: 0+627 N=4751620.8 E=645163.4 ELEV=179.86	EX. CHANNEL: TW=3.6m BW=0.6m SS=1.5	STA: 0+817 N=4751631.7 E=644971.7 ELEV=180.25		
CONSTRUCTION NOTES	CLEAR AND RE-GRADE TO PROPOSED GRADE LINE EAST SIDE WORK ZONE	EX. CHANNEL TO REMAIN AS-IS NORTH AND EAST SIDE FUTURE WORK ZONE.	CLEAR VEGETATION & RE-GRADE TO DESIGN GRADE LINE. NORTH SIDE WORK ZONE.								
PROPERTY INFO R/B | L/B	ARN:410800	0+224.7	ROW	0+259.6	ARN:411500	0+512.7	ARN:411000	0+570.6	ARN:411500	0+818.4	0+823.9
	224.7m		HWY#3		253.1m		57.9m		247.8m		5.5m ROW-SNIDER ROAD
	ARN:410710										

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LEGEND

	EXISTING DITCH BOTTOM (NPCA DEM DATA)
	EXISTING DITCH BOTTOM (SURVEYED)
	HISTORICAL GRADELINE
	PROPOSED DRAIN GRADELINE-EWA, 2021
LEFT	LEFT BANK
RIGHT	RIGHT BANK
	EXISTING DRAIN SECTION
	EXISTING STRUCTURE DETAILS
	ASSUMED EXISTING STRUCTURE DETAILS
OBV=175.00	EXISTING DRAIN ELEVATION
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1	ISSUED FOR BASELINE REPORT	MAY 2019

PORT COLBORNE BRANCH DRAIN #1 PROFILE
STA 0+000 to 0+824

LICENSED PROFESSIONAL ENGINEER
PAUL C MARSH
2021-04-16
PROVINCE OF ONTARIO

THIS PAGE IS FORMATTED FOR PRINTING ON AN ARCH D SIZE PAGE 610mm x 914mm.

EWA Engineering Inc.
647.400.2824 www.ewaeng.com

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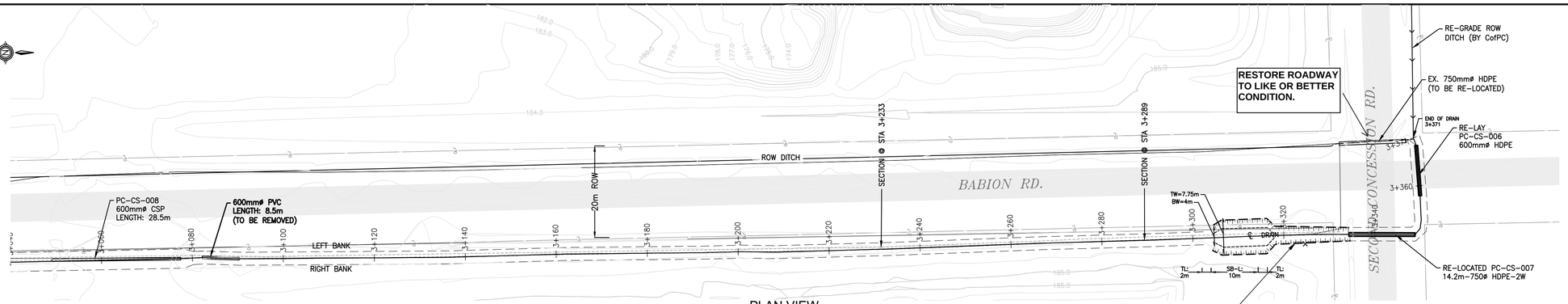
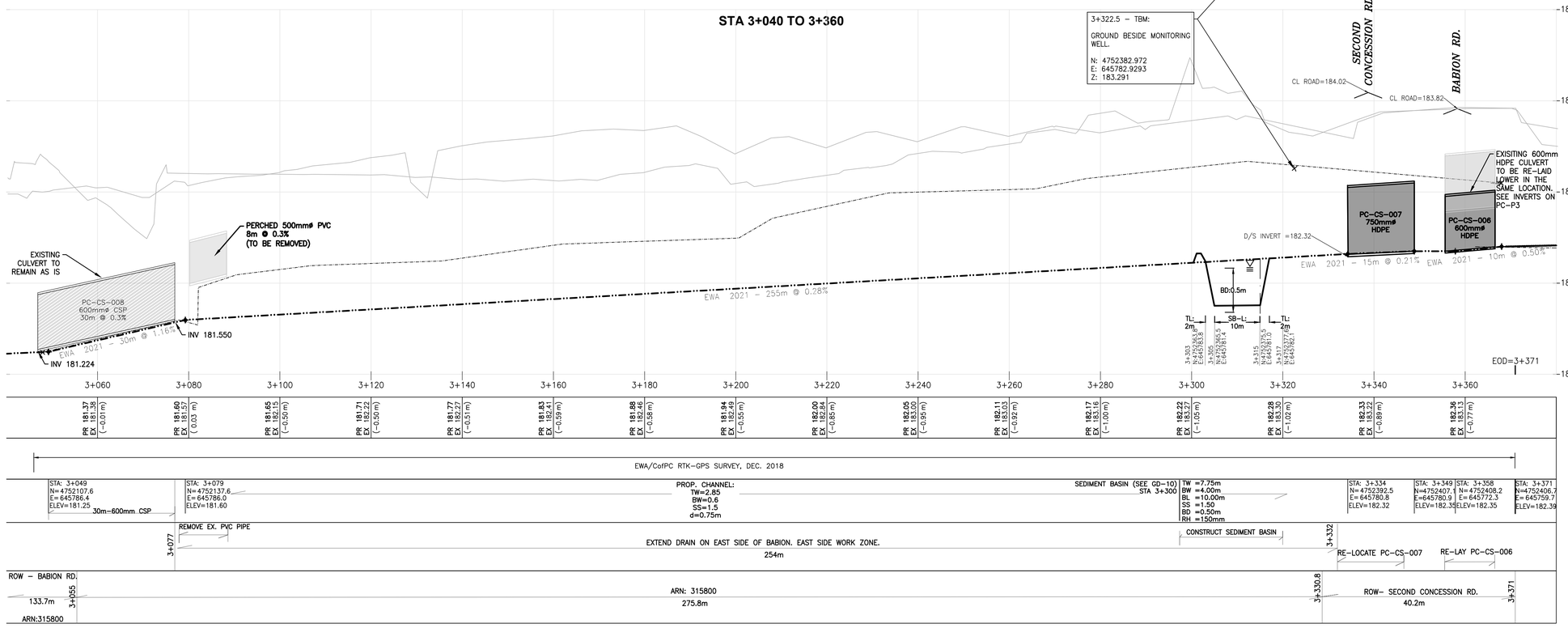
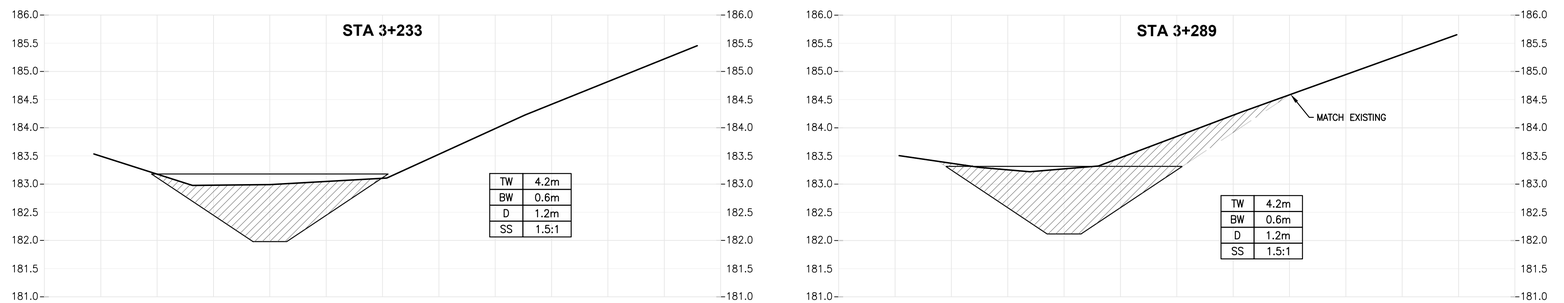
TJF	PCM	189999	PC.P4
DESIGNED BY :	DATE :	SCALE :	
PCM	16-APRIL-21	1:2500	



PLAN VIEW
SCALE 1:500



PROFILE VIEW
SCALE H=1:500, V=1:25



SECTION VIEWS
SCALE 1:50

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   - SUPPLEMENTARY SURVEY BY CofPC, 2018
   - WIEBE ENGINEERING SURVEY, 2008
   - WETLAND SURVEY BY CofPC RTK GPS, 2020
   - FORDING SURVEY BY CofPC RTK GPS, 2020
   - BRANCH #1 OUTLET SURVEY BY CofPC RTK GPS, 2020

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LEGEND

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	EXISTING DITCH BOTTOM (SURVEYED)
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	PROPOSED DRAIN GRADELINE-EWA, 2021
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	ASSUMED EXISTING STRUCTURE DETAILS
OBV=175.00	EXISTING DRAIN ELEVATION
175.00 PR.	PROPOSED DRAIN CENTERLINE ELEVATION
175.00 EX.	PROPOSED DRAIN ELEVATION (WHERE MATCHES EXISTING ELEVATION)
	DATA POINT FROM HISTORICAL DESIGN GRADELINE RVA, 1979

NO.	REVISION DESCRIPTION	DATE
2	ISSUED FOR REPORT	APRIL 16, 2021
1	ISSUED FOR BASELINE REPORT	MAY 2019

LICENSED PROFESSIONAL ENGINEER
PAUL C MARSH
2021-04-16
PROVINCE OF ONTARIO

PORT COLBORNE MUNICIPAL DRAIN
PLAN & PROFILE - SPECIFIC DETAIL
STA 3+040 to 3+371 END OF DRAIN

THIS DRAWING IS PREPARED FOR PRINTING ON 610mm x 914mm PAPER FOR 1:2500 SCALE.
AN EXPORT OF DESIGN POINTS IN NORTHING, EASTING AND ELEVATIONS IS AVAILABLE ON REQUEST.

EWA Engineering Inc.
647.400.2824
www.ewaeng.com

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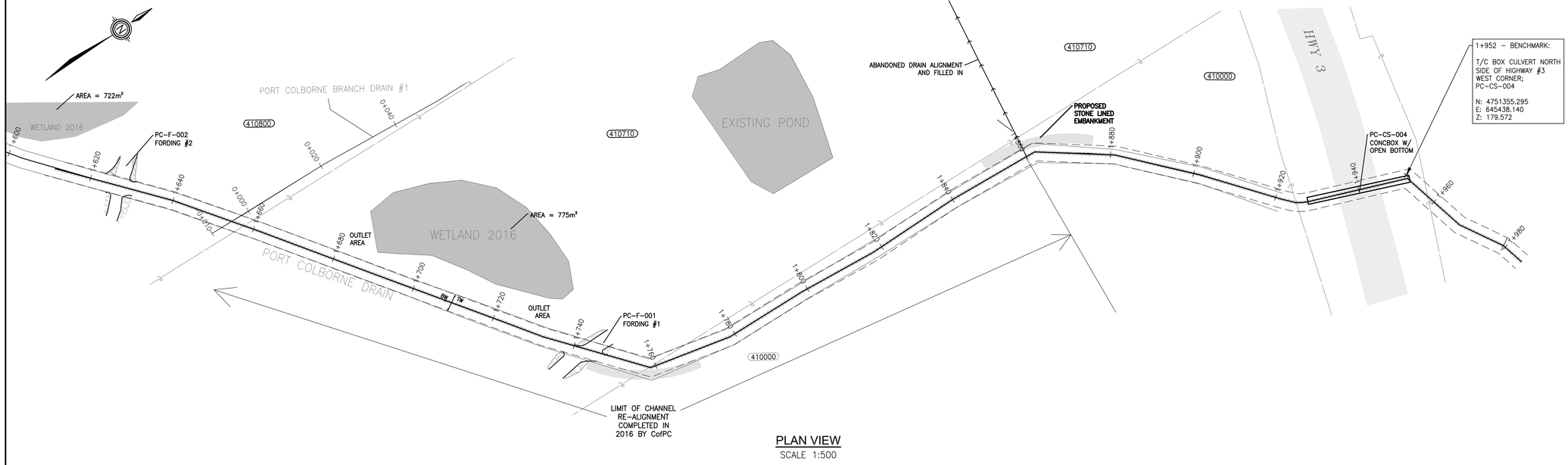
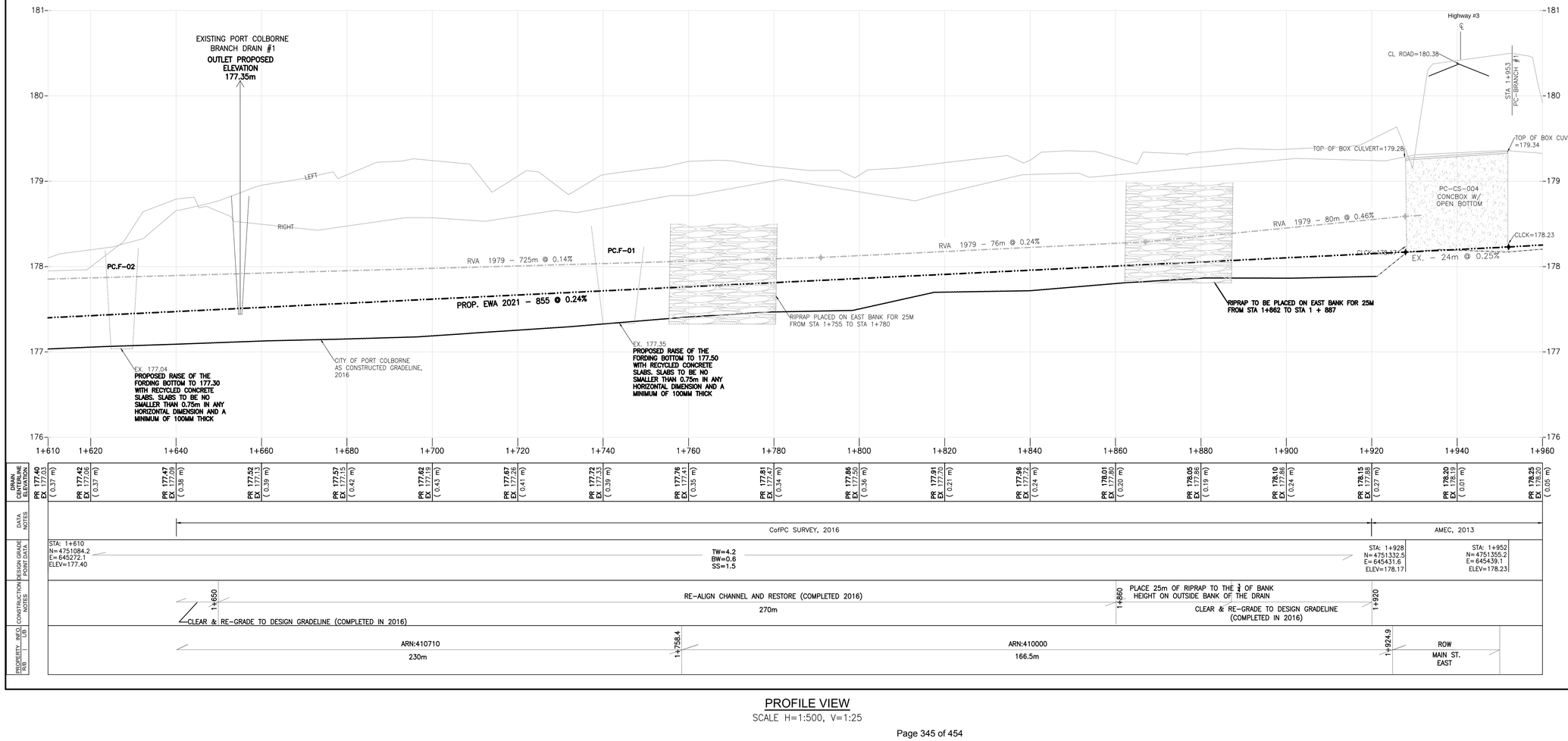
TJF	PCM	189999	PC.SD-01
DESIGNED BY :	DATE :	SCALE :	
PCM	16-APRIL-21	1:2500	



PLAN VIEW
SCALE 1:500



PROFILE VIEW
SCALE H=1:500, V=1:25

NOTES:

1. DIMENSIONS ARE IN METRES UNLESS OTHERWISE NOTED
2. CATCHMENT BOUNDARIES ARE BASED ON THE NPCA DIGITAL ELEVATION MODEL (DEM) 2010
3. SPECIFIC POINTS IN THE SURFACE ARE BASED ON THE FOLLOWING SURVEYS:
   - DRAIN CROSSINGS & SPOT CHANNELS AMEC SURVEY, 2013
   - AS CONSTRUCTED SURVEY BY CofPC, 2016 STATION 0+000-1+940
   - SUPPLEMENTARY SURVEY BY CofPC, 2018
   - WIEBE ENGINEERING SURVEY, 2008
   - WETLAND SURVEY BY CofPC RTK GPS, 2020
   - FORDING SURVEY BY CofPC RTK GPS, 2020
   - BRANCH #1 OUTLET SURVEY BY CofPC RTK GPS, 2020

THE POSITION OF POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND, WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED.

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SPATIAL DATA:

DTM DATA FROM NIAGARA PENINSULA CONSERVATION AUTHORITY

- HORIZONTAL DATUM: UTM NAD83-CSRS ZONE 17N
- VERTICAL DATUM: CGVD28-1978
- ACCURACY: ABSOLUTE HORIZONTAL AND VERTICAL POSITIONAL ACCURACIES OF ±0.5m

LEGEND

	EXISTING DITCH BOTTOM (NPCA DEM DATA)
	EXISTING DITCH BOTTOM (SURVEYED)
	HISTORICAL GRADELINE
	PROPOSED DRAIN GRADELINE-EWA, 2021
LEFT	LEFT BANK
RIGHT	RIGHT BANK
	EXISTING DRAIN SECTION
	EXISTING STRUCTURE DETAILS
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OBV=175.00	EXISTING DRAIN ELEVATION
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LICENSED PROFESSIONAL ENGINEER
PAUL C MARSH
2021-04-16
PROVINCE OF ONTARIO

PORT COLBORNE MUNICIPAL DRAIN
PLAN & PROFILE – SPECIFIC DETAIL
STA 1+640 to 1+960

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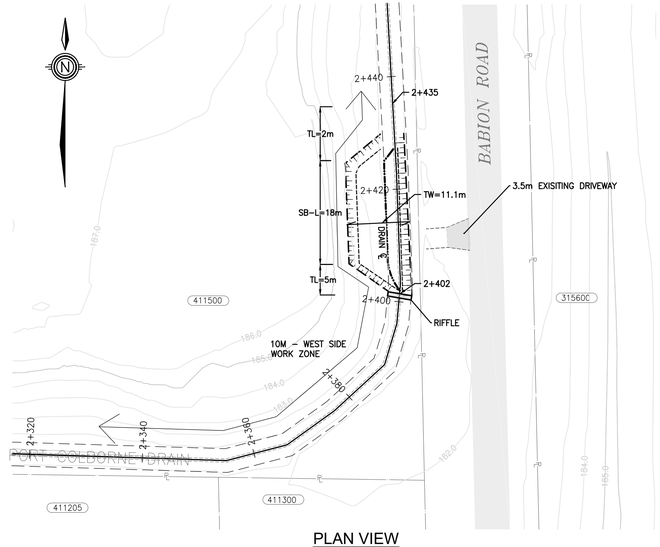
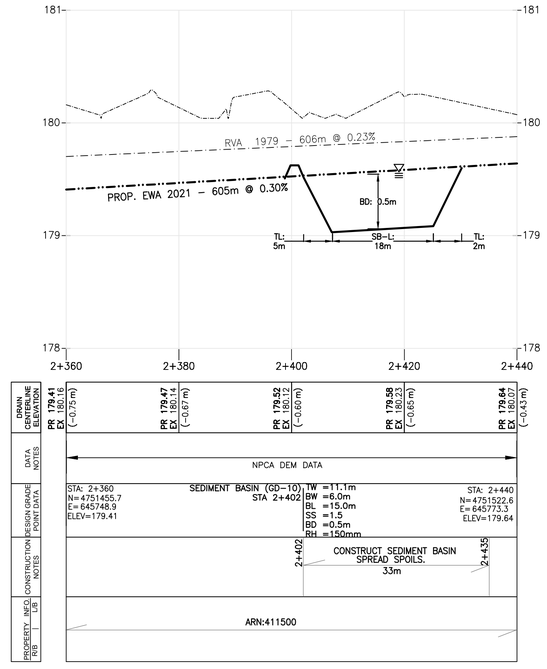
DESIGNED BY :	DATE :	SCALE :	
PCM	16-APRIL-21		

PC.SB-02

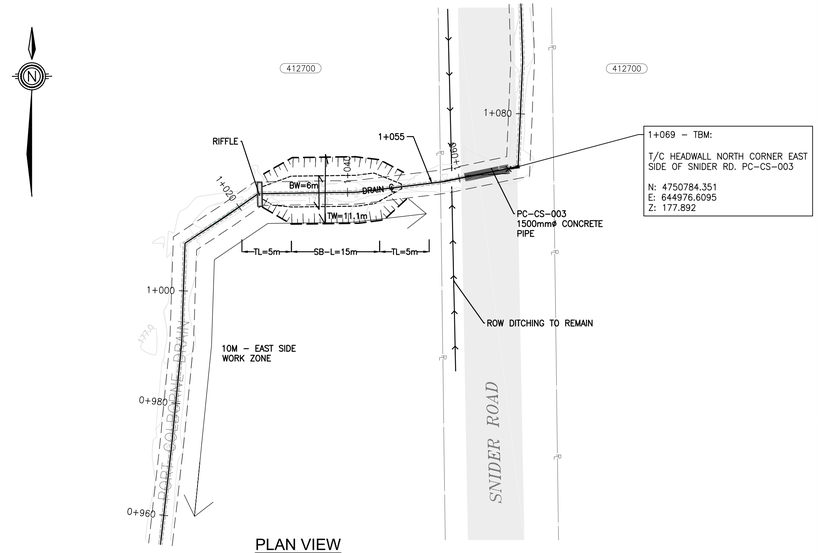


PLAN VIEW
SCALE 1:500

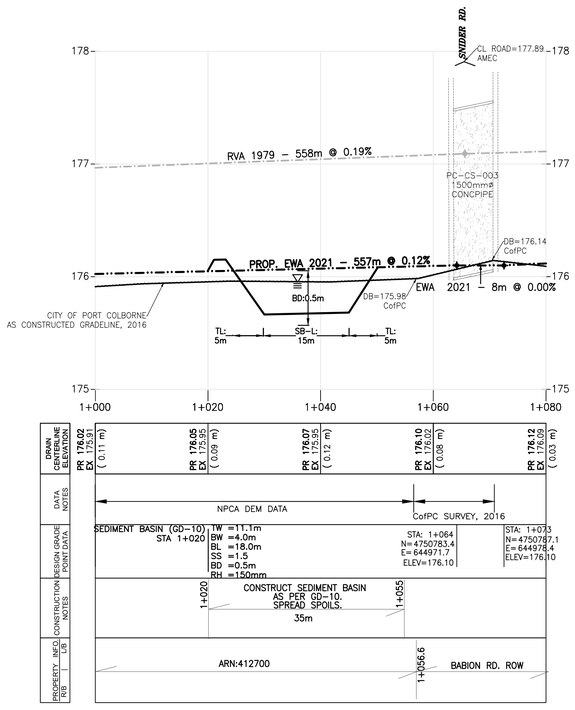


PROFILE VIEW
SCALE H=1:500, V=1:25

PC.SB-03



PLAN VIEW
SCALE 1:500



PROFILE VIEW
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	EXISTING DITCH BOTTOM (SURVEYED)
	HISTORICAL GRADELINE
	PROPOSED DRAIN GRADELINE–EWA, 2021
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RIGHT	RIGHT BANK
	EXISTING DRAIN SECTION
	EXISTING STRUCTURE DETAILS
	ASSUMED EXISTING STRUCTURE DETAILS
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LICENSED PROFESSIONAL ENGINEER
PAUL C MARSH
2021-04-16
PROVINCE OF ONTARIO

PORT COLBORNE MUNICIPAL DRAIN

SEDIMENT BASINS – SPECIFIC DETAIL

PC.SB–02 & PC.SB–03

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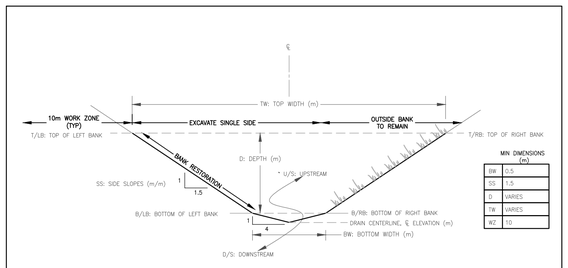
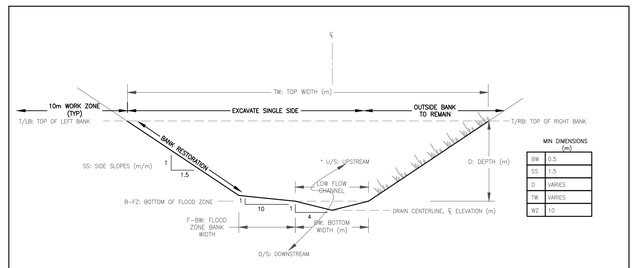
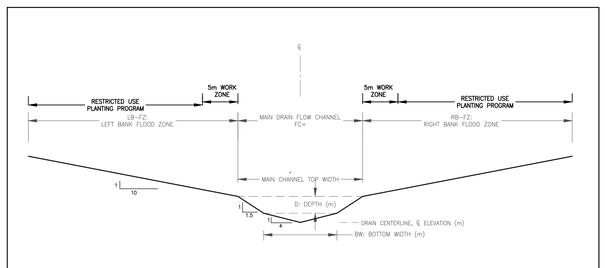
DESIGNED BY :	DATE :	SCALE :	
PCM	16–APRIL–21		



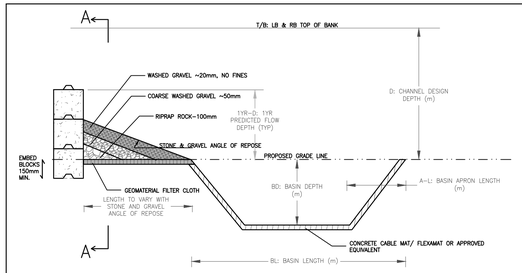
GD-01
DRAIN CHANNEL DIMENSIONS
NOT TO SCALE



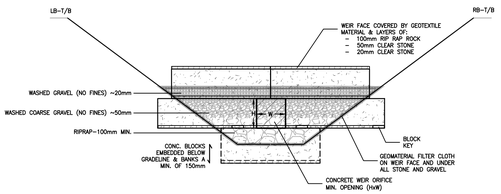
GD-02
FLOOD ZONE DRAIN CHANNEL DIMENSIONS
NOT TO SCALE



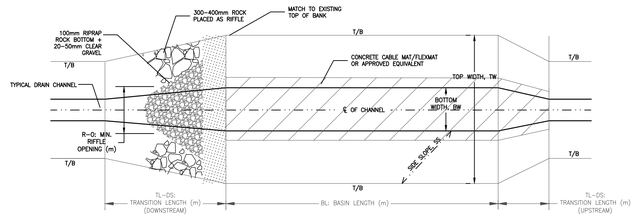
GD-03
NATURAL DRAIN CHANNEL DIMENSIONS
NOT TO SCALE



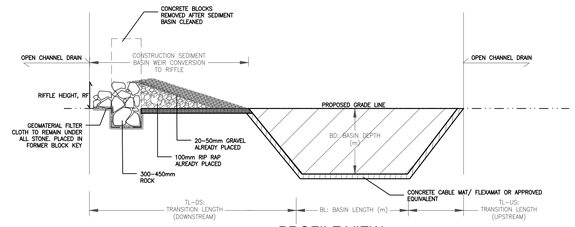
PROFILE VIEW
SEDIMENT BASIN - DURING CONSTRUCTION



SECTION A-A
SEDIMENT BASIN - DURING CONSTRUCTION

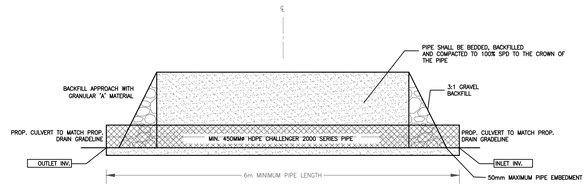


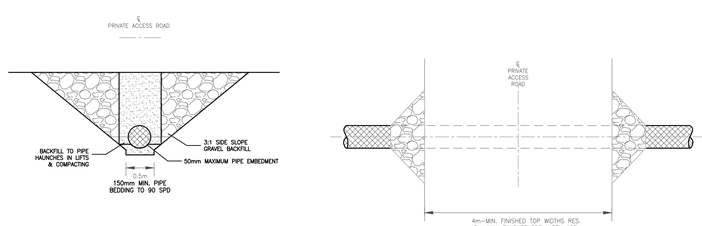
PLAN VIEW
SEDIMENT BASIN - POST-CONSTRUCTION



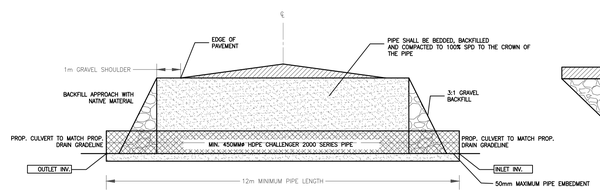
PROFILE VIEW
SEDIMENT BASIN - POST-CONSTRUCTION

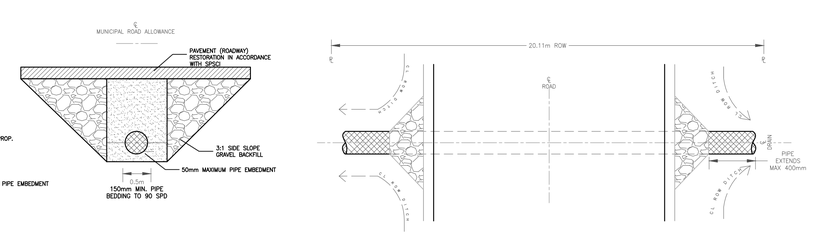
GD-10
SEDIMENT BASIN
NOT TO SCALE



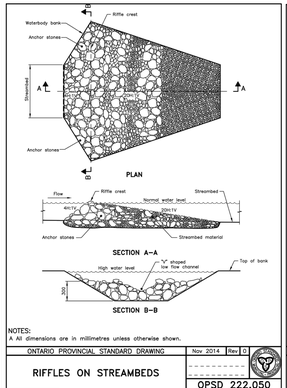


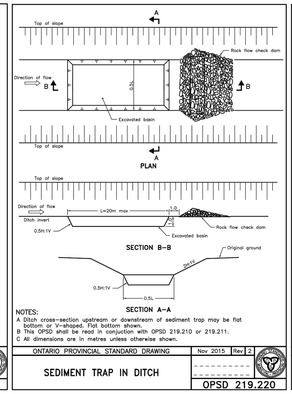
GD-05
TYPICAL PRIVATE ACCESS ROAD CIRCULAR CULVERT INSTALLATION
NOT TO SCALE

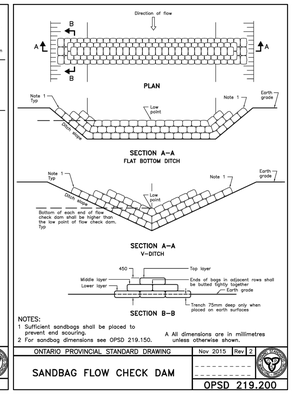


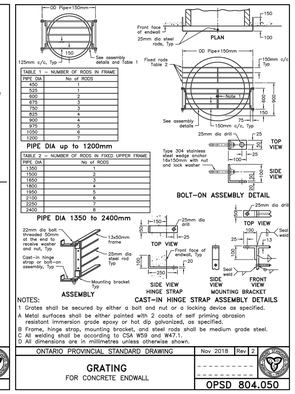


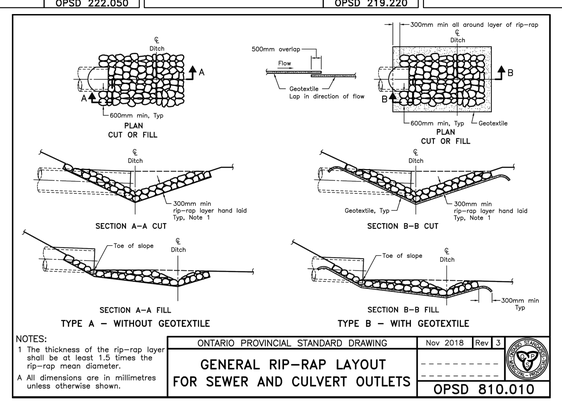
GD-06
TYPICAL MUNICIPAL ROW CULVERT INSTALLATION
NOT TO SCALE











PORT COLBORNE MUNICIPAL DRAIN GENERAL DETAILS

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TJF	PCM	–	PC.GD
DESIGNED BY :	DATE :	SCALE :	
PCM	16-APRIL-21	N/A	

CITY OF PORT COLBORNE DRAINAGE CONTACTS:

APPOINTED DRAINAGE ENGINEER:
MR. PAUL C. MARSH, P.ENG.
EWA ENGINEERING INC.
84 MAIN STREET, UNIONVILLE, ON L3R 2E7
PCMARSH@EWAENG.COM
647.400.2824

DRAINAGE SUPERINTENDENT:
ALANA VANDER VEEN
DRAINAGE SUPERINTENDENT
1 KILLALY STREET WEST, PORT COLBORNE, ONTARIO L3K 6H1
TEL: 905-835-2901 EXT. 291
ALANA.VANDERVEEN@PORTCOLBORNE.CA

DEPARTMENT OF FISHERIES AND OCEANS:
867 LAKESHORE RD
BURLINGTON ON L7S 1A1
TELEPHONE: 905-336-4999
EMAIL: INFO@DFO-MPO.GC.CA

MINISTRY OF NATURAL RESOURCES AND FORESTRY
ELIZABETH REIMER
ADMINISTRATION BUILDING
4890 VICTORIA AVE N
VINELAND STATION, ON L0R 2E0
905-562-4147

NIAGARA PARKS CONSERVATION AUTHORITY, NPCA
DIRECTOR, WATERSHED MANAGEMENT
NIAGARA PENINSULA CONSERVATION AUTHORITY
250 THOROLD ROAD WEST, 3RD FLOOR
WELLAND, ON, L3C 3W2
P: 905-788-3135 EXT. 229
F: 905-788-1121
WWW.NPCA.CA

GENERAL NOTES:

THE CITY SHALL ARRANGE A PRE-CONSTRUCTION MEETING PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.

ALL CONSTRUCTION MATERIALS AND METHODOLOGIES SHALL BE IN ACCORDANCE WITH:

- SPECIAL PROVISIONS - SUPPLEMENTARY GENERAL CONDITIONS (SPSGC)
- SPECIAL PROVISIONS - SUPPLEMENTARY CONTRACT ITEMS (SPSCI)
- NIAGARA PENINSULA STANDARD CONTRACT DOCUMENTS (NPSCD)
- ONTARIO PROVINCIAL STANDARDS FOR ROADS & PUBLIC WORKS (OPSS & OPSD)

AND ANY OTHER APPLICABLE STANDARDS THAT MAY APPLY.

IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT THESE MATERIALS AND METHODOLOGIES ARE STRICTLY ADHERED TO.

THE CITY OF PORT COLBORNE AND STAFF DISCLAIMS ANY LIABILITY AS TO THE CURRENT ACCURACY OF THE DRAWINGS PROVIDED. IN USING THE INFORMATION SHOWN OR CONTAINED ON THESE DRAWINGS, THE USER AGREES IMPLICITLY AND EXPLICITLY THAT THE CITY OF PORT COLBORNE AND STAFF SHALL NOT BE LIABLE FOR SPECIAL, INCIDENTAL, CONSEQUENTIAL OR OTHER DAMAGES ARISING FOR THE USE OF SUCH INFORMATION. THE USER SHALL DO AN IN-FIELD VERIFICATION OF THE INFORMATION SHOWN ON OR CONTAINED WITHIN THESE DRAWINGS.

IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN ANY APPROVALS WHICH MAY BE REQUIRED PRIOR TO THE COMMENCEMENT OF CONSTRUCTION UNLESS DIRECTED OTHERWISE BY THE CONTRACT ADMINISTRATOR.

DIMENSIONING SHALL GOVERN OVER SCALED DIMENSIONS.

ANY WORKS COMPLETED IN SET-BACK AREAS, AND DISCHARGE TO CREEKS, STREAMS AND WATERCOURSES MAY BE SUBJECT TO FEDERAL AND PROVINCIAL APPROVALS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN SUCH APPROVALS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION IF REQUIRED FOR THE PROJECT.

PUBLIC UTILITIES:

THE CONTRACTOR SHALL NOTE THAT PUBLIC UTILITIES SHALL INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING, HYDRO, GAS, BELL, CABLE AND FIBRE OPTIC.

IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN THE NECESSARY CLEARANCES FROM SAID PUBLIC UTILITIES WHICH MAY BE IN DIRECT CONFLICT WITH THIS PROJECT.

ANY WORK REQUIRING EITHER RELOCATION/LOWERING OF SAID PUBLIC UTILITY SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT THE UTILITY, AND ANY WORKS WILL BE REQUIRED TO BE COMPLETE PRIOR TO THE INSTALLATION OF THE WORK.

ENVIRONMENTAL COMPLIANCE:

THE CONTRACTOR SHALL PREPARE AN ENVIRONMENTAL MANAGEMENT PLAN (EMP) PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITIES. THE EMP WILL ADDRESS THE FOLLOWING MAJOR SUBJECT AREAS:

- EROSION AND SEDIMENT CONTROL DURING CONSTRUCTION
- TREE PROTECTION & REMOVAL (SAR - BUTTERNUT)
- MINIMIZE AND/OR MITIGATION MEASURES FOR CONSTRUCTION IMPACTS ON SPECIES AND SPECIES HABITAT INCLUDING STOPPING CONSTRUCTION PROCEDURES.
- AGENCY CONTACTS - IDENTIFY RESOURCES & CONTACT INFO.

THE CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH SPECIES AT RISK (SAR) LEGISLATION. BY LAW, YOU MUST IMMEDIATELY:

- AVOID DRAINAGE WORK DURING REPRODUCTION AND REARING SEASONS
- PREVENT A SPECIES FROM ENTERING THE WORK AREA (E.G. PUTTING UP A FENCE)
- GIVE THE SPECIES ADEQUATE TIME TO LEAVE THE AREA, BEFORE STARTING WORK
- GET ADVICE/HELP BEFORE YOU MOVE IT
- PROTECT AREAS THAT ARE IMPORTANT TO THE SPECIES (E.G. SPAWNING AREAS)
- CONTROL EROSION AND SEDIMENT
- STABILIZE WATER BANKS IN AFFECTED AREAS

TURTLES:

- YOU CANNOT REDUCE THE AMOUNT OF WATER IN A DRAIN OR DITCH WHERE A TURTLE IS HIBERNATING.

ABREVATIONS USED:

- BD - SEDIMENT BASIN BOTTOM DEPTH (FROM GRADE LINE)
- BL - SEDIMENT BASIN LENGTH
- BOD - BEGINNING OF DRAIN
- BW - BOTTOM WIDTH OF CHANNEL
- CL - CENTRELINE OF ROAD, CHANNEL
- CLCK - CENTRELINE OF CREEK OR CHANNEL
- D - DEPTH
- D/S - DOWNSTREAM
- E - EASTING
- ELEV - ELEVATION
- EOD - END OF DRAIN
- EX. - EXISTING
- INV - INVERT
- LB - LEFT BANK, LOOKING UPSTREAM
- N - NORTHING
- PL - PROPERTY LINE
- PR. - PROPOSED
- RB - RIGHT BANK, LOOKING UPSTREAM
- RH - RIFFLE HEIGHT
- ROW - RIGHT OF WAY
- SB - SEDIMENT BASIN
- SS - SIDE SLOPE; RUN(m)/RISE, WHERE RISE=1m
- T/B - TOP OF BANK
- T/C - TOP OF CONCRETE
- TL - TRANSITION LENGTH
- TW - TOP WIDTH OF CHANNEL
- TYP - TYPICAL
- U/S - UPSTREAM
- WZ - WORK ZONE

OPSD REFERENCED DETAILS:

- OPSD 219.200
- OPSD 219.220
- OPSD 222.050
- OPSD 400.020
- OPSD 403.010
- OPSD 705.040
- OPSD 803.010

PORT COLBORNE MUNICIPAL DRAIN CONSTRUCTION NOTES

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TJF	PCM	-	PC.CN
DESIGNED BY :	DATE :	SCALE :	
PCM	10-FEB-21	N/A	

Appendix B:

Cost Estimates & Assessment Tables

Port Colborne Municipal Drain

City of Port Colborne
Regional Municipality of Niagara

Section 78 Works under the Municipal Drainage Act.

Drainage Assessment	Costs

Cover page

Port Colborne Drain

Estimated Cost of Construction				
	Port Colborne Drain	$33,332.00		
	Port Colborne General Construction Costs	$8,278.52		
	Port Colborne Contingency	$12,458.10		
	Total - Estimated Cost of Construction			$54,068.62
Previous Construction				
	Port Colborne Channel Re-alignment by Rankin Construction - 2+580 to 3+045	$26,050.00		
	Port Colborne Channel Re-Alignment - 1+660 to 1+860	$9,442.50		
	Port Colborne Channel Re-Grading and Clearing - 0+010 to 1+500	$15,300.00		
	Fording #1; ARN = 410710 - 1+740 to 1+750	$710.00		
	Fording #2; ARN = 410800 - 1+630 to 1+640	$710.00		
	Total - Previous Construction			$52,212.50
Administration				
	Engineering	$167,486.89		
	Administration Cost Allocations	$10,723.47		
		$178,210.37		
Administration Costs allocated per Drain area				
	Port Colborne Branch Drain #1	$8,052.75	4.5%	14.812
	Port Colborne Drain	$170,157.61	95.5%	327.795
	Total - Administration Port Colborne Drain			$170,157.61
Drain Allowances				
	Port Colborne Drain	$939.00		
				$939.00
	Forecasted Total Drain Costs			$277,377.74

Assessment Schedule			
Benefit Assessment (Section 22)			
	Private Lands	$763.50	
	Total - Benefit Assessment (Section 22)		$763.50
Outlet Liability Assessment (Section 23)			
	Private Lands		
	Road Right of Way Lands	$225,489.15	
	Total - Outlet Liability Assessment (Section 23)		$225,489.15
Special Benefit Assessment (Section 24)			
	Port Colborne Drain	$5,600.09	
	Total - Special Benefit Assessment (Section 24)		$5,600.09
Special Assessments (Section 26)			
	City of Port Colborne	$40,448.80	
	MINISTRY OF TRANSPORTATION ONTARIO	$5,076.19	
	Total: Port Colborne Drain	$45,525.00	
	Total - Special Assessments (Section 26)		$45,525.00
	Forecasted Total Drain Assessments		$277,377.74

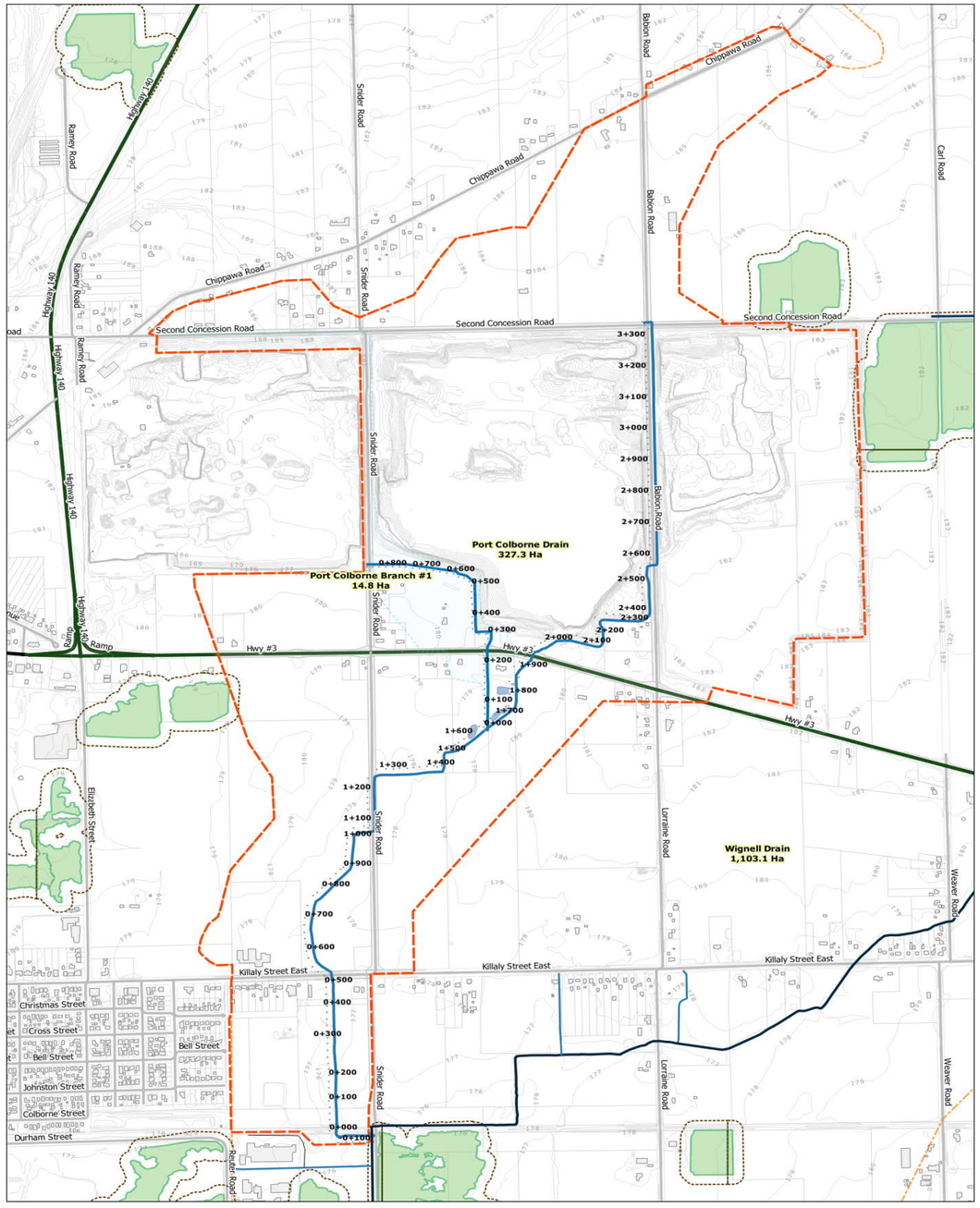
Port Colborne Branch Drain #1

Estimated Cost of Construction	$10,340.00	
Previous Construction	$0.00	
Administration	$8,052.75	
Drain Allowances	$277.62	
		$18,670.37

Benefit Assessment (Section 22)	$0.00		
Outlet Liability Assessment (Section 23)			
Private Lands	$3,096.49		
Road Right of Way Lands	$1,450.25		
		$4,546.73	
Special Benefit Assessment (Section 24)	$0.00		
Special Assessments (Section 26)			
City of Port Colborne	$7,008.46		
MINISTRY OF TRANSPORTATION ONTARIO	$7,115.18		
Total: Section 26		$14,123.64	
		$18,670.37	
			$296,048.11

Prepared by: Paul C. Marsh, P.Eng.

Dated:



Port Colborne Municipal Drain
City of Port Colborne
Regional Municipality of Niagara

Proposed Construction - Cost Estimate

Port Colborne Branch #1

Cost ID:	Drain	From STA	To STA	Work	Description	Linear, Each or Lump Sum Cost Type	Length	$/m	Qnty	/each	$	Notes
PC1-01	Port Colborne Branch Drain #1.	0+000	0+227	Clear and re-grade to design grade to outlet from MTO culvert crossing	Work from West Side. Spread spoil material adjacent to bank.	linear	227	$20.00			$4,540.00	
PC1-00	MTO	0+227	0+255	Existing Drain Crossing CS-100 CSPA 1070 crossing Highway #3	No work required.						$0.00	
PC1-02	Port Colborne Branch Drain #1.	0+255	0+627	Spot maintenance as required		linear	372	$5.00			$1,860.00	
PC1-03	Port Colborne Branch Drain #1.	0+627	0+824	Clear and re-grade to design grade from culvert quarry outlet to Snider Road ROW.		linear	197	$20.00			$3,940.00	
PC1-04	Port Colborne Branch Drain #1.			ROW North South Grading by others, (CofPC)							$0.00	Excluded from Drain. Work to be completed for ROW by CofPC.

SubTotal for: Port Colborne Branch #1 $10,340.00

Port Colborne Drain

Cost ID:	Drain	From STA	To STA	Work	Description	Linear, Each or Lump Sum Cost Type	Length	$/m	Qnty	/each	$	Notes
PC-00	Port Colborne Drain		3364.5	Regrade the North Side of Second Concession Rd. Ditch to drain to the East into the re-laid culvert crossing Babion Rd.	This work is not part of the drain and excluded from the cost estimate. Work is the responsibility of the City of Port Colborne as part of the road funding program.		388				$0.00	Excluded from Drain. Work to be completed for ROW by CofPC.
PC-01	Port Colborne Drain	3+364.5	3+350	Re-lay existing 600mm HDPE double wall culvert lower and to drain to the East.		Each	14.5		1	$ 2,500.00	$2,500.00	
PC-02	Port Colborne Drain	3+350	3+331	Re-locate existing 750mm HDPE double wall culvert to the East side of Babion Road, crossing Second Concession Rd. and outletting to East Side Drain Channel.	Road is to be closed to re-lay culvert in both directions. Restore road to original condition or better. Includes re-grading of open channel between culverts.	linear & each	5	$ 25.00	1	$ 2,500.00	$2,625.00	
PC-03	Port Colborne Drain	3+303	3+318	Construct Sediment Basin PC-SB01 at STA 3+300 as per Design and GD-10.	Remove material and dispose by spreading on existing berm. Sediment Basin constructed prior to commencing work upstream.	Area, m2	10	$ 75.00	77.5	$ 40.00	$3,850.00	
PC-04	Port Colborne Drain	3+080	3+331	Construct Open Channel as per Design.	Spoil removed and spread on berm.		254	$ 35.00			$8,890.00	
PC-05	Port Colborne Drain	2+595	2+960	Existing PVC Pipe to be removed.	Remove and dispose.				1	$ 500.00	$500.00	

PC-08	Port Colborne Drain			Construct Sediment Basin PC-SB02 at STA 2+400 as per Design and GD-10.	Remove material and dispose by spreading adjacent to the drain. Sediment Basin constructed prior to commencing work upstream.	Area, m2	15	$ 75.00	199.8	$ 40.00	$9,117.00	
PC-09	Port Colborne Drain			Additional Erosion Protection	Protect bank from erosion south of Highway 3 crossing				1	$ 1,500.00	$1,500.00	
PC-10	Port Colborne Drain			Construct Sediment Basin PC-SB03 at STA 1+020 as per Design and GD-10.	Remove material and dispose by spreading adjacent to the drain. Sediment Basin constructed prior to commencing work upstream.	Area, m2	18	$ 75.00	FALSE	$ 40.00	$1,350.00	
PC-11	Port Colborne Drain	2+300	2+500	Clear vegetation from Drain Channel & Construct Channel as per Design			200	$ 15.00			$3,000.00	

SubTotal for: Cost ID: $33,332.00

Construction Mgmt Port Colborne Drain

Cost ID:	Drain	From STA	To STA	Work	Description	Linear, Each or Lump Sum Cost Type	Length	$/m	Qnty	/each	$	Notes
	Port Colborne Drain			Bonding							$1,310.16	
	Port Colborne Drain			Environmental Management - Compliance with legislative requirements	Preparation of Environmental Management Plan - Exclusions for SAR incidents that require on site expertise.	Lump Sum					$2,500.00	Program budget - actual cost will vary
	Port Colborne Drain			Erosion Control During construction - including conversion of sediment ponds to permanent drain features		Lump Sum					$3,500.00	Program budget - actual cost will vary
	Port Colborne Drain			Construction Management	Traffic Control, Layout, and all compliance items for submission on construction startup.						$1,528.52	Budget
	Port Colborne Drain			Tree Replacement Program	Where private trees are removed for the drain and in lieu of compensation a 3 for 1 tree planting program is available for owners.				15	50	$750.00	Program budget - actual cost will vary

SubTotal for: Construction Mgmt Port Colborne Drain $8,278.52

SubTotal for: Port Colborne Drain $51,950.52
Contigency Allowance, (20%) $12,458.10
Cost of Construction: $74,748.62

Port Colborne Municipal Drain
City of Port Colborne
Regional Municipality of Niagara

Previous Costs - Works Already Completed

Port Colborne Branch #1	Status	From STA	To STA	Work	Description	$	Notes	Date Completed	Length	$/m	Qnty	/each
Channel Construction by appointment - Section XX		2+580	3+045	Port Colborne Channel Re-alignment by Rankin Construction		$26,050.00		27-Mar-17	465	$ 56.02		
	Completed	1+660	1+860	Port Colborne Channel Re-Alignment	Construct new alignment based on existing topography	$9,442.50	filling in Drain - $ 3,995.00 Erosion protection - $1,555.00 Misc. trucking & levelling - $3,892.50	2016	202	$ 46.75		
	Completed	0+010	1+500	Port Colborne Channel Re-Grading and Clearing	establish lower grade line	$15,300.00		2016	1490	$ 10.27		
	Completed	1+740	1+750	Fording #1; ARN = 410710	provides access to back of farm crossing new alignment	$710.00	Two crossings - $1,410.00	2016				
	Completed	1+630	1+640	Fording #2; ARN = 410800	provides access to back of farm crossing new alignment	$710.00	Two crossings - $1,410.00	2016				
						$52,212.50						

Port Colborne Municipal Drain
City of Port Colborne
Regional Municipality of Niagara

Administration Costs

	Area, Ha	Area Ratio
Michener Drain Area	135	12%
Port Colborne Drain Area	327.8	30%
Wignell Drain Area	634.4	58%
	1097.2	100.0%

Port Colborne Drain	Costs	Cost Items	Sub-totals, $	Totals, $
ADMINISTRATION				
	Interim Financing Allowance	Debenture Interest - 20007 to 2017	$8,911.40	
		Total Amount: $29,827.92		$8,911.40
		Debenture Administrative Fee	$1,812.07	
		Total Fee Amount: $6,065.29		$1,812.07
	Legal and Permitting Fees			$0.00
	Expenses, where applicable			$0.00
	Applicable Taxes			$0.00
		Total - ADMINISTRATION		$10,723.47
ENGINEERING				
	Preliminary Design and Report			$0.00
	Survey, Design, Plans, Engineer's Report and Assessment Schedule (Wiebe)*1			
		Survey; ($8,342.93) portion allocated by area	$2,492.54	
		Report Preparation; ($92,511.44) portion allocated by area	$27,638.76	
	Survey, Design, Plans, Engineer's Report (AMEC)*2	3-561-33229; 2012 to 2014; $67,147.23 portion allocated by area	$20,060.94	
	Survey, Design, Plans, Engineer's Report and Assessment Schedule (EWA Engineering)			
		Design Services	$99,811.50	
		CofPC CAD Work - 2020	$11,483.16	
		CofPC CAD Work - 2021	$2,500.00	
		Sub-total: ENGINEERING		$163,986.89
	Tribunal Costs (not estimated and assumed to be zero)			$0.00
	Tendering, Contract Administration and Construction Inspection (estimated)			$3,500.00
		Total - ENGINEERING		$167,486.89
TOTAL ADMINISTRATION AND ENGINEERING				$178,210.37

*1 Wiebe Engineering was appointed as the Drainage Engineer by Council with an approved budget. The firm declared bankruptcy after having been paid for a portion of the work. This is the amount originaly paid and not allocated.

*2 AMEC was appointed as the Drainage Engineer by Council in 2013, assuming work already completd by Wiebe and with an approved budget. After having been paid for 70% of the work, the company refused to complete the project without additional funds being allocated. The contract was cancelled.
This is the fee for service paid for partially completed work on the drain.

Allowances

Port Colborne Branch #1

Owner	Legal Text		Roll No	Area, Ha	Land and Rights of Way: Length m	Top Width	Section 29 Area, Ha	$	Work Zone $	Damages: Length m	Section 30 Area, Ha	$	For Existing Private Drain converted: From STN	To STN	Length, m	Section 31 Allowance $	Insufficient Outlet: Section 32 Allowance $	Loss of Access: Section 33 Allowance $	Total of Allowances $
Konc John Andrew	CON 2 PT LOT 22 RP 59R4801		271104000410710	0.107			0.0000	$0.00		224.7	0.225	$277.62				$0.00			$277.62
Van Ruyven Josef Nicolaas	CON 2 PT LOT 22 RP 59R4801		271104000410800	1.084			0.0000	$0.00			0.000	$0.00				$0.00			$0.00
Hellinga Jack Simon	CON 2 PT LOT 22		271104000411000	5.247			0.0000	$0.00			0.000	$0.00			0	$0.00			$0.00
Port Colborne Quarries Inc	CON 2 PT LOT 21 PT LOT 22 RP		271104000411500	2.758			0.0000	$0.00			0.000	$0.00			0	$0.00			$0.00
Parsons David Scott	CON 2 PT LOT 22		271104000411600	0.413			0.0000	$0.00			0.000	$0.00				$0.00			$0.00
Leavere Larry Allan Thomas	CON 2 PT LOT 22		271104000411700	0.098			0.0000	$0.00			0.000	$0.00				$0.00			$0.00
Yanni Bill	CON 2 PT LOT 22		271104000411900	0.418			0.0000	$0.00			0.000	$0.00				$0.00			$0.00
Orlowski Jeffrey	CON 2 PT LOT 22 RP 59R4884		271104000412100	0.025			0.0000	$0.00			0.000	$0.00				$0.00			$0.00
Port Colborne Quarries Inc	HUMBERSTONE CON 2 PT LOTS 23		271104000414000	3.308			0.0000	$0.00			0.000	$0.00				$0.00			$0.00
				13.457															
City of Port Colborne	Snider Rd. from Hwy 3 to Second Conc	ROW		1.612			0.0000	$0.00			0.000	$0.00				$0.00			$0.00
City of Port Colborne	Second Concession from Snider to Babion	ROW		0.022			0.0000	$0.00			0.000	$0.00				$0.00			$0.00
City of Port Colborne	Second Concession W of Snider Rd.	ROW		0.501			0.0000	$0.00			0.000	$0.00				$0.00			$0.00
MTO	Highway #3	ROW		0.547			0.0000	$0.00			0.000	$0.00				$0.00			$0.00
				2.682															
				16.139				$0.00	$0.00			$277.62				$0.00	$0.00	$0.00	$277.62

Port Colborne Drain

Owner	Legal Text	Roll No	Area, Ha	Land and Rights of Way: Length m	Top Width	Section 29 Area, Ha	$	Damages: Length m	Section 30 Area, Ha	$	For Existing Private Drain converted: From STN	To STN	Length, m	Section 31 Allowance $	Insufficient Outlet: Section 32 Allowance $	Loss of Access: Section 33 Allowance $	Total of Allowances $
Vale Canada Limited	HUMBERSTONE CON 1 PT LOTS 24	271102000718000	1.642														$0.00
McLean William Richard Samue	CON 1 PT TWP LOT 23	271102001311300	0.095														$0.00
Tomiuck Jonas	CON 1 PT TWP LOT 23	271102001311400	0.191														$0.00
Scott Gregory George	CON 1 PT TWP LOT 23	271102001311500	0.190														$0.00
Vale Canada Limited	CON 2 PT LOT 24	271102001312000	0.534														$0.00
Port Colborne Quarries Inc	CON 2 PT LOTS 19 AND 20 RP	271104000315600	30.868														$0.00
Phillips Richard Gordon	CON 2 PT LOT 20 RP 59R-1546	271104000315702	0.089														$0.00
Port Colborne Quarries Inc	CON 2 PT LOT 19 PT LOT 20	271104000315800	35.112	255.0	3.800	0.0969	$ -										$0.00
Schlenger Uszer	CON 1 PT LOT 23	271104000408700	0.583														$0.00
Schlenger Uszer	CON 1 PT LOT 23	271104000408700	6.726	0.0	0.000	0.0000	$ -										$0.00
City of Port Colborne	CON 1 PT LOTS 23, 24 RP	271104000408715	2.431														$0.00
Schlenger Uszer	CON 1 PT LOT 23	271104000408800	0.373														$0.00
Coccagna Anthony	CON 1 PT LOT 23	271104000408900	0.631														$0.00
1346618 Ontario Ltd	CON 1 PT LOT 23	271104000409000	0.463														$0.00
Ostric Milan	CON 1 PT LOT 23 RP 59R5797	271104000409100	0.201														$0.00
1108904 Ontario Limited	CON 1 PT LOT 23 PT LOT 24	271104000409200	0.779														$0.00
Favero Lidia	CON 1 PT LOT 23	271104000409300	0.202														$0.00
Ed Christensen Roofing Limited	CON 1 PT LOT 23	271104000409400	0.190														$0.00
Sauder William Edward	HUMBERSTONE CON 1 PT LOT 23	271104000409500	0.190														$0.00
Stenson Ian John	CON 1 PT LOT 23	271104000409600	0.190														$0.00
Polverari Giuseppe	CON 1 PT LOT 23	271104000409700	0.190														$0.00
Vale Canada Limited	CON 1 PT LOT 23	271104000409800	4.106														$0.00
Vale Canada Limited	CON 2 PT LOT 21 RP59R3588	271104000410000	4.963	100.000	3.800	0.0380	$ 939.00	164.4	0.000	$0.00							$939.00
Huffman John Wayne	CON 2 PT LOT 21	271104000410400	0.071														$0.00
Young Tammy Lynn	CON 2 PT LOT 21	271104000410500	0.107														$0.00
Vollick Ronald Christopher	CON 2 PT LOT 21	271104000410600	0.159														$0.00
Citrigno Angela	CON 2 PT LOT 21	271104000410700	0.168														$0.00
Stark Raymond	CON 2 PT LOT 21 RP 59R4333	271104000410705	1.936														$0.00
Konc John Andrew	CON 2 PT LOT 22 RP 59R4801	271104000410710	2.899	202.000	0.000	0.0000	$ -	202	0.000	$0.00							$0.00
Van Ruyven Josef Nicolaas	CON 2 PT LOT 22 RP 59R4801	271104000410800	4.199														$0.00
Stewart Scott James	CON 2 PT LOT 22 RP 59R 5732	271104000410810	0.407														$0.00
Powell Bradley Kenneth	CON 2 PT LOT 22 RP59R4801	271104000410900	7.711														$0.00
Hellinga Jack Simon	CON 2 PT LOT 22	271104000411000	5.411														$0.00
Kinzie Patricia Helen	CON 2 PT LOT 21 RP 59R6766	271104000411200	1.202														$0.00
Pipher Lynn Mae	CON 2 PT LOT 21 RP 59R6766	271104000411205	1.208														$0.00
Scace Wesley	CON 2 PT LOT 21	271104000411300	0.067														$0.00
Port Colborne Quarries Inc	CON 2 PT LOT 21 PT LOT 22 RP	271104000411500	73.170														$0.00
Parsons David Scott	CON 2 PT LOT 22	271104000411600	0.418														$0.00
Leavere Larry Allan Thomas	CON 2 PT LOT 22	271104000411700	0.209														$0.00
Yanni Bill	CON 2 PT LOT 22	271104000411900	0.418														$0.00
Fitzgerald Shawn Patrick	HUMBERSTONE CON 2 PT LOT 22	271104000412000	0.209														$0.00
Orlowski Jeffrey	CON 2 PT LOT 22 RP 59R4884	271104000412100	0.209														$0.00

Owner	Legal Text	Roll No	Area, Ha	Land and Rights of Way: Length m	Top Width	Area, Ha	Section 29 Allowance $	$	Damages: Length m	Area, Ha	Section 30 Allowance $	For Existing Private Drain converted: From STN	To STN	Length, m	Section 31 Allowance $	Insufficient Outlet: Section 32 Allowance $	Loss of Access: Section 33 Allowance $	Total of Allowances $
Moes Frank Allan	HUMBERSTONE CON 2 PT LOT 22	271104000412200	0.357															$0.00
Boda Terry Joseph	CON 2 PT LOT 22	271104000412400	0.186															$0.00
Elite Capital P.C Developments Inc	CON 2 PT LOT 22	271104000412600	4.110															$0.00
Vale Canada Limited	CON 2 PT LOT 22 PT LOT 23	271104000412700	10.153															$0.00
Vale Canada Limited	CON 2 PT LOT 22 PT LOT 23	271104000412700	22.189															$0.00
Vale Canada Limited	CON 2 PT LOT 23	271104000412800	0.363															$0.00
NCDSB	CON 2 PT LOT 23	271104000412900	5.947															$0.00
Dyson Patrick James	CON 2 PT LOT 23	271104000413000	0.176															$0.00
Dyson Mary Lynn	CON 2 PT LOT 23	271104000413100	0.182															$0.00
Hortobagyi Zoltan	CON 2 PT LOT 23	271104000413200	0.186															$0.00
Wakunick Deborah Ivy	CON 2 PT LOT 24	271104000413300	0.085															$0.00
Wells Donna Louise	CON 2 PT LOT 23 PT LOT 24	271104000413400	0.828			0.0000	$ -											$0.00
Vale Canada Limited	CON 2 PT LOT 23 PT LOT 24 RP	271104000413401	7.409															$0.00
Vale Canada Limited	CON 2 PT LOT 23 PT LOT 24 RP	271104000413410	10.115															$0.00
Vale Canada Limited	CON 2 PT LOT 24 RP 59R10047	271104000413435	0.631															$0.00
Port Colborne Quarries Inc	HUMBERSTONE CON 2 PT LOTS 23	271104000414000	3.326															$0.00
Vale Canada Limited	CON 2 PT LOT 24	271104000414120	0.928															$0.00
2023165 Ontario Inc	CON 3 PT LOT 19 PT LOT 20	271104000506400	1.291															$0.00
Koch Olga	CON 3 LOT 19CPT	271104000506500	0.222															$0.00
Kozelj Stif	CON 3 PT LOT 20	271104000506600	0.079															$0.00
Orsetto Aldo	CON 3 PT LOT 20	271104000506700	4.228															$0.00
Currie Michael Bruce	CON 3 PT LOT 20	271104000506702	0.085															$0.00
Fijavz David	CON 3 PT LOT 20	271104000506703	0.334															$0.00
Levitt Corie	CON 3 PT LOT 20 PLAN 59R	271104000506710	0.212															$0.00
Michaud Antonio Abel	CON 3 PT LOT 20 RP 59R8240	271104000506800	0.271															$0.00
Henderson David Marshall	CON 3 PT LOT 20	271104000506801	11.011															$0.00
Babion Gail J	HUMBERSTONE CON 3 PT LOT 21	271104000506900	15.252															$0.00
Wagner Dan Patrick	CON 3 PT LOT 21	271104000507400	3.050															$0.00
Stovell David Alan	CON 3 PT LOT 21 59R8535	271104000507500	1.238															$0.00
Cooper Collin James Lee	CON 3 S PT LOT 21 S PT LOT	271104000508100	7.613															$0.00
Henderson Drew David	CON 3 PT LOT 22	271104000508301	1.055															$0.00
Beaulieu George E	CON 3 E PT LOT 23	271104000508900	0.388															$0.00
Garner Mark Edward	CON 3 PT LOT 23	271104000509100	0.346															$0.00
Joseph Grandilli	CON 3 PT LOT 23	271104000509300	0.082															$0.00
Stefan John	CON 3 PT LOT 23	271104000509400	0.016															$0.00
Johnson Raymond Francis Jr	CON 3 PT LOT 23 RP 59R10549	271104000510200	0.208															$0.00
Vance Gregory Thomas	CON 3 PT LOT 23 RP 59R10549	271104000510202	0.417															$0.00
Saxon Ronald Joseph	CON 3 PT LOT 23 PLAN	271104000510204	0.605															$0.00
Pilkey Dean Lloyd	CON 3 PT LOT 23 PLAN	271104000510206	0.597															$0.00
Schneider Darryl Frederick	CON 3 PT LOT 23	271104000510801	2.252															$0.00
Zonneveld Bastian	CON 3 PT LOT 24	271104000510900	0.103															$0.00
Terreberry Jack	CON 3 PT LOT 24	271104000511000	0.144															$0.00
Jacak Dominik	CON 3 PT LOT 24	271104000511300	0.347															$0.00
Moore Linda Ann	CON 3 PT LOT 24	271104000511400	0.099															$0.00
Moore Linda Ann	CON 3 PT LOT 24	271104000511500	0.029															$0.00
Medvic Peter James	CON 3 PT LOT 24	271104000511600	0.356															$0.00
McIntyre Shelly	CON 3 PT LOT 24	271104000511700	0.191															$0.00
City of Port Colborne	59R11175 PART 1 59R11176	271104000699500	0.630															$0.00
			311.038				$ 939.00	$ -			$ -				$ -	$ -	$ -	$ 939.00
City of Port Colborne	Sndier Rd from Hwy 3 to Killaly St E	ROW	2.033															
City of Port Colborne	Second Concession W of Snider Rd.	ROW	1.221															
City of Port Colborne	Snider Rd. from Hwy 3 to Second Conc	ROW	2.005															
City of Port Colborne	Snider Rd. N of Second Concession	ROW	0.071															
City of Port Colborne	Second Concession Rd. E of Babion	ROW	0.595															
City of Port Colborne	Babion Rd. from Hwy 3 to Second Concess	ROW	2.308															
City of Port Colborne	Chippawa Road	ROW	0.559															
City of Port Colborne	Babion Rd. from 2nd to Chippawa	ROW	1.432															
City of Port Colborne	Snider Rd protion south of Killaly St E	ROW	0.353															
City of Port Colborne	Killaly St East W of Snider Rd	ROW	0.901															
City of Port Colborne	Killaly St E east of Snider	ROW	0.176															
City of Port Colborne	Second Concession from Snider to Babion	ROW	1.645															
MTO	Highway #3	ROW	3.281															
			16.581															
			327.619															

Drain Allowance To $ 1,216.62

Port Colborne Municipal Drain
City of Port Colborne
Regional Municipality of Niagara

Section 22: Assessed Benefit

Benefit assessments are based on the benefit value to each property and are not proportional to

Owner	Legal Text	ARN	Area Ha	Abutting Length m	BENEFIT ASSESSMENT DIRECT	BENEFIT ASSESSMENT ABUT	TOTAL BENEFIT
City of Port Colborne - Lands Assessed							
Konc John Andrew	CON 2 PT LOT 22 RP 59R4801	271104000410710	0.107	224.7			$0.00
Van Ruyven Josef Nicolaas	CON 2 PT LOT 22 RP 59R4801	271104000410800	1.084	224.7			$0.00
Hellinga Jack Simon	CON 2 PT LOT 22	271104000411000	5.247	57.9			$0.00
Port Colborne Quarries Inc	CON 2 PT LOT 21 PT LOT 22 RP	271104000411500	2.758	500.9			$0.00
Parsons David Scott	CON 2 PT LOT 22	271104000411600	0.413				$0.00
Leavere Larry Allan Thomas	CON 2 PT LOT 22	271104000411700	0.098				$0.00
Yanni Bill	CON 2 PT LOT 22	271104000411900	0.418				$0.00
Orlowski Jeffrey	CON 2 PT LOT 22 RP 59R4884	271104000412100	0.025				$0.00
Port Colborne Quarries Inc	HUMBERSTONE CON 2 PT LOTS 23	271104000414000	3.308				$0.00
Sub-Total (Lands)			13.457				
Roads							
City of Port Colborne	Snider Rd. from Hwy 3 to Second Con	ROW	1.612				$0.00
City of Port Colborne	Second Concession from Snider to Bal	ROW	0.022				$0.00
City of Port Colborne	Second Concession W of Snider Rd.	ROW	0.501				$0.00
MTO	Highway #3	ROW	0.547	34.9			$0.00
Sub-Total (Roads)			2.682				
			16.139				

Owner	Legal Text	Roll No	Area, Ha	Abutting Length m	BENEFIT ASSESSMENT DIRECT	BENEFIT ASSESSMENT ABUT	TOTAL BENEFIT
City of Port Colborne - Lands Assessed							
Vale Canada Limited	HUMBERSTONE CON 1 PT LOTS 24	271102000718000	1.642			$0	$0.00
McLean William Richard Samue	CON 1 PT TWP LOT 23	271102001311300	0.095			$0	$0.00
Tomiuck Jonas	CON 1 PT TWP LOT 23	271102001311400	0.191			$0	$0.00
Scott Gregory George	CON 1 PT TWP LOT 23	271102001311500	0.190			$0	$0.00
Vale Canada Limited	CON 2 PT LOT 24	271102001312000	0.534			$0	$0.00
Port Colborne Quarries Inc	CON 2 PT LOTS 19 AND 20 RP	271104000315600	30.868			$0	$0.00
Phillips Richard Gordon	CON 2 PT LOT 20 RP 59R-1546	271104000315702	0.089			$0	$0.00
Port Colborne Quarries Inc	CON 2 PT LOT 19 PT LOT 20	271104000315800	35.112			$0	$0.00
Schlenger Uszer	CON 1 PT LOT 23	271104000408700	0.583			$0	$0.00
Schlenger Uszer	CON 1 PT LOT 23	271104000408700	6.726			$0	$0.00
City of Port Colborne	CON 1 PT LOTS 23, 24 RP	271104000408715	2.431			$0	$0.00
Schlenger Uszer	CON 1 PT LOT 23	271104000408800	0.373			$0	$0.00
Coccagna Anthony	CON 1 PT LOT 23	271104000408900	0.631			$0	$0.00
1346618 Ontario Ltd	CON 1 PT LOT 23	271104000409000	0.463			$0	$0.00
Ostric Milan	CON 1 PT LOT 23 RP 59R5797	271104000409100	0.201			$0	$0.00
1108904 Ontario Limited	CON 1 PT LOT 23 PT LOT 24	271104000409200	0.779			$0	$0.00
Favero Lidia	CON 1 PT LOT 23	271104000409300	0.202			$0	$0.00
Ed Christensen Roofing Limited	CON 1 PT LOT 23	271104000409400	0.190			$0	$0.00
Sauder William Edward	HUMBERSTONE CON 1 PT LOT 23	271104000409500	0.190			$0	$0.00
Stenson Ian John	CON 1 PT LOT 23	271104000409600	0.190			$0	$0.00
Polverari Giuseppe	CON 1 PT LOT 23	271104000409700	0.190			$0	$0.00
Vale Canada Limited	CON 1 PT LOT 23	271104000409800	4.106			$0	$0.00
Vale Canada Limited	CON 2 PT LOT 21 RP59R3588	271104000410000	4.963	102.2		$256	$255.50
Huffman John Wayne	CON 2 PT LOT 21	271104000410400	0.071			$0	$0.00
Young Tammy Lynn	CON 2 PT LOT 21	271104000410500	0.107			$0	$0.00
Vollick Ronald Christopher	CON 2 PT LOT 21	271104000410600	0.159			$0	$0.00
Citrigno Angela	CON 2 PT LOT 21	271104000410700	0.168			$0	$0.00
Stark Raymond	CON 2 PT LOT 21 RP 59R4333	271104000410705	1.936			$0	$0.00
Konc John Andrew	CON 2 PT LOT 22 RP 59R4801	271104000410710	2.899	203.2		$508	$508.00
Van Ruyven Josef Nicolaas	CON 2 PT LOT 22 RP 59R4801	271104000410800	4.199			$0	$0.00
Stewart Scott James	CON 2 PT LOT 22 RP 59R 5732	271104000410810	0.407			$0	$0.00
Powell Bradley Kenneth	CON 2 PT LOT 22 RP59R4801	271104000410900	7.711			$0	$0.00
Hellinga Jack Simon	CON 2 PT LOT 22	271104000411000	5.411			$0	$0.00
Kinzie Patricia Helen	CON 2 PT LOT 21 RP 59R6766	271104000411200	1.202			$0	$0.00
Pipher Lynn Mae	CON 2 PT LOT 21 RP 59R6766	271104000411205	1.208			$0	$0.00
Scace Wesley	CON 2 PT LOT 21	271104000411300	0.067			$0	$0.00
Port Colborne Quarries Inc	CON 2 PT LOT 21 PT LOT 22 RP	271104000411500	73.170			$0	$0.00

Parsons David Scott	CON 2 PT LOT 22	271104000411600	0.418				$0	$0.00
Leavere Larry Allan Thomas	CON 2 PT LOT 22	271104000411700	0.209				$0	$0.00
Yanni Bill	CON 2 PT LOT 22	271104000411900	0.418				$0	$0.00
Fitzgerald Shawn Patrick	HUMBERSTONE CON 2 PT LOT 22	271104000412000	0.209				$0	$0.00
Orlowski Jeffrey	CON 2 PT LOT 22 RP 59R4884	271104000412100	0.209				$0	$0.00
Moes Frank Allan	HUMBERSTONE CON 2 PT LOT 22	271104000412200	0.357				$0	$0.00
Boda Terry Joseph	CON 2 PT LOT 22	271104000412400	0.186				$0	$0.00
Elite Capital P.C Developments Inc	CON 2 PT LOT 22	271104000412600	4.110				$0	$0.00
Vale Canada Limited	CON 2 PT LOT 22 PT LOT 23	271104000412700	10.153				$0	$0.00
Vale Canada Limited	CON 2 PT LOT 22 PT LOT 23	271104000412700	22.189				$0	$0.00
Vale Canada Limited	CON 2 PT LOT 23	271104000412800	0.363				$0	$0.00
NCDSB	CON 2 PT LOT 23	271104000412900	5.947				$0	$0.00
Dyson Patrick James	CON 2 PT LOT 23	271104000413000	0.176				$0	$0.00
Dyson Mary Lynn	CON 2 PT LOT 23	271104000413100	0.182				$0	$0.00
Hortobagyi Zoltan	CON 2 PT LOT 23	271104000413200	0.186				$0	$0.00
Wakunick Deborah Ivy	CON 2 PT LOT 24	271104000413300	0.085				$0	$0.00
Wells Donna Louise	CON 2 PT LOT 23 PT LOT 24	271104000413400	0.828				$0	$0.00
Vale Canada Limited	CON 2 PT LOT 23 PT LOT 24 RP	271104000413401	7.409				$0	$0.00
Vale Canada Limited	CON 2 PT LOT 23 PT LOT 24 RP	271104000413410	10.115				$0	$0.00
Vale Canada Limited	CON 2 PT LOT 24 RP 59R10047	271104000413435	0.631				$0	$0.00
Port Colborne Quarries Inc	HUMBERSTONE CON 2 PT LOTS 23	271104000414000	3.326				$0	$0.00
Vale Canada Limited	CON 2 PT LOT 24	271104000414120	0.928				$0	$0.00
2023165 Ontario Inc	CON 3 PT LOT 19 PT LOT 20	271104000506400	1.291				$0	$0.00
Koch Olga	CON 3 LOT 19CPT	271104000506500	0.222				$0	$0.00
Kozelj Stif	CON 3 PT LOT 20	271104000506600	0.079				$0	$0.00
Orsetto Aldo	CON 3 PT LOT 20	271104000506700	4.228				$0	$0.00
Currie Michael Bruce	CON 3 PT LOT 20	271104000506702	0.085				$0	$0.00
Fijavz David	CON 3 PT LOT 20	271104000506703	0.334				$0	$0.00
Levitt Corie	CON 3 PT LOT 20 PLAN 59R	271104000506710	0.212				$0	$0.00
Michaud Antonio Abel	CON 3 PT LOT 20 RP 59R8240	271104000506800	0.271				$0	$0.00
Henderson David Marshall	CON 3 PT LOT 20	271104000506801	11.011				$0	$0.00
Babion Gail J	HUMBERSTONE CON 3 PT LOT 21	271104000506900	15.252				$0	$0.00
Wagner Dan Patrick	CON 3 PT LOT 21	271104000507400	3.050				$0	$0.00
Stovell David Alan	CON 3 PT LOT 21 59R8535	271104000507500	1.238				$0	$0.00
Cooper Collin James Lee	CON 3 S PT LOT 21 S PT LOT	271104000508100	7.613				$0	$0.00
Henderson Drew David	CON 3 PT LOT 22	271104000508301	1.055				$0	$0.00
Beaulieu George E	CON 3 E PT LOT 23	271104000508900	0.388				$0	$0.00
Garner Mark Edward	CON 3 PT LOT 23	271104000509100	0.346				$0	$0.00
Joseph Grandilli	CON 3 PT LOT 23	271104000509300	0.082				$0	$0.00
Stefan John	CON 3 PT LOT 23	271104000509400	0.016				$0	$0.00
Johnson Raymond Francis Jr	CON 3 PT LOT 23 RP 59R10549	271104000510200	0.208				$0	$0.00
Vance Gregory Thomas	CON 3 PT LOT 23 RP 59R10549	271104000510202	0.417				$0	$0.00
Saxon Ronald Joseph	CON 3 PT LOT 23 PLAN	271104000510204	0.605				$0	$0.00
Pilkey Dean Lloyd	CON 3 PT LOT 23 PLAN	271104000510206	0.597				$0	$0.00
Schneider Darryl Frederick	CON 3 PT LOT 23	271104000510801	2.252				$0	$0.00
Zonneveld Bastian	CON 3 PT LOT 24	271104000510900	0.103				$0	$0.00
Terreberry Jack	CON 3 PT LOT 24	271104000511000	0.144				$0	$0.00
Jacak Dominik	CON 3 PT LOT 24	271104000511300	0.347				$0	$0.00
Moore Linda Ann	CON 3 PT LOT 24	271104000511400	0.099				$0	$0.00
Moore Linda Ann	CON 3 PT LOT 24	271104000511500	0.029				$0	$0.00
Medvic Peter James	CON 3 PT LOT 24	271104000511600	0.356				$0	$0.00
McIntyre Shelly	CON 3 PT LOT 24	271104000511700	0.191				$0	$0.00
City of Port Colborne	59R11175 PART 1 59R11176	271104000699500	0.630				$0	$0.00
			311.038					
City of Port Colborne	Sndier Rd from Hwy 3 to Killaly St E	ROW	2.033				$0	$0.00
City of Port Colborne	Second Concession W of Snider Rd.	ROW	1.221				$0	$0.00
City of Port Colborne	Snider Rd. from Hwy 3 to Second Con	ROW	2.005				$0	$0.00
City of Port Colborne	Snider Rd. N of Second Concession	ROW	0.071				$0	$0.00
City of Port Colborne	Second Concession Rd. E of Babion	ROW	0.595				$0	$0.00
City of Port Colborne	Babion Rd. from Hwy 3 to Second Con	ROW	2.308				$0	$0.00
City of Port Colborne	Chippawa Road	ROW	0.559				$0	$0.00
City of Port Colborne	Babion Rd. from 2nd to Chippawa	ROW	1.432				$0	$0.00
City of Port Colborne	Snider Rd protion south of Killaly St E	ROW	0.353				$0	$0.00
City of Port Colborne	Killaly St East W of Snider Rd	ROW	0.901				$0	$0.00
City of Port Colborne	Killaly St E east of Snider	ROW	0.176				$0	$0.00
City of Port Colborne	Second Concession from Snider to Bal	ROW	1.645				$0	$0.00
MTO	Highway #3	ROW	3.281				$0	$0.00
			16.581					
							$	763.50

Port Colborne Municipal Drain
City of Port Colborne
Regional Municipality of Niagara

Section 23 Outlet Benefit / Outlet Liability

Port Colborne Branch #1

$4,546.73

Owner	Legal Text	Roll No	Area, Ha	Runoff Factor 'C'	QRF	QRF Ratio	
City of Port Colborne - Lands Assessed							
Konc John Andrew	CON 2 PT LOT 22 RP 59R4801	271104000410710	0.107	30	0.21	0.0060	$27.28
Van Ruyven Josef Nicolaas	CON 2 PT LOT 22 RP 59R4801	271104000410800	1.084	20	1.41	0.0405	$184.32
Hellinga Jack Simon	CON 2 PT LOT 22	271104000411000	5.247	30	10.27	0.2945	$1,338.84
Port Colborne Quarries Inc	CON 2 PT LOT 21 PT LOT 22 RP	271104000411500	2.758	20	3.60	0.1032	$469.10
Parsons David Scott	CON 2 PT LOT 22	271104000411600	0.413	30	0.81	0.0232	$105.40
Leavere Larry Allan Thomas	CON 2 PT LOT 22	271104000411700	0.098	20	0.13	0.0037	$16.60
Yanni Bill	CON 2 PT LOT 22	271104000411900	0.418	30	0.82	0.0235	$106.65
Orlowski Jeffrey	CON 2 PT LOT 22 RP 59R4884	271104000412100	0.025	20	0.03	0.0009	$4.25
Port Colborne Quarries Inc	HUMBERSTONE CON 2 PT LOTS 23	271104000414000	3.308	30	6.47	0.1856	$844.05
		Sub-Total (Lands)	13.457				
Roads							
City of Port Colborne	Snider Rd. from Hwy 3 to Second Conc	ROW	1.612	45	4.73	0.1357	$616.77
City of Port Colborne	Second Concession from Snider to Babion	ROW	0.022	86	0.12	0.0035	$16.13
City of Port Colborne	Second Concession W of Snider Rd.	ROW	0.501	87	2.84	0.0815	$370.35
MTO	Highway #3	ROW	0.547	96	3.43	0.0983	$446.99
		Sub-Total (Roads)	2.682				
	Total Assessments for City of Port Colborne:		16.139		34.88	1.00	$4,546.73

Port Colborne Drain

$225,489.15

Owner	Legal Text	Roll No	Area, Ha	Runoff Factor 'C'	QRF	QRF Ratio	
Vale Canada Limited	HUMBERSTONE CON 1 PT LOTS 24	271102000718000	1.642	45	4.82	0.0063	$1,413.83
McLean William Richard Samue	CON 1 PT TWP LOT 23	271102001311300	0.095	25	0.16	0.0002	$45.49
Tomiuck Jonas	CON 1 PT TWP LOT 23	271102001311400	0.191	25	0.31	0.0004	$91.13
Scott Gregory George	CON 1 PT TWP LOT 23	271102001311500	0.190	25	0.31	0.0004	$91.08
Vale Canada Limited	CON 2 PT LOT 24	271102001312000	0.534	30	1.05	0.0014	$306.76
Port Colborne Quarries Inc	CON 2 PT LOTS 19 AND 20 RP	271104000315600	30.868	35	70.48	0.0917	$20,671.95
Phillips Richard Gordon	CON 2 PT LOT 20 RP 59R-1546	271104000315702	0.089	25	0.14	0.0002	$42.53
Port Colborne Quarries Inc	CON 2 PT LOT 19 PT LOT 20	271104000315800	35.112	35	80.17	0.1043	$23,514.47
Schlenger Uszer	CON 1 PT LOT 23	271104000408700	0.583	30	1.14	0.0015	$334.83
Schlenger Uszer	CON 1 PT LOT 23	271104000408700	6.726	35	15.36	0.0200	$4,504.18
City of Port Colborne	CON 1 PT LOTS 23, 24 RP	271104000408715	2.431	35	5.55	0.0072	$1,628.23

Owner	Legal Text	Roll No	Area, Ha	Runoff Factor 'C'	QRF	QRF Ratio	
Schlenger Uszer	CON 1 PT LOT 23	271104000408800	0.373	32	0.78	0.0010	$228.20
Coccagna Anthony	CON 1 PT LOT 23	271104000408900	0.631	25	1.03	0.0013	$301.99
1346618 Ontario Ltd	CON 1 PT LOT 23	271104000409000	0.463	35	1.06	0.0014	$310.00
Ostric Milan	CON 1 PT LOT 23 RP 59R5797	271104000409100	0.201	25	0.33	0.0004	$96.15
1108904 Ontario Limited	CON 1 PT LOT 23 PT LOT 24	271104000409200	0.779	35	1.78	0.0023	$521.36
Favero Lidia	CON 1 PT LOT 23	271104000409300	0.202	25	0.33	0.0004	$96.58
Ed Christensen Roofing Limited	CON 1 PT LOT 23	271104000409400	0.190	25	0.31	0.0004	$90.98
Sauder William Edward	HUMBERSTONE CON 1 PT LOT 23	271104000409500	0.190	25	0.31	0.0004	$90.98
Stenson Ian John	CON 1 PT LOT 23	271104000409600	0.190	25	0.31	0.0004	$90.98
Polverari Giuseppe	CON 1 PT LOT 23	271104000409700	0.190	25	0.31	0.0004	$90.98
Vale Canada Limited	CON 1 PT LOT 23	271104000409800	4.106	25	6.70	0.0087	$1,963.89
Vale Canada Limited	CON 2 PT LOT 21 RP59R3588	271104000410000	4.963	35	11.33	0.0147	$3,323.44
Huffman John Wayne	CON 2 PT LOT 21	271104000410400	0.071	25	0.12	0.0001	$33.82
Young Tammy Lynn	CON 2 PT LOT 21	271104000410500	0.107	25	0.17	0.0002	$51.04
Vollick Ronald Christopher	CON 2 PT LOT 21	271104000410600	0.159	25	0.26	0.0003	$76.06
Citrigno Angela	CON 2 PT LOT 21	271104000410700	0.168	25	0.27	0.0004	$80.12
Stark Raymond	CON 2 PT LOT 21 RP 59R4333	271104000410705	1.936	25	3.16	0.0041	$926.05
Konc John Andrew	CON 2 PT LOT 22 RP 59R4801	271104000410710	2.899	35	6.62	0.0086	$1,941.39
Van Ruyven Josef Nicolaas	CON 2 PT LOT 22 RP 59R4801	271104000410800	4.199	35	9.59	0.0125	$2,811.99
Stewart Scott James	CON 2 PT LOT 22 RP 59R 5732	271104000410810	0.407	25	0.66	0.0009	$194.50
Powell Bradley Kenneth	CON 2 PT LOT 22 RP59R4801	271104000410900	7.711	35	17.61	0.0229	$5,164.30
Hellinga Jack Simon	CON 2 PT LOT 22	271104000411000	5.411	25	8.83	0.0115	$2,588.33
Kinzie Patricia Helen	CON 2 PT LOT 21 RP 59R6766	271104000411200	1.202	25	1.96	0.0025	$574.94
Pipher Lynn Mae	CON 2 PT LOT 21 RP 59R6766	271104000411205	1.208	25	1.97	0.0026	$578.00
Scace Wesley	CON 2 PT LOT 21	271104000411300	0.067	25	0.11	0.0001	$31.95
Port Colborne Quarries Inc	CON 2 PT LOT 21 PT LOT 22 RP	271104000411500	73.170	37	176.62	0.2297	$51,802.13
Parsons David Scott	CON 2 PT LOT 22	271104000411600	0.418	25	0.68	0.0009	$199.95
Leavere Larry Allan Thomas	CON 2 PT LOT 22	271104000411700	0.209	25	0.34	0.0004	$100.02
Yanni Bill	CON 2 PT LOT 22	271104000411900	0.418	25	0.68	0.0009	$199.95
Fitzgerald Shawn Patrick	HUMBERSTONE CON 2 PT LOT 22	271104000412000	0.209	25	0.34	0.0004	$100.07
Orlowski Jeffrey	CON 2 PT LOT 22 RP 59R4884	271104000412100	0.209	25	0.34	0.0004	$100.02
Moes Frank Allan	HUMBERSTONE CON 2 PT LOT 22	271104000412200	0.357	25	0.58	0.0008	$170.72
Boda Terry Joseph	CON 2 PT LOT 22	271104000412400	0.186	25	0.30	0.0004	$88.88
Elite Capital P.C Developments Inc	CON 2 PT LOT 22	271104000412600	4.110	30	8.04	0.0105	$2,359.42
Vale Canada Limited	CON 2 PT LOT 22 PT LOT 23	271104000412700	10.153	30	19.87	0.0258	$5,827.80
Vale Canada Limited	CON 2 PT LOT 22 PT LOT 23	271104000412700	22.189	30	43.43	0.0565	$12,736.89
Vale Canada Limited	CON 2 PT LOT 23	271104000412800	0.363	30	0.71	0.0009	$208.54
NCDSB	CON 2 PT LOT 23	271104000412900	5.947	30	11.64	0.0151	$3,413.79
Dyson Patrick James	CON 2 PT LOT 23	271104000413000	0.176	25	0.29	0.0004	$84.14
Dyson Mary Lynn	CON 2 PT LOT 23	271104000413100	0.182	30	0.36	0.0005	$104.19
Hortobagyi Zoltan	CON 2 PT LOT 23	271104000413200	0.186	25	0.30	0.0004	$88.88
Wakunick Deborah Ivy	CON 2 PT LOT 24	271104000413300	0.085	25	0.14	0.0002	$40.85
Wells Donna Louise	CON 2 PT LOT 23 PT LOT 24	271104000413400	0.828	25	1.35	0.0018	$396.13
Vale Canada Limited	CON 2 PT LOT 23 PT LOT 24 RP	271104000413401	7.409	25	12.08	0.0157	$3,544.32

Owner	Legal Text	Roll No	Area, Ha	Runoff Factor 'C'	QRF	QRF Ratio	
Vale Canada Limited	CON 2 PT LOT 23 PT LOT 24 RP	271104000413410	10.115	35	23.10	0.0300	$6,774.19
Vale Canada Limited	CON 2 PT LOT 24 RP 59R10047	271104000413435	0.631	35	1.44	0.0019	$422.51
Port Colborne Quarries Inc	HUMBERSTONE CON 2 PT LOTS 23	271104000414000	3.326	30	6.51	0.0085	$1,909.44
Vale Canada Limited	CON 2 PT LOT 24	271104000414120	0.928	35	2.12	0.0028	$621.68
2023165 Ontario Inc	CON 3 PT LOT 19 PT LOT 20	271104000506400	1.291	25	2.11	0.0027	$617.56
Koch Olga	CON 3 LOT 19CPT	271104000506500	0.222	25	0.36	0.0005	$106.05
Kozelj Stif	CON 3 PT LOT 20	271104000506600	0.079	25	0.13	0.0002	$37.89
Orsetto Aldo	CON 3 PT LOT 20	271104000506700	4.228	30	8.27	0.0108	$2,426.75
Currie Michael Bruce	CON 3 PT LOT 20	271104000506702	0.085	25	0.14	0.0002	$40.80
Fijavz David	CON 3 PT LOT 20	271104000506703	0.334	25	0.54	0.0007	$159.58
Levitt Corie	CON 3 PT LOT 20 PLAN 59R	271104000506710	0.212	25	0.34	0.0004	$101.17
Michaud Antonio Abel	CON 3 PT LOT 20 RP 59R8240	271104000506800	0.271	25	0.44	0.0006	$129.44
Henderson David Marshall	CON 3 PT LOT 20	271104000506801	11.011	35	25.14	0.0327	$7,373.83
Babion Gail J	HUMBERSTONE CON 3 PT LOT 21	271104000506900	15.252	35	34.83	0.0453	$10,214.09
Wagner Dan Patrick	CON 3 PT LOT 21	271104000507400	3.050	35	6.97	0.0091	$2,042.84
Stovell David Alan	CON 3 PT LOT 21 59R8535	271104000507500	1.238	25	2.02	0.0026	$592.40
Cooper Collin James Lee	CON 3 S PT LOT 21 S PT LOT	271104000508100	7.613	35	17.38	0.0226	$5,098.67
Henderson Drew David	CON 3 PT LOT 22	271104000508301	1.055	35	2.41	0.0031	$706.46
Beaulieu George E	CON 3 E PT LOT 23	271104000508900	0.388	25	0.63	0.0008	$185.46
Garner Mark Edward	CON 3 PT LOT 23	271104000509100	0.346	25	0.56	0.0007	$165.65
Joseph Grandilli	CON 3 PT LOT 23	271104000509300	0.082	25	0.13	0.0002	$39.37
Stefan John	CON 3 PT LOT 23	271104000509400	0.016	25	0.03	0.0000	$7.85
Johnson Raymond Francis Jr	CON 3 PT LOT 23 RP 59R10549	271104000510200	0.208	26	0.35	0.0005	$103.68
Vance Gregory Thomas	CON 3 PT LOT 23 RP 59R10549	271104000510202	0.417	25	0.68	0.0009	$199.52
Saxon Ronald Joseph	CON 3 PT LOT 23 PLAN	271104000510204	0.605	25	0.99	0.0013	$289.50
Pilkey Dean Lloyd	CON 3 PT LOT 23 PLAN	271104000510206	0.597	25	0.97	0.0013	$285.72
Schneider Darryl Frederick	CON 3 PT LOT 23	271104000510801	2.252	25	3.67	0.0048	$1,077.11
Zonneveld Bastian	CON 3 PT LOT 24	271104000510900	0.103	25	0.17	0.0002	$49.17
Terreberry Jack	CON 3 PT LOT 24	271104000511000	0.144	25	0.24	0.0003	$68.98
Jacak Dominik	CON 3 PT LOT 24	271104000511300	0.347	25	0.57	0.0007	$166.13
Moore Linda Ann	CON 3 PT LOT 24	271104000511400	0.099	25	0.16	0.0002	$47.21
Moore Linda Ann	CON 3 PT LOT 24	271104000511500	0.029	25	0.05	0.0001	$13.78
Medvic Peter James	CON 3 PT LOT 24	271104000511600	0.356	25	0.58	0.0008	$170.06
McIntyre Shelly	CON 3 PT LOT 24	271104000511700	0.191	25	0.31	0.0004	$91.41
City of Port Colborne	59R11175 PART 1 59R11176	271104000699500	0.630	35	1.44	0.0019	$421.71
			311.038				
Roads							
City of Port Colborne	Sndier Rd from Hwy 3 to Killaly St E	ROW	2.033	85	11.27	0.0147	$3,306.62
City of Port Colborne	Second Concession W of Snider Rd.	ROW	1.221	75	5.97	0.0078	$1,752.36
City of Port Colborne	Snider Rd. from Hwy 3 to Second Conc	ROW	2.005	75	9.81	0.0128	$2,876.95
City of Port Colborne	Snider Rd. N of Second Concession	ROW	0.071	85	0.40	0.0005	$116.22
City of Port Colborne	Second Concession Rd. E of Babion	ROW	0.595	85	3.30	0.0043	$968.19
City of Port Colborne	Babion Rd. from Hwy 3 to Second Concess	ROW	2.308	85	12.80	0.0166	$3,753.26
City of Port Colborne	Chippawa Road	ROW	0.559	80	2.92	0.0038	$854.95

Owner	Legal Text	Roll No	Area, Ha	Runoff Factor 'C'	QRF	QRF Ratio	
City of Port Colborne	Babion Rd. from 2nd to Chippawa	ROW	1.432	85	7.94	0.0103	$2,329.34
City of Port Colborne	Snider Rd protion south of Killaly St E	ROW	0.353	80	1.84	0.0024	$541.04
City of Port Colborne	Killaly St East W of Snider Rd	ROW	0.901	85	4.99	0.0065	$1,464.94
City of Port Colborne	Killaly St E east of Snider	ROW	0.176	85	0.98	0.0013	$286.73
City of Port Colborne	Second Concession from Snider to Babion	ROW	1.645	85	9.12	0.0119	$2,675.64
MTO	Highway #3	ROW	3.281	85	18.19	0.0237	$5,336.02
			16.581				
			327.619		768.83	1.00	$225,489.15

Port Colborne Municipal Drain
City of Port Colborne
Regional Municipality of Niagara

Section 24 Special Benefit
Port Colborne Branch #1

Owner	Legal Text	Roll No	Area, Ha	Length	Crossings $/each	Channel Works	Culvert Works	Erosion Control	Other Works	Construction Sub-Total Assessments	Construction Total	Portion of Eng & Admin	TOTAL Special Benefit
City of Port Colborne - Lands Assessed										$0.00	$0.00		$0.00
Konc John Andrew	CON 2 PT LOT 22 RP 59R4801	271104000410710	0.107							$0.00	$0.00		$0.00
Van Ruyven Josef Nicolaas	CON 2 PT LOT 22 RP 59R4801	271104000410800	1.084							$0.00	$0.00		$0.00
Hellinga Jack Simon	CON 2 PT LOT 22	271104000411000	5.247							$0.00	$0.00		$0.00
Port Colborne Quarries Inc	CON 2 PT LOT 21 PT LOT 22 RP	271104000411500	2.758							$0.00	$0.00		$0.00
Parsons David Scott	CON 2 PT LOT 22	271104000411600	0.413							$0.00	$0.00		$0.00
Leavere Larry Allan Thomas	CON 2 PT LOT 22	271104000411700	0.098							$0.00	$0.00		$0.00
Yanni Bill	CON 2 PT LOT 22	271104000411900	0.418							$0.00	$0.00		$0.00
Orlowski Jeffrey	CON 2 PT LOT 22 RP 59R4884	271104000412100	0.025							$0.00	$0.00		$0.00
Port Colborne Quarries Inc	HUMBERSTONE CON 2 PT LOTS 23	271104000414000	3.308							$0.00	$0.00		$0.00
		Sub-Total (Lands)	13.457										$0.00
Roads													
City of Port Colborne	Snider Rd. from Hwy 3 to Second Conc	ROW	1.612							$0.00	$0.00		$0.00
City of Port Colborne	Second Concession from Snider to Babion	ROW	0.022							$0.00	$0.00		$0.00
City of Port Colborne	Second Concession W of Snider Rd.	ROW	0.501							$0.00	$0.00		$0.00
MTO	Highway #3	ROW	0.547							$0.00	$0.00		$0.00
		Sub-Total (Roads)	2.682										$0.00
	Total Assessments for City of Port Colborne:		16.139										$0.00

Port Colborne Drain

Owner	Legal Text	Roll No	Area, Ha	Length	Crossings $/each	Channel Works	Culvert Works	Erosion Control	Other Works	Construction Sub-Total Assessments		Construction Total	Portion of Eng & Admin	TOTAL Special Benefit
Vale Canada Limited	HUMBERSTONE CON 1 PT LOTS 24	271102000718000	1.642							$0.00		$0.00		$0.00
McLean William Richard Sam	CON 1 PT TWP LOT 23	271102001311300	0.095							$0.00		$0.00		$0.00
Tomiuck Jonas	CON 1 PT TWP LOT 23	271102001311400	0.191							$0.00		$0.00		$0.00
Scott Gregory George	CON 1 PT TWP LOT 23	271102001311500	0.190							$0.00		$0.00		$0.00
Vale Canada Limited	CON 2 PT LOT 24	271102001312000	0.534							$0.00		$0.00		$0.00
Port Colborne Quarries Inc	CON 2 PT LOTS 19 AND 20 RP	271104000315600	30.868							$0.00		$0.00		$0.00
Phillips Richard Gordon	CON 2 PT LOT 20 RP 59R-1546	271104000315702	0.089							$0.00		$0.00		$0.00
Port Colborne Quarries Inc	CON 2 PT LOT 19 PT LOT 20	271104000315800	35.112							$0.00		$0.00		$0.00
Schlenger Uszer	CON 1 PT LOT 23	271104000408700	0.583	105.6						$0.00		$0.00		$0.00
Schlenger Uszer	CON 1 PT LOT 23	271104000408700	6.726	329.1						$0.00		$0.00		$0.00
City of Port Colborne	CON 1 PT LOTS 23, 24 RP	271104000408715	2.431	61						$0.00		$0.00		$0.00
Schlenger Uszer	CON 1 PT LOT 23	271104000408800	0.373	18.2						$0.00		$0.00		$0.00
Coccagna Anthony	CON 1 PT LOT 23	271104000408900	0.631	60.9						$0.00		$0.00		$0.00
1346618 Ontario Ltd	CON 1 PT LOT 23	271104000409000	0.463	54.9						$0.00		$0.00		$0.00
Ostric Milan	CON 1 PT LOT 23 RP 59R5797	271104000409100	0.201							$0.00		$0.00		$0.00
1108904 Ontario Limited	CON 1 PT LOT 23 PT LOT 24	271104000409200	0.779							$0.00		$0.00		$0.00
Favero Lidia	CON 1 PT LOT 23	271104000409300	0.202							$0.00		$0.00		$0.00
Ed Christensen Roofing Limit	CON 1 PT LOT 23	271104000409400	0.190							$0.00		$0.00		$0.00
Sauder William Edward	HUMBERSTONE CON 1 PT LOT 23	271104000409500	0.190							$0.00		$0.00		$0.00
Stenson Ian John	CON 1 PT LOT 23	271104000409600	0.190							$0.00		$0.00		$0.00
Polverari Giuseppe	CON 1 PT LOT 23	271104000409700	0.190							$0.00		$0.00		$0.00
Vale Canada Limited	CON 1 PT LOT 23	271104000409800	4.106							$0.00		$0.00		$0.00
Vale Canada Limited	CON 2 PT LOT 21 RP59R3588	271104000410000	4.963	166.5				$ 187.50		$187.50		$187.50		$187.50
Huffman John Wayne	CON 2 PT LOT 21	271104000410400	0.071							$0.00		$0.00		$0.00
Young Tammy Lynn	CON 2 PT LOT 21	271104000410500	0.107							$0.00		$0.00		$0.00

Port Colborne Drain

Owner	Legal Text	Roll No	Area, Ha	Length	Crossings $/each	Channel Works	Culvert Works	Erosion Control	Other Works	Construction Sub-Total Assessments		Construction Total	Portion of Eng & Admin	TOTAL Special Benefit
Vollick Ronald Christopher	CON 2 PT LOT 21	271104000410600	0.159							$0.00		$0.00		$0.00
Citrigno Angela	CON 2 PT LOT 21	271104000410700	0.168							$0.00		$0.00		$0.00
Stark Raymond	CON 2 PT LOT 21 RP 59R4333	271104000410705	1.936							$0.00		$0.00		$0.00
Konc John Andrew	CON 2 PT LOT 22 RP 59R4801	271104000410710	2.899	100.8	$ 710.00	$ 4,702.59	$ 355.00			$5,057.59		$5,057.59		$5,057.59
Van Ruyven Josef Nicolaas	CON 2 PT LOT 22 RP 59R4801	271104000410800	4.199	129.1	$ 710.00		$ 355.00			$355.00		$355.00		$355.00
Stewart Scott James	CON 2 PT LOT 22 RP 59R 5732	271104000410810	0.407							$0.00		$0.00		$0.00
Powell Bradley Kenneth	CON 2 PT LOT 22 RP59R4801	271104000410900	7.711	151.6						$0.00		$0.00		$0.00
Hellinga Jack Simon	CON 2 PT LOT 22	271104000411000	5.411							$0.00		$0.00		$0.00
Kinzie Patricia Helen	CON 2 PT LOT 21 RP 59R6766	271104000411200	1.202							$0.00		$0.00		$0.00
Pipher Lynn Mae	CON 2 PT LOT 21 RP 59R6766	271104000411205	1.208							$0.00		$0.00		$0.00
Scace Wesley	CON 2 PT LOT 21	271104000411300	0.067							$0.00		$0.00		$0.00
Port Colborne Quarries Inc	CON 2 PT LOT 21 PT LOT 22 RP	271104000411500	73.170	597						$0.00		$0.00		$0.00
Parsons David Scott	CON 2 PT LOT 22	271104000411600	0.418							$0.00		$0.00		$0.00
Leavere Larry Allan Thomas	CON 2 PT LOT 22	271104000411700	0.209							$0.00		$0.00		$0.00
Yanni Bill	CON 2 PT LOT 22	271104000411900	0.418							$0.00		$0.00		$0.00
Fitzgerald Shawn Patrick	HUMBERSTONE CON 2 PT LOT 22	271104000412000	0.209							$0.00		$0.00		$0.00
Orlowski Jeffrey	CON 2 PT LOT 22 RP 59R4884	271104000412100	0.209							$0.00		$0.00		$0.00
Moes Frank Allan	HUMBERSTONE CON 2 PT LOT 22	271104000412200	0.357							$0.00		$0.00		$0.00
Boda Terry Joseph	CON 2 PT LOT 22	271104000412400	0.186							$0.00		$0.00		$0.00
Elite Capital P.C Developmen	CON 2 PT LOT 22	271104000412600	4.110							$0.00		$0.00		$0.00
Vale Canada Limited	CON 2 PT LOT 22 PT LOT 23	271104000412700	10.153	127						$0.00		$0.00		$0.00
Vale Canada Limited	CON 2 PT LOT 22 PT LOT 23	271104000412700	22.189	542.7						$0.00		$0.00		$0.00
Vale Canada Limited	CON 2 PT LOT 23	271104000412800	0.363							$0.00		$0.00		$0.00
NCDSB	CON 2 PT LOT 23	271104000412900	5.947							$0.00		$0.00		$0.00
Dyson Patrick James	CON 2 PT LOT 23	271104000413000	0.176							$0.00		$0.00		$0.00
Dyson Mary Lynn	CON 2 PT LOT 23	271104000413100	0.182							$0.00		$0.00		$0.00
Hortobagyi Zoltan	CON 2 PT LOT 23	271104000413200	0.186							$0.00		$0.00		$0.00
Wakunick Deborah Ivy	CON 2 PT LOT 24	271104000413300	0.085							$0.00		$0.00		$0.00
Wells Donna Louise	CON 2 PT LOT 23 PT LOT 24	271104000413400	0.828							$0.00		$0.00		$0.00
Vale Canada Limited	CON 2 PT LOT 23 PT LOT 24 RP	271104000413401	7.409							$0.00		$0.00		$0.00
Vale Canada Limited	CON 2 PT LOT 23 PT LOT 24 RP	271104000413410	10.115							$0.00		$0.00		$0.00
Vale Canada Limited	CON 2 PT LOT 24 RP 59R10047	271104000413435	0.631							$0.00		$0.00		$0.00
Port Colborne Quarries Inc	HUMBERSTONE CON 2 PT LOTS 23	271104000414000	3.326							$0.00		$0.00		$0.00
2023165 Ontario Inc	CON 3 PT LOT 19 PT LOT 20	271104000506400	1.291							$0.00		$0.00		$0.00
Koch Olga	CON 3 LOT 19CPT	271104000506500	0.222							$0.00		$0.00		$0.00
Kozelj Stif	CON 3 PT LOT 20	271104000506600	0.079							$0.00		$0.00		$0.00
Orsetto Aldo	CON 3 PT LOT 20	271104000506700	4.228							$0.00		$0.00		$0.00
Currie Michael Bruce	CON 3 PT LOT 20	271104000506702	0.085							$0.00		$0.00		$0.00
Fijavz David	CON 3 PT LOT 20	271104000506703	0.334							$0.00		$0.00		$0.00
Levitt Corie	CON 3 PT LOT 20 PLAN 59R	271104000506710	0.212							$0.00		$0.00		$0.00
Michaud Antonio Abel	CON 3 PT LOT 20 RP 59R8240	271104000506800	0.271							$0.00		$0.00		$0.00
Henderson David Marshall	CON 3 PT LOT 20	271104000506801	11.011							$0.00		$0.00		$0.00
Babion Gail J	HUMBERSTONE CON 3 PT LOT 21	271104000506900	15.252							$0.00		$0.00		$0.00
Wagner Dan Patrick	CON 3 PT LOT 21	271104000507400	3.050							$0.00		$0.00		$0.00
Stovell David Alan	CON 3 PT LOT 21 59R8535	271104000507500	1.238							$0.00		$0.00		$0.00
Cooper Collin James Lee	CON 3 S PT LOT 21 S PT LOT	271104000508100	7.613							$0.00		$0.00		$0.00
Henderson Drew David	CON 3 PT LOT 22	271104000508301	1.055							$0.00		$0.00		$0.00
Beaulieu George E	CON 3 E PT LOT 23	271104000508900	0.388							$0.00		$0.00		$0.00
Garner Mark Edward	CON 3 PT LOT 23	271104000509100	0.346							$0.00		$0.00		$0.00
Joseph Grandilli	CON 3 PT LOT 23	271104000509300	0.082							$0.00		$0.00		$0.00
Stefan John	CON 3 PT LOT 23	271104000509400	0.016							$0.00		$0.00		$0.00
Johnson Raymond Francis Jr	CON 3 PT LOT 23 RP 59R10549	271104000510200	0.208							$0.00		$0.00		$0.00
Vance Gregory Thomas	CON 3 PT LOT 23 RP 59R10549	271104000510202	0.417							$0.00		$0.00		$0.00
Saxon Ronald Joseph	CON 3 PT LOT 23 PLAN	271104000510204	0.605							$0.00		$0.00		$0.00
Pilkey Dean Lloyd	CON 3 PT LOT 23 PLAN	271104000510206	0.597							$0.00		$0.00		$0.00
Schneider Darryl Frederick	CON 3 PT LOT 23	271104000510801	2.252							$0.00		$0.00		$0.00
Zonneveld Bastian	CON 3 PT LOT 24	271104000510900	0.103							$0.00		$0.00		$0.00

Port Colborne Drain

Owner	Legal Text	Roll No	Area, Ha	Length	Crossings $/each	Channel Works	Culvert Works	Erosion Control	Other Works	Construction Sub-Total Assessments		Construction Total	Portion of Eng & Admin	TOTAL Special Benefit
Terreberry Jack	CON 3 PT LOT 24	271104000511000	0.144							$0.00		$0.00		$0.00
Jacak Dominik	CON 3 PT LOT 24	271104000511300	0.347							$0.00		$0.00		$0.00
Moore Linda Ann	CON 3 PT LOT 24	271104000511400	0.099							$0.00		$0.00		$0.00
Moore Linda Ann	CON 3 PT LOT 24	271104000511500	0.029							$0.00		$0.00		$0.00
Medvic Peter James	CON 3 PT LOT 24	271104000511600	0.356							$0.00		$0.00		$0.00
McIntyre Shelly	CON 3 PT LOT 24	271104000511700	0.191							$0.00		$0.00		$0.00
City of Port Colborne	59R11175 PART 1 59R11176	271104000699500	0.630	20.7						$0.00		$0.00		$0.00
			310.110											
Roads														
City of Port Colborne	Sndier Rd from Hwy 3 to Killaly St E	ROW	2.033							$0.00		$0.00		$0.00
City of Port Colborne	Second Concession W of Snider Rd.	ROW	1.221							$0.00		$0.00		$0.00
City of Port Colborne	Snider Rd. from Hwy 3 to Second Conc	ROW	2.005							$0.00		$0.00		$0.00
City of Port Colborne	Snider Rd. N of Second Concession	ROW	0.071	28.4						$0.00		$0.00		$0.00
City of Port Colborne	Second Concession Rd. E of Babion	ROW	0.595							$0.00		$0.00		$0.00
City of Port Colborne	Babion Rd. from Hwy 3 to Second Concess	ROW	2.308							$0.00		$0.00		$0.00
City of Port Colborne	Chippawa Road	ROW	0.559							$0.00		$0.00		$0.00
City of Port Colborne	Babion Rd. from 2nd to Chippawa	ROW	1.432							$0.00		$0.00		$0.00
City of Port Colborne	Snider Rd protion south of Killaly St E	ROW	0.353							$0.00		$0.00		$0.00
City of Port Colborne	Killaly St East W of Snider Rd	ROW	0.901							$0.00		$0.00		$0.00
City of Port Colborne	Killaly St E east of Snider	ROW	0.176							$0.00		$0.00		$0.00
City of Port Colborne	Second Concession from Snider to Babion	ROW	1.645							$0.00		$0.00		$0.00
MTO	Highway #3	ROW	3.281							$0.00		$0.00		$0.00
			16.581											

$ 5,600.09

Section 26 - Special Assessments

As per Section 26 of the Drainage Act, the following costs are to be charged directly to the Road Authorities listed as SPECIAL ASSESSMENTS.

Port Colborne Branch #1

Agency	Items	A. Portion of General Construction Costs	B. Channel Improvement Works	C. Culvert Improvement Works	D. Erosion and Sediment Control Works	E. Other Improvement Works	Total Construction Costs	Portion of Administration Costs	TOTAL Special Assessment
City of Port Colborne	Assessed special benefit for improving Snider road outlet.		$ 3,940				$ 3,940	$ 3,068	$7,008.46
Regional Municipality of Niagara	No works proposed						$ -	$ -	$0.00
MINISTRY OF TRANSPORTATION ONTARIO		$ 4,000					$ 4,000	$ 3,115	$7,115.18
Utilities - Enbridge	No conflicts assessed during design						$ -	$ -	$0.00
Utilities - Other	No conflicts assessed during design						$ -	$ -	$0.00
									$14,123.64

Port Colborne Drain

City of Port Colborne	Extend drain along Babion Rd. to Second Concession. Re-lay culverts at Second Concession Rd.		$ 8,890	$ 2,563		$ 500	$ 11,953	$ 28,496	$40,448.80
Regional Municipality of Niagara	No works proposed						$ -		$0.00
MINISTRY OF TRANSPORTATION ONTARIO					$1,500.00		$ 1,500	$ 3,576	$5,076.19
Utilities - Enbridge	No conflicts assessed during design						$ -		$0.00
Utilities - Other	No conflicts assessed during design						$ -		$0.00
									$45,525.00

Appendix C:

Past Financing and Cost Reports

Fw: invoicing

1 message

alanavanderveen@portcolborne.ca <alanavanderveen@portcolborne.ca> Tue, Dec 17, 2019 at 4:02 PM
To: "Paul Marsh (pcmarsh" <pcmarsh@ewaeng.com>

Paul, as per our discussions on the Port Colborne drain wetland and fordings.

Thank you,

Alana Vander Veen
Drainage Superintendent
City of Port Colborne
alanavanderveen@portcolborne.ca
905-835-2900 x 291

"Serving You to Create an Even Better Community"

Working Smoke and Carbon Monoxide Alarms Save Lives

This message, including any attachments, is privileged and intended only for the person (s) named above. This material may contain confidential or personal information which may be subject to the provisions of the Municipal Freedom of Information and Protection of Privacy Act. Any other distribution, copying or disclosure is strictly prohibited. If you are not the intended recipient or have received this message in error, please notify us immediately by telephone, fax or email and permanently delete the original transmission from us, including any attachments, without making a copy.

----- Forwarded by Alana Vander Veen/Port_Notes on 2019-12-17 04:02 PM -----

From: Deanna Lindblad <dlindblad@npca.ca>
To: "henribennemeer@portcolborne.ca" <henribennemeer@portcolborne.ca>, "alanavanderveen@portcolborne.ca" <alanavanderveen@portcolborne.ca>
Date: 2016-01-07 09:14 AM
Subject: RE: invoicing

Hello,
Below are the reworked numbers for the invoices.
Thank you Henri for catching my mistake about the low level crossings.
deanna

KONC:
Excavation of wetland $7,571.00 (incl HST)
Low level crossing $ 1,243.00 (incl HST)
TOTAL: $8,814.00
Total will need to be in access of $ 11,800 in order for this amount to be paid by NPCA. *See details below.

VANRUYVEN:
Excavation of wetland $2,721.00 (incl HST)
Low level crossing $1,243.00 (inlc HST)
TOTAL: $3,964.00
Total will need to be in access of $5300 in order for this amount to be paid by NPCA. *See details below.

*Now because our program can only pay 75% of the cost of the project and it is our understanding that the City through your funding is covering the 25% on behalf of the landowner through your additional funding source, I will need the invoice to show that the totals above are no more than 75% of the cost. I know that the trucking of the soil off site will be more than that 25% so be sure that the invoice you send me shows that amount please.

**I will need that invoice by the end of the year in order to process by our drop dead date in the first week of January.

Deanna L. Lindblad
Restoration Project Lead
Niagara Peninsula Conservation Authority
250 Thorold Road, West, 3rd floor,
Welland, ON L3C 3W2
905-788-3135 x237
dlindblad@npca.ca

CERTIFICATE

TO: Borden Ladner Gervais LLP

IN THE MATTER OF By-law Number 71-2007 (the "**Debenture By-law**") authorizing an issue of instalment debentures of The Regional Municipality of Niagara (the "**Upper-tier Municipality**") in the aggregate principal amount of $22,809,804.00 - $845,000.00 of which relates to The Corporation of the City of Port Colborne (the "**Lower-tier Municipality**");

AND IN THE MATTER OF certain authorizing by-laws of the Lower-tier Municipality.

I, Janet Beckett, refer to my declaration declared July 5th, 2007. I hereby certify that all statements contained in such declaration are true and correct as at the date hereof.

DATED at the City of Port Colborne as at the 10th day of July, 2007.

Janet Beckett

Janet Beckett,
Clerk

City of Port Colborne

DATE: APRIL 23RD, 2007

MOVED BY COUNCILLOR G. BRUNO

SECONDED BY COUNCILLOR B. Butters

WHEREAS the Council of the Corporation of the City of Port Colborne passed By-law No. 4988/44/07 Being a By-law to Authorize the Borrowing of the Sum of Seven Hundred and Forty-Five Thousand Dollars ($745,000) Upon the Issuance of Debentures for Such Purposes, for the construction of Wignell and Michener Municipal Drains;

WHEREAS the estimated cost of construction of the Wignell and Michener Municipal Drains amount to $745,000;

WHEREAS it is deemed desirable to issue debentures in the amount of $745,000 in accordance with the terms of the various authorizing by-laws applicable to such expenditures;

NOW THEREFORE be it resolved by the Council of the Corporation of the City of Port Colborne as follows:

THAT the City Clerk be and is hereby directed to request the Council of the Regional Municipality of Niagara to issue debentures, on behalf of the said City of Port Colborne in the amount of $745,000 to finance the construction of the Wignell and Michener Municipal Drains and to be a 10 year debenture;

AND THAT the City Clerk and the Treasurer be and they are hereby directed to make available to the said Regional Municipality of Niagara certified copies of all By-laws and Orders of the Ontario Municipal Board applicable and all other information required in this connection, to ensure the issue of the said debentures in the amount of $745,000. for the construction of the Wignell and Michener Municipal Drains as described in the attached schedule.

Vance Badawey (sgd.)
MAYOR

No.....

CITY OF PORT COLBORNE
CERTIFIED TRUE AND CORRECT COPY
City Clerk Janet Beckett
05/01/07

THE CORPORATION OF THE CITY OF PORT COLBORNE

BY-LAW NO. 4988/44/07

BEING A BY-LAW TO AUTHORIZE
THE BORROWING OF THE SUM OF
SEVEN HUNDRED AND FORTY-FIVE THOUSAND DOLLARS
($745,000)
UPON THE ISSUANCE OF DEBENTURES FOR SUCH PURPOSES

WHEREAS Section 401(1) of the Municipal Act, 2001, S.O. 2001, c.25, as amended, authorizes the municipality to borrow money or incur a debt for municipal purposes and may issue debentures for the money borrowed or for the debt.

WHEREAS the Council of the Corporation of the City of Port Colborne deemed it desirable to undertake the following Capital Project in 2007 by issuance of debentures:

The construction of the Wignell and Michener Municipal Drains, as approved by Council in the Department of Operational, Planning & Development Services Report No. 2007-25, for the amount of $745,000.

WHEREAS the Treasurer of the Corporation of the City of Port Colborne has confirmed that the debt repayment limit for the City of Port Colborne has been updated and this project will not cause the Corporation to exceed its limit.

NOW THEREFORE THE COUNCIL OF THE CORPORATION OF THE CITY OF PORT COLBORNE ENACTS AS FOLLOWS:

1. In this By-law:

   "Council" means the Council of the Corporation of the City of Port Colborne.

   "Corporation" means the Corporation of the City of Port Colborne.

2. The Council authorizes and approves the Capital Project, being the construction of the Wignell and Michener Municipal Drains in 2007 for the amount of $745,000.

3. That the cost of the project, namely $745,000, to be borne by the ratepayers within the Wignell and Michener Municipal Drain Watershed, shall be paid for by the issue and sale of debentures for the amount of $745,000 over a period of ten (10) years.

4. Any debentures to be issued by the Council of the Regional Municipality of Niagara, with respect to the said project or part thereof, shall bear interest at such rate or rates as shall be determined by the Regional Council.

5. The Mayor and Treasurer are hereby authorized on behalf of the Corporation to borrow from any bank, person, firm or corporation from time to time, pending the issue and sale of debentures, any money necessary to meet the expenditures incurred up to the amount of the estimated cost thereof, and the Mayor and Treasurer are hereby authorized to execute a promissory note or notes thereof and the Clerk is hereby authorized to affix the corporate seal thereto.

6. The City Clerk of the Corporation is hereby authorized and directed to request the Council of the Regional Municipality of Niagara to borrow money for the purposes hereinbefor set out to a maximum amount of $745,000 and to issue debentures therefore to the credit of the Regional Corporation and to suggest to the Regional Municipality of Niagara that such debentures shall be payable within ten (10) years.

READ A FIRST, SECOND AND THIRD TIME AND FINALLY PASSED THIS 23rd DAY OF APRIL, 2007.

Vance Badawey
MAYOR

Janet Beckett

Janet Beckett
CITY CLERK

CITY OF PORT COLBORNE
CERTIFIED TRUE AND CORRECT COPY
City Clerk Janet Beckett
05/01/07

PORT COLBORNE

APPROVED BY COUNCIL
APR 23 2007
J. BECKETT
CITY CLERK
CITY OF PORT COLBORNE

DEPARTMENT OF OPERATIONAL PLANNING & DEVELOPMENT SERVICES

Report No. 2007-25 **Agenda Date: April 23, 2007**

Division: Engineering Division

Subject: FINANCING OF THE WIGNELL-MICHENER MUNICIPAL DRAINS

RECOMMENDATION:

That the Council of the City of Port Colborne approve the works contained in this report for the construction of the Wignell and Michener Municipal Drains.

That the Council of the City of Port Colborne approve the attached resolution to authorize the Regional Municipality of Niagara to issue the debenture in the amount of $745,000.00 over a period of 10 years for the works related to construction for the Wignell and Michener Drains.

That the Council of the City of Port Colborne authorize the City Clerk and Mayor to sign the appropriate by-law to authorize the issuance of debentures by the Region.

Purpose of the Report

The City of Port Colborne has appointed Wiebe Engineering Group to prepare a report for the repair and improvement of the Wignell, Michener M - 1 and the Michener M - 2 Municipal Drains. The estimated cost of the work is $780,000.00 and Council should consider debenturing the cost of this project as the City cannot finance this amount on behalf of the benefiting landowners within the watershed.

Analysis

Council appointed Wiebe Engineering Group on December 21, 2001 to prepare a drainage report for the Wignell and Michener Municipal Drains, under the appropriate sections of *The Drainage Act, R.S.O 1990*. The primary reason for the Report was to amalgamate 5 different by-laws for various portions of the Wignell Municipal Drain into one by-law, to confer municipal drain status on a short section connecting two portions of the Wignell Drain, to update the assessment schedules to reflect current land use and watershed boundaries, and to provide for needed repairs and improvements.

The "on-site" meeting for this project was held the evening of January 9, 2002 and was attended by about 90 landowners as well as Councillors Butters and Bodner. Many issues were raised and discussed at the meeting, including a storm water management system to control discharge of sediment and nutrients into Lorraine Bay, the ongoing erosion problem in the muck type soils in the portion of the Wignell Drain located south of the Friendship Trail, and others.

A treatment wetlands / storm water management system was designed, however, the cost was so high that it was decided not to proceed with that as part of the Report. The concept has not been abandoned, we are trying to receive funding for the wetlands through Water Smart Niagara. Concerns were raised about contaminants in the sediment in the bottom of the drain, so soil samples of the drain bottom were taken and tested and the test results indicate that the sediment is within provincial guidelines so the excavated material is safe to spread along the side of the drain.

The existing building housing the pump at Lakeshore Road East must be replaced, the starter on the pump inside the building must be replaced, the controller for the Grindex pump on the north side of the floodgates must be moved to inside the building, "bubblers" must be installed inside the pump wetwell to prevent freezing, the existing transformer must be upgraded to provide more power, the power supply cables must be moved underground, the floodgates require remedial work, and various

electrical components and installations for the pumps and floodgates must be upgraded to meet current Hydro regulations.

Erosion continues to worsen, to the extent that we had to install a concrete block wall along the Smith property between Snider Road and the Cemetery at a cost of $226,000. Repairs and improvements are required all along the Wignell and Michener Drains to improve flows and reduce erosion.
The work has escalated beyond what was originally considered when the engineer was appointed in late 2001. The cost of the required works is now estimated at $780,000, as follows:

- Construction: Main Drain = $400,000 (includes the $226,000 for the concrete wall)
  Wignell W-1 = $38,000
  Wignell W-2 = $23,000
  Michener M-1 = $15,000
  Michener M-2 = $56,000
  Total construction & Contingency = $532,000
- Allowances = $53,000
- Engineering & Administration = $151,000
- GST = $44,000
- **TOTAL COST = $780,000**

Resource Implications

The estimated $780,000 cost will have to be borne upfront by the municipality. It is estimated that approximately 15% of that cost will be assessed to City owned lands and road allowances and the remainder will be invoiced to affected landowners within the watershed. The actual cost to be debentured, net of GST and commission/legal fees, amounts to $745,000.00.

Policies Affecting The Proposal

The attached resolution provides the authority for the Region to issue a 10 year debenture for the construction of the Wignell and Michener Drains . This confirms that the Treasurer has updated the municipalities 2006 annual repayment limit respecting long term debt and financial obligations and determined that the estimated annual amount payable in respect of the drain construction, the additional cost amount and additional debenture authority, would not cause the municipality to reach or to exceed the updated 2006 limit.

Comments From Relevant Departments, Agencies & Corporate Partners

None.

Alternatives

None

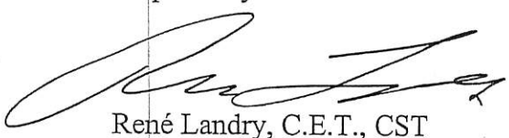
Conclusions

That the construction of the Wignell and Michener Drains be approved with financing from the issuance of debentures from the Region in the amount of $745,000.00. Costs will be recovered from the affected landowners following completion of the works.

Attachments

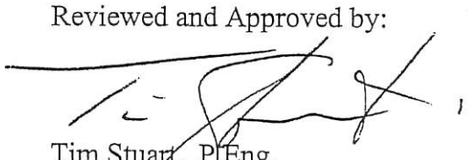
The attached by-law and resolution is required to authorize the borrowing of $745,000.00 upon the issuance of debentures by the Region in June, 2007.

Prepared by:



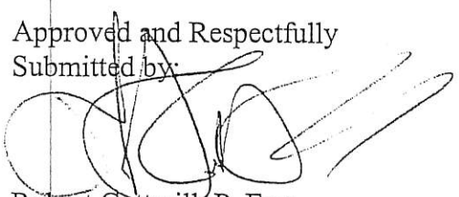
René Landry, C.E.T., CST
Drainage Superintendent
Engineering Assistant

Reviewed and Approved by:



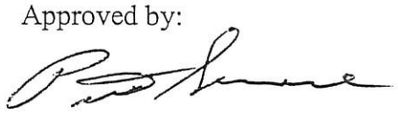
Tim Stuart, P.Eng.
Director of Operational, Planning
and Development Services

Approved and Respectfully
Submitted by:



Robert Cotterill, P. Eng.
Chief Administrative Officer

Financing strategy reviewed and
Approved by:



Peter Senese
Director of Community & Corporate
Services

Wignell/Michener Debenture

		Debenture Fee	December 31, 2007.	**2008 TOTAL**	December 31, 2008.	**2009 TOTAL**	December 31, 2009.	**2010 TOTAL**	December 31, 2010.	**2011 TOTAL**	December 31, 2011.	**2012 TOTAL**	December 31, 2012.	**2013 TOTAL**	December 31, 2013.	**2014 TOTAL**	December 31, 2014.	**2015 TOTAL**	December 31, 2015.	**2016 TOTAL**	December 31, 2016.	**2017 TOTAL**	December 31, 2017.	**Total Interest Paid**
Total			$ 745,000.00		$ 685,773.55		$ 623,570.98		$ 558,277.98		$ 489,704.23		$ 417,715.44		$ 342,126.42		$ 262,748.73		$ 179,397.98		$ 91,889.76		$ -	
		$ 6,065.29		$ 96,388.48		$ 96,422.90		$ 96,485.90		$ 96,556.81		$ 96,577.48		$ 96,614.26		$ 96,661.28		$ 96,665.48		$ 96,613.74		$ 96,576.12		
PRINC.				$ 59,226.45		$ 62,192.57		$ 65,303.00		$ 68,573.75		$ 71,988.79		$ 75,589.02		$ 79,377.69		$ 83,350.75		$ 87,508.22		$ 91,889.76		
INT.				$ 37,162.03		$ 34,230.33		$ 31,182.90		$ 27,983.06		$ 24,588.69		$ 21,025.24		$ 17,283.59		$ 13,314.73		$ 9,105.52		$ 4,686.36		**$ 220,562.45**
2007-2009 Contract cost for Rankin Construction Retaining Wall	$241,254.45																							
Erosion Protection Wall Engineering Fee	$27,894.59	$2,191.23		$13,425.67		$12,366.52		$11,265.57		$10,109.55		$8,883.25		$7,595.87		$6,244.11		$4,810.26		$3,289.59		$1,693.06		**$79,683.45**
2001-2007 Weibe Engineering Fees	$100,750.62	$820.24		$5,025.63		$4,629.16		$4,217.04		$3,784.31		$3,325.27		$2,843.36		$2,337.36		$1,800.63		$1,231.39		$633.76		**$29,827.92**
	$369,899.66	$3,011.47		$18,451.31		$16,995.69		$15,482.61		$13,893.86		$12,208.52		$10,439.23		$8,581.47		$6,610.89		$4,520.98		$2,326.82		**$ 109,511.38**
				4.99%		4.59%		4.19%		3.76%		3.30%		2.82%		2.32%		1.79%		1.22%		0.63%		**29.61%**

Appendix D:

Supplementary Information

City of Port Colborne
Regular Committee of the Whole Meeting 16-18
Minutes

Date:	July 23, 2018
Time:	6:30 p.m.
Place:	Council Chambers, Municipal Offices, 66 Charlotte Street, Port Colborne
Members Present:	R. Bodner, Councillor B. Butters, Councillor F. Danch, Councillor A. Desmarais, Councillor D. Elliott, Councillor B. Kenny, Councillor J. Maloney, Mayor (presiding officer) Absent: Y. Doucet, Councillor (due to vacation) J. Mayne, Councillor (leave of absence)
Staff Present:	D. Aquilina, Director of Planning and Development T. Cartwright, Fire Chief A. Grigg, Director of Community and Economic Development N. Halasz, Manager of Parks and Recreation A. LaPointe, Manager of Legislative Services/City Clerk (minutes) C. Lee, Director of Engineering and Operations S. Luey, Chief Administrative Officer P. Senese, Director of Corporate Services

Also in attendance were interested citizens, members of the news media and WeeStreem.

1. Call to Order:

Mayor Maloney called the meeting to order.

2. Introduction of Addendum Items:

Nil.

3. Confirmation of Agenda:

Moved by Councillor B. Kenny
Seconded by Councillor A. Desmarais

That the agenda dated July 23, 2018 be confirmed, as circulated or as amended.

CARRIED.

2. Engineering and Operations Department, Engineering Division, Report 2018-103, Subject: Wignell, Michener, Port Colborne and Beaverdam Municipal Drains Engineer Appointment

Moved by Councillor R. Bodner
Seconded by Councillor B. Butters

That the appointment of Paul Smeltzer P. Eng. of AMEC(FW) be rescinded as per Section 39(2) Chapter D.17 of *the Drainage Act R.S.O. 1990*; and

That Paul Marsh P. Eng. of EWA Engineers Inc. be appointed under Section 78(1) Chapter D.17 of the *Drainage Act R.S.O. 1990*, and that this appointment become effective once the conditions of Section 78(2) have been met; and

That staff be authorized to execute a petition under Section 4 Chapter D.17 of the *Drainage Act R.S.O. 1990* to initiate/incorporate any new works related to municipal roads and/or property; and

That Paul Marsh P. Eng. of EWA Engineers Inc., be appointed under Section 8 Chapter D.17 of the *Drainage Act R.S.O. 1990* for the new works contemplated and any additional petitions under Section 4, related to the Wignell, Michener Port Colborne and Beaver Dam Drains, that may come forward during the Drainage Act process; and

That the Mayor and Clerk be authorized to sign the requisite Engineering Services Agreement for the preparation of new engineer(s) reports for the Wignell, Michener, Port Colborne and Beaverdam Municipal Drains.

CARRIED.

14. Notice of Motion:

Nil.

15. Adjournment:

Moved by Councillor F. Danch
Seconded by Councillor D. Elliott

That the Committee of the Whole meeting be adjourned at approximately 7:31p.m.

CARRIED.

AL/cm

WIGNELL MUNICIPAL DRAIN
W2 RELOCATION
W1 ABANDONMENT

ENGINEER'S REPORT

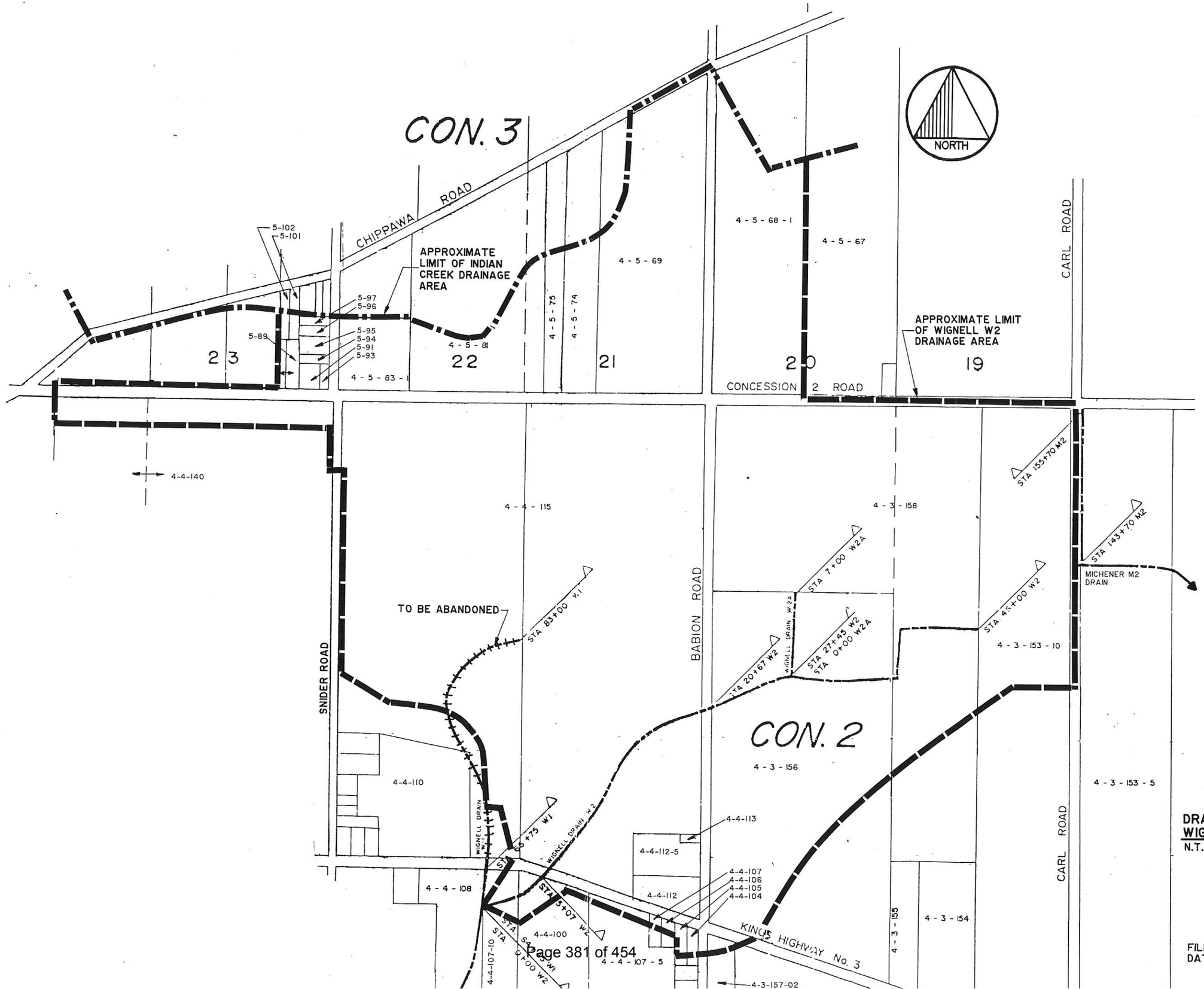
CITY OF PORT COLBORNE
Regional Municipality of Niagara

DATED: FEBRUARY 19, 1999

Copyright 1999

WIEBE ENGINEERING GROUP INC.
CONSULTING ENGINEERS & PROJECT MANAGERS

826 East Main Street
WELLAND, Ontario
L3B 3Y9
Ph. (905) 735-4522
Fax (905) 735-5355
E-mail: wiebe@vaxxine.com



DRAINAGE PLAN
WIGNELL W2 DRAIN
N.T.S

FILE: 9758
DATE: FEBRUARY 19, 1999

ENGINEERING AND OPERATIONS DEPARTMENT
ENGINEERING DIVISION

Report Number: 2013- 1 **Date: January 14, 2013**

SUBJECT: Wignell/Michener & Beaverdam Drains – Abandonments & Subsequent Connections

1. PURPOSE:

This report prepared by Henri Bennemeer, Drainage Superintendent has been authorized by Chris Lee, Manager of Projects & Design in response to a request from Port Colborne Quarries to have the Wignell 2A (W-2A) and a portion of the Wignell 2 (W-2) east of Babion Road abandoned and to have a remnant portion of the Wignell 2 watershed redirected to the Michener 2 (M2). The purpose of this report is to provide Council with background information and requisite actions.

2) HISTORY, BACKGROUND, COUNCIL POLICY, PRACTICES

Some years previous, circa 1998 the former owners of Port Colborne Quarries had requested that certain portions of the Wignell Municipal Drain system (W-1, W-2 & W-2A) be abandoned (see attached plan). An engineer's report was prepared by Wiebe Engineering Group dated February 19, 1999 dealing with an initial request to have a portion of the W-2 drain west of Babion Road, within the quarry lands, relocated as part of their rehabilitation plan, as well as the abandonment of a portion of the W-1 drain. The request to have the W-2 & W-2A drains abandoned was postponed until sometime in the future, when needed.

As Council may be aware the Wignell/Michener Municipal Drain Report has been under review for a number of years through a former appointment of Wiebe Engineering Group Inc. and more recently, combined with the Beaverdam Municipal Drain, through the appointment of AMEC Environment & Infrastructure. Throughout the review process, in discussions between AMEC and the current owner of Port Colborne Quarries (who now wish to move the abandonments forward), it was anticipated that the report, including the abandonments, would be finalized by the time quarry operations necessitated the removal of the aforementioned drains and ancillary works related to the redirection of the remnant portion of the W-2 watershed. A number of factors have affected this timing, namely the scope of the project and increased activity at the quarry that has moved the timelines forward, requiring that interim or alternate measures under the Drainage Act be taken.

3) STAFF COMMENTS AND DISCUSSIONS

Under Section 84 Chapter D.17 of the Drainage Act R.S.O. the Council of the initiating municipality may give notice on its own initiative, to the property owners affected, of its intention to abandon a drainage works or part thereof as specified in the notice, without any written request of the landowners assessed for benefit, in respect of the drainage

works. If within ten days of the mailing of the notice, no landowners receiving the notice request that an engineer's report be prepared on the proposed abandonment, then Council may by by-law abandon the drainage works or part thereof and thereafter the municipality will have no further obligation with respect to the drainage works.

In the case of the abandonment of the W-2 and W-2A east of Babion Road there are only two properties affected, that of Port Colborne Quarries, through which the drains pass and that of Mr. Paul Fehrman, who's lands drain into the W-2 at their west property line with Port Colborne Quarries. In discussions with both property owners, neither require the report of an engineer for the abandonment, provided that the drainage of the Fehrman lands can be redirected to the east into the M-2 drain.

In regard to redirecting or subsequently connecting lands to a drainage works to which the lands are not assessed, Section 65(3) & 65(5) Subsequent Connections to a Drainage Works, Chapter D.17 of the Drainage Act R.S.O. 1990, respectively provides for the clerk to instruct an engineer to inspect the subject lands and to assess it for a just proportion of the drainage works and to provide for Council authority to allow the connection. Again, similar to the abandonment, there will be no appeals as all construction costs and engineering related to the subsequent connection process are to be borne by Port Colborne Quarries. Staff is in receipt of the appropriate documentation from both parties in regard to the aforementioned requests/releases/commitments.

As a further assurance the new report by AMEC will address any oversights and or inequities that may develop as a result of this alternative measure.

4) OPTIONS AND FINANCIAL CONSIDERATIONS:

a) Do nothing.

This is an option. However, it would cause serious hardship and additional costs to Port Colborne Quarries if they were delayed until the outcome of the Engineer's Report on the Wignell/Michener Municipal Drain.

b) Other Options

None.

5) COMPLIANCE WITH STRATEGIC PLAN INITIATIVES

Municipal Drain Maintenance Strategic Planning is currently under review. This project is in compliance with all City legislative requirements.

6) ATTACHMENTS

Aerial plan of the subject area.

7) RECOMMENDATION

A. That Council receives this report as information.

B. That Council hereby authorizes the subsequent connection of the Fehrman lands identified as Roll # 2711-040-003-15310 to the Michener M-2 Municipal Drain.

C. That the City Clerk be authorized to send notice to the affected parties as defined in Section 84(2) Chapter D.17 of the Drainage Act R.S.O. 1990 and to prepare the appropriate by-law for the abandonment of those portions of the Wignell W-2 and W-2A Municipal Drains east of Babion Road, which by-law will come into effect once the conditions of Section 84(5) Chapter D.17 of the Drainage Act R.S.O. 1990 are met.

8) SIGNATURES

Prepared on January 2, 2013

Henri Bennemeer
Drainage Superintendent

Reviewed by:

Chris Lee
Manager of Projects & Design

Reviewed by:

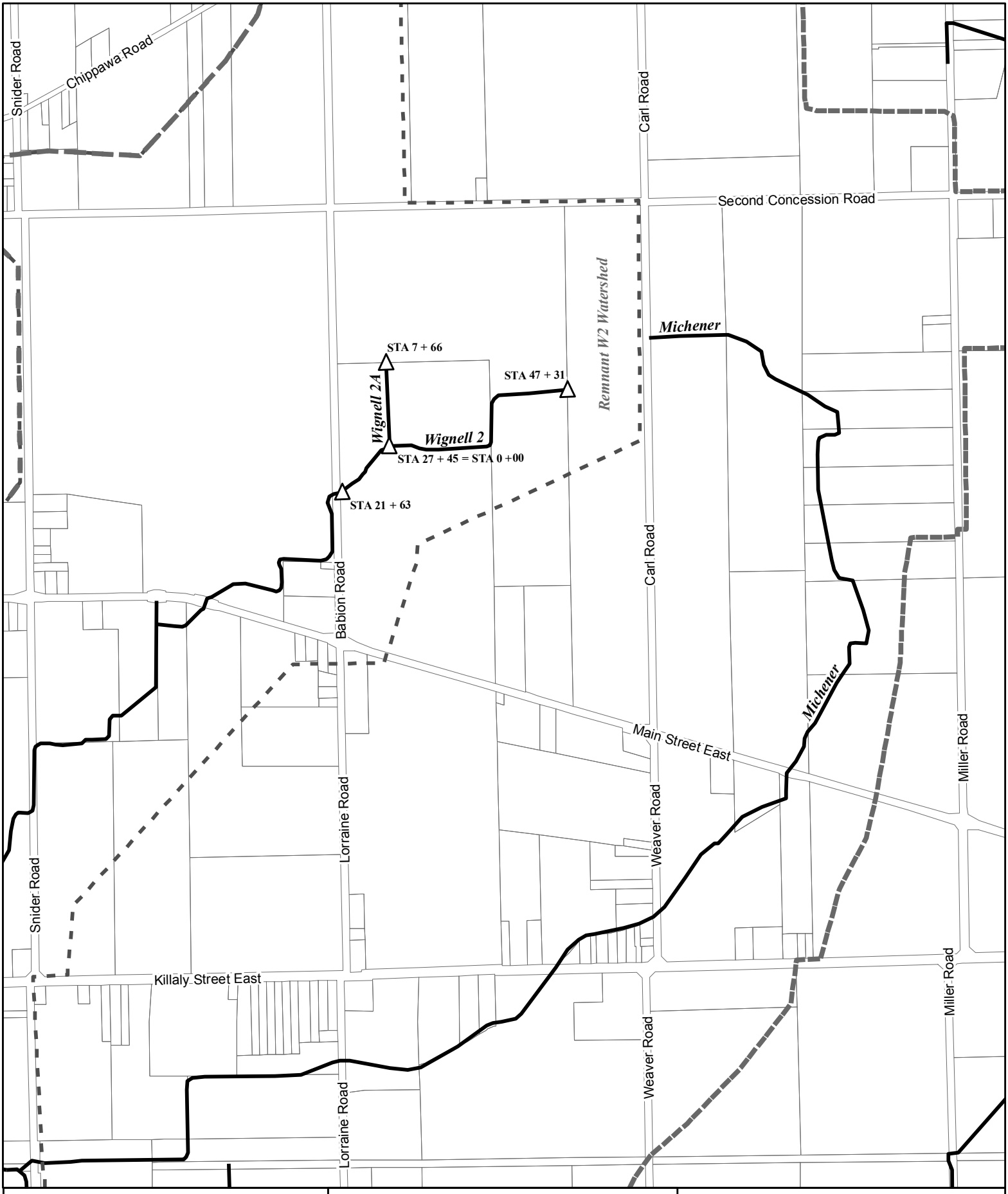
Ron Hanson, C.E.T.
Director, Engineering & Operations

Reviewed by:

Peter Senese
Director of Corporate and Community Services

Reviewed and Respectfully Submitted:

Robert J. Heil
Chief Administrative Officer



Wignell 2 & Wignell 2A Abandonment

PORT COLBORNE

January 02, 2013

```
[TITLE]
Wignell Drain

[OPTIONS]
;;Options             Value
;;------------------- ------------
FLOW_UNITS           CMS
INFILTRATION         CURVE_NUMBER
FLOW_ROUTING         KINWAVE
LINK_OFFSETS         DEPTH
MIN_SLOPE            0
ALLOW_PONDING        YES
SKIP_STEADY_STATE    NO

START_DATE           11/20/2018
START_TIME           00:00:00
REPORT_START_DATE    11/20/2018
REPORT_START_TIME    00:00:00
END_DATE             11/23/2018
END_TIME             00:00:00
SWEEP_START          01/01
SWEEP_END            12/31
DRY_DAYS             0
REPORT_STEP          00:10:00
WET_STEP             00:10:00
DRY_STEP             01:00:00
ROUTING_STEP         30

INERTIAL_DAMPING     PARTIAL
NORMAL_FLOW_LIMITED  BOTH
FORCE_MAIN_EQUATION  H-W
VARIABLE_STEP        0.75
LENGTHENING_STEP     0
MIN_SURFAREA         0
MAX_TRIALS           8
HEAD_TOLERANCE       0.0015
SYS_FLOW_TOL         5
LAT_FLOW_TOL         5
MINIMUM_STEP         0.5
THREADS              4

[EVAPORATION]
;;Type          Parameters
;;------------- ----------
CONSTANT         0.0
DRY_ONLY         NO

[RAINGAGES]
;;               Rain      Time     Snow     Data
;;Name           Type      Intrvl   Catch    Source
;;-------------- --------- -------- -------- ----------
Rain Gage-01     CUMULATIVE 0:10     1.0      TIMESERIES TS-SCS24_5

[SUBCATCHMENTS]
;;                                              Total    Pcnt.             Pcnt.    Curb     S
;;Name           Raingage         Outlet          Area     Imperv   Width    Slope    Length   P
;;-------------- ---------------- --------------- -------- -------- -------- -------- -------- -
;Bower
B1               Rain Gage-01     J6              8.32     5        201      0.25     0
;Michener
M1               Rain Gage-01     J1              30.426   4.5      288      0.17     0
;Michener
M2               Rain Gage-01     J2              26.526   4.5      420      0.43     0
;Michener
```

```
M3               Rain Gage-01     J7               41.950000 4.5      411        .01        0
;Michener
M4               Rain Gage-01     J4               18.790000 4.5      469.75     .001       0
;Michener
M5               Rain Gage-01     J5               15.520000 4.5      597        .001       0
;Port Colborne
PC1              Rain Gage-01     J21              20.1163   4.5      198        0.53       0
;Port Colborne
PC10             Rain Gage-01     J18              1.98      55       40         0.4        0
;Port Colborne
PC11             Rain Gage-01     J88              3.65      45       36.5       0.4        0
;Port Colborne
PC2              Rain Gage-01     J21              41.1751   4.73     374        0.24       0
;Port Colborne
PC3-QW1          Rain Gage-01     J20              66.06     0        660        0.01       0
;Port Colborne
PC4-QE1          Rain Gage-01     J19              63.430000 0        906        0.01       0
;Port Colborne
PC5              Rain Gage-01     J17              7.7       4.5      153        0.4        0
;Port Colborne
PC6              Rain Gage-01     J14              21.44     4.5      447        0.2        0
;Port Colborne
PC7              Rain Gage-01     J15              59.555    4.5      455        0.2        0
;Port Colborne
PC8              Rain Gage-01     J16              39.25     4.5      441        0.56       0
;Port Colborne
PC9_3            Rain Gage-01     J32              8.952833  4.5      239        0.75       0
;Port Colborne
PC9_4            Rain Gage-01     J10              4.005947  85       60         0.75       0
;Wignell
W1               Rain Gage-01     J22              62.0833   4.5      511        0.77       0
;Wignell
W10              Rain Gage-01     J12              100.600000 4.5     680        .01        0
;Wignell
W11              Rain Gage-01     J8               26.230000 4.5      1380       3          0
;Wignell
W12              Rain Gage-01     J24              18.67     4.5      275        0.15       0
;Wignell
W13              Rain Gage-01     J87              28.59     4.5      342        0.36       0
;Wignell
W14              Rain Gage-01     J27              34.15     4.5      491        0.29       0
;Wignell
W2               Rain Gage-01     J23              87.36     4.5      488        0.5        0
;Wignell
W3               Rain Gage-01     J28              41.21     4.5      330        0.16       0
;Wignell
W4               Rain Gage-01     J86              42.97     4.5      511        0.6        0
;Wignell
W5               Rain Gage-01     J26              22.3      4.5      354        0.16       0
;Wignell
W6               Rain Gage-01     J25              83.88     4.5      986        0.12       0
;Wignell
W7               Rain Gage-01     J24              41.66     4.5      495        0.12       0
;Wignell
W8               Rain Gage-01     J29              6.61      4.5      220        0.33       0
;Wignell
W9               Rain Gage-01     J30              23.23     4.5      502.06     0.81       0
;Wignell
WB1              Rain Gage-01     J29              6.88      4.5      260        0.38       0
;Wignell
WB2              Rain Gage-01     J24              10.34     4.5      250        0.24       0

[SUBAREAS]
;;Subcatchment   N-Imperv   N-Perv     S-Imperv   S-Perv     PctZero    RouteTo    PctRouted
```

```
;;-------------- ---------- ---------- ---------- ---------- ---------- ---------- ----------
B1               0.015      0.1        10         5          25         OUTLET
M1               0.015      0.1        10         5          25         OUTLET
M2               0.015      0.1        10         5          25         OUTLET
M3               0.0150     0.1000     10         5.00       25         OUTLET
M4               0.0150     0.1000     10         5.00       25         OUTLET
M5               0.0150     0.1000     10         5.00       25         OUTLET
PC1              0.015      0.1        10         5          25         OUTLET
PC10             0.015      0.1        10         5          25         OUTLET
PC11             0.015      0.1        10         5          25         OUTLET
PC2              0.015      0.1        10         5          25         OUTLET
PC3-QW1          0.015      0.1        10         200        25         OUTLET
PC4-QE1          0.0150     0.1000     10         200        25         OUTLET
PC5              0.015      0.1        10         5          25         OUTLET
PC6              0.015      0.1        10         5          25         OUTLET
PC7              0.015      0.1        10         5          25         OUTLET
PC8              0.015      0.1        10         5          25         OUTLET
PC9_3            0.015      0.1        10         5          25         OUTLET
PC9_4            0.015      0.1        10         5          25         OUTLET
W1               0.015      0.1        10         5          25         OUTLET
W10              0.0150     0.1000     10         5.00       25         OUTLET
W11              0.0150     0.1000     10         5.00       25         OUTLET
W12              0.015      0.1        10         5          25         OUTLET
W13              0.015      0.1        10         5          25         OUTLET
W14              0.015      0.1        10         5          25         OUTLET
W2               0.015      0.1        10         5          25         OUTLET
W3               0.015      0.1        10         5          25         OUTLET
W4               0.015      0.1        10         5          25         OUTLET
W5               0.015      0.1        10         5          25         OUTLET
W6               0.015      0.1        10         5          25         OUTLET
W7               0.015      0.1        10         5          25         OUTLET
W8               0.015      0.1        10         5          25         OUTLET
W9               0.015      0.1        10         5          25         OUTLET
WB1              0.015      0.1        10         5          25         OUTLET
WB2              0.015      0.1        10         5          25         OUTLET

[INFILTRATION]
;;Subcatchment   CurveNum   HydCon     DryTime
;;-------------- ---------- ---------- ----------
B1               83         0.5        4
M1               73         0.5        4
M2               83         0.5        4
M3               73.00      0.5        4
M4               73.00      0.5        4
M5               73.00      0.5        4
PC1              83         0.5        4
PC10             93         0.5        4
PC11             93         0.5        4
PC2              83         0.5        4
PC3-QW1          73         0.5        4
PC4-QE1          73.00      0.5        4
PC5              83         0.5        4
PC6              83         0.5        4
PC7              83         0.5        4
PC8              83         0.5        4
PC9_3            83         0.5        4
PC9_4            95         0.5        4
W1               83         0.5        4
W10              73.00      0.5        4
W11              73.00      0.5        4
W12              83         0.5        4
W13              83         0.5        4
W14              83         0.5        4
W2               83         0.5        4
```

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W3               83         0.5        4
W4               83         0.5        4
W5               83         0.5        4
W6               83         0.5        4
W7               83         0.5        4
W8               83         0.5        4
W9               83         0.5        4
WB1              83         0.5        4
WB2              83         0.5        4

[JUNCTIONS]
;;               Invert     Max.       Init.      Surcharge  Ponded
;;Name           Elev.      Depth      Depth      Depth      Area
;;-------------- ---------- ---------- ---------- ---------- ----------
;Michener
J1               176.34     1.87       0          0          0
J10              180.25     0.75       0          0          0
;Wignell
J11              173.85     3.5        0          0          0
;Wignell
J12              174.134    2          0          0          0
;Wignell
J13              174.345    2          0          0          0
;Wignell
J14              174.36     3.34       0          0          0
;Port Colborne
J15              175.33     2          0          0          0.00
;Port Colborne
J16              175.98     2          0          0          0.00
;Port Colborne
J17              178.43     1.74       0          0          0
;Port Colborne
J18              179.98     2.08       0          0          0
;Port Colborne
J19              181.76     2          0          0          0.00
;Michener
J2               176.377    1.2        0          0          0
;Port Colborne
J20              181.78     2          0          0          0.00
;Port Colborne
J21              182.40     2          0          0          0.00
;Wignell
J22              181.38     2          0          0          0.00
;Wignell
J23              181.36     2          0          0          0.00
;Wignell
J24              180.75     2          0          0          0.00
;Wignell
J25              178.32     2          0          0          0.00
;Wignell
J26              177.25     2          0          0          0.00
;Wignell
J27              176.5      2          0          0          0.00
;Wignell
J28              175.52     2          0          0          0.00
;Wignell
J29              175.15     2          0          0          0.00
;Michener
J3               175.26     1          0          0          0
;Wignell
J30              174.48     2          0          0          0.00
J31              177.35     2.314      0          0          0
J32              178.05     2.3        0          0          0
;Michener
```

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J4              174.6      1.2        0          0          0
;Michener
J5              174.1      2.96       0          0          0
;Bower
J6              174.5      2          0          0          0.00
;Michener
J7              175.85     0.9        0          0          0
;Wignell
J8              174.07     3          0          0          0
;Wignell
J86             176        2          0          0          0.00
;Wignell
J87             176        2          0          0          0.00
;Wignell
J88             181.6      2.14       0          0          0
;Wignell
J9              173.888    3.512      0          0          0

[OUTFALLS]
;;              Invert     Outfall    Stage/Table      Tide
;;Name          Elev.      Type       Time Series      Gate     Route To
;;------------- ---------- ---------- ---------------- -------- ----------------
;Wignell
J10 Outlet      173.75     FREE                        NO

[CONDUITS]
;;              Inlet           Outlet                      Manning    Inlet      Outlet     In
;;Name          Node            Node            Length      N          Offset     Offset     Fl
;;------------- --------------- --------------- ----------- ---------- ---------- ---------- --
;MitchnerChannel
Link-01         J1              J7              455         0.04       0          0          0
;MitchnerChannel
Link-02         J2              J7              352         0.04       0          0          0
;MitchnerChannel
Link-04         J7              J3              533         0.04       0          0          0
;MitchnerChannel
Link-05         J3              J4              510         0.04       0          0          0
;MitchnerChannel
Link-06         J4              J5              230         0.04       0          0          0
;PortColborneChannel
Link-07         J21             J88             302         0.04       0          0          0
;PortColborneChannel
Link-08         J88             J18             500         0.04       0          0          0
;PortColborneChannel-QE1
Link-09         J19             J88             70          0.032      0          0          0
;PortColborneChannel-QW1
Link-10         J20             J18             110         0.04       0          0          0
;PortColborneChannel
Link-11         J18             J17             640         0.04       0          0          0
;PortColborneChannel
Link-12_1       J17             J31             198.542     0.04       0          0          0
;PortColborneChannel
Link-12_2       J31             J16             661.458     0.04       0          0          0
;PortColborneChannel
Link-13         J16             J15             580         0.04       0          0          0
;PortColborneChannel
Link-14         J15             J14             600         0.04       0          0          0
;WignelChannel
Link-15         J22             J23             21.42       0.04       0          0          0
;WignelChannel
Link-16         J23             J24             883.618     0.04       0          0          0
;WignelChannel
Link-17         J24             J25             1250        0.04       0          0          0
;WignelChannel
```

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Link-18          J25              J26              522.47     0.04       0          0          0
;WignelChannel
Link-19          J26              J27              313.77     0.04       0          0          0
;WignelChannel
Link-20          J27              J28              618.63     0.04       0          0          0
;WignelChannel
Link-21          J28              J29              289.09     0.04       0          0          0
;WignelChannel
Link-22          J29              J30              567        0.04       0          0          0
;WignelChannel
Link-23          J30              J14              40.77      0.04       0          0          0
;WignelChannel
Link-25          J14              J13              98.5       0.04       0          0          0
;BowerDrain
Link-26          J6               J13              25         0.04       0          0          0
;WignelChannel
Link-27          J13              J12              1364.61    0.04       0          0          0
;WignelChannel
Link-28          J12              J8               566.25     0.04       0          0          0
;WignelChannel
Link-29          J5               J8               12         0.04       0          0          0
;WignelChannel
Link-30          J8               J9               13.58      0.04       0          0          0
;WignelChannel
Link-31          J9               J11              29.42      0.04       0          0          0
;WignelChannel
Link-32          J11              J10 Outlet       231.24     0.04       0          0          0
;WignelChannel
Link-33          J87              J28              254.29     0.04       0          0          0
;WignelChannel
Link-34          J86              J29              278.16     0.04       0          0          0
PC1              J32              J31              256        0.036      0          0          0
PC2              J10              J32              680        0.036      0          0          0

[XSECTIONS]
;;Link           Shape        Geom1           Geom2      Geom3      Geom4      Barrels
;;-------------- ------------ --------------- ---------- ---------- ---------- ----------
Link-01          TRAPEZOIDAL  0.9             0.6        1.5        1.5        1
Link-02          TRAPEZOIDAL  2.000           0.600      1.5        1.5        1
Link-04          TRAPEZOIDAL  1               1          1.5        1.5        1
Link-05          TRAPEZOIDAL  1.2             1          1.5        1.5        1
Link-06          TRAPEZOIDAL  1               0.6        1.5        1.5        1
Link-07          TRAPEZOIDAL  2.000           0.600      1.5        1.5        1
Link-08          TRAPEZOIDAL  2.000           0.600      1.5        1.5        1
Link-09          TRAPEZOIDAL  2.000           0.600      1.5        1.5        1
Link-10          TRAPEZOIDAL  2.000           0.600      1.5        1.5        1
Link-11          TRAPEZOIDAL  2.000           0.600      1.5        1.5        1
Link-12_1        TRAPEZOIDAL  2               0.6        2          2          1
Link-12_2        TRAPEZOIDAL  2               0.6        2          2          1
Link-13          TRAPEZOIDAL  2.000           0.600      1.5        1.5        1
Link-14          TRAPEZOIDAL  2               0.6        1.5        1.5        1
Link-15          TRAPEZOIDAL  2.0000000000    0.600      1.5        1.5        1
Link-16          TRAPEZOIDAL  2               0.6        1.5        1.5        1
Link-17          TRAPEZOIDAL  2.0000000000    0.600      1.5        1.5        1
Link-18          TRAPEZOIDAL  2.0000000000    0.600      1.5        1.5        1
Link-19          TRAPEZOIDAL  2.0000000000    0.600      1.5        1.5        1
Link-20          TRAPEZOIDAL  2.0000000000    0.600      1.5        1.5        1
Link-21          TRAPEZOIDAL  2.0000000000    1.000      1.5        1.5        1
Link-22          TRAPEZOIDAL  2               1.65       2          2          1
Link-23          RECT_OPEN    2.57            3.13       0          0          1
Link-25          TRAPEZOIDAL  2.5             5          1.5        1.5        1
Link-26          TRAPEZOIDAL  2.0000000000    0.600      1.5        1.5        1
Link-27          TRAPEZOIDAL  2               15         1.5        1.5        1
Link-28          TRAPEZOIDAL  2               15         1.5        1.5        1
```

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Link-29          TRAPEZOIDAL  1               1.6        1.5        1.5        1
Link-30          RECT_OPEN    2.73            5.2        0          0          1
Link-31          TRAPEZOIDAL  3.5             5          1.5        1.5        1
Link-32          TRAPEZOIDAL  2.000           5.000      1.5        1.5        1
Link-33          TRAPEZOIDAL  2.0000000000    0.600      1.5        1.5        1
Link-34          TRAPEZOIDAL  2.0000000000    0.600      1.5        1.5        1
PC1              TRAPEZOIDAL  1.2             0.8        1.5        1.5        1
PC2              TRAPEZOIDAL  1.5             0.6        1.5        1.5        1

[LOSSES]
;;Link            Inlet      Outlet     Average    Flap Gate  SeepageRate
;;--------------- ---------- ---------- ---------- ---------- ----------

[INFLOWS]
;;                                                 Param    Units    Scale    Baseline Baseline
;;Node            Parameter        Time Series     Type     Factor   Factor   Value    Pattern
;;--------------- ---------------- --------------- -------- -------- -------- -------- --------
J19              FLOW             ""              FLOW     1.0      1.0      .118     Sanitary T
J20              FLOW             ""              FLOW     1.0      1.0      .057     Sanitary T

[TIMESERIES]
;;Name            Date       Time       Value
;;--------------- ---------- ---------- ----------
;10-year cumulative storm with a total rainfall amount of 81.50 mm using a SCS Type II 24-hr stor
TS-SCS24_10                 0:00       0.00000
TS-SCS24_10                 0:10       0.13697
TS-SCS24_10                 0:20       0.27620
TS-SCS24_10                 0:30       0.41769
TS-SCS24_10                 0:40       0.56145
TS-SCS24_10                 0:50       0.70747
TS-SCS24_10                 1:00       0.85575
TS-SCS24_10                 1:10       1.00631
TS-SCS24_10                 1:20       1.15912
TS-SCS24_10                 1:30       1.31419
TS-SCS24_10                 1:40       1.47154
TS-SCS24_10                 1:50       1.63114
TS-SCS24_10                 2:00       1.79300
TS-SCS24_10                 2:10       1.95714
TS-SCS24_10                 2:20       2.12354
TS-SCS24_10                 2:30       2.29219
TS-SCS24_10                 2:40       2.46312
TS-SCS24_10                 2:50       2.63631
TS-SCS24_10                 3:00       2.81175
TS-SCS24_10                 3:10       2.98947
TS-SCS24_10                 3:20       3.16945
TS-SCS24_10                 3:30       3.35169
TS-SCS24_10                 3:40       3.53620
TS-SCS24_10                 3:50       3.72297
TS-SCS24_10                 4:00       3.91200
TS-SCS24_10                 4:10       4.10450
TS-SCS24_10                 4:20       4.30146
TS-SCS24_10                 4:30       4.50288
TS-SCS24_10                 4:40       4.70896
TS-SCS24_10                 4:50       4.91950
TS-SCS24_10                 5:00       5.13450
TS-SCS24_10                 5:10       5.35412
TS-SCS24_10                 5:20       5.57829
TS-SCS24_10                 5:30       5.80688
TS-SCS24_10                 5:40       6.04007
TS-SCS24_10                 5:50       6.27784
TS-SCS24_10                 6:00       6.52000
TS-SCS24_10                 6:10       6.76684
TS-SCS24_10                 6:20       7.01807
TS-SCS24_10                 6:30       7.27388
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TS-SCS24_10	6:40	7.53424
TS-SCS24_10	6:50	7.79912
TS-SCS24_10	7:00	8.06850
TS-SCS24_10	7:10	8.34250
TS-SCS24_10	7:20	8.62096
TS-SCS24_10	7:30	8.90387
TS-SCS24_10	7:40	9.19146
TS-SCS24_10	7:50	9.48350
TS-SCS24_10	8:00	9.78000
TS-SCS24_10	8:10	10.09035
TS-SCS24_10	8:20	10.42314
TS-SCS24_10	8:30	10.77838
TS-SCS24_10	8:40	11.15664
TS-SCS24_10	8:50	11.55735
TS-SCS24_10	9:00	11.98050
TS-SCS24_10	9:10	12.41517
TS-SCS24_10	9:20	12.84983
TS-SCS24_10	9:30	13.28450
TS-SCS24_10	9:40	13.73764
TS-SCS24_10	9:50	14.22664
TS-SCS24_10	10:00	14.75150
TS-SCS24_10	10:10	15.32254
TS-SCS24_10	10:20	15.94738
TS-SCS24_10	10:30	16.62600
TS-SCS24_10	10:40	17.37852
TS-SCS24_10	10:50	18.22068
TS-SCS24_10	11:00	19.15250
TS-SCS24_10	11:10	20.24134
TS-SCS24_10	11:20	21.54534
TS-SCS24_10	11:30	23.06450
TS-SCS24_10	11:40	27.42855
TS-SCS24_10	11:50	38.38593
TS-SCS24_10	12:00	54.03450
TS-SCS24_10	12:10	56.50151
TS-SCS24_10	12:20	58.45751
TS-SCS24_10	12:30	59.90250
TS-SCS24_10	12:40	61.02421
TS-SCS24_10	12:50	62.02938
TS-SCS24_10	13:00	62.91800
TS-SCS24_10	13:10	63.71426
TS-SCS24_10	13:20	64.44776
TS-SCS24_10	13:30	65.11850
TS-SCS24_10	13:40	65.73383
TS-SCS24_10	13:50	66.30433
TS-SCS24_10	14:00	66.83000
TS-SCS24_10	14:10	67.32449
TS-SCS24_10	14:20	67.80330
TS-SCS24_10	14:30	68.26644
TS-SCS24_10	14:40	68.71338
TS-SCS24_10	14:50	69.14465
TS-SCS24_10	15:00	69.56025
TS-SCS24_10	15:10	69.95965
TS-SCS24_10	15:20	70.34338
TS-SCS24_10	15:30	70.71144
TS-SCS24_10	15:40	71.06330
TS-SCS24_10	15:50	71.39949
TS-SCS24_10	16:00	71.72000
TS-SCS24_10	16:10	72.02954
TS-SCS24_10	16:20	72.33345
TS-SCS24_10	16:30	72.63182
TS-SCS24_10	16:40	72.92433
TS-SCS24_10	16:50	73.21129
TS-SCS24_10	17:00	73.49263
TS-SCS24_10	17:10	73.76820

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TS-SCS24_10                17:20      74.03816
TS-SCS24_10                17:30      74.30249
TS-SCS24_10                17:40      74.56114
TS-SCS24_10                17:50      74.81412
TS-SCS24_10                18:00      75.06150
TS-SCS24_10                18:10      75.30312
TS-SCS24_10                18:20      75.53914
TS-SCS24_10                18:30      75.76957
TS-SCS24_10                18:40      75.99416
TS-SCS24_10                18:50      76.21320
TS-SCS24_10                19:00      76.42663
TS-SCS24_10                19:10      76.63429
TS-SCS24_10                19:20      76.83635
TS-SCS24_10                19:30      77.03274
TS-SCS24_10                19:40      77.22345
TS-SCS24_10                19:50      77.40854
TS-SCS24_10                20:00      77.58800
TS-SCS24_10                20:10      77.76399
TS-SCS24_10                20:20      77.93886
TS-SCS24_10                20:30      78.11262
TS-SCS24_10                20:40      78.28523
TS-SCS24_10                20:50      78.45674
TS-SCS24_10                21:00      78.62713
TS-SCS24_10                21:10      78.79632
TS-SCS24_10                21:20      78.96440
TS-SCS24_10                21:30      79.13145
TS-SCS24_10                21:40      79.29722
TS-SCS24_10                21:50      79.46190
TS-SCS24_10                22:00      79.62550
TS-SCS24_10                22:10      79.78790
TS-SCS24_10                22:20      79.94919
TS-SCS24_10                22:30      80.10937
TS-SCS24_10                22:40      80.26840
TS-SCS24_10                22:50      80.42632
TS-SCS24_10                23:00      80.58313
TS-SCS24_10                23:10      80.73874
TS-SCS24_10                23:20      80.89323
TS-SCS24_10                23:30      81.04662
TS-SCS24_10                23:40      81.19886
TS-SCS24_10                23:50      81.34999
TS-SCS24_10                24:00      81.50000

;100-year cumulative storm with a total rainfall amount of 121.1 mm using a SCS Type II 24-hr sto
TS-SCS24_100               0:00       0.00000
TS-SCS24_100               0:10       0.20353
TS-SCS24_100               0:20       0.41041
TS-SCS24_100               0:30       0.62064
TS-SCS24_100               0:40       0.83426
TS-SCS24_100               0:50       1.05123
TS-SCS24_100               1:00       1.27155
TS-SCS24_100               1:10       1.49526
TS-SCS24_100               1:20       1.72232
TS-SCS24_100               1:30       1.95274
TS-SCS24_100               1:40       2.18654
TS-SCS24_100               1:50       2.42370
TS-SCS24_100               2:00       2.66420
TS-SCS24_100               2:10       2.90810
TS-SCS24_100               2:20       3.15534
TS-SCS24_100               2:30       3.40594
TS-SCS24_100               2:40       3.65992
TS-SCS24_100               2:50       3.91726
TS-SCS24_100               3:00       4.17795
TS-SCS24_100               3:10       4.44203
TS-SCS24_100               3:20       4.70946
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TS-SCS24_100	3:30	4.98024
TS-SCS24_100	3:40	5.25441
TS-SCS24_100	3:50	5.53193
TS-SCS24_100	4:00	5.81280
TS-SCS24_100	4:10	6.09884
TS-SCS24_100	4:20	6.39150
TS-SCS24_100	4:30	6.69078
TS-SCS24_100	4:40	6.99700
TS-SCS24_100	4:50	7.30984
TS-SCS24_100	5:00	7.62930
TS-SCS24_100	5:10	7.95562
TS-SCS24_100	5:20	8.28873
TS-SCS24_100	5:30	8.62838
TS-SCS24_100	5:40	8.97488
TS-SCS24_100	5:50	9.32817
TS-SCS24_100	6:00	9.68800
TS-SCS24_100	6:10	10.05477
TS-SCS24_100	6:20	10.42808
TS-SCS24_100	6:30	10.80818
TS-SCS24_100	6:40	11.19505
TS-SCS24_100	6:50	11.58862
TS-SCS24_100	7:00	11.98890
TS-SCS24_100	7:10	12.39604
TS-SCS24_100	7:20	12.80980
TS-SCS24_100	7:30	13.23018
TS-SCS24_100	7:40	13.65750
TS-SCS24_100	7:50	14.09144
TS-SCS24_100	8:00	14.53200
TS-SCS24_100	8:10	14.99315
TS-SCS24_100	8:20	15.48764
TS-SCS24_100	8:30	16.01548
TS-SCS24_100	8:40	16.57754
TS-SCS24_100	8:50	17.17295
TS-SCS24_100	9:00	17.80170
TS-SCS24_100	9:10	18.44757
TS-SCS24_100	9:20	19.09343
TS-SCS24_100	9:30	19.73930
TS-SCS24_100	9:40	20.41262
TS-SCS24_100	9:50	21.13922
TS-SCS24_100	10:00	21.91910
TS-SCS24_100	10:10	22.76761
TS-SCS24_100	10:20	23.69604
TS-SCS24_100	10:30	24.70440
TS-SCS24_100	10:40	25.82256
TS-SCS24_100	10:50	27.07392
TS-SCS24_100	11:00	28.45850
TS-SCS24_100	11:10	30.07640
TS-SCS24_100	11:20	32.01400
TS-SCS24_100	11:30	34.27130
TS-SCS24_100	11:40	40.75580
TS-SCS24_100	11:50	57.03725
TS-SCS24_100	12:00	80.28930
TS-SCS24_100	12:10	83.95500
TS-SCS24_100	12:20	86.86140
TS-SCS24_100	12:30	89.00850
TS-SCS24_100	12:40	90.67524
TS-SCS24_100	12:50	92.16881
TS-SCS24_100	13:00	93.48920
TS-SCS24_100	13:10	94.67235
TS-SCS24_100	13:20	95.76225
TS-SCS24_100	13:30	96.75890
TS-SCS24_100	13:40	97.67321
TS-SCS24_100	13:50	98.52091
TS-SCS24_100	14:00	99.30200

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TS-SCS24_100                14:10       100.03675
TS-SCS24_100                14:20       100.74822
TS-SCS24_100                14:30       101.43639
TS-SCS24_100                14:40       102.10050
TS-SCS24_100                14:50       102.74132
TS-SCS24_100                15:00       103.35885
TS-SCS24_100                15:10       103.95232
TS-SCS24_100                15:20       104.52250
TS-SCS24_100                15:30       105.06939
TS-SCS24_100                15:40       105.59222
TS-SCS24_100                15:50       106.09175
TS-SCS24_100                16:00       106.56800
TS-SCS24_100                16:10       107.02794
TS-SCS24_100                16:20       107.47952
TS-SCS24_100                16:30       107.92287
TS-SCS24_100                16:40       108.35749
TS-SCS24_100                16:50       108.78389
TS-SCS24_100                17:00       109.20193
TS-SCS24_100                17:10       109.61140
TS-SCS24_100                17:20       110.01253
TS-SCS24_100                17:30       110.40530
TS-SCS24_100                17:40       110.78963
TS-SCS24_100                17:50       111.16552
TS-SCS24_100                18:00       111.53310
TS-SCS24_100                18:10       111.89212
TS-SCS24_100                18:20       112.24283
TS-SCS24_100                18:30       112.58522
TS-SCS24_100                18:40       112.91893
TS-SCS24_100                18:50       113.24440
TS-SCS24_100                19:00       113.56153
TS-SCS24_100                19:10       113.87009
TS-SCS24_100                19:20       114.17034
TS-SCS24_100                19:30       114.46215
TS-SCS24_100                19:40       114.74552
TS-SCS24_100                19:50       115.02054
TS-SCS24_100                20:00       115.28720
TS-SCS24_100                20:10       115.54870
TS-SCS24_100                20:20       115.80854
TS-SCS24_100                20:30       116.06672
TS-SCS24_100                20:40       116.32321
TS-SCS24_100                20:50       116.57805
TS-SCS24_100                21:00       116.83123
TS-SCS24_100                21:10       117.08263
TS-SCS24_100                21:20       117.33238
TS-SCS24_100                21:30       117.58059
TS-SCS24_100                21:40       117.82691
TS-SCS24_100                21:50       118.07161
TS-SCS24_100                22:00       118.31470
TS-SCS24_100                22:10       118.55601
TS-SCS24_100                22:20       118.79567
TS-SCS24_100                22:30       119.03367
TS-SCS24_100                22:40       119.26998
TS-SCS24_100                22:50       119.50463
TS-SCS24_100                23:00       119.73763
TS-SCS24_100                23:10       119.96885
TS-SCS24_100                23:20       120.19841
TS-SCS24_100                23:30       120.42632
TS-SCS24_100                23:40       120.65254
TS-SCS24_100                23:50       120.87710
TS-SCS24_100                24:00       121.10000

;2-year cumulative storm with a total rainfall amount of 49.8 mm using a SCS Type II 24-hr storm
TS-SCS24_2                  0:00        0.00000
TS-SCS24_2                  0:10        0.08370
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TS-SCS24_2	0:20	0.16877
TS-SCS24_2	0:30	0.25523
TS-SCS24_2	0:40	0.34307
TS-SCS24_2	0:50	0.43230
TS-SCS24_2	1:00	0.52290
TS-SCS24_2	1:10	0.61490
TS-SCS24_2	1:20	0.70827
TS-SCS24_2	1:30	0.80303
TS-SCS24_2	1:40	0.89917
TS-SCS24_2	1:50	0.99670
TS-SCS24_2	2:00	1.09560
TS-SCS24_2	2:10	1.19590
TS-SCS24_2	2:20	1.29757
TS-SCS24_2	2:30	1.40063
TS-SCS24_2	2:40	1.50507
TS-SCS24_2	2:50	1.61090
TS-SCS24_2	3:00	1.71810
TS-SCS24_2	3:10	1.82670
TS-SCS24_2	3:20	1.93667
TS-SCS24_2	3:30	2.04803
TS-SCS24_2	3:40	2.16077
TS-SCS24_2	3:50	2.27490
TS-SCS24_2	4:00	2.39040
TS-SCS24_2	4:10	2.50803
TS-SCS24_2	4:20	2.62838
TS-SCS24_2	4:30	2.75145
TS-SCS24_2	4:40	2.87738
TS-SCS24_2	4:50	3.00603
TS-SCS24_2	5:00	3.13740
TS-SCS24_2	5:10	3.27159
TS-SCS24_2	5:20	3.40858
TS-SCS24_2	5:30	3.54825
TS-SCS24_2	5:40	3.69074
TS-SCS24_2	5:50	3.83603
TS-SCS24_2	6:00	3.98400
TS-SCS24_2	6:10	4.13483
TS-SCS24_2	6:20	4.28834
TS-SCS24_2	6:30	4.44465
TS-SCS24_2	6:40	4.60374
TS-SCS24_2	6:50	4.76559
TS-SCS24_2	7:00	4.93020
TS-SCS24_2	7:10	5.09763
TS-SCS24_2	7:20	5.26778
TS-SCS24_2	7:30	5.44065
TS-SCS24_2	7:40	5.61638
TS-SCS24_2	7:50	5.79483
TS-SCS24_2	8:00	5.97600
TS-SCS24_2	8:10	6.16564
TS-SCS24_2	8:20	6.36899
TS-SCS24_2	8:30	6.58605
TS-SCS24_2	8:40	6.81719
TS-SCS24_2	8:50	7.06204
TS-SCS24_2	9:00	7.32060
TS-SCS24_2	9:10	7.58620
TS-SCS24_2	9:20	7.85180
TS-SCS24_2	9:30	8.11740
TS-SCS24_2	9:40	8.39429
TS-SCS24_2	9:50	8.69309
TS-SCS24_2	10:00	9.01380
TS-SCS24_2	10:10	9.36273
TS-SCS24_2	10:20	9.74453
TS-SCS24_2	10:30	10.15920
TS-SCS24_2	10:40	10.61902
TS-SCS24_2	10:50	11.13362

TS-SCS24_2	11:00	11.70300
TS-SCS24_2	11:10	12.36833
TS-SCS24_2	11:20	13.16513
TS-SCS24_2	11:30	14.09340
TS-SCS24_2	11:40	16.76002
TS-SCS24_2	11:50	23.45545
TS-SCS24_2	12:00	33.01740
TS-SCS24_2	12:10	34.52485
TS-SCS24_2	12:20	35.72005
TS-SCS24_2	12:30	36.60300
TS-SCS24_2	12:40	37.28841
TS-SCS24_2	12:50	37.90261
TS-SCS24_2	13:00	38.44560
TS-SCS24_2	13:10	38.93215
TS-SCS24_2	13:20	39.38035
TS-SCS24_2	13:30	39.79020
TS-SCS24_2	13:40	40.16619
TS-SCS24_2	13:50	40.51479
TS-SCS24_2	14:00	40.83600
TS-SCS24_2	14:10	41.13815
TS-SCS24_2	14:20	41.43073
TS-SCS24_2	14:30	41.71372
TS-SCS24_2	14:40	41.98683
TS-SCS24_2	14:50	42.25035
TS-SCS24_2	15:00	42.50430
TS-SCS24_2	15:10	42.74835
TS-SCS24_2	15:20	42.98283
TS-SCS24_2	15:30	43.20772
TS-SCS24_2	15:40	43.42273
TS-SCS24_2	15:50	43.62815
TS-SCS24_2	16:00	43.82400
TS-SCS24_2	16:10	44.01314
TS-SCS24_2	16:20	44.19884
TS-SCS24_2	16:30	44.38116
TS-SCS24_2	16:40	44.55989
TS-SCS24_2	16:50	44.73524
TS-SCS24_2	17:00	44.90715
TS-SCS24_2	17:10	45.07554
TS-SCS24_2	17:20	45.24049
TS-SCS24_2	17:30	45.40201
TS-SCS24_2	17:40	45.56006
TS-SCS24_2	17:50	45.71464
TS-SCS24_2	18:00	45.86580
TS-SCS24_2	18:10	46.01344
TS-SCS24_2	18:20	46.15766
TS-SCS24_2	18:30	46.29846
TS-SCS24_2	18:40	46.43569
TS-SCS24_2	18:50	46.56954
TS-SCS24_2	19:00	46.69995
TS-SCS24_2	19:10	46.82684
TS-SCS24_2	19:20	46.95031
TS-SCS24_2	19:30	47.07031
TS-SCS24_2	19:40	47.18684
TS-SCS24_2	19:50	47.29994
TS-SCS24_2	20:00	47.40960
TS-SCS24_2	20:10	47.51713
TS-SCS24_2	20:20	47.62399
TS-SCS24_2	20:30	47.73016
TS-SCS24_2	20:40	47.83564
TS-SCS24_2	20:50	47.94043
TS-SCS24_2	21:00	48.04455
TS-SCS24_2	21:10	48.14793
TS-SCS24_2	21:20	48.25064
TS-SCS24_2	21:30	48.35271

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TS-SCS24_2                  21:40      48.45401
TS-SCS24_2                  21:50      48.55463
TS-SCS24_2                  22:00      48.65460
TS-SCS24_2                  22:10      48.75383
TS-SCS24_2                  22:20      48.85239
TS-SCS24_2                  22:30      48.95026
TS-SCS24_2                  22:40      49.04744
TS-SCS24_2                  22:50      49.14393
TS-SCS24_2                  23:00      49.23975
TS-SCS24_2                  23:10      49.33483
TS-SCS24_2                  23:20      49.42924
TS-SCS24_2                  23:30      49.52296
TS-SCS24_2                  23:40      49.61599
TS-SCS24_2                  23:50      49.70833
TS-SCS24_2                  24:00      49.80000

;25-year cumulative storm with a total rainfall amount of 97.5 mm using a SCS Type II 24-hr storm
TS-SCS24_25                 0:00       0.00000
TS-SCS24_25                 0:10       0.16387
TS-SCS24_25                 0:20       0.33043
TS-SCS24_25                 0:30       0.49969
TS-SCS24_25                 0:40       0.67168
TS-SCS24_25                 0:50       0.84636
TS-SCS24_25                 1:00       1.02375
TS-SCS24_25                 1:10       1.20387
TS-SCS24_25                 1:20       1.38668
TS-SCS24_25                 1:30       1.57219
TS-SCS24_25                 1:40       1.76043
TS-SCS24_25                 1:50       1.95137
TS-SCS24_25                 2:00       2.14500
TS-SCS24_25                 2:10       2.34137
TS-SCS24_25                 2:20       2.54043
TS-SCS24_25                 2:30       2.74219
TS-SCS24_25                 2:40       2.94668
TS-SCS24_25                 2:50       3.15387
TS-SCS24_25                 3:00       3.36375
TS-SCS24_25                 3:10       3.57637
TS-SCS24_25                 3:20       3.79168
TS-SCS24_25                 3:30       4.00969
TS-SCS24_25                 3:40       4.23043
TS-SCS24_25                 3:50       4.45387
TS-SCS24_25                 4:00       4.68000
TS-SCS24_25                 4:10       4.91029
TS-SCS24_25                 4:20       5.14592
TS-SCS24_25                 4:30       5.38688
TS-SCS24_25                 4:40       5.63342
TS-SCS24_25                 4:50       5.88530
TS-SCS24_25                 5:00       6.14250
TS-SCS24_25                 5:10       6.40523
TS-SCS24_25                 5:20       6.67342
TS-SCS24_25                 5:30       6.94688
TS-SCS24_25                 5:40       7.22586
TS-SCS24_25                 5:50       7.51029
TS-SCS24_25                 6:00       7.80000
TS-SCS24_25                 6:10       8.09530
TS-SCS24_25                 6:20       8.39585
TS-SCS24_25                 6:30       8.70188
TS-SCS24_25                 6:40       9.01335
TS-SCS24_25                 6:50       9.33023
TS-SCS24_25                 7:00       9.65250
TS-SCS24_25                 7:10       9.98030
TS-SCS24_25                 7:20       10.31342
TS-SCS24_25                 7:30       10.65188
TS-SCS24_25                 7:40       10.99592
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TS-SCS24_25	7:50	11.34530
TS-SCS24_25	8:00	11.70000
TS-SCS24_25	8:10	12.07128
TS-SCS24_25	8:20	12.46941
TS-SCS24_25	8:30	12.89438
TS-SCS24_25	8:40	13.34691
TS-SCS24_25	8:50	13.82628
TS-SCS24_25	9:00	14.33250
TS-SCS24_25	9:10	14.85250
TS-SCS24_25	9:20	15.37250
TS-SCS24_25	9:30	15.89250
TS-SCS24_25	9:40	16.43460
TS-SCS24_25	9:50	17.01960
TS-SCS24_25	10:00	17.64750
TS-SCS24_25	10:10	18.33065
TS-SCS24_25	10:20	19.07815
TS-SCS24_25	10:30	19.89000
TS-SCS24_25	10:40	20.79025
TS-SCS24_25	10:50	21.79775
TS-SCS24_25	11:00	22.91250
TS-SCS24_25	11:10	24.21510
TS-SCS24_25	11:20	25.77510
TS-SCS24_25	11:30	27.59250
TS-SCS24_25	11:40	32.81330
TS-SCS24_25	11:50	45.92182
TS-SCS24_25	12:00	64.64250
TS-SCS24_25	12:10	67.59383
TS-SCS24_25	12:20	69.93383
TS-SCS24_25	12:30	71.66250
TS-SCS24_25	12:40	73.00443
TS-SCS24_25	12:50	74.20693
TS-SCS24_25	13:00	75.27000
TS-SCS24_25	13:10	76.22257
TS-SCS24_25	13:20	77.10008
TS-SCS24_25	13:30	77.90250
TS-SCS24_25	13:40	78.63863
TS-SCS24_25	13:50	79.32113
TS-SCS24_25	14:00	79.95000
TS-SCS24_25	14:10	80.54157
TS-SCS24_25	14:20	81.11438
TS-SCS24_25	14:30	81.66844
TS-SCS24_25	14:40	82.20313
TS-SCS24_25	14:50	82.71907
TS-SCS24_25	15:00	83.21625
TS-SCS24_25	15:10	83.69407
TS-SCS24_25	15:20	84.15313
TS-SCS24_25	15:30	84.59344
TS-SCS24_25	15:40	85.01438
TS-SCS24_25	15:50	85.41656
TS-SCS24_25	16:00	85.80000
TS-SCS24_25	16:10	86.17031
TS-SCS24_25	16:20	86.53388
TS-SCS24_25	16:30	86.89083
TS-SCS24_25	16:40	87.24076
TS-SCS24_25	16:50	87.58406
TS-SCS24_25	17:00	87.92063
TS-SCS24_25	17:10	88.25031
TS-SCS24_25	17:20	88.57326
TS-SCS24_25	17:30	88.88948
TS-SCS24_25	17:40	89.19892
TS-SCS24_25	17:50	89.50156
TS-SCS24_25	18:00	89.79750
TS-SCS24_25	18:10	90.08656
TS-SCS24_25	18:20	90.36892

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TS-SCS24_25                 18:30      90.64458
TS-SCS24_25                 18:40      90.91326
TS-SCS24_25                 18:50      91.17531
TS-SCS24_25                 19:00      91.43062
TS-SCS24_25                 19:10      91.67905
TS-SCS24_25                 19:20      91.92079
TS-SCS24_25                 19:30      92.15573
TS-SCS24_25                 19:40      92.38388
TS-SCS24_25                 19:50      92.60531
TS-SCS24_25                 20:00      92.82000
TS-SCS24_25                 20:10      93.03054
TS-SCS24_25                 20:20      93.23974
TS-SCS24_25                 20:30      93.44761
TS-SCS24_25                 20:40      93.65411
TS-SCS24_25                 20:50      93.85929
TS-SCS24_25                 21:00      94.06313
TS-SCS24_25                 21:10      94.26554
TS-SCS24_25                 21:20      94.46661
TS-SCS24_25                 21:30      94.66646
TS-SCS24_25                 21:40      94.86477
TS-SCS24_25                 21:50      95.06179
TS-SCS24_25                 22:00      95.25750
TS-SCS24_25                 22:10      95.45179
TS-SCS24_25                 22:20      95.64474
TS-SCS24_25                 22:30      95.83636
TS-SCS24_25                 22:40      96.02661
TS-SCS24_25                 22:50      96.21554
TS-SCS24_25                 23:00      96.40313
TS-SCS24_25                 23:10      96.58929
TS-SCS24_25                 23:20      96.77411
TS-SCS24_25                 23:30      96.95761
TS-SCS24_25                 23:40      97.13974
TS-SCS24_25                 23:50      97.32053
TS-SCS24_25                 24:00      97.50000

;5-year cumulative storm with a total rainfall amount of 68.90 mm using a SCS Type II 24-hr storm
TS-SCS24_5                  0:00       0.00000
TS-SCS24_5                  0:10       0.11580
TS-SCS24_5                  0:20       0.23350
TS-SCS24_5                  0:30       0.35311
TS-SCS24_5                  0:40       0.47465
TS-SCS24_5                  0:50       0.59810
TS-SCS24_5                  1:00       0.72345
TS-SCS24_5                  1:10       0.85073
TS-SCS24_5                  1:20       0.97992
TS-SCS24_5                  1:30       1.11101
TS-SCS24_5                  1:40       1.24404
TS-SCS24_5                  1:50       1.37896
TS-SCS24_5                  2:00       1.51580
TS-SCS24_5                  2:10       1.65456
TS-SCS24_5                  2:20       1.79524
TS-SCS24_5                  2:30       1.93781
TS-SCS24_5                  2:40       2.08232
TS-SCS24_5                  2:50       2.22873
TS-SCS24_5                  3:00       2.37705
TS-SCS24_5                  3:10       2.52730
TS-SCS24_5                  3:20       2.67945
TS-SCS24_5                  3:30       2.83351
TS-SCS24_5                  3:40       2.98950
TS-SCS24_5                  3:50       3.14740
TS-SCS24_5                  4:00       3.30720
TS-SCS24_5                  4:10       3.46994
TS-SCS24_5                  4:20       3.63645
TS-SCS24_5                  4:30       3.80673
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TS-SCS24_5	4:40	3.98095
TS-SCS24_5	4:50	4.15894
TS-SCS24_5	5:00	4.34070
TS-SCS24_5	5:10	4.52636
TS-SCS24_5	5:20	4.71588
TS-SCS24_5	5:30	4.90912
TS-SCS24_5	5:40	5.10627
TS-SCS24_5	5:50	5.30728
TS-SCS24_5	6:00	5.51200
TS-SCS24_5	6:10	5.72068
TS-SCS24_5	6:20	5.93307
TS-SCS24_5	6:30	6.14933
TS-SCS24_5	6:40	6.36944
TS-SCS24_5	6:50	6.59336
TS-SCS24_5	7:00	6.82110
TS-SCS24_5	7:10	7.05274
TS-SCS24_5	7:20	7.28815
TS-SCS24_5	7:30	7.52733
TS-SCS24_5	7:40	7.77045
TS-SCS24_5	7:50	8.01734
TS-SCS24_5	8:00	8.26800
TS-SCS24_5	8:10	8.53037
TS-SCS24_5	8:20	8.81171
TS-SCS24_5	8:30	9.11203
TS-SCS24_5	8:40	9.43181
TS-SCS24_5	8:50	9.77057
TS-SCS24_5	9:00	10.12830
TS-SCS24_5	9:10	10.49577
TS-SCS24_5	9:20	10.86323
TS-SCS24_5	9:30	11.23070
TS-SCS24_5	9:40	11.61378
TS-SCS24_5	9:50	12.02718
TS-SCS24_5	10:00	12.47090
TS-SCS24_5	10:10	12.95366
TS-SCS24_5	10:20	13.48189
TS-SCS24_5	10:30	14.05560
TS-SCS24_5	10:40	14.69178
TS-SCS24_5	10:50	15.40374
TS-SCS24_5	11:00	16.19150
TS-SCS24_5	11:10	17.11200
TS-SCS24_5	11:20	18.21440
TS-SCS24_5	11:30	19.49870
TS-SCS24_5	11:40	23.18807
TS-SCS24_5	11:50	32.45142
TS-SCS24_5	12:00	45.68070
TS-SCS24_5	12:10	47.76630
TS-SCS24_5	12:20	49.41990
TS-SCS24_5	12:30	50.64150
TS-SCS24_5	12:40	51.58979
TS-SCS24_5	12:50	52.43956
TS-SCS24_5	13:00	53.19080
TS-SCS24_5	13:10	53.86395
TS-SCS24_5	13:20	54.48405
TS-SCS24_5	13:30	55.05110
TS-SCS24_5	13:40	55.57130
TS-SCS24_5	13:50	56.05360
TS-SCS24_5	14:00	56.49800
TS-SCS24_5	14:10	56.91604
TS-SCS24_5	14:20	57.32083
TS-SCS24_5	14:30	57.71236
TS-SCS24_5	14:40	58.09021
TS-SCS24_5	14:50	58.45481
TS-SCS24_5	15:00	58.80615
TS-SCS24_5	15:10	59.14381

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TS-SCS24_5                  15:20      59.46821
TS-SCS24_5                  15:30      59.77936
TS-SCS24_5                  15:40      60.07683
TS-SCS24_5                  15:50      60.36104
TS-SCS24_5                  16:00      60.63200
TS-SCS24_5                  16:10      60.89368
TS-SCS24_5                  16:20      61.15061
TS-SCS24_5                  16:30      61.40285
TS-SCS24_5                  16:40      61.65014
TS-SCS24_5                  16:50      61.89273
TS-SCS24_5                  17:00      62.13058
TS-SCS24_5                  17:10      62.36355
TS-SCS24_5                  17:20      62.59177
TS-SCS24_5                  17:30      62.81523
TS-SCS24_5                  17:40      63.03390
TS-SCS24_5                  17:50      63.24777
TS-SCS24_5                  18:00      63.45690
TS-SCS24_5                  18:10      63.66117
TS-SCS24_5                  18:20      63.86070
TS-SCS24_5                  18:30      64.05550
TS-SCS24_5                  18:40      64.24537
TS-SCS24_5                  18:50      64.43055
TS-SCS24_5                  19:00      64.61098
TS-SCS24_5                  19:10      64.78653
TS-SCS24_5                  19:20      64.95736
TS-SCS24_5                  19:30      65.12338
TS-SCS24_5                  19:40      65.28461
TS-SCS24_5                  19:50      65.44108
TS-SCS24_5                  20:00      65.59280
TS-SCS24_5                  20:10      65.74158
TS-SCS24_5                  20:20      65.88941
TS-SCS24_5                  20:30      66.03631
TS-SCS24_5                  20:40      66.18224
TS-SCS24_5                  20:50      66.32723
TS-SCS24_5                  21:00      66.47128
TS-SCS24_5                  21:10      66.61431
TS-SCS24_5                  21:20      66.75641
TS-SCS24_5                  21:30      66.89763
TS-SCS24_5                  21:40      67.03777
TS-SCS24_5                  21:50      67.17699
TS-SCS24_5                  22:00      67.31530
TS-SCS24_5                  22:10      67.45259
TS-SCS24_5                  22:20      67.58895
TS-SCS24_5                  22:30      67.72436
TS-SCS24_5                  22:40      67.85881
TS-SCS24_5                  22:50      67.99231
TS-SCS24_5                  23:00      68.12488
TS-SCS24_5                  23:10      68.25643
TS-SCS24_5                  23:20      68.38704
TS-SCS24_5                  23:30      68.51671
TS-SCS24_5                  23:40      68.64541
TS-SCS24_5                  23:50      68.77318
TS-SCS24_5                  24:00      68.90000

;50-year cumulative storm with a total rainfall amount of 109.3 mm using a SCS Type II 24-hr stor
TS-SCS24_50                 0:00       0.00000
TS-SCS24_50                 0:10       0.18370
TS-SCS24_50                 0:20       0.37042
TS-SCS24_50                 0:30       0.56016
TS-SCS24_50                 0:40       0.75297
TS-SCS24_50                 0:50       0.94880
TS-SCS24_50                 1:00       1.14765
TS-SCS24_50                 1:10       1.34956
TS-SCS24_50                 1:20       1.55450
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TS-SCS24_50	1:30	1.76246
TS-SCS24_50	1:40	1.97348
TS-SCS24_50	1:50	2.18753
TS-SCS24_50	2:00	2.40460
TS-SCS24_50	2:10	2.62473
TS-SCS24_50	2:20	2.84788
TS-SCS24_50	2:30	3.07406
TS-SCS24_50	2:40	3.30330
TS-SCS24_50	2:50	3.53556
TS-SCS24_50	3:00	3.77085
TS-SCS24_50	3:10	4.00920
TS-SCS24_50	3:20	4.25057
TS-SCS24_50	3:30	4.49496
TS-SCS24_50	3:40	4.74242
TS-SCS24_50	3:50	4.99290
TS-SCS24_50	4:00	5.24640
TS-SCS24_50	4:10	5.50457
TS-SCS24_50	4:20	5.76871
TS-SCS24_50	4:30	6.03883
TS-SCS24_50	4:40	6.31521
TS-SCS24_50	4:50	6.59757
TS-SCS24_50	5:00	6.88590
TS-SCS24_50	5:10	7.18043
TS-SCS24_50	5:20	7.48107
TS-SCS24_50	5:30	7.78762
TS-SCS24_50	5:40	8.10037
TS-SCS24_50	5:50	8.41923
TS-SCS24_50	6:00	8.74400
TS-SCS24_50	6:10	9.07503
TS-SCS24_50	6:20	9.41197
TS-SCS24_50	6:30	9.75503
TS-SCS24_50	6:40	10.10420
TS-SCS24_50	6:50	10.45943
TS-SCS24_50	7:00	10.82070
TS-SCS24_50	7:10	11.18817
TS-SCS24_50	7:20	11.56161
TS-SCS24_50	7:30	11.94103
TS-SCS24_50	7:40	12.32671
TS-SCS24_50	7:50	12.71837
TS-SCS24_50	8:00	13.11600
TS-SCS24_50	8:10	13.53221
TS-SCS24_50	8:20	13.97852
TS-SCS24_50	8:30	14.45493
TS-SCS24_50	8:40	14.96222
TS-SCS24_50	8:50	15.49961
TS-SCS24_50	9:00	16.06710
TS-SCS24_50	9:10	16.65003
TS-SCS24_50	9:20	17.23297
TS-SCS24_50	9:30	17.81590
TS-SCS24_50	9:40	18.42361
TS-SCS24_50	9:50	19.07941
TS-SCS24_50	10:00	19.78330
TS-SCS24_50	10:10	20.54913
TS-SCS24_50	10:20	21.38710
TS-SCS24_50	10:30	22.29720
TS-SCS24_50	10:40	23.30640
TS-SCS24_50	10:50	24.43584
TS-SCS24_50	11:00	25.68550
TS-SCS24_50	11:10	27.14575
TS-SCS24_50	11:20	28.89455
TS-SCS24_50	11:30	30.93190
TS-SCS24_50	11:40	36.78455
TS-SCS24_50	11:50	51.47953
TS-SCS24_50	12:00	72.46590

TS-SCS24_50	12:10	75.77441
TS-SCS24_50	12:20	78.39761
TS-SCS24_50	12:30	80.33550
TS-SCS24_50	12:40	81.83983
TS-SCS24_50	12:50	83.18787
TS-SCS24_50	13:00	84.37960
TS-SCS24_50	13:10	85.44746
TS-SCS24_50	13:20	86.43116
TS-SCS24_50	13:30	87.33070
TS-SCS24_50	13:40	88.15591
TS-SCS24_50	13:50	88.92102
TS-SCS24_50	14:00	89.62600
TS-SCS24_50	14:10	90.28916
TS-SCS24_50	14:20	90.93130
TS-SCS24_50	14:30	91.55241
TS-SCS24_50	14:40	92.15181
TS-SCS24_50	14:50	92.73019
TS-SCS24_50	15:00	93.28755
TS-SCS24_50	15:10	93.82319
TS-SCS24_50	15:20	94.33781
TS-SCS24_50	15:30	94.83141
TS-SCS24_50	15:40	95.30330
TS-SCS24_50	15:50	95.75416
TS-SCS24_50	16:00	96.18400
TS-SCS24_50	16:10	96.59912
TS-SCS24_50	16:20	97.00670
TS-SCS24_50	16:30	97.40685
TS-SCS24_50	16:40	97.79913
TS-SCS24_50	16:50	98.18397
TS-SCS24_50	17:00	98.56128
TS-SCS24_50	17:10	98.93085
TS-SCS24_50	17:20	99.29289
TS-SCS24_50	17:30	99.64739
TS-SCS24_50	17:40	99.99427
TS-SCS24_50	17:50	100.33354
TS-SCS24_50	18:00	100.66530
TS-SCS24_50	18:10	100.98934
TS-SCS24_50	18:20	101.30587
TS-SCS24_50	18:30	101.61490
TS-SCS24_50	18:40	101.91609
TS-SCS24_50	18:50	102.20985
TS-SCS24_50	19:00	102.49607
TS-SCS24_50	19:10	102.77457
TS-SCS24_50	19:20	103.04556
TS-SCS24_50	19:30	103.30894
TS-SCS24_50	19:40	103.56470
TS-SCS24_50	19:50	103.81292
TS-SCS24_50	20:00	104.05360
TS-SCS24_50	20:10	104.28962
TS-SCS24_50	20:20	104.52414
TS-SCS24_50	20:30	104.75716
TS-SCS24_50	20:40	104.98866
TS-SCS24_50	20:50	105.21867
TS-SCS24_50	21:00	105.44718
TS-SCS24_50	21:10	105.67408
TS-SCS24_50	21:20	105.89949
TS-SCS24_50	21:30	106.12352
TS-SCS24_50	21:40	106.34584
TS-SCS24_50	21:50	106.56670
TS-SCS24_50	22:00	106.78610
TS-SCS24_50	22:10	107.00390
TS-SCS24_50	22:20	107.22020
TS-SCS24_50	22:30	107.43501
TS-SCS24_50	22:40	107.64829

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TS-SCS24_50                 22:50      107.86008
TS-SCS24_50                 23:00      108.07038
TS-SCS24_50                 23:10      108.27907
TS-SCS24_50                 23:20      108.48626
TS-SCS24_50                 23:30      108.69196
TS-SCS24_50                 23:40      108.89614
TS-SCS24_50                 23:50      109.09882
TS-SCS24_50                 24:00      109.30000

[PATTERNS]
;;Name           Type       Multipliers
;;-------------- ---------- -----------
Sanitary TP-03   MONTHLY    1.0   1.0   1.0   1.0   1.0   1.0
Sanitary TP-03              1.0   1.0   1.0   1.0   1.0   1.0

[REPORT]
;;Reporting Options
INPUT      YES
CONTROLS   YES
SUBCATCHMENTS ALL
NODES ALL
LINKS ALL

[TAGS]

[MAP]
DIMENSIONS       643980.4075      4747589.535      647613.9825      4754619.085
UNITS            Meters

[COORDINATES]
;;Node           X-Coord          Y-Coord
;;-------------- ---------------- ----------------
J1               645495.04        4749843.42
J10              644984.427       4751723.074
J11              645549.88        4748115.22
J12              645009.32        4748356.47
J13              644971.1         4749720.54
J14              644968.9         4749819.02
J15              644853.51        4750336.06
J16              644981.39        4750788.06
J17              645440           4751355.44
J18              645793.52        4751633.26
J19              645847.07        4752117.18
J2               645817.33        4749465.97
J20              645691.36        4751614.15
J21              645768.04        4752399.45
J22              646596.45        4752421.17
J23              646617.85        4752422.15
J24              647023.16        4751905.96
J25              646996.81        4750894.91
J26              646650.71        4750503.52
J27              646367.33        4750368.8
J28              645802.88        4750115.61
J29              645517.18        4750071.48
J3               645525.2         4748818.72
J30              644995.13        4749850.23
J31              645334.124       4751224.453
J32              645328.117       4751385.992
J4               645535.25        4748420.78
J5               645543.35        4748168.19
J6               644945.37        4749722.83
J7               645507.17        4749392.75
J8               645539.77        4748156.74
J86              645511.4         4750349.58
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J87              645881.27        4750357.52
J88              645783.96        4752124.13
J9               645545.1         4748144.25
J10 Outlet       645654.61        4747909.06

[VERTICES]
;;Link           X-Coord          Y-Coord
;;-------------- ---------------- ----------------
Link-14          644893.667       4749817.216
Link-16          646985.327       4752420.587
PC2              645290.524       4751615.308

[POLYGONS]
;;Subcatchment   X-Coord          Y-Coord
;;-------------- ---------------- ----------------
B1               644551.47        4749578.28
B1               644547.75        4749803.94
B1               644566.84        4749828.59
B1               644763.85        4749829.73
B1               644802.33        4749787.63
B1               644958.56        4749791.87
B1               644961.89        4749701.17
B1               644765.39        4749581.9
B1               644551.47        4749578.28
M1               645435.43        4749839.87
M1               645452.18        4749862.21
M1               645450.79        4749860.82
M1               645481.5         4749911.08
M1               645508.03        4749934.82
M1               645551.32        4749966.93
M1               645725.85        4750015.8
M1               645838.95        4750015.8
M1               646048.4         4749941.8
M1               646372.33        4749933.42
M1               646611.1         4749966.93
M1               646602.636       4749833.774
M1               646455.359       4749484.959
M1               646253.821       4749659.367
M1               645872.083       4749708.458
M1               645811.988       4749833.774
M1               645435.43        4749839.87
M2               645819.4         4748934.38
M2               645804.39        4749845.46
M2               645870.124       4749709.751
M2               646249.945       4749651.615
M2               646373.968       4749574.101
M2               646453.32        4749497.08
M2               646239.69        4749291.13
M2               646123.1         4749205.26
M2               646025.36        4749134.75
M2               645971.6         4749080.99
M2               645819.4         4748934.38
M3               645405.89        4748812.41
M3               645402.43        4748991.91
M3               645396.67        4749321.65
M3               645402.96        4749517.17
M3               645405.89        4749766.17
M3               645432.25        4749837.85
M3               645804.36        4749845.59
M3               645819.41        4748934.41
M3               645821.8         4748824.76
M3               645405.89        4748812.41
M4               645411.51        4748558.43
M4               645212.62        4748553.12
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M4	645208.26	4748806.9
M4	645405.9	4748812.41
M4	645821.8	4748824.76
M4	645826.82	4748560.79
M4	645536.06	4748415.38
M4	645411.51	4748558.43
M5	645411.53	4748558.42
M5	645536.09	4748415.16
M5	645826.83	4748560.79
M5	645833.72	4748170.44
M5	645837.38	4748108.39
M5	645717.47	4748076.69
M5	645617.6	4748022.84
M5	645586.18	4748160.38
M5	645572.92	4748163.43
M5	645542.81	4748165.09
M5	645521.25	4748167.97
M5	645466.01	4748171.98
M5	645420.42	4748183.11
M5	645411.53	4748558.42
PC1	645768.01	4752399.72
PC1	645752.97	4753106.77
PC1	645753.8	4753119.33
PC1	645764.14	4753127.15
PC1	645764.14	4753164.57
PC1	646166.82	4753367.59
PC1	646180.129	4753384.991
PC1	646222.761	4753341.267
PC1	646289.441	4753272.401
PC1	646315.828	4753241.681
PC1	646264.6	4753192.6
PC1	646152.9	4753133.4
PC1	645974.45	4752972.55
PC1	645860.34	4752715.56
PC1	645859.98	4752502.12
PC1	645986.2	4752413.5
PC1	645984.71	4752404.56
PC1	645768.01	4752399.72
PC10	645749.92	4751618.57
PC10	645747.66	4751635.62
PC10	645767.79	4751649.59
PC10	645757.93	4752122.27
PC10	645795.6	4752123.09
PC10	645808.1	4751624.92
PC10	645749.92	4751618.57
PC11	645784.91	4752122.95
PC11	645758.07	4752122.28
PC11	645753.18	4752381.39
PC11	644968.95	4752358.66
PC11	644967.86	4752379.94
PC11	645767.92	4752399.43
PC11	646178.1	4752406.54
PC11	646181.1	4752382.61
PC11	645802.42	4752368.7
PC11	645790.65	4752359.51
PC11	645795.6	4752123.09
PC11	645784.91	4752122.95
PC2	645767.82	4752399.5
PC2	644943.61	4752379.64
PC2	644267.53	4752363.44
PC2	644396.65	4752492.77
PC2	644704.95	4752580.74
PC2	644827.675	4752527.522
PC2	644942.842	4752467.031

PC2	644989.374	4752496.113
PC2	645031.68	4752623.46
PC2	645101.63	4752620.95
PC2	645167.4	4752613.41
PC2	645214.73	4752675.41
PC2	645377.05	4752710.59
PC2	645418.52	4752709.34
PC2	645584.71	4753023.19
PC2	645753.58	4753119.24
PC2	645752.63	4753105.58
PC2	645767.82	4752399.5
PC3-QW1	644968.95	4752358.65
PC3-QW1	645753.18	4752381.39
PC3-QW1	645766.97	4751649.78
PC3-QW1	645747.18	4751635.64
PC3-QW1	645763.08	4751486.37
PC3-QW1	645753.42	4751472.94
PC3-QW1	645635.84	4751478.6
PC3-QW1	645613.22	4751449.38
PC3-QW1	645621	4751415.69
PC3-QW1	645609.22	4751402.96
PC3-QW1	645486.69	4751411.45
PC3-QW1	645365.11	4751434.07
PC3-QW1	645293.48	4751449.15
PC3-QW1	645283.43	4751541.2
PC3-QW1	645289.4	4751615.97
PC3-QW1	645066.97	4751680.06
PC3-QW1	644991.57	4751747.92
PC3-QW1	644987.8	4751796.93
PC3-QW1	644970.84	4751881.75
PC3-QW1	644968.95	4752358.65
PC4-QE1	645818.92	4751289.45
PC4-QE1	645811.5	4751382.76
PC4-QE1	645809.03	4751607.28
PC4-QE1	645804.2	4751701.29
PC4-QE1	645796.54	4752078.29
PC4-QE1	645790.65	4752359.5
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[SYMBOLS]
;;Gage            X-Coord           Y-Coord
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Appendix E:

Specifications

SPECIAL PROVISIONS - MUNICIPAL DRAIN

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A1 ROLES

The Contractor is responsible for the construction site including all approvals required for compliance with applicable legislation not already completed by the City of Port Colborne.

The City of Port Colborne, who is further recognized as The Owner, shall be responsible party for allocation of resources in support of construction where required, such as road occupancy permits during construction.

The Drainage Engineer or the Drainage Superintendent shall supervise construction and the Drainage Engineer, Drainage Superintendent or their representative shall respond to any requests by the Contractor and identify any deficiencies between the Contractor's work and the Design documents.

The Drainage Engineer is the responsible designer and will provide technical direction to the Contractor on an as needed and as requested basis from the Drainage Superintendent or their representative.

A2 ENVIRONMENTAL CONDITONS AND COMPLIANCE

The Contractor is wholly responsible for the site environmental conditions, compliance with applicable approvals and existing legislation. The Owner will facilitate environmental approvals, but the Contractor shall control the site and be the responsible party for all construction activities.

General requirements to be fulfilled by Contractor:

a) Department of Fisheries and Oceans, DFO.
   Requirements to protect Fish and Fish habitat.
b) Endangered Species Act, 2007 ONTARIO REGULATION 230/08
   https://www.ontario.ca/page/species-risk
c) Ontario Water Resources Act, R.S.O. 1990, c. O.40
d) On-Site and Excess Soil Management, 2019 ONTARIO REGULATION 406/19 Environmental Protection Act
e) O. Reg. 675/98: Classification and Exemption of Spills and Reporting of Discharges, Environmental Protection Act, R.S.O. 1990

Any other legislation applicable to the jurisdiction of the works.

A3 CONSTRUCTION LAYOUT

Conditions stipulated in the Niagara Peninsula Standard Contract Document also apply. Failure to comply with these conditions will result in a reduction in payment to this item.

a) Stakes

Contractor is responsible for setting any layout, alignment or grade control stakes required for construction. A Stake shall be placed to mark every cross-section grade and a second stake shall be placed to mark the limits of the Working Zone. Work Zone Stake shall be 4' wooden stake painted red at the top of the stake. Grade stake shall be placed at the Work Zone Top of Bank. X-Section stakes shall be placed at a maximum spacing of 25m. A recommended spacing shall coincide with the Profile drawings. Prior to the start of Construction, the Contractor will stake and identify the difference between the existing grade and the design grade. The Drainage Engineer shall review the stakes and the measurement of the soil to be removed. Post Construction, the Contractor shall remove all stakes.

b) Project Signage

The Contractor is responsible for the installation and removal of all construction signage and is responsible for daily maintenance of all signage throughout the contract.

A5 INSTALL AND MAINTAIN SEDIMENT CONTROL DEVICES

In addition to the conditions stipulated in the Niagara Peninsula Standard Contract Document and OPSS 577, the following shall also apply:

a) SILT FENCE

Silt fence is to be placed prior to disturbing soil adjacent to the drain that could be carried by runoff into the drain. This excludes the area of the drain where The Contractor is working to re-establish Drain grade and cross-section. It includes areas adjacent to the drain impacted by clearing and grubbing for work access.(missing is a description of where a silt fence is to be placed. How frequently across the drain.)

Silt fence shall be installed in accordance with OPSD 219.190 except that the minimum height above the invert of the drain shall be 500 mm. Silt fence materials shall be in accordance with OPSS 577.05.02.02 for geotextile and OPSS 577.05.03 for stakes. Stakes shall be 1.5 m minimum height.

The silt fence shall remain in place for the duration of the section that the Contractor is working and the Contractor shall make every effort to maintain it throughout the project. The Contractor shall request Approval from the Engineer or the Drainage Superintendent for the removal of the silt fence once each section of the drain is complete. Prior to the removal of the silt fence, the accumulated silt shall be removed and leveled adjacent to the drain in accordance with the disposal of excavated material section.

b) SEDIMENT BASINS

Sediment basins have been provided along the length of the drain in an effort to minimize the transport of sediment. The Contractor shall construct the sediment basins in accordance with the construction drawings in the locations indicated. Relocation of sediment basins can only be undertaken upon approval of the Engineer.

The Sediment basin is to be constructed prior to the upstream work and shall be monitored during construction for sediment accumulation and sediment removed if the basin has more than 50% of the 0.5m depth occupied with sediment. Once the upstream work is complete, the Sediment basin shall be converted from Construction to Final as per the Design Detail Drawings. Sediment accumulated during construction shall be removed and disposed of in the manner directed by the Contract.

A5 PAYMENT; For progress payment, fifty (50) percent of the lump sum price will be paid upon installation with the balance to be paid with the final payment.

A6 ACCESS & NOTICE

The City of Port Colborne's Drainage Superintendent or designate shall provide affected landowners with notice of the commencement of construction.

It will be the Contractor's responsibility to inform the various businesses and residences of daily construction impacts in order to reduce/eliminate any problems with parked vehicles that may interfere with their operations. Ingress & egress to the abutting businesses and residences must be maintained at all times.

The Contractor shall advise the Police Department, Fire Department and Niagara Emergency Medical Service on a daily basis, with current status of the construction as it pertains to the passage of traffic within the contract limits.

The Contractor will co-ordinate with local transit to ensure minimum interruption to bus schedules. Transit, school buses and garbage and recycling service vehicles will be given priority to maintain their schedule.

The Contractor shall also maintain/provide existing pedestrian access at all times to the businesses and residents during all phases of construction in an acceptable manner.

A6 PAYMENT; Payment as a lump sum bid for this item shall be full compensation for all labour, equipment and materials necessary to meet the above requirements. Fifty (50) percent of the lump sum price will be paid on the first payment certificate. The balance will be prorated over the remainder of the working period.

B1 EARTH EXCAVATION

Work under this item shall include the supply of all labour, equipment and materials required for ditch excavation or any other type of excavation or earth work as outlined on the Contract Drawings. Ditch work involves clearing, excavation, leveling, and seeding as required. Specifications and information on the Contract Drawings shall take precedence over the standard specifications outlined below. The specifications below shall take precedence over the Niagara Peninsula Standard Contract Document Special Provisions B2.

B2 CONSTRUCTION

a) Vegetation Removal

All trees, brush, fallen timber and debris shall be moved from the ditch cross-section and to such a distance on each side to eliminate any interference with the spreading of the spoil. The roots shall be left in the banks if no bank excavation is required as part of the new channel excavation. In wooded or heavily overgrown areas all cleared material may be pushed into piles or rows along the edge of the cleared path and away from leveled spoil. All dead trees along either side of the drain that may impede the performance of the drain if allowed to remain and fall into the ditch, shall be removed prior to excavation and put in piles, unless directed otherwise by the Engineer.

Any tree removed will be offered as wood to the property owner in the form of logs from the trunk where they lay and to be moved from the site by the owner at their expense. Tree tops shall be cut and limbs stacked as piles adjacent to the drain and within the work zone.

b) Excavation

The bottom width and the side slopes of the ditch shall be as shown on the profile(s) and/or cross-sections on the Contract Drawings. Side slopes are normally one and one-half metre horizontal to one metre vertical (1.5:1) unless otherwise noted on the Contract Drawings. If a bottom width is not specified then any excavation required shall be from the bottom of the ditch without disturbing the bank slopes subject to the clearing of brush required as described in a).

c) Profile

The profile(s) on the Contract Drawings show the depth and grade for the drain improvements. The description and elevation of benchmarks that were established during the survey are shown on the profile(s) in the location for each benchmark.

d) Line

The drain shall follow the course of the existing channel and/or shall be constructed in a straight line as outlined on the Contract Drawings. A uniform grade shall be maintained in accordance with the profile(s). A variation of one hundred millimeters (100mm) above

the required grade will require the Contractor to remedy the grade to that given on the profile. The Contractor may be required to backfill any portion of the ditch that is excavated more than two hundred millimeters (200mm) below the required grade. All curves shall be made with a minimum radius of fifteen metres (15m).

e) Excavated Material

Excavated material (spoil) shall be deposited on either or both sides of the drain as directed on the Contract Drawings. Spoil upon excavation shall be placed a minimum one (1) metre back from the top of the bank, either existing or new. No excavated material shall be placed in tributary drains, depressions, or low areas, which direct or channel water into the ditch so that no water will be trapped behind the spoil bank. The excavated material shall be placed and leveled to a maximum depth of three hundred millimeters (300mm); unless otherwise instructed. The edge of the spoil bank away from the ditch shall be feathered down to existing ground. The edge of the spoil bank nearest the ditch shall have a maximum slope of 2:1. The material shall be leveled such that it may be cultivated with ordinary equipment without causing undue hardship on farm machinery and farm personnel. Wherever clearing is necessary prior to leveling, the Contractor shall remove all stumps unless the Contract Drawings specify that stumps can be covered with the leveled spoil. No excavated material shall cover any logs, brush or rubbish of any kind. Large stones or boulders in the leveled spoil that are heavier than fifteen kilograms (15kg or approximately 300mm in size roughly referred to as man stone or the size of a stone that a single person can carry.) shall be moved to the edge of the leveled spoil nearest to the ditch but in general no closer than one metre (1) to the top of bank.

Where it is necessary to straighten any unnecessary bends or irregularities in the alignment of the ditch or to relocate any portion of an existing ditch, the excavation from the new cut shall be used for backfilling the original ditch. Regardless of the distance between the new ditch and old ditch, no extra compensation will be allowed for this work. If the Contractor obtains written permission from an affected landowner stating that the owner does not wish the spoil to be leveled and such is approved by the Engineer, the Engineer may release the Contractor from the obligation to level the spoil. If spoil is not leveled that was to be leveled as part of the Contract, the Engineer shall determine the credit to be applied to the Contractor's payment. No additional compensation is provided to the owner if the spoil is not leveled.

If the affected landowner requests that the spoil be removed from the site instead of being spread adjacent to the drain within the work zone or that the grading requirement is to a higher standard than suitable for agricultural cultivation, then the Contractor shall provide trucking of the spoil including disposal at a suitable site or additional grading and shall provide the Drainage Superintendent with the specific costs for each landowner who requests such work. The Engineer shall assess the cost of the trucking of spoil to the landowner making such request.

The Engineer may require the Contractor to obtain written statements from any or all of the landowners affected by the leveling of the spoil. A written statement from the owners indicating their complete satisfaction with the leveling of the spoil is sufficient to comply

with this specification. The final decision, with respect to leveling of the spoil, shall be made by the Engineer.

f) Excavation Through Woodlots

The Contractor shall minimize disturbance through woodlots by reducing the limit of excavation to the bottom width of the drain and a minimum side slopes. The drain shall be routed around existing trees at the direction of the Drainage Superintendent or where requested by the Engineer.

Prior to performing work through a woodlot, the Contractor in coordination with the Drainage Superintendent shall mark all trees for preservation or removal within the Drain or Workzone. This mark will consist of a physical identification that will be easily understood by the landowner and consist of either colour ribbons or specific paint markings (green to keep, red mark of an ‘X’ for removal).

g) Excavation at Bridge and Culvert Sites

The Contractor shall excavate or clean through all bridges and culverts to match the grade line and the downstream channel cross-section. Bridges that span from bank to bank may be carefully removed to permit excavation below the bridge and then replaced to original condition. Permanent bridges must be left intact. All necessary care and precautions shall be taken to protect the structure. The Contractor shall notify the Engineer before completing excavation in the area of a bridge or culvert if the excavation will expose the footings or otherwise cause bridge instability.

Where the invert of any pipe culvert is above the grade line, the Contractor will be required to remove the culvert, clean and relay it, so that the invert of the culvert is one hundred and fifty millimetres (150mm) below the grade for the ditch bottom at this location.

h) Obstructions

In all cases, the Contractor shall ensure that the finished drain is clear of obstructions to flow. The contractor will ensure that trunks are cut flush and that any debris or snags are removed as part of the bid price.

i) Fences and private furniture or equipment

The contractor will use the identified work zone for access and shall restore any fences to an equivalent or better condition than before construction. Where possible the Contractor shall perverse existing fences, private equipment and furniture in place but where it must be moved, the Contractor shall in all cases restore to a like or better condition than existed before construction.

j) Tile Outlets

The location of all existing tile outlets may not be shown on the profile for the drain. The Contractor shall contact each owner and ensure that all tile outlets are marked prior to commencing excavation on the owner's property. If a marked tile outlet is damaged during, or altered due to construction, the Contractor shall repair or replace the damaged or altered outlet as part of the Contract. If an existing outlet pipe does require replacement the Contractor shall confirm the replacement outlet pipe with the Engineer. All tile outlets identified are considered part of the bid work.

Additional payment will be allowed for the repair or replacement of any unmarked tile outlets encountered during excavation. Where stone or concrete riprap protection exists at any existing tile outlet such protection shall be removed and replaced as necessary to protect the outlet after reconstruction of the channel.

If any outlet becomes plugged as a result of construction, the Contractor shall be obligated to free such outlet of any impediments. Where any damage results to tile leading to and upstream of the outlet, as a consequence of such construction, the Engineer may direct the Contractor to repair such tile and shall determine a fair compensation to be paid to the Contractor for performing the work.

B3 INSTALLATION OF NEW CULVERT

Work under this item shall include the supply of all labour, equipment and materials required for supply and installation of culverts as outlined on the Contract Drawings. The Niagara Peninsula Standard Contract Document Special Provision B7 shall apply but the specifications and information on the Contract Drawings shall take precedence over Special Provision B7.

Payment shall be as per Plan Quantity.
The size and material for any new ditch crossings shall be as specified on the Contract Drawings. Any crossings assembled on-site shall be assembled in accordance with the manufacturer's specifications for on-site assembly.

Where a new crossing replaces an existing crossing the following shall apply:

If directed on the drawings that the existing crossing is to be salvaged for the owner the Contractor shall carefully remove the existing crossing and leave along the ditch or haul to a location as specified on the Drawings.

If the existing crossing is not to be saved then the Contractor shall remove and dispose of the existing crossing. Disposal by burying on-site is not permitted.

All new pipe crossings shall be installed a minimum of 100mm below design grade (not as-constructed grade) or at the invert elevations as specified on the Drawings. If the ditch is over excavated greater than 200mm the Contractor shall confirm with the Engineer the elevations for installation of the new pipe crossing.

When an existing crossing is being replaced the contractor shall save all granular and riprap. New crossings can be backfilled with compacted on-site native material that is

free of large rocks or stones. Contractor responsible for any damage to a culvert pipe as a result of rocks or stones in the backfill.

All new crossings shall have a minimum 6m laneway width and end slopes shall be at 1:1 slope or flatter. Finished crossing elevation shall provide a minimum of 300mm cover. Finished crossing surface shall be a minimum 150mm depth of Granular A for the minimum 6m width and extending from top of bank to top of bank using salvaged granular or imported granular as required.

Installation of private crossings during construction must be approved by the Engineer before the culvert is installed.

Where riprap protection is called for at either or both ends of a new culvert, such riprap shall be in accordance with Special Provision B4.
Payment will be based on plan quantity.

Riprap to be adequately keyed in along the bottom of the slope. Riprap to extend to top of pipe or as directed on the Drawings. No riprap is required in the ditch bottom on the upstream side of a crossing. If riprap is required in the ditch bottom on the downstream side of a crossing it shall be specified on the Drawings. Any new end face slope not protected by riprap shall be seeded as per specifications for ditch bank seeding.

B4 HAND LAND RIP RAP WITH FILTER CLOTH

Rip rap complete with filter fabric underlay (geotextile) shall be placed by the Contractor at the locations shown on the drawing or as requested by the Drainage Superintendent. Rip rap shall consist of 200 – 250 mm dia. stones (min.) and shall be placed at 300 mm minimum thickness. Along upstream edges, where surface water will enter the drain, the underlay shall extend a minimum of 300 mm upstream from the rip rap and be keyed into the soil a minimum of 300 mm. The finished elevation of the rip rap shall be at design elevation or flush with the ground.

Work under this item shall include the supply of all labour, equipment and materials required for placing riprap as outlined on the Contract Drawings. The Niagara Peninsula Standard Contract Document Special Provision B20 shall apply but the specifications and information on the Contract Drawings shall take precedence over Special Provision B20.

Payment shall be as per Plan Quantity.

C1 COMPLETION

At the time of final inspection, all work in the contract shall have the full dimensions and cross-sections specified.

PAYMENT; Payment is for all work complete on the basis of a measured linear distance inclusion of all items identified above. Where a culvert is removed and reinstalled, compensation shall be in the form of a per each payment. Where a tile is discovered and constructed as an outlet, compensation will be in the form of a per each payment for tile outlets repaired.

C2 AS-CONSTRUCTED DOCUMENTATION

For the 'as-constructed' works, the Contractor must provide the City of Port Colborne with an electronic version of the final drainage works as surveyed post construction, to be imported into AutoCAD or GIS. This copy must confirm that the design grade and cross-section details for all drainage work and the invert elevations and lengths for all culverts complies with the Engineer's Report. Survey spacing shall be to a minimum of 25m.

All work must be in an acceptable electronic format that the City of Port Colborne can use and all work must be completed using the verified geodetic benchmarks. The submission of the As-Constructed works will be in a common delimited format having the form as follows:

> Numeric key, Northing, Easting, Elevation, Coded identifier & optional description
> For the coded identifiers, the City of Port Colborne will provide a table for reference along with an example file from a past project for comparison. The City will certify the as-constructed files with respect to their completeness.

Failure to provide a certified as-built file will result in the delay of substantial completion and/or contract completion. In the event that the contractor asks the City to perform the AS CONSTRUCTED SURVEY, then payment for the lump sum item is negated.
A4 PAYMENT; Payment in full at the lump sum bid price for this item shall be made only upon completion and approval by the Contract Administrator.

Schedule 'B'

Port Colborne Municipal Drain
City of Port Colborne
Regional Municipality of Niagara

Section 22: Assessed Benefit
Section 23 Outlet Benefit / Outlet Liability
Section 24 Special Benefit

	Owner	Legal Text	Roll No	Area, Ha	Assessment			Total	Allowance	Net
					Benefit	Outlet Liability	Special			
	City of Port Colborne - Lands Assessed									
	Vale Canada Limited	HUMBERSTONE CON 1 PT LOTS 24	271102000718000	1.642	$0	$1,413.83	$0.00	$1,413.83	$0.00	$1,413.83
	McLean William Richard Samue	CON 1 PT TWP LOT 23	271102001311300	0.095	$0	$45.49	$0.00	$45.49	$0.00	$45.49
	Tomiuck Jonas	CON 1 PT TWP LOT 23	271102001311400	0.191	$0	$91.13	$0.00	$91.13	$0.00	$91.13
	Scott Gregory George	CON 1 PT TWP LOT 23	271102001311500	0.190	$0	$91.08	$0.00	$91.08	$0.00	$91.08
	Vale Canada Limited	CON 2 PT LOT 24	271102001312000	0.534	$0	$306.76	$0.00	$306.76	$0.00	$306.76
	Port Colborne Quarries Inc	CON 2 PT LOTS 19 AND 20 RP	271104000315600	30.868	$0	$20,671.95	$0.00	$20,671.95	$0.00	$20,671.95
	Phillips Richard Gordon	CON 2 PT LOT 20 RP 59R-1546	271104000315702	0.089	$0	$42.53	$0.00	$42.53	$0.00	$42.53
	Port Colborne Quarries Inc	CON 2 PT LOT 19 PT LOT 20	271104000315800	35.112	$0	$23,514.47	$0.00	$23,514.47	$0.00	$23,514.47
	Schlenger Uszer	CON 1 PT LOT 23	271104000408700	0.583	$0	$334.83	$0.00	$334.83	$0.00	$334.83
	Schlenger Uszer	CON 1 PT LOT 23	271104000408700	6.726	$0	$4,504.18	$0.00	$4,504.18	$0.00	$4,504.18
	City of Port Colborne	CON 1 PT LOTS 23, 24 RP	271104000408715	2.431	$0	$1,628.23	$0.00	$1,628.23	$0.00	$1,628.23
	Schlenger Uszer	CON 1 PT LOT 23	271104000408800	0.373	$0	$228.20	$0.00	$228.20	$0.00	$228.20
	Coccagna Anthony	CON 1 PT LOT 23	271104000408900	0.631	$0	$301.99	$0.00	$301.99	$0.00	$301.99
	1346618 Ontario Ltd	CON 1 PT LOT 23	271104000409000	0.463	$0	$310.00	$0.00	$310.00	$0.00	$310.00
	Ostric Milan	CON 1 PT LOT 23 RP 59R5797	271104000409100	0.201	$0	$96.15	$0.00	$96.15	$0.00	$96.15
	1108904 Ontario Limited	CON 1 PT LOT 23 PT LOT 24	271104000409200	0.779	$0	$521.36	$0.00	$521.36	$0.00	$521.36
	Favero Lidia	CON 1 PT LOT 23	271104000409300	0.202	$0	$96.58	$0.00	$96.58	$0.00	$96.58
	Ed Christensen Roofing Limited	CON 1 PT LOT 23	271104000409400	0.190	$0	$90.98	$0.00	$90.98	$0.00	$90.98
	Sauder William Edward	HUMBERSTONE CON 1 PT LOT 23	271104000409500	0.190	$0	$90.98	$0.00	$90.98	$0.00	$90.98
	Stenson Ian John	CON 1 PT LOT 23	271104000409600	0.190	$0	$90.98	$0.00	$90.98	$0.00	$90.98
	Polverari Giuseppe	CON 1 PT LOT 23	271104000409700	0.190	$0	$90.98	$0.00	$90.98	$0.00	$90.98
	Vale Canada Limited	CON 1 PT LOT 23	271104000409800	4.106	$0	$1,963.89	$0.00	$1,963.89	$0.00	$1,963.89
	Vale Canada Limited	CON 2 PT LOT 21 RP59R3588	271104000410000	4.963	$256	$3,323.44	$187.50	$3,766.44	$939.00	$2,827.44
	Huffman John Wayne	CON 2 PT LOT 21	271104000410400	0.071	$0	$33.82	$0.00	$33.82	$0.00	$33.82
	Young Tammy Lynn	CON 2 PT LOT 21	271104000410500	0.107	$0	$51.04	$0.00	$51.04	$0.00	$51.04
	Vollick Ronald Christopher	CON 2 PT LOT 21	271104000410600	0.159	$0	$76.06	$0.00	$76.06	$0.00	$76.06
	Citrigno Angela	CON 2 PT LOT 21	271104000410700	0.168	$0	$80.12	$0.00	$80.12	$0.00	$80.12
	Stark Raymond	CON 2 PT LOT 21 RP 59R4333	271104000410705	1.936	$0	$926.05	$0.00	$926.05	$0.00	$926.05
	Konc John Andrew	CON 2 PT LOT 22 RP 59R4801	271104000410710	2.899	$508	$1,941.39	$5,057.59	$7,506.97	$0.00	$7,506.97
F	Van Ruyven Josef Nicolaas	CON 2 PT LOT 22 RP 59R4801	271104000410800	4.199	$0	$2,811.99	$355.00	$3,166.99	$0.00	$3,166.99
	Stewart Scott James	CON 2 PT LOT 22 RP 59R 5732	271104000410810	0.407	$0	$194.50	$0.00	$194.50	$0.00	$194.50
F	Powell Bradley Kenneth	CON 2 PT LOT 22 RP59R4801	271104000410900	7.711	$0	$5,164.30	$0.00	$5,164.30	$0.00	$5,164.30
	Hellinga Jack Simon	CON 2 PT LOT 22	271104000411000	5.411	$0	$2,588.33	$0.00	$2,588.33	$0.00	$2,588.33
	Kinzie Patricia Helen	CON 2 PT LOT 21 RP 59R6766	271104000411200	1.202	$0	$574.94	$0.00	$574.94	$0.00	$574.94
	Pipher Lynn Mae	CON 2 PT LOT 21 RP 59R6766	271104000411205	1.208	$0	$578.00	$0.00	$578.00	$0.00	$578.00
	Scace Wesley	CON 2 PT LOT 21	271104000411300	0.067	$0	$31.95	$0.00	$31.95	$0.00	$31.95
	Port Colborne Quarries Inc	CON 2 PT LOT 21 PT LOT 22 RP	271104000411500	73.170	$0	$51,802.13	$0.00	$51,802.13	$0.00	$51,802.13
	Parsons David Scott	CON 2 PT LOT 22	271104000411600	0.418	$0	$199.95	$0.00	$199.95	$0.00	$199.95
	Leavere Larry Allan Thomas	CON 2 PT LOT 22	271104000411700	0.209	$0	$100.02	$0.00	$100.02	$0.00	$100.02
	Yanni Bill	CON 2 PT LOT 22	271104000411900	0.418	$0	$199.95	$0.00	$199.95	$0.00	$199.95
	Fitzgerald Shawn Patrick	HUMBERSTONE CON 2 PT LOT 22	271104000412000	0.209	$0	$100.07	$0.00	$100.07	$0.00	$100.07
	Orlowski Jeffrey	CON 2 PT LOT 22 RP 59R4884	271104000412100	0.209	$0	$100.02	$0.00	$100.02	$0.00	$100.02
	Moes Frank Allan	HUMBERSTONE CON 2 PT LOT 22	271104000412200	0.357	$0	$170.72	$0.00	$170.72	$0.00	$170.72
	Boda Terry Joseph	CON 2 PT LOT 22	271104000412400	0.186	$0	$88.88	$0.00	$88.88	$0.00	$88.88
F	Elite Capital P.C Developments Inc	CON 2 PT LOT 22	271104000412600	4.110	$0	$2,359.42	$0.00	$2,359.42	$0.00	$2,359.42
	Vale Canada Limited	CON 2 PT LOT 22 PT LOT 23	271104000412700	10.153	$0	$5,827.80	$0.00	$5,827.80	$0.00	$5,827.80
	Vale Canada Limited	CON 2 PT LOT 22 PT LOT 23	271104000412700	22.189	$0	$12,736.89	$0.00	$12,736.89	$0.00	$12,736.89
	Vale Canada Limited	CON 2 PT LOT 23	271104000412800	0.363	$0	$208.54	$0.00	$208.54	$0.00	$208.54
	NCDSB	CON 2 PT LOT 23	271104000412900	5.947	$0	$3,413.79	$0.00	$3,413.79	$0.00	$3,413.79
	Dyson Patrick James	CON 2 PT LOT 23	271104000413000	0.176	$0	$84.14	$0.00	$84.14	$0.00	$84.14
	Dyson Mary Lynn	CON 2 PT LOT 23	271104000413100	0.182	$0	$104.19	$0.00	$104.19	$0.00	$104.19
	Hortobagyi Zoltan	CON 2 PT LOT 23	271104000413200	0.186	$0	$88.88	$0.00	$88.88	$0.00	$88.88
	Wakunick Deborah Ivy	CON 2 PT LOT 24	271104000413300	0.085	$0	$40.85	$0.00	$40.85	$0.00	$40.85
	Wells Donna Louise	CON 2 PT LOT 23 PT LOT 24	271104000413400	0.828	$0	$396.13	$0.00	$396.13	$0.00	$396.13
	Vale Canada Limited	CON 2 PT LOT 23 PT LOT 24 RP	271104000413401	7.409	$0	$3,544.32	$0.00	$3,544.32	$0.00	$3,544.32
	Vale Canada Limited	CON 2 PT LOT 23 PT LOT 24 RP	271104000413410	10.115	$0	$6,774.19	$0.00	$6,774.19	$0.00	$6,774.19
	Vale Canada Limited	CON 2 PT LOT 24 RP 59R10047	271104000413435	0.631	$0	$422.51	$0.00	$422.51	$0.00	$422.51
	Port Colborne Quarries Inc	HUMBERSTONE CON 2 PT LOTS 23	271104000414000	3.326	$0	$1,909.44	$0.00	$1,909.44	$0.00	$1,909.44
	Vale Canada Limited	CON 2 PT LOT 24	271104000414120	0.928	$0	$621.68	$0.00	$621.68	$0.00	$621.68
	2023165 Ontario Inc	CON 3 PT LOT 19 PT LOT 20	271104000506400	1.291	$0	$617.56	$0.00	$617.56	$0.00	$617.56
F	Koch Olga	CON 3 LOT 19CPT	271104000506500	0.222	$0	$106.05	$0.00	$106.05	$0.00	$106.05
	Kozelj Stif	CON 3 PT LOT 20	271104000506600	0.079	$0	$37.89	$0.00	$37.89	$0.00	$37.89
F	Orsetto Aldo	CON 3 PT LOT 20	271104000506700	4.228	$0	$2,426.75	$0.00	$2,426.75	$0.00	$2,426.75
	Currie Michael Bruce	CON 3 PT LOT 20	271104000506702	0.085	$0	$40.80	$0.00	$40.80	$0.00	$40.80
F	Fijavz David	CON 3 PT LOT 20	271104000506703	0.334	$0	$159.58	$0.00	$159.58	$0.00	$159.58
	Levitt Corie	CON 3 PT LOT 20 PLAN 59R	271104000506710	0.212	$0	$101.17	$0.00	$101.17	$0.00	$101.17
	Michaud Antonio Abel	CON 3 PT LOT 20 RP 59R8240	271104000506800	0.271	$0	$129.44	$0.00	$129.44	$0.00	$129.44
F	Henderson David Marshall	CON 3 PT LOT 20	271104000506801	11.011	$0	$7,373.83	$0.00	$7,373.83	$0.00	$7,373.83
F	Babion Gail J	HUMBERSTONE CON 3 PT LOT 21	271104000506900	15.252	$0	$10,214.09	$0.00	$10,214.09	$0.00	$10,214.09
	Wagner Dan Patrick	CON 3 PT LOT 21	271104000507400	3.050	$0	$2,042.84	$0.00	$2,042.84	$0.00	$2,042.84
	Stovell David Alan	CON 3 PT LOT 21 59R8535	271104000507500	1.238	$0	$592.40	$0.00	$592.40	$0.00	$592.40
F	Cooper Collin James Lee	CON 3 S PT LOT 21 S PT LOT	271104000508100	7.613	$0	$5,098.67	$0.00	$5,098.67	$0.00	$5,098.67
F	Henderson Drew David	CON 3 PT LOT 22	271104000508301	1.055	$0	$706.46	$0.00	$706.46	$0.00	$706.46
	Beaulieu George E	CON 3 E PT LOT 23	271104000508900	0.388	$0	$185.46	$0.00	$185.46	$0.00	$185.46
	Garner Mark Edward	CON 3 PT LOT 23	271104000509100	0.346	$0	$165.65	$0.00	$165.65	$0.00	$165.65
	Joseph Grandilli	CON 3 PT LOT 23	271104000509300	0.082	$0	$39.37	$0.00	$39.37	$0.00	$39.37
	Stefan John	CON 3 PT LOT 23	271104000509400	0.016	$0	$7.85	$0.00	$7.85	$0.00	$7.85
	Johnson Raymond Francis Jr	CON 3 PT LOT 23 RP 59R10549	271104000510200	0.208	$0	$103.68	$0.00	$103.68	$0.00	$103.68
	Vance Gregory Thomas	CON 3 PT LOT 23 RP 59R10549	271104000510202	0.417	$0	$199.52	$0.00	$199.52	$0.00	$199.52
	Saxon Ronald Joseph	CON 3 PT LOT 23 PLAN	271104000510204	0.605	$0	$289.50	$0.00	$289.50	$0.00	$289.50
	Pilkey Dean Lloyd	CON 3 PT LOT 23 PLAN	271104000510206	0.597	$0	$285.72	$0.00	$285.72	$0.00	$285.72
F	Schneider Darryl Frederick	CON 3 PT LOT 23	271104000510801	2.252	$0	$1,077.11	$0.00	$1,077.11	$0.00	$1,077.11
	Zonneveld Bastian	CON 3 PT LOT 24	271104000510900	0.103	$0	$49.17	$0.00	$49.17	$0.00	$49.17
	Terreberry Jack	CON 3 PT LOT 24	271104000511000	0.144	$0	$68.98	$0.00	$68.98	$0.00	$68.98
	Jacak Dominik	CON 3 PT LOT 24	271104000511300	0.347	$0	$166.13	$0.00	$166.13	$0.00	$166.13
	Moore Linda Ann	CON 3 PT LOT 24	271104000511400	0.099	$0	$47.21	$0.00	$47.21	$0.00	$47.21
	Moore Linda Ann	CON 3 PT LOT 24	271104000511500	0.029	$0	$13.78	$0.00	$13.78	$0.00	$13.78
	Medvic Peter James	CON 3 PT LOT 24	271104000511600	0.356	$0	$170.06	$0.00	$170.06	$0.00	$170.06
	McIntyre Shelly	CON 3 PT LOT 24	271104000511700	0.191	$0	$91.41	$0.00	$91.41	$0.00	$91.41
	City of Port Colborne	59R11175 PART 1 59R11176	271104000699500	0.630	$0	$421.71	$0.00	$421.71	$0.00	$421.71
				311.038	$763.50	$199,226.89	$5,600.09	$205,590.48	$939.00	$204,651.48

Owner	Legal Text	Roll No	Area, Ha	Assessment Benefit	Outlet Liability	Special	Total	Allowance	Net
Roads									
City of Port Colborne	Snider Rd. N of Second Concession	ROW	0.071		$3,306.62	$0.00	$3,306.62		
City of Port Colborne	Killaly St E east of Snider	ROW	0.176		$1,752.36	$0.00	$1,752.36		
City of Port Colborne	Snider Rd portion south of Killaly St E	ROW	0.353		$2,876.95	$0.00	$2,876.95		
City of Port Colborne	Second Concession Rd. E of Babion	ROW	0.596		$116.22	$0.00	$116.22		
City of Port Colborne	Killaly St East W of Snider Rd	ROW	0.920		$968.19	$0.00	$968.19		
City of Port Colborne	Chippawa Road	ROW	1.016		$3,753.26	$0.00	$3,753.26		
City of Port Colborne	Second Concession W of Snider Rd.	ROW	1.221		$854.95	$0.00	$854.95		
City of Port Colborne	Babion Rd. from 2nd to Chippawa	ROW	1.432		$2,329.34	$0.00	$2,329.34		
City of Port Colborne	Second Concession from Snider to Babion	ROW	1.645		$541.04	$0.00	$541.04		
City of Port Colborne	Snider Rd. from Hwy 3 to Second Conc	ROW	2.005		$1,464.94	$0.00	$1,464.94		
City of Port Colborne	Sndier Rd from Hwy 3 to Killaly St E	ROW	2.033		$286.73	$0.00	$286.73		
City of Port Colborne	Babion Rd. from Hwy 3 to Second Concess	ROW	2.308		$2,675.64	$0.00	$2,675.64		
							$20,926.24		
MTO	Highway #3	ROW	3.281		$5,336.02	$0.00	$5,336.02		
			17.058		$26,262.26	$0.00	$26,262.26		
Section 26 - Special Assessments									
City of Port Colborne	Extend drain along Babion Rd. to Second Concession. Re-lay culverts at Second Concession Rd.						$40,448.80		
MINISTRY OF TRANSPORTATION ONTARIO							$5,076.19		
Utilities - Enbridge	No conflicts assessed during design						$0.00		
Utilities - Other	No conflicts assessed during design						$0.00		
							$45,525.00		
Port Colborne Drain									
	Total Assessed:						$277,377.74		

Notes:
1. The above lands marked "F" are currently classified as agricultural according to the OMAFRA and are therefore entitled to a 1/3 grant.
2. Section 21 of the Drainage Act, RSO 1990 requires that assessments be shown for each parcel of land and road affected. The affected parcels of land are identified using the roll number received from the City. For convenience only, the owners' names are shown by the last revised assessment roll.
3. The value of the assessments identified in this schedule are estimates only, and should not be considered final.

Port Colborne Branch #1 Municipal Drain

City of Port Colborne
Regional Municipality of Niagara

Section 22: Assessed Benefit
Section 23 Outlet Benefit / Outlet Liability
Section 24 Special Benefit

Owner	Legal Text	Roll No	Area, Ha	Assessment Benefit	Outlet Liability	Special	Total	Allowance	Net
City of Port Colborne - Lands Assessed									
Konc John Andrew	CON 2 PT LOT 22 RP 59R4801	271104000410710	0.107	$0	$27.28	$0.00	$27.28	$277.62	-$250.35
Van Ruyven Josef Nicolaas	CON 2 PT LOT 22 RP 59R4801	271104000410800	1.084	$0	$184.32	$0.00	$184.32	$0.00	$184.32
Hellinga Jack Simon	CON 2 PT LOT 22	271104000411000	5.247	$0	$1,338.84	$0.00	$1,338.84	$0.00	$1,338.84
Port Colborne Quarries Inc	CON 2 PT LOT 21 PT LOT 22 RP	271104000411500	2.758	$0	$469.10	$0.00	$469.10	$0.00	$469.10
Parsons David Scott	CON 2 PT LOT 22	271104000411600	0.413	$0	$105.40	$0.00	$105.40	$0.00	$105.40
Leavere Larry Allan Thomas	CON 2 PT LOT 22	271104000411700	0.098	$0	$16.60	$0.00	$16.60	$0.00	$16.60
Yanni Bill	CON 2 PT LOT 22	271104000411900	0.418	$0	$106.65	$0.00	$106.65	$0.00	$106.65
Orlowski Jeffrey	CON 2 PT LOT 22 RP 59R4884	271104000412100	0.025	$0	$4.25	$0.00	$4.25	$0.00	$4.25
Port Colborne Quarries Inc	HUMBERSTONE CON 2 PT LOTS 23	271104000414000	3.308	$0	$844.05	$0.00	$844.05	$0.00	$844.05
			12.267	$0.00	$3,096.49	$0.00	$3,096.49	$277.62	$2,884.89
Roads									
City of Port Colborne	Snider Rd. from Hwy 3 to Second Conc	ROW	1.612	$0	$616.77	$0.00	$616.77		
City of Port Colborne	Second Concession from Snider to Bab	ROW	0.022	$0	$16.13	$0.00	$16.13		
City of Port Colborne	Second Concession W of Snider Rd.	ROW	0.501	$0	$370.35	$0.00	$370.35		
							$1,003.25		
MTO	Highway #3	ROW	0.547	$0	$446.99	$0.00	$446.99		
			2.682	$0.00	$1,450.25	$0.00	$1,450.25		
			14.948				$4,546.73		
Section 26 - Special Assessments									
City of Port Colborne	Assessed special benefit for improving Snider road outlet.						$7,008.46		
Regional Municipality of Niagara	No works proposed						$0.00		
MINISTRY OF TRANSPORTATION ONTARIO							$7,115.18		
Utilities - Enbridge	No conflicts assessed during design						$0.00		
Utilities - Other	No conflicts assessed during design						$0.00		
							$14,123.64		
Port Colborne Branch #1 Drain									
	Total Assessed:						$18,670.37		

Notes:
1. The above lands marked "F" are currently classified as agricultural according to the OMAFRA and are therefore entitled to a 1/3 grant.
2. Section 21 of the Drainage Act, RSO 1990 requires that assessments be shown for each parcel of land and road affected. The affected parcels of land are identified using the roll number received from the City. For convenience only, the owners' names are shown by the last revised assessment roll.

The Corporation of the City of Port Colborne

By-law no. _____

Being a by-law to amend Zoning By-law 6575/30/18 respecting lands legally described as Part of Lots 21 and 22, formerly in the Township of Humberstone, now in the City of Port Colborne, Regional Municipality of Niagara, municipally known as 650 Lorraine Road

Whereas By-law 6575/30/18 is a by-law of The Corporation of the City of Port Colborne restricting the use of land and the location and use of buildings and structures; and

Whereas**,** the Council of The Corporation of the City of Port Colborne desires to amend the said by-law.

Now therefore**,** and pursuant to the provisions of Section 34 of the *Planning Act, R.S.O. 1990*, The Corporation of the City of Port Colborne enacts as follows:

1. This amendment shall apply to those lands described on Schedule “A” attached to and forming part of this by-law.

2. That the Zoning Map referenced as Schedule “A5” forming part of By-law 6575/30/18 is hereby amended by changing those lands described on Schedule A from Agricultural (A) to APO-64 and Agricultural Residential (AR).

3. That Section 37 entitled “Special Provisions” of Zoning By-law 6575/30/18, is hereby further amended by adding the following:

   APO-64

   Notwithstanding the provisions of the Agricultural Purposes Only (APO) zone, the following regulations shall apply:

   a) Minimum Interior Side Yard 3 metres

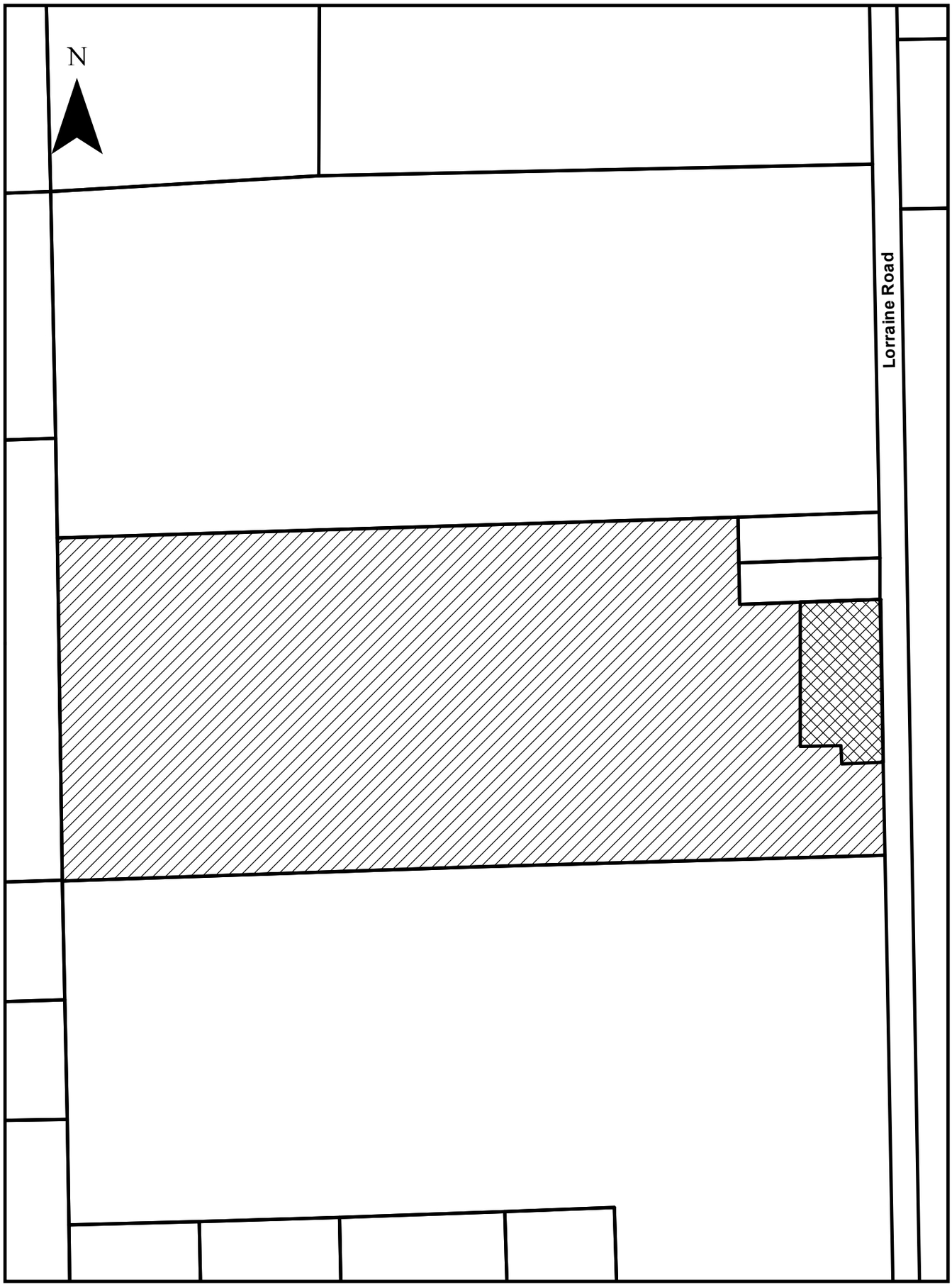
4. That this by-law shall come into force and take effect on the day that it is passed by Council, subject to the provisions of the *Planning Act*.

5. The City Clerk is hereby authorized and directed to proceed with the giving notice of the passing of this by-law, in accordance with the *Planning Act*.

Enacted and passed this 26th day of July, 2021.

_____
William C. Steele
Mayor

_____
Amber LaPointe
City Clerk



This is Schedule "A" to By-law No_____

Passed _____, 2021

_____
Mayor

_____
Clerk

Lands to be rezoned from Agricultural (A) to APO-64

Lands to be rezoned from Agricultural (A) to Agricultural Residential (AR)

June 2021

File No. D14-10-21

Drawn by: DS - City of Port Colborne Planning Division

Not to scale

The Corporation of the City of Port Colborne

By-law No. _____

Being a By-law to Authorize Entering into an Agreement with Ontario Water/Wastewater Agency Response Network regarding the coordination of response activities and sharing resources during emergencies

Whereas at its meeting of July 26, 2021, the Council of The Corporation of the City of Port Colborne (Council) approved the recommendations of the Public Works Department Report No. 2021-203, Subject: Ontario Water/Wastewater Agency Response Network (OnWARN) Mutual Aid and Assistance Agreement; and

Whereas Council is desirous of entering into an agreement with Ontario Water/Wastewater Agency Response Network regarding the coordination of response activities and sharing resources during emergencies;

Whereas the *Municipal Act*, 2001 S.O. 2001, c.25, as amended, confers broad authority on municipalities to enter into such agreements;

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

1. That The Corporation of the City of Port Colborne enters into an agreement with Ontario Water/Wastewater Agency Response Network regarding the coordination of response activities and sharing resources during emergencies.

2. That the Mayor and the Clerk be and each of them is hereby authorized and directed to sign said agreement, together with any documents necessary to complete the conditions of said agreement, and the Clerk is hereby authorized to affix the Corporate Seal thereto.

Enacted and passed this 26th day of July, 2021.

_____
William C. Steele
Mayor

_____
Amber LaPointe
City Clerk

Mutual Aid and Assistance Agreement for an Ontario Water/Wastewater Agency Response Network (OnWARN)

Memorandum of Understanding

This Memorandum of Understanding ("Agreement") is made and entered into by public and private water and wastewater utilities, owners, and operating authorities in the Province of Ontario ("Utilities") that have, by executing this Agreement, manifested their intent to participate in an Ontario program for water/wastewater mutual aid and assistance ("Mutual Aid and Assistance Program").

Statutory Authority for Municipal Utilities: This Agreement is authorized under Section 20 of the Ontario Municipal Act, 2001 which provides that Municipal Utilities may contract with each other to provide services.

ARTICLE I
PURPOSE

Recognizing that emergencies may require aid or assistance in the form of personnel, equipment, and supplies, the signatory Members hereby establish the Mutual Aid and Assistance Program. Through the Mutual Aid and Assistance Program, Members coordinate response activities and share resources during emergencies. This Agreement sets forth the procedures and standards for the administration of the Mutual Aid and Assistance Program.

ARTICLE II
DEFINITIONS

A. Authorized Official – An employee or officer of a Member who under this Agreement is authorized to:
   1. Request assistance;
   2. Offer assistance;
   3. Decline to offer assistance; or
   4. Withdraw assistance.

B. Emergency - A natural or human caused event or circumstance causing, or imminently threatening to cause, loss of life, injury to person or property, human suffering or financial loss, or could reasonably be beyond the capability of the services, personnel, equipment, and facilities of a Member to fully manage and mitigate internally.

C. Member – Any public or private water or wastewater utility, owner, or operating authority in Ontario ("Utility") that manifests intent to participate in the Mutual Aid and Assistance Program by executing this Agreement.

   1. Requesting Member – A Member who requests aid or assistance from another Member or Members under the Mutual Aid and Assistance Program.
   2. Responding Member – A Member that provides aid or assistance during a Period of Assistance in response to a request for aid or assistance under the Mutual Aid and Assistance Program.
   3. Non-Responding Member - A Member or Associate Member that does not provide aid or assistance during a Period of Assistance under the Mutual Aid and Assistance Program.

D. Associate Member – Any participant, approved by the OnWARN Steering Committee, which provides a support role or service for the Mutual Aid and Assistance Program. (For example: any agency, or an association that does not sign this Agreement). An Associate Member is not entitled to vote on any matter as outlined and identified in this Agreement.

E. Confidential Information - Any document shared with any signatory of this Agreement that is marked confidential, including but not limited to any map, report, note, paper, opinion, letter or e-mail which relates to the system security and vulnerabilities of a Member or Associate Member, and any document that is protected under the Municipal Freedom of Information and Protection of Privacy Act, Freedom of Information and Protection of Privacy Act, Emergency Management and Civil Protection Act, Personal Information Protection and Electronic Documents Act, and Personal Health Information Protection Act, 2004.

F. Period of Assistance – A specified period of time when a Responding Member assists a Requesting Member. The period commences when personnel, equipment, and/or supplies depart from Responding Member's facility and ends when the resources return to their facility. This period also includes the utilization of Responding Member personnel that provide a direct support role or service to the Requesting Member as mutually agreed upon, and the period commences when the support personnel are assigned to the Requesting Member's emergency. All protections identified in this Agreement, including but not limited to indemnification and hold-harmless clauses, apply during this period. The specified Period of Assistance may occur during response to or recovery from an Emergency, as previously defined.

G. Incident Management System – A system, consistent with internationally recommended practices that provides standardized organizational structures, functions, processes and terminology for use at all levels of emergency response in Ontario.

ARTICLE III
ADMINISTRATION

The Mutual Aid and Assistance Program shall be administered through the OnWARN Steering Committee. In addition to representing the interests of the Members, the OnWARN Steering Committee may include Associate Members as non-voting participants. Under the leadership of the OnWARN Steering Committee Chair, the OnWARN Steering Committee shall coordinate emergency planning and response activities for the Mutual Aid and Assistance Program, and provide administrative oversight and coordination of the Agreement and the associated policies and procedures.

ARTICLE IV
PROCEDURES

The OnWARN Steering Committee shall develop operational and planning procedures for the Mutual Aid and Assistance Program, which may be undertaken in cooperation with Associate Members, at the sole discretion of the OnWARN Steering Committee. These procedures shall be reviewed at least annually and updated as needed by the OnWARN Steering Committee.

The OnWARN Steering Committee shall distribute copies of the policies and procedures to the Members when they are developed or amended.

ARTICLE V
REQUESTS FOR ASSISTANCE

A. Member Responsibility: Members shall identify an Authorized Official and alternate contacts, related contact information including 24-hour access (e.g. an after-hours number), and maintain information on resources that may be available from the Member for mutual aid and assistance response. Such contact information shall be updated annually or when changes occur, and copies provided to the OnWARN Steering Committee.

In the event of an Emergency, a Member's Authorized Official may request mutual aid and assistance from participating Members. Requests for assistance can be made orally or in writing. When made orally, the request for personnel, equipment, and supplies shall be prepared in writing as soon as reasonably practicable. Requests for assistance shall be directed to the Authorized Official of the participating Member. Specific protocols for requesting aid shall be provided in the required procedures (Article IV).

For further clarity, an Emergency under this agreement does not require the Member to declare a state of emergency in accordance with the Emergency Management and Civil Protection Act.

B. Response to a Request for Assistance – Members are not obligated to respond to a request for assistance from a Requesting Member. After a Member receives a request for assistance, the Authorized Official evaluates whether or not to respond, whether resources are available to respond, or if other circumstances would hinder response. Following the evaluation, the Authorized Representative shall inform, as soon as possible, the Requesting Member whether it will respond. If the Member is willing and able to provide assistance, the Responding Member shall inform the Requesting Member about the type of available resources and the approximate time of such assistance.

C. Discretion of Responding Member's Authorized Official – Execution of this Agreement does not create any duty to respond to a request for assistance from a Requesting Member. When a Member receives a request for assistance, the Authorized Official shall have sole and absolute discretion as to whether or not to respond, or the availability of resources to be used in such response. An Authorized Official's decisions on the availability of resources shall be final.

ARTICLE VI
RESPONDING MEMBER PERSONNEL

A. Incident Management System – When providing assistance under this Agreement, the Requesting Member and Responding Member may be organized and may function under the Incident Management System.

B. Control - While employees so provided may be under the supervision of the Responding Member, the Responding Member's employees come under the direction and control of the Requesting Member, to address the needs identified by the Requesting Member. The Requesting Member's Authorized Official shall coordinate response activities with the designated supervisor(s) of the Responding Member(s). The Responding Member's designated supervisor(s) shall keep accurate records of work performed by personnel during the specified Period of Assistance.

C. Food and Shelter – Whenever practical, Responding Member personnel shall be self-sufficient for up to 72 hours. When possible, the Requesting Member shall supply reasonable food and shelter for Responding Member personnel. If the Requesting Member is unable to provide food and shelter for Responding Member personnel, the Responding Member's designated supervisor is authorized to secure the resources necessary to reasonably meet the needs of its personnel.

Except as provided below, the cost for such resources shall not exceed the Responding Member's per diem rates or related expense policy for that area. To the extent food and shelter costs exceed the Responding Member's per diem rates for the area, the Responding Member shall demonstrate that the additional costs were reasonable and necessary under the circumstances.

Unless otherwise agreed to in writing, the Requesting Member remains responsible for reimbursing the Responding Member for all reasonable and necessary costs associated with providing food and shelter, if such resources are not provided.

D. Communication – The Requesting Member shall provide Responding Member personnel with radio equipment as available, or radio frequency information to program existing radios, in order to facilitate communications with local responders and personnel. In lieu of radio equipment, the Requesting Member may make alternative communications arrangements with the Responding Member in order to adequately facilitate coordinated communications during the Period of Assistance.

E. Status - Unless otherwise provided by law, the Responding Member's officers and employees retain the same privileges, immunities, rights, duties and benefits as provided in their respective jurisdictions.

F. Licences and Permits – To the extent permitted by law, Responding Member personnel who hold licences, certificates, or permits evidencing professional, mechanical, or other skills shall be allowed to carry out activities and tasks relevant and related to their respective credentials during the specified Period of Assistance.

G. Right to Withdraw - The Responding Member's Authorized Official retains the right to withdraw some or all of its resources at any time for any reason in the Responding Member's sole and absolute discretion. Notice of intention to withdraw shall be communicated to the Requesting Member's Authorized Official as soon as is practicable under the circumstances

ARTICLE VII
COST – REIMBURSEMENT

The Requesting Member shall reimburse the Responding Member for each of the following categories of costs incurred during the specified Period of Assistance. The Responding Member may assume, in whole or in part, any such loss, damage, expense, or other cost incurred, or may loan such equipment or donate such services to the Requesting Member without charge or cost to the Requesting Member.

A. Personnel – The Responding Member shall be reimbursed by the Requesting Member for personnel costs incurred for work performed during the specified Period of Assistance. Responding Member personnel costs shall be calculated according to the terms provided in their employment contracts or other conditions of employment. The Responding Member's designated supervisor(s) shall keep accurate records of work performed by personnel during the specified Period of Assistance. Requesting Member reimbursement to the Responding Member could consider all personnel costs, including salaries or hourly wages, costs for fringe benefits, and indirect costs.

B. Equipment – The Requesting Member shall reimburse the Responding Member for the use of equipment during the specified Period of Assistance, including, but not limited to, reasonable rental rates, all fuel, lubrication, maintenance, transportation, and loading/unloading of loaned equipment. All equipment shall be returned to the Responding Member in good working order as soon as is practicable and reasonable under the circumstances. At a minimum, rates for equipment use shall be based on the "Ontario Provincial Standard 127 Schedule of Equipment Rates". If a Responding Member uses rates different from those in the "Ontario Provincial Standard 127 Schedule of Equipment Rates", the Responding Member shall provide such rates orally or in writing to the Requesting Member prior to supplying the equipment. Mutual agreement on which rates are used shall be reached in writing prior to dispatch of the equipment. Reimbursement for equipment not referenced on the "Ontario Provincial Standard 127 Schedule of Equipment Rates" shall be developed based on actual recovery of costs. If Responding Member must lease a piece of equipment while its equipment is being repaired, Requesting Member shall reimburse Responding Member for such rental costs.

C. Materials and Supplies – The Requesting Member shall reimburse the Responding Member actual replacement cost, plus handling charges, for use of expendable, consumable, or non-returnable supplies. The Responding Member shall not charge direct fees or rental charges to the Requesting Member for other supplies and reusable items that are returned to the Responding Member in a clean, damage-free condition. Reusable supplies that are returned to the Responding Member with damage shall be treated as expendable supplies for purposes of cost reimbursement.

D. Payment Period – The Responding Member shall provide an itemized bill to the Requesting Member for all expenses incurred by the Responding Member while providing assistance under this Agreement. The Requesting Member shall send the itemized bill not later than (90) ninety days following the end of the Period of Assistance. The Responding Member may request additional periods of time within which to submit the itemized bill, and Requesting Member shall not unreasonably withhold consent to such request. The Requesting Member shall pay the bill in full on or before the forty-fifth (45th) day following the billing date. The Requesting Member may request additional periods of time within which to pay the itemized bill, and Responding Member shall not unreasonably withhold consent to such request, provided, however, that all payment shall occur not later than one-year after the date a final itemized bill is submitted to the Requesting Member.

E. Records - Each Responding Member and their duly authorized representatives shall have access to a Requesting Member's books, documents, notes, reports, papers and records which are directly pertinent to this Agreement for the purposes of reviewing the accuracy of a cost bill or making a financial, maintenance or regulatory audit. Each Requesting Member and their duly authorized representatives shall have access to a Responding Member's books, documents, notes, reports, papers and records which are directly pertinent to this Agreement for the purposes of reviewing the accuracy of a cost bill or making a financial, maintenance or regulatory audit. Such records shall be maintained for at least three (3) years after the Period of Assistance, or longer where required by law.

ARTICLE VIII
DISPUTES

If any controversy or claim arises out of, or relates to, the execution of this Agreement, including, but not limited to, alleged breach of this Agreement, the disputing Members shall first attempt to resolve the dispute by negotiation, followed by mediation and finally shall be settled by arbitration in accordance with the rules of the Ontario Arbitration Act. Any court of competent jurisdiction may enter the judgment rendered by the arbitrators as final judgment that is binding on the parties.

ARTICLE IX
REQUESTING MEMBER'S DUTY TO INDEMNIFY

The Requesting Member shall assume the defense of, fully indemnify and hold harmless, the Responding Member, its officers and employees, from all claims, loss, damage, injury and liability of every kind, nature and description, directly or indirectly arising from Responding Member's work during a specified Period of Assistance. The scope of the Requesting Member's duty to indemnify includes, but is not limited to, suits arising from, or related to, negligent or wrongful use of equipment or supplies on loan to the Requesting Member, or faulty workmanship or other negligent acts, errors or omissions by Requesting Member or the Responding Member personnel.

The Requesting Member's duty to indemnify is subject to, and shall be applied consistent with, the conditions set forth in Article X.

ARTICLE X
SIGNATORY INDEMNIFICATION

In the event of a liability, claim, demand, action, or proceeding of whatever kind or nature arising out of a specified Period of Assistance, the Requesting Member shall have a duty to defend, indemnify, save and hold harmless all Non-Responding Members, their officers, agents and employees from any liability, claim, demand, action, or proceeding of whatever kind or nature arising out of a Period of Assistance.

ARTICLE XI
WORKPLACE SAFETY AND INSURANCE

A. Workplace Safety and Insurance - The Workplace Safety and Insurance Act provides that if an Emergency is declared by the Premier of Ontario or the head of council of a municipality, and a person is sent to assist, the Crown (Government of Ontario) or the municipality, whichever declared the Emergency is considered the employer of that person for the purposes of assessing any accident costs. However, the worker's regular employer (Responding Member) continues to be responsible for:
   - Maintaining employment benefits as required by section 25 of the Workplace Safety and Insurance Act,
   - Complying with the obligation to co-operate in the early and safe return to work of the worker (section 40), and,
   - Complying with the obligation to re-employ the worker (section 41) if it applies.

Any costs incurred by the worker's regular employer (Responding Member) in meeting these obligations are reimbursed by the Crown or the municipality, whichever is applicable.

The Responding Member is responsible for providing Workplace Safety and Insurance Board (WSIB) benefits and administering WSIB for its employees. The Requesting Member shall reimburse the Responding Member for all costs, benefits, and expenses associated with WSIB and other employee claims that arise from or are related to providing assistance under this Agreement.

B. Hold Harmless - The Requesting Member shall indemnify and hold the Responding Member harmless from and against any and all liability for loss, including, but not limited to, damage, cost or expense which the Responding Member may incur by reason of bodily injury, including death, to any person or persons, or by reason of damage to or destruction of any property, including the loss of use thereof, which result from furnishing Emergency assistance and whether or not due in whole or in part to any act, omission, or negligence of the Responding Member.

Where payments are made to Responding Member's employees under WSIB or any similar law for bodily injury or death resulting from furnishing emergency assistance, Requesting Member shall make reimbursement to Responding Member to the extent such payment increases the Responding Member's WSIB or disability benefits costs, whether such increase in costs occurs in the form of an increase in premiums or contributions or in the form of reduction in dividends or premium refunds, or otherwise.

In the event any claim or demand is made or suit or action is filed against the Responding Member alleging liability for which Requesting Member shall indemnify and hold harmless the Responding Member under the above paragraphs, the Responding Member shall promptly notify the Requesting Member thereof, and the Requesting Member, at its sole cost and expense, shall settle, compromise or defend the same in such manner as it in its sole discretion deems necessary or prudent.

ARTICLE XII
NOTICE

A Member who becomes aware of a claim or suit that in any way, directly or indirectly, contingently or otherwise, affects or might affect other Members in respect of this Agreement, shall provide prompt and timely notice to the Members who may be affected by the suit or claim. Each Member reserves the right to participate in the defense of such claims or suits as necessary to protect its own interests.

ARTICLE XIII
INSURANCE

Each Member shall maintain an insurance policy or maintain a self-insurance program that covers activities that it may undertake by virtue of membership in the Mutual Aid and Assistance Program.

A. Members shall maintain at minimum the following insurance policies;
    a. Commercial General Liability (CGL) insurance for bodily injury (including death) and property damage in an amount of not less than Five Million Dollars ($5,000,000.00). This CGL insurance shall be written to a minimum of the current IBC 2100 form or the most recent version and such policy shall include:
        i. the Responding Member as an additional insured;
        ii. a cross liability clause;
        iii. products and completed operations coverage;
        iv. broad form contractual liability coverage;
        v. non-owned automobile liability coverage; and
        vi. operation of attached machinery;
    b. Automobile third party liability insurance in an amount of not less than Two Million Dollars ($2,000,000.00); and
    c. All Risk Property insurance that covers any property on loan from a Responding Member

B. In the event of a claim requiring the Responding Member to incur costs as a result of providing assistance under this Agreement, the Requesting Member shall be responsible for reimbursing the Responding Member for the payment of every deductible amount provided in the insurance described in Article XIII (A), above.

C. The Requesting Member covenants and agrees that the insurance obligations mentioned above will not be construed to and will in no manner limit or restrict the liability of the Requesting Member or its responsibility under Article IX.

ARTICLE XIV
CONFIDENTIAL INFORMATION

Subject to the terms and conditions of the Municipal Freedom of Information and Protection of Privacy Act, Freedom of Information and Protection of Privacy Act, Emergency Management and Civil Protection Act, Personal Information Protection and Electronic Documents Act and Personal Health Information Protection Act, 2004, as appropriate, Members and Associate Members shall maintain in the strictest confidence and shall take all reasonable steps necessary to prevent the disclosure of any Confidential Information under this Agreement. Except when compelled by this agreement to provide information to a Member, if any Member, Associate Member, third party or other entity requests or demands, by subpoena or otherwise, that a Member or Associate Member disclose any Confidential Information disclosed under this Agreement, the Member or Associate Member shall immediately notify the owner of the Confidential Information and shall take all reasonable steps necessary to prevent the disclosure of any Confidential Information by asserting all applicable rights and privileges with respect to such information and shall cooperate fully in any judicial or administrative proceeding relating thereto.

ARTICLE XV
EFFECTIVE DATE

This Agreement shall be effective on the Member once the Member's authorized representative executes this Agreement and the OnWARN Steering Committee Chair receives the executed Agreement. The OnWARN Steering Committee Chair shall maintain a list of all Members and Associate Members, and make the list available to all Members and Associate Members.

ARTICLE XVI
WITHDRAWAL

A Member may withdraw from this Agreement by providing written notice of its intent to withdraw to the OnWARN Steering Committee Chair. Withdrawal takes effect 60 days after the appropriate officials receive notice. Withdrawal from this Agreement shall in no way affect a Requesting Member's duty to reimburse a Responding Member for cost incurred during a Period of Assistance, which duty shall survive such withdrawal.

ARTICLE XVII
MODIFICATION

No provision of this Agreement may be modified, altered or rescinded by individual parties to this Agreement. Modifications to this Agreement may be due to programmatic operational changes to support this Agreement, legislative action, creation of a mutual aid and assistance agreement, or other developments. Modifications require a simple majority vote of Members. The OnWARN Steering Committee Chair shall provide written notice to all Members of approved modifications to this Agreement. Approved modifications take effect 60 days after the date upon which notice is sent to the Members.

ARTICLE XVIII
SEVERABILITY

The parties agree that if any term or provision of this Agreement is declared by a court of competent jurisdiction to be illegal or in conflict with any law, the validity of the remaining terms and provisions shall not be affected, and the rights and obligations of the parties shall be construed and enforced as if this Agreement did not contain the particular term or provision held to be invalid.

ARTICLE XIX
PRIOR AGREEMENTS

This Agreement supersedes all prior agreements between Members to the extent that such prior agreements are inconsistent with this Agreement.

ARTICLE XX
PROHIBITION ON THIRD PARTIES AND ASSIGNMENT OF RIGHTS/DUTIES

This Agreement is for the sole benefit of the Members and no person or entity shall have any rights under this Agreement as a third party beneficiary. Assignments of benefits and delegations of duties created by this Agreement are prohibited and shall be without effect.

ARTICLE XXI
COUNTERPARTS

This Agreement may be executed and delivered by the parties in counterparts, each of which shall constitute an original and may be delivered by facsimile, email or other functionally equivalent electronic means of communication, and those counterparts taken together shall constitute one and the same instrument.

Now, therefore, in consideration of the covenants and obligations set forth in this Agreement, the Utility listed here manifests its intent to be a Member of the Ontario Water/Wastewater Agency Response Network by executing this Mutual Aid and Assistance Agreement on this _____day of _____ 20_____.

Utility:_____

By: _____

Title: _____

_____
Please Print Name

By: _____

Title: _____

_____
Please Print Name

The Corporation of the City of Port Colborne

By-law No. _____

Being a By-law to Amend By-law No. 6086/52/14, Being a By-law to Appoint Deputy Treasurers

Whereas Subsection 286(1) of the *Municipal Act, 2001*, S.O. 2001, c. 25 provides that a municipality shall appoint a treasurer; and

Whereas Subsection 286(2) of the *Municipal Act, 2001* provides that the municipality may appoint a deputy treasurer who shall have all the powers and duties of the treasurer;

Whereas the Council of The Corporation of the City of Port Colborne deems it expedient to amend By-law No. 6086/52/14, Being a By-law to Appoint Deputy Treasurers;

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

1. That section 2 of By-law No. 6086/52/14, Being a By-law to Appoint Deputy Treasurers, be amended by deleting “Manager of Revenue and Taxation” and replacing it with “Manager of Financial Services”.

2. That this By-law shall come into force and take effect on the date of passing.

Enacted and passed this 26th day of July, 2021.

_____
William C. Steele
Mayor

_____
Amber LaPointe
City Clerk

The Corporation of the City of Port Colborne

By-law No. _____

Being a By-law to Amend By-law No. 5510/107/10, Being a By-law to Regulate Fences in the City of Port Colborne and to Repeal By-law No. 1170/117/81 as Amended

Whereas the City of Port Colborne has adopted By-law No. 6902/50/21 Being a By-law to Establish a System for Administrative Penalties for Non-Parking Offences within the City of Port Colborne;

Whereas section 434.1(1) of the Municipal Act provides that a municipality may require a person, subject to such conditions as the municipality considers appropriate, to pay an administrative penalty if the municipality is satisfied that the person has failed to comply with a by-law of the municipality passed under this Act;

Whereas the City of Port Colborne considers it desirable and necessary to amend By-law No. 5510/107/10, Being a By-law to Regulate Fences in the City of Port Colborne and to Repeal By-law No. 1170/117/81 as Amended, to allow for enforcement through the administrative penalty system;

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

1. That By-law No. 5510/107/10, Being a By-law to Regulate Fences in the City of Port Colborne and to Repeal By-law No. 1170/117/81 as Amended, be further amended by adding the following sections:

    "9.7 This By-law is designated as a by-law to which the Administrative (Non-Parking) Penalty By-Law, applies.

    9.8 Any person who contravenes any of the provisions of this By-law and each Owner, when given a Penalty Notice in accordance with the City's Administrative (Non-Parking) Penalty By-Law, is liable to pay the City an administrative penalty in the amount specified in the City's Administrative (Non-Parking) Penalty By-Law, as amended from time-to-time."

Enacted and passed this 26th day of July, 2021.

_____
William C. Steele
Mayor

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Amber LaPointe
City Clerk

The Corporation of the City of Port Colborne

By-law No. _____

Being a By-law to Amend By-law No. 6574/29/18, Being a By-law to provide for the maintenance of property and land (Lot Maintenance By-law) and to repeal By-law 6329/09/16

Whereas the City of Port Colborne has adopted By-law No. 6902/50/21 Being a By-law to Establish a System for Administrative Penalties for Non-Parking Offences within the City of Port Colborne;

Whereas section 434.1(1) of the Municipal Act provides that a municipality may require a person, subject to such conditions as the municipality considers appropriate, to pay an administrative penalty if the municipality is satisfied that the person has failed to comply with a by-law of the municipality passed under this Act;

Whereas the City of Port Colborne considers it desirable and necessary to amend By-law No. 6574/29/18, Being a By-law to provide for the maintenance of property and land (Lot Maintenance By-law) and to repeal By-law 6329/09/16, to allow for enforcement through the administrative penalty system;

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

1. That By-law No. 6574/29/18, Being a By-law to provide for the maintenance of property and land (Lot Maintenance By-law) and to repeal By-law 6329/09/16, be amended by adding the following sections:

"**5.12 Designation re: Administrative Penalties**
This By-law is designated as a by-law to which the Administrative (Non-Parking) Penalty By-Law, applies.

5.13 Penalties Created
Any Person who contravenes any of the provisions of this By-law, when given a Penalty Notice in accordance with the City's Administrative (Non-Parking) Penalty By-Law, is liable to pay the City an administrative penalty in the amount specified in the City's Administrative (Non-Parking) Penalty By-Law, as amended from time-to-time."

Enacted and passed this 26th day of July, 2021.

_____
William C. Steele
Mayor

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Amber LaPointe
City Clerk

The Corporation of the City of Port Colborne

By-law No. _____

Being a By-law to Amend By-law No. 4588/119/04, Being a By-law to Regulate Noise

Whereas the City of Port Colborne has adopted By-law No. 6902/50/21 Being a By-law to Establish a System for Administrative Penalties for Non-Parking Offences within the City of Port Colborne;

Whereas section 434.1(1) of the Municipal Act provides that a municipality may require a person, subject to such conditions as the municipality considers appropriate, to pay an administrative penalty if the municipality is satisfied that the person has failed to comply with a by-law of the municipality passed under this Act;

Whereas the City of Port Colborne considers it desirable and necessary to amend By-law No. 4588/119/04, Being a By-law to Regulate Noise, to allow for enforcement through the administrative penalty system;

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

1. That By-law No. 4588/119/04, Being a By-law to Regulate Noise, be amended by adding the following sections:

    "19.1 This By-law is designated as a by-law to which the Administrative (Non-Parking) Penalty By-Law, applies.

    19.2 Any person who contravenes any of the provisions of this By-law, when given a Penalty Notice in accordance with the City's Administrative (Non-Parking) Penalty By-Law, is liable to pay the City an administrative penalty in the amount specified in the City's Administrative (Non-Parking) Penalty By-Law, as amended from time-to-time."

Enacted and passed this 26th day of July, 2021.

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William C. Steele
Mayor

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Amber LaPointe
City Clerk

The Corporation of the City of Port Colborne

By-law No. _____

Being a By-law to Amend By-law No. 4299/135/02, Being a By-law Prescribing Standards for the Maintenance and Occupancy of Property within the City of Port Colborne

Whereas the City of Port Colborne has adopted By-law No. 6902/50/21 Being a By-law to Establish a System for Administrative Penalties for Non-Parking Offences within the City of Port Colborne;

Whereas section 434.1(1) of the Municipal Act provides that a municipality may require a person, subject to such conditions as the municipality considers appropriate, to pay an administrative penalty if the municipality is satisfied that the person has failed to comply with a by-law of the municipality passed under this Act;

Whereas the City of Port Colborne considers it desirable and necessary to amend By-law No. 4299/135/02, Being a By-law Prescribing Standards for the Maintenance and Occupancy of Property within the City of Port Colborne, to allow for enforcement through the administrative penalty system;

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

1. That By-law No. 4299/135/02, Being a By-law Prescribing Standards for the Maintenance and Occupancy of Property within the City of Port Colborne, be amended by adding the following sections:

    "6.12.1 This By-law is designated as a by-law to which the Administrative (Non-Parking) Penalty By-Law, applies.

    6.12.2 Any person who contravenes any of the provisions of this By-law and each Occupant, when given a Penalty Notice in accordance with the City's Administrative (Non-Parking) Penalty By-Law, is liable to pay the City an administrative penalty in the amount specified in the City's Administrative (Non-Parking) Penalty By-Law, as amended from time-to-time."

Enacted and passed this 26th day of July, 2021.

_____
William C. Steele
Mayor

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Amber LaPointe
City Clerk

The Corporation of the City of Port Colborne

By-law No. _____

Being a By-law to Amend By-law No. 5383/137/09, Being a By-law to provide for the Removal of Snow and Ice from Roofs and Sidewalks

Whereas the City of Port Colborne has adopted By-law No. 6902/50/21 Being a By-law to Establish a System for Administrative Penalties for Non-Parking Offences within the City of Port Colborne;

Whereas section 434.1(1) of the Municipal Act provides that a municipality may require a person, subject to such conditions as the municipality considers appropriate, to pay an administrative penalty if the municipality is satisfied that the person has failed to comply with a by-law of the municipality passed under this Act;

Whereas the City of Port Colborne considers it desirable and necessary to amend By-law No. 5383/137/09, Being a By-law to provide for the Removal of Snow and Ice from Roofs and Sidewalks, to allow for enforcement through the administrative penalty system;

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

1. That By-law No. 5383/137/09, Being a By-law to provide for the Removal of Snow and Ice from Roofs and Sidewalks, be amended by adding the following sections:

    "7.1 This By-law is designated as a by-law to which the Administrative (Non-Parking) Penalty By-Law, applies.

    7.2 Any person who contravenes any of the provisions of this By-law and each Owner, when given a Penalty Notice in accordance with the City's Administrative (Non-Parking) Penalty By-Law, is liable to pay the City an administrative penalty in the amount specified in the City's Administrative (Non-Parking) Penalty By-Law, as amended from time-to-time."

Enacted and passed this 26th day of July, 2021.

_____
William C. Steele
Mayor

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Amber LaPointe
City Clerk

The Corporation of the City of Port Colborne

By-law No. _____

Being a By-law to Amend By-law No. 4843/68/06, Being a By-law to Regulate Privately Owned Swimming Pools

Whereas the City of Port Colborne has adopted By-law No. 6902/50/21 Being a By-law to Establish a System for Administrative Penalties for Non-Parking Offences within the City of Port Colborne;

Whereas section 434.1(1) of the Municipal Act provides that a municipality may require a person, subject to such conditions as the municipality considers appropriate, to pay an administrative penalty if the municipality is satisfied that the person has failed to comply with a by-law of the municipality passed under this Act;

Whereas the City of Port Colborne considers it desirable and necessary to amend By-law No. 4843/68/06, Being a By-law to Regulate Privately Owned Swimming Pools, to allow for enforcement through the administrative penalty system;

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

1. That By-law No. 4843/68/06, Being a By-law to Regulate Privately Owned Swimming Pools, be amended by adding the following sections:

    "6.1.3 This By-law is designated as a by-law to which the Administrative (Non-Parking) Penalty By-Law, applies.

    6.1.4 Any person who contravenes any of the provisions of this By-law and each Owner, when given a Penalty Notice in accordance with the City's Administrative (Non-Parking) Penalty By-Law, is liable to pay the City an administrative penalty in the amount specified in the City's Administrative (Non-Parking) Penalty By-Law, as amended from time-to-time."

Enacted and passed this 26th day of July, 2021.

_____
William C. Steele
Mayor

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Amber LaPointe
City Clerk

The Corporation of the City of Port Colborne

By-law No. _____

Being a By-law to Amend By-law No. 4738/120/05, Being a By-law to Regulate the Erection and Maintenance of Signs and Other Advertising Devices

Whereas the City of Port Colborne has adopted By-law No. 6902/50/21 Being a By-law to Establish a System for Administrative Penalties for Non-Parking Offences within the City of Port Colborne;

Whereas section 434.1(1) of the Municipal Act provides that a municipality may require a person, subject to such conditions as the municipality considers appropriate, to pay an administrative penalty if the municipality is satisfied that the person has failed to comply with a by-law of the municipality passed under this Act;

Whereas the City of Port Colborne considers it desirable and necessary to amend By-law No. 4738/120/05, Being a By-law to Regulate the Erection and Maintenance of Signs and Other Advertising Devices, to allow for enforcement through the administrative penalty system;

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

1. That By-law No. 4738/120/05, Being a By-law to Regulate the Erection and Maintenance of Signs and Other Advertising Devices, be amended by adding the following sections:

    "4.6.2 This By-law is designated as a by-law to which the Administrative (Non-Parking) Penalty By-Law, applies.

    4.6.3 Any person who contravenes any of the provisions of this By-law and each Owner, when given a Penalty Notice in accordance with the City's Administrative (Non-Parking) Penalty By-Law, is liable to pay the City an administrative penalty in the amount specified in the City's Administrative (Non-Parking) Penalty By-Law, as amended from time-to-time."

Enacted and passed this 26th day of July, 2021.

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William C. Steele
Mayor

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Amber LaPointe
City Clerk

The Corporation of the City of Port Colborne

By-law No. _____

Being a By-law to Amend By-law No. 6665/29/19, Being a By-law to Adopt a Policy for Encroachments on Municipal Property

Whereas the City of Port Colborne has adopted By-law No. 6902/50/21 Being a By-law to Establish a System for Administrative Penalties for Non-Parking Offences within the City of Port Colborne;

Whereas section 434.1(1) of the Municipal Act provides that a municipality may require a person, subject to such conditions as the municipality considers appropriate, to pay an administrative penalty if the municipality is satisfied that the person has failed to comply with a by-law of the municipality passed under this Act;

Whereas the City of Port Colborne considers it desirable and necessary to amend By-law No. 6665/29/19, Being a By-law to Adopt a Policy for Encroachments on Municipal Property, to allow for enforcement through the administrative penalty system;

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

1. That By-law No. 6665/29/19, Being a By-law to Adopt a Policy for Encroachments on Municipal Property, be amended by adding the following sections:

   "6 (c) This By-law is designated as a by-law to which the Administrative (Non-Parking) Penalty By-Law, applies.

   6 (d) Any person who contravenes any of the provisions of this By-law and each Owner, when given a Penalty Notice in accordance with the City's Administrative (Non-Parking) Penalty By-Law, is liable to pay the City an administrative penalty in the amount specified in the City's Administrative (Non-Parking) Penalty By-Law, as amended from time-to-time."

Enacted and passed this 26th day of July, 2021.

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William C. Steele
Mayor

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Amber LaPointe
City Clerk

The Corporation of the City of Port Colborne

By-law No. _____

Being a By-law to Amend By-law No. 6175/01/15, Being a By-law to Authorize and Regulate the Planting, Care, Maintenance and Removal of Trees on or Affecting Property of the City of Port Colborne

Whereas the City of Port Colborne has adopted By-law No. 6902/50/21 Being a By-law to Establish a System for Administrative Penalties for Non-Parking Offences within the City of Port Colborne;

Whereas section 434.1(1) of the Municipal Act provides that a municipality may require a person, subject to such conditions as the municipality considers appropriate, to pay an administrative penalty if the municipality is satisfied that the person has failed to comply with a by-law of the municipality passed under this Act;

Whereas the City of Port Colborne considers it desirable and necessary to amend By-law No. 6175/01/15, Being a By-law to Authorize and Regulate the Planting, Care, Maintenance and Removal of Trees on or Affecting Property of the City of Port Colborne, to allow for enforcement through the administrative penalty system;

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

1. That By-law No. 6175/01/15, Being a By-law to Authorize and Regulate the Planting, Care, Maintenance and Removal of Trees on or Affecting Property of the City of Port Colborne, be amended by adding the following sections:

    "10 (2) This By-law is designated as a by-law to which the Administrative (Non-Parking) Penalty By-Law, applies.

    10 (3) Any person who contravenes any of the provisions of this By-law and each Property Owner, when given a Penalty Notice in accordance with the City's Administrative (Non-Parking) Penalty By-Law, is liable to pay the City an administrative penalty in the amount specified in the City's Administrative (Non-Parking) Penalty By-Law, as amended from time-to-time."

Enacted and passed this 26th day of July, 2021.

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William C. Steele
Mayor

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Amber LaPointe
City Clerk

The Corporation of the City of Port Colborne

By-law No. _____

Being a By-law to Amend By-law No. 6613/68/18, Being a by-law for prohibiting and regulating the sale of fireworks and the setting off of fireworks in the City of Port Colborne and to repeal By-law No. 4989/45/07

Whereas the City of Port Colborne has adopted By-law No. 6902/50/21 Being a By-law to Establish a System for Administrative Penalties for Non-Parking Offences within the City of Port Colborne;

Whereas section 434.1(1) of the Municipal Act provides that a municipality may require a person, subject to such conditions as the municipality considers appropriate, to pay an administrative penalty if the municipality is satisfied that the person has failed to comply with a by-law of the municipality passed under this Act;

Whereas the City of Port Colborne considers it desirable and necessary to amend By-law No. 6613/68/18, Being a by-law for prohibiting and regulating the sale of fireworks and the setting off of fireworks in the City of Port Colborne and to repeal By-law No. 4989/45/07, to allow for enforcement through the administrative penalty system;

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

1. That By-law No. 6613/68/18, Being a by-law for prohibiting and regulating the sale of fireworks and the setting off of fireworks in the City of Port Colborne and to repeal By-law No. 4989/45/07, be amended by adding the following sections:

    "12.2 This By-law is designated as a by-law to which the Administrative (Non-Parking) Penalty By-Law, applies.

    12.3 Any person who contravenes any of the provisions of this By-law, when given a Penalty Notice in accordance with the City's Administrative (Non-Parking) Penalty By-Law, is liable to pay the City an administrative penalty in the amount specified in the City's Administrative (Non-Parking) Penalty By-Law, as amended from time-to-time."

Enacted and passed this 26th day of July, 2021.

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William C. Steele
Mayor

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Amber LaPointe
City Clerk

The Corporation of the City of Port Colborne

By-law No. _____

Being a By-law to Amend By-law No. 4930/155/06, Being a By-law to provide for the Licensing, Control and Regulation of Dogs

Whereas the City of Port Colborne has adopted By-law No. 6902/50/21 Being a By-law to Establish a System for Administrative Penalties for Non-Parking Offences within the City of Port Colborne;

Whereas section 434.1(1) of the Municipal Act provides that a municipality may require a person, subject to such conditions as the municipality considers appropriate, to pay an administrative penalty if the municipality is satisfied that the person has failed to comply with a by-law of the municipality passed under this Act;

Whereas the City of Port Colborne considers it desirable and necessary to amend By-law No. 4930/155/06, Being a By-law to provide for the Licensing, Control and Regulation of Dogs, to allow for enforcement through the administrative penalty system;

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

1. That By-law No. 4930/155/06, Being a By-law to provide for the Licensing, Control and Regulation of Dogs, be amended by adding the following sections:

    "17 (c) This By-law is designated as a by-law to which the Administrative (Non-Parking) Penalty By-Law, applies.

    17 (d) Any person who contravenes any of the provisions of this By-law and each Owner, when given a Penalty Notice in accordance with the City's Administrative (Non-Parking) Penalty By-Law, is liable to pay the City an administrative penalty in the amount specified in the City's Administrative (Non-Parking) Penalty By-Law, as amended from time-to-time."

Enacted and passed this 26th day of July, 2021.

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William C. Steele
Mayor

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Amber LaPointe
City Clerk

The Corporation of the City of Port Colborne

By-Law No. _____

Being a by-law to adopt, ratify and confirm the proceedings of the Council of The Corporation of the City of Port Colborne at its Regular Meeting of July 26, 2021

Whereas Section 5(1) of the *Municipal Act, 2001,* provides that the powers of a municipality shall be exercised by its council; and

Whereas Section 5(3) of the *Municipal Act, 2001,* provides that a municipal power, including a municipality's capacity rights, powers and privileges under section 9, shall be exercised by by-law unless the municipality is specifically authorized to do otherwise; and

Whereas it is deemed expedient that the proceedings of the Council of The Corporation of the City of Port Colborne be confirmed and adopted by by-law;

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

1. Every action of the Council of The Corporation of the City of Port Colborne taken at its Regular Meeting of July 26, 2021 upon which a vote was taken and passed whether a resolution, recommendations, adoption by reference, or other means, is hereby enacted as a by-law of the City to take effect upon the passing hereof; and further

2. That the Mayor and Clerk are authorized to execute any documents required on behalf of the City and affix the corporate seal of the City and the Mayor and Clerk, and such other persons as the action directs, are authorized and directed to take the necessary steps to implement the action.

Enacted and passed this 26th day of July, 2021.

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William C. Steele
Mayor

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Amber LaPointe
City Clerk