
MEMORANDUM

CSC-C 9-2019

Subject: Delegated Decisions of the CAO, Carmen D'Angelo

Date: March 20, 2019

To: Corporate Services Committee

From: Ron Tripp, Acting Chief Administrative Officer

As per GM 8-2018, Restricted Acts after Nomination Day of the Municipal Election, and Section 275 of the *Municipal Act, 2001*, the Chief Administrative Officer, Carmen D'Angelo, approved the following reports:

- PW 47-2018 - Award of Contract 2017-T-117 (RN17-17) Reconstruction of Regional Road 69 (Pelham Road) From Wessel Drive to Regional Road 28 (Fifth Street Louth) in the Town of Lincoln and the City of St. Catharines
- PW 46-2018 - Award of Contract 2018-T-102 Contract RN 18-02 Replacement of Reece Bridge (Structure No. 069205) Regional Road 69 (Twenty Mile Road) Over Twenty Mile Creek in the Township of West Lincoln
- PW 37-2018 - Environmental Centre Expansion
- PW 41-2018 - Award of Contract 2018-T-122 (RN 18-22) Garner Road Biosolids Facility Upgrade
- PW 45-2018 - Niagara Falls Wastewater Treatment Plant Upgrade
- PW 29-2018 - Award of Contract 2018-T-127 (RN 18-27) Stamford Interceptor Rehabilitation Phase 1

The approval of these reports, Appendices 1 – 7 of Correspondence Item CSC-C 09-2019, was communicated to Council on October 6, 2018 via email.

- Confidential CSD 56-2018 – Matter Respecting Litigation and A Matter of Advice that is Subject to Solicitor-Client privilege under s. 239 (2) of the *Municipal Act, 2001* – Niagara-on-the-Lake Wastewater Treatment Plant

The approval of this report, Confidential Appendix 8 of Correspondence Item CSC-C 09-2019, was communicated to Council on September 15, 2018 via email.

Respectfully submitted and signed by

Ron Tripp, P.Eng.
Acting Chief Administrative Officer

Appendices

Appendix 1 GM 8-2018
Appendix 2 PW 47-2018
Appendix 3 PW 46-2018
Appendix 4 PW 37-2018
Appendix 5 PW 41-2018
Appendix 6 PW 45-2018
Appendix 7 PW 29-2018
Appendix 8 Confidential CSD 56-2018

Subject: Restricted Acts after Nomination Day of the Municipal Election

Report to: Corporate Services Committee

Report date: Wednesday, May 16, 2018

Recommendations

1. That pursuant to Section 275(6) of the *Municipal Act, 2001*, Regional Council **DELEGATES** to the Chief Administrative Officer (CAO), only to the extent not already delegated, the following:
 - (a) The appointment or removal from office of a statutory officer of the Niagara Region or Commissioner;
 - (b) The hiring or dismissal of any employee of the municipality;
 - (c) The disposition of any real or personal property of Niagara Region which has a value exceeding \$50,000 at the time of disposal, and
 - (d) Making any expenditures or incurring any other liability which exceeds \$50,000,

Provided such authority shall extend only until the first meeting of the new Council, and that the CAO shall report to the new Council all actions taken pursuant to this delegation.

Provided further the CAO shall exercise the authority to appoint or remove an officer or Commissioner only if the CAO, after consideration of all reasonable alternatives, is of the opinion waiting for convening of the new Council would be contrary to the best interests of the Niagara Region or contrary to applicable law.

That authority delegated expressly constitutes a waiver of any expressed requirement arising from previous resolutions of Council directing a matter be returned to Council for approval before proceeding.

That the authority delegated shall continue from election to election unless determined otherwise by Council.

Key Facts

- Section 275 of the *Municipal Act, 2001 (Act)* provides for restricted acts after nomination day and after voting day (sometime referred to as lame duck period). The purpose of this report is to seek delegated authority, only to the extent not already delegated, over certain acts, to the Chief Administrative Officer, in the event Section 275 is triggered.

Financial Considerations

Section 275 of the *Act* prohibits Council from undertaking certain acquisitions, spending and employee-related actions during two periods after nomination day. Failure to delegate authority could restrict the Region's ability to conduct business in the normal course.

Analysis

As a result of amendments to the *Act*, the timing for restricted acts after nomination day have changed and are now longer if a municipality finds itself in this position. A summary of the provisions of the *Act* for restricted acts after nomination day and other related matters are set out below.

Regional Council has delegated authority to the CAO since 2003 for the restricted acts under the *Act*. It is deemed desirable to continue the delegation of authority to the CAO for 2018 as a matter of routine and to continue the delegation from election to election unless determined otherwise by Council in order to create efficiencies.

RESTRICTIVE PROVISIONS

The determination of whether Council is in a "restricted" position occurs twice during the election period. The calculations are now based on 32 Council Members since Council approved an additional Member for the Township of West Lincoln. Section 275(1), paragraph 2 will apply since the new Council will have more members than the outgoing Council.

(a) Between July 27 to October 22, 2018

The determination is based on the certified nominations by the Clerk and any acclamations as of July 27, 2018. If less than three-quarters of the current members are running for Council, then the restrictions set out in the *Municipal Act* will apply. For the Region, three-quarters equals 24, and less than three-quarters equals 23. Therefore, if 24 are not running/acclaimed, then restrictions apply; and

(b) Between October 22 to November 30, 2018

If the election results declared by the Regional Clerk after the election result in less than three-quarters of the incumbent Regional Councillors returning to Regional Council, the restrictions set out in the Act apply. Therefore, if 23 or less, are re-elected/acclaimed, then restrictions apply.

RESTRICTIONS

If Regional Council finds itself in a restriction period, Council shall not take any of the following actions:

- (a) the appointment or removal from office of any officer of the municipality;
- (b) the hiring or dismissal of any employee of the municipality;
- (c) the disposition of any real or personal property of the municipality which has a value exceeding \$50,000 at the time of disposal; and
- (d) making any expenditures or incurring any other liability which exceeds \$50,000.

EXCEPTION

Clauses (c) and (d) above do not apply if the disposition or liability was included in the most recent budget adopted by Regional Council before nomination day in an election year.

In addition, nothing prevents a municipality from taking any action in the event of an emergency.

DELEGATION OF AUTHORITY

Nothing in this section of the *Act* prevents any person or body from exercising any authority of a municipality that is delegated to the person or body prior to nomination day for the election of the new council.

Alternatives Reviewed


This report is driven by the provisions of the *Act*. Alternatively, Council may wish to delegate authority for the restricted acts in each election year rather than providing for the continuous election to election delegation. It is more efficient to continue the delegation from election to election with notification of same to Council each year.

Relationship to Council Strategic Priorities

The information and recommendations contained in this report advance the Strategic Priority of "Doing Business Differently/Advancing Organizational Excellence".

Other Pertinent Reports

LCS 10-2014 Section 275 Municipal Act, 2001 "Lame Duck" Provisions –
Municipal Election 2014 and Delegation of Authority



Prepared by:
Ann-Marie Norio
Acting Regional Clerk
Corporate Services - Administration



Recommended by:
Chris Carter
General Manager
Corporate Services



Submitted by:
Carmelo D'Angelo, BSc, MPA
Chief Administrative Officer

This report was prepared in consultation with Carolyn Kett, Acting Deputy Regional Clerk/Elections and Donna Gibbs, Director of Legal Services.

Appendices

None.

Subject: Award of Contract 2017-T-117 (RN17-17) Reconstruction of Regional Road 69 (Pelham Road) From Wessel Drive to Regional Road 28 (Fifth Street Louth) in the Town of Lincoln and the City of St. Catharines

Report to: Public Works Committee

Report date: Tuesday, September 25, 2018

Recommendations

1. That Contract 2017-T-117 (RN 17-17) Reconstruction of Regional Road 69 (Pelham Road) From Wessel Drive to Regional Road 28 (Fifth Street Louth) in the Town of Lincoln and the City of St. Catharines, **BE AWARDED** to Rankin Construction Inc. at their bid price of \$8,065,516.25 (including 13% HST).

Key Facts

- The purpose of this report is to seek Council approval on the award of Tender 2017-T-117 (RN17-17), Reconstruction of Regional Road 69 (Pelham Road) from Wessel Drive to Regional Road 28 (Fifth Street Louth) in the Town of Lincoln and the City of St. Catharines, to the low bidder, Rankin Construction Inc.
- \$8,300,000 was approved in the 2017 Capital Budget and \$800,000 in the 2014 Capital budget for a combined budget of \$9,100,000 in project 10RC1447.
- This is Phase 2 for the Regional Road 69 (Pelham Road) reconstruction program. Phase 1 [First Street Louth to Regional Road 28 (Fifth Street Louth)] was previously completed. This Phase 2 from Wessel Drive to Regional Road 28 (Fifth Street Louth) will be completed in 2018/2019 subject to Council's approval of this report. Phase 3 Wessel Drive to Centre Street will be completed in the next 2-3 years, each project is budgeted for individually.
- The proposed work is required to address the severe road condition, drainage issues and cycling networks. The proposed works include road reconstruction, storm sewers, structural culvert replacements, cycling facilities and intersection illumination.
- A public tender process was initiated and a total of 4 bids were received with the lowest bid being \$7,137,625.00 (excluding taxes).

Financial Considerations

Council approved the 2017 Capital Budget for the Transportation Department including the Reconstruction of Regional Road 69 (Pelham Road) from Wessel Drive to Regional Road 28 (Fifth Street Louth) in the Town of Lincoln and the City of St. Catharines. This budget includes the construction, contract administration & inspection, internal staff time and contingency under project 10RC1447 in the amount of \$8,300,000. This project

has prior approved funding of \$800,000 to cover the costs of detailed design, geotechnical investigations, property acquisitions and utility relocations. The total approved budget for this project is \$9,100,000.

There is no cost sharing on this project.

A full budget breakdown can be found in Appendix 3 Total Estimated Project Cost.

Given that the award is within the approved 2017 capital budget for this Project, the restrictions in section 275 of the Municipal Act do not apply.

Analysis

The reconstruction of Regional Road 69 (Pelham Rd) has been subject to a Municipal Class Environmental Assessment. As part of that process two (2) Public Information Centres were held. Utility relocations have been underway since 2017 and are nearly complete. Most of the property acquisitions have been completed with a few to be finalized in the near future. The Utility relocations and property acquisitions were budgeted in previous years.

Contract award requires resources from Legal Services and Corporate Services in order to execute the required contract documents. Transportation staff will be providing resources throughout the project in order to manage the contract with assistance from Corporate Services on contract/project payments.

In accordance with Niagara Region Procurement By-law 02-2016, a public tender process was initiated on August 16, 2018 and at the time of closing on August 30, 2018. Four (4) tender submissions were received and publicly opened. The Region's Procurement Department has reviewed all bids and deemed each submission compliant with the requirements as outlined in the tender including the inclusion of all issued addenda and adherence to the bid security and surety requirements. Procurement noted that there was 1 mathematical error (from other than the low bid) which was deemed to have no bearing on final ranking of submissions as outlined in Appendix 2 Summary of Bids Received of this report.

Our consultant Associated Engineering has advised that the tendered unit prices submitted by the low tenderer, Rankin Construction Inc. are competitive and compare favorably with the Region's estimate. Staff therefore recommend that the low tender submitted by Rankin Construction Inc. be accepted.

Alternatives Reviewed

If this road section is not addressed the road condition will continue to deteriorate and the costs to remediate the road structure will only continue to escalate. The Region will

be at risk for damage claims due to the road condition. The Region received favourable pricing for this proposed works, and has sufficient budget to award this contract.

Although alternatives are limited on a road reconstruction project, road design elements and the impact on the environment were reviewed as part of the detailed design and Environmental Assessment processes. The detailed design of this road section was derived from the recommended alternative from the Environmental Assessment.

Relationship to Council Strategic Priorities

Addressing road conditions is an essential part of maintaining the Region's road network and this vital program is very closely tied to strategic priority 1 "Moving people and goods". This road section is highly travelled corridor with many cycling groups utilizing this route. Regional Staff and Associated Engineering have worked intensely with the NPCA to manage any risk to the Environment and the Region and have put forward considerable effort to ensure a timely project to mitigate the impact on the public.

This report is being brought forth to Regional Council as required by Section 15 (g) – Schedule B of the Purchasing By-law – Procurement of Supplies and Services, as the award of contract exceeds \$5 million, and the purchasing authority is Regional Council.

Other Pertinent Reports

n/a

Prepared by:

Mike Wilson, A.Sc.T., PMP
Senior Project Manager
Transportation Engineering

Recommended by:

Ron Tripp, P.Eng.
Commissioner
Public Works Department

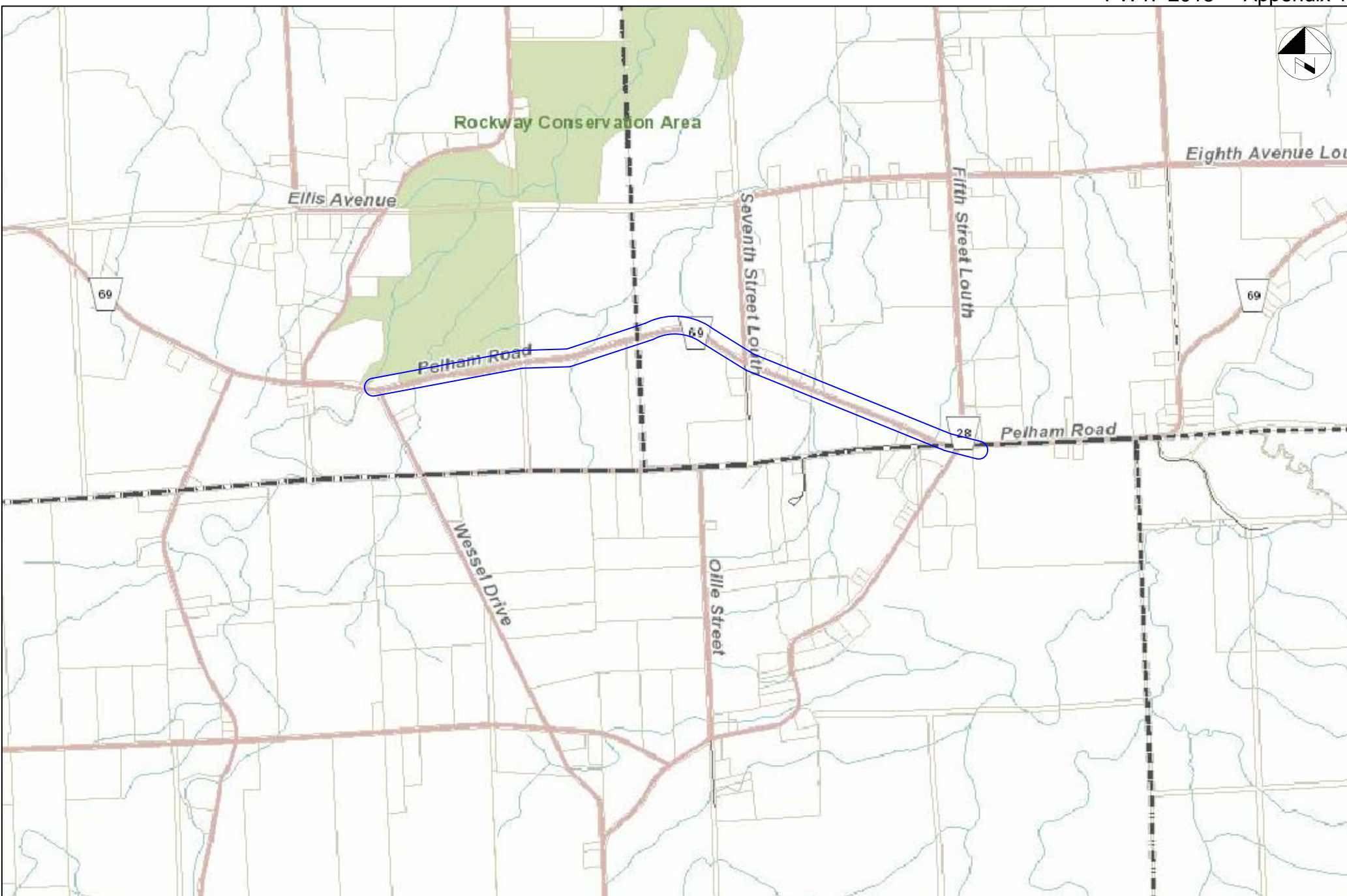
Submitted by:

Carmelo D'Angelo, BSc, MPA
Chief Administrative Officer

This report was prepared in consultation with Frank Tassone, Associate Director Transportation Engineering, and reviewed by Jeff Mulligan, Manager Strategic Sourcing, Brian McMahon, Program Financial Specialist, Sterling Wood, Legal Counsel, and Carolyn Ryall, Director Transportation Services.

Appendices

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Appendix 3	Total Estimated Project Cost	7



Appendix 2 - Summary of Bids Received

The total tendered amounts (before HST) are listed below in ascending order:

Rankin Construction Inc.	\$ 7,137,625.00
Brennan Paving Limited	\$ 7,841,139.00
Norjohn Contracting and Paving Limited	\$ 8,854,000.00
Peters Excavating Limited (\$8,923,649.50)	\$ 9,017,784.50*

*Corrected amount

PW 47-2018 APPENDIX 3
TOTAL ESTIMATED PROJECT COSTS
Contract Award

Contract 2017-T-117 (RN17-17) Reconstruction of Regional Road 69 (Pelham Road) From Wessel Drive to Regional Road 28 (Fifth Street Louth) in the Town of Lincoln and the City of St. Catharines

	Region Approved Budget	Expended & Committed as of August 28, 2018	Contract Award/Forecasted Spend	Budget Remaining
<u>Estimated Project Cost for Transportation (10RC1447)</u>				
(a) Construction (including Construction Contingency and non-refundable HST 1.76%)*	7,263,247	-	7,263,247	-
(b) Project Contingency	700,000	-	700,000	-
(c) Property Acquisition	58,919	8,919	50,000	-
(d) Consulting Engineering Services	-	-	-	-
i. Geotechnical Services	60,000	-	60,000	-
ii. Contract Administration & Inspection	300,000	-	300,000	-
iii. Design	231,190	231,190	-	-
(e) Project Management (In-House)	71,637	21,637	50,000	-
(f) Contract Administration & Inspection (In-house)	4,799	4,799	-	-
(g) Utility Relocation	165,275	165,275	-	-
(h) Miscellaneous	244,933	-	244,933	-
Total Estimated Project Cost for Transportation	9,100,000	431,820	8,668,180	0

* Total Contract Award with no tax is \$7,137,625, with 1.76% non-recoverable tax is \$7,263,247, and with 13% HST is \$8,065,516

Subject: Award of Contract 2018-T-102 Contract RN 18-02 Replacement of Reece Bridge (Structure No. 069205) Regional Road 69 (Twenty Mile Road) Over Twenty Mile Creek in the Township of West Lincoln

Report to: Public Works Committee

Report date: Tuesday, September 25, 2018

Recommendations

That report PW 46-2018 **BE RECEIVED** for information.

Key Facts

- Special Reference
 - Given Section 275 of the Municipal Act, 2001, and Regional Council's delegated authority to the Chief Administrative Officer (CAO) via report GM 8-2018, that the CAO consider and authorize:
 - That this report will incur expenditures or liability which exceeds \$50,000; and
 - That staff proceed with the award of Contract 2018-T-102 (RN18-02) - Replacement of Reece Bridge (Structure No. 069205), Regional Road 69 (Twenty Mile Road) Over Twenty Mile Creek, in the Township of West Lincoln, to Rankin Construction Inc., at their bid price of \$9,376,655.25 (including 13% HST); and
 - That staff proceed with the budget increase for the Replacement of Reece Bridge (Structure No. 069205), project 10RC1022 of \$950,000 to be funded from the Capital Variance – Levy Project
 - Should the CAO incur an expenditure or liability great than \$50,000, then the CAO will report to the new Council all actions taken pursuant to this decision
- The purpose of this report is to inform Council of the basis upon which the CAO is being requested to exercise his authority to approve the award of Contract 2018-T-102 (RN18-02) - Replacement of Reece Bridge (Structure No. 069205), Regional Road 69 (Twenty Mile Road) Over Twenty Mile Creek, in the Township of West Lincoln, to Rankin Construction Inc.
- The Reece Bridge carries Regional Road 69 across Twenty Mile Creek (see Appendix 1 – Project Location). The bridge was constructed around 1950 and is deteriorating significantly, compromising long term public safety and traffic loading capacity. Also, the current road geometrics result in significant safety concerns. Bridge inspections have been completed over the last 15 years and most recently in 2015 that have identified the need for replacement.

- A Municipal Class Environmental Assessment Study was completed for Reece Bridge (Structure No. 069205) and the Environmental Study Report was filed on September 11, 2012, recommending replacement of the bridge and realignment of the adjacent roadway.
- A public tender process was initiated and a total of five bids were received with the lowest being \$8,297,925.00 (excluding taxes).

Financial Considerations

Council has approved \$9,032,500 for the Replacement of Reece Bridge (Structure No. 069205), Regional Road 69 (Twenty Mile Road) Over Twenty Mile Creek, in the Township of West Lincoln. This budget includes construction, detailed design, utility relocations, contract administration & inspection, construction testing, internal staff time and contingency, under project 10RC1022. As outlined in this report, the total estimated cost for the project is \$9,982,500 based on the tenders received (Appendix 2), resulting in a budget shortfall of \$950,000.

The budget shortfall can be attributed primarily to higher tender prices associated with the recent instability of steel prices and the market is at capacity in terms of supply resulting in an upward trend in pricing. Steel prices have been rising continuously over the last few months, related to U.S. trade issues. The Region's consultant has estimated the pricing for the steel caissons, reinforcing steel and structural steel have increased by 20-33% since the tender estimate was prepared. This has increased the project construction cost by approximately \$550,000.

The budget shortfall is proposed to be addressed through Capital Variance – Levy Project.

A full budget breakdown can be found in Appendix 3 – Total Estimated Project Cost.

Analysis

The Reece Bridge carries Regional Road 69 across Twenty Mile Creek, consisting of a two-span reinforced concrete rigid frame structure with a span of 18.3 m, and a deck width of 9.3 m, supported on concrete abutments on a pier and spread footings. The bridge was constructed around 1950, and an asphalt wearing surface was added more recently over the concrete deck. The bridge has an exposed reinforced concrete sidewalk on the east side of the deck and a concrete curb on the west side. The original railings consist of a wooden rail system with concrete posts that run along each side of the structure. Since the railing system is ineffective by current standards, temporary concrete barriers have been placed on each side of the deck in front of the existing railings. Bridge inspections have been completed over the last 15 years and most recently in 2015. A deck condition survey carried out in 2002 found that chlorides from

de-icing salts have penetrated into the concrete and have resulted in corrosion of reinforcing steel.

The Region classifies Regional Road 69 as an important east-west rural arterial undivided road that links the community of Smithville and several communities to the east within the Town of Lincoln and Pelham. West of Reece Bridge, Regional Road 69 runs along the north side of Twenty Mile Creek, and curves to cross the creek at a skew over Reece Bridge. East of the bridge, the road curves and continues along the south side of the creek. Due to the current reverse curve alignment Reece Bridge structure is not visible to approaching vehicular traffic until within approximately 100 m of the structure. Due to the poor alignment of the road the replacement of the structure includes realignment of the adjacent roadway.

Under the guidance of the Region's Procurement Department, a public tender process was initiated. The Tender Call was advertised on Monday, July 16, 2018. A total of five bids were received and publicly opened on Tuesday, August 14, 2018, with the lowest being \$8,297,925.00 (before HST). The Region's Procurement Department and the Region's consultant have reviewed and checked all the tenders received. All five tenders included Addendums No. 1 and 2 and all submitted the necessary tender deposit and Agreement to Bond. Mathematical errors were found in two of the five tenders submitted. There were no errors found in the lowest bid. The corrected totals did not change the overall ranking. Appendix 2 includes the Summary of Bids Received.

Contract award requires resources from Legal Services and Corporate Services in order to execute the required contract documents. Transportation Engineering staff will be providing resources throughout the project in order to manage the contract with assistance from Corporate Services on contract/project payments.

The total tendered amounts (before HST) are listed below in ascending order:

Rankin Construction Inc.	\$8,297,925.00
Eiffage Innovative Canada Inc.	\$8,958,505.00
Dufferin Construction Company	\$9,106,386.00*
Toronto Zenith Contracting Ltd.	\$10,696,838.00
Bob Hendricksen Construction Ltd.	\$11,482,459.00*

*Corrected amount

The Region's consultant, Ellis Engineering Inc., has advised that the tendered unit prices submitted by the low tenderer, Rankin Construction Inc., are competitive and compare favorably with the Region's estimate. Staff therefore recommends that the low tender submitted by Rankin Construction Inc. be accepted.

Alternatives Reviewed

A Municipal Class Environmental Assessment Study was completed for Reece Bridge (Structure No. 069205) and the Environmental Study Report was filed on September 11, 2012, recommending replacement of the bridge and realignment of the adjacent roadway.

In addition to the tendered design two other alternatives were considered during the detailed design as potential replacement structures: 1) Single Span Bridge on a new alignment to the north-east of the existing structure; and 2) Single Span Bridge on the existing alignment.

The tendered design of replacing the existing Reece Bridge with a two-span structure on a new alignment to the east of the existing bridge was chosen based on the benefits and advantages as follows:

1. The structure spans over the soft soils; thereby, avoiding any future settlements and maintenance concerns with building on the poor soils.
2. The bridge will be constructed on a reduced skew angle requiring smaller abutment foundations; thereby, reducing foundations costs.
3. The new bridge will be constructed to the east of the existing structure on a new alignment to allow traffic to be maintained on the existing bridge; thereby, mitigating traffic related impacts.
4. The two-span structure will allow passage for wildlife on the south bank under the structure making it safer for vehicles.

As part of the Municipal Class Environmental Assessment process, two Public information Centres were held. The first was held on September 28, 2011 and the second was held on January 25, 2012.

An additional Public Information Centre will be held in September at a local community hall to present the construction drawings, details and schedule to local residents that may be affected by the project.

Relationship to Council Strategic Priorities

Improving capacity is an essential part of maintaining the Region's road network and this vital program is very closely tied to strategic priority 1 "Moving people and goods". This road section is a significant corridor and with the improved condition will assist the Region with strategic priority 4 "Positioning Niagara Globally".

Other Pertinent Reports

PW 45-2016 - Project Update for the Replacement of Reece Bridge (Structure No.069205) which carries Regional Road 69 (Twenty Road) over 20 Mile Creek, in the Town of West Lincoln

Prepared by:

Cam Milne, CET
Senior Project Manager
Transportation Engineering
Public Works Department

Recommended by:

Ron Tripp, P.Eng.
Commissioner
Public Works Department

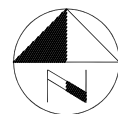
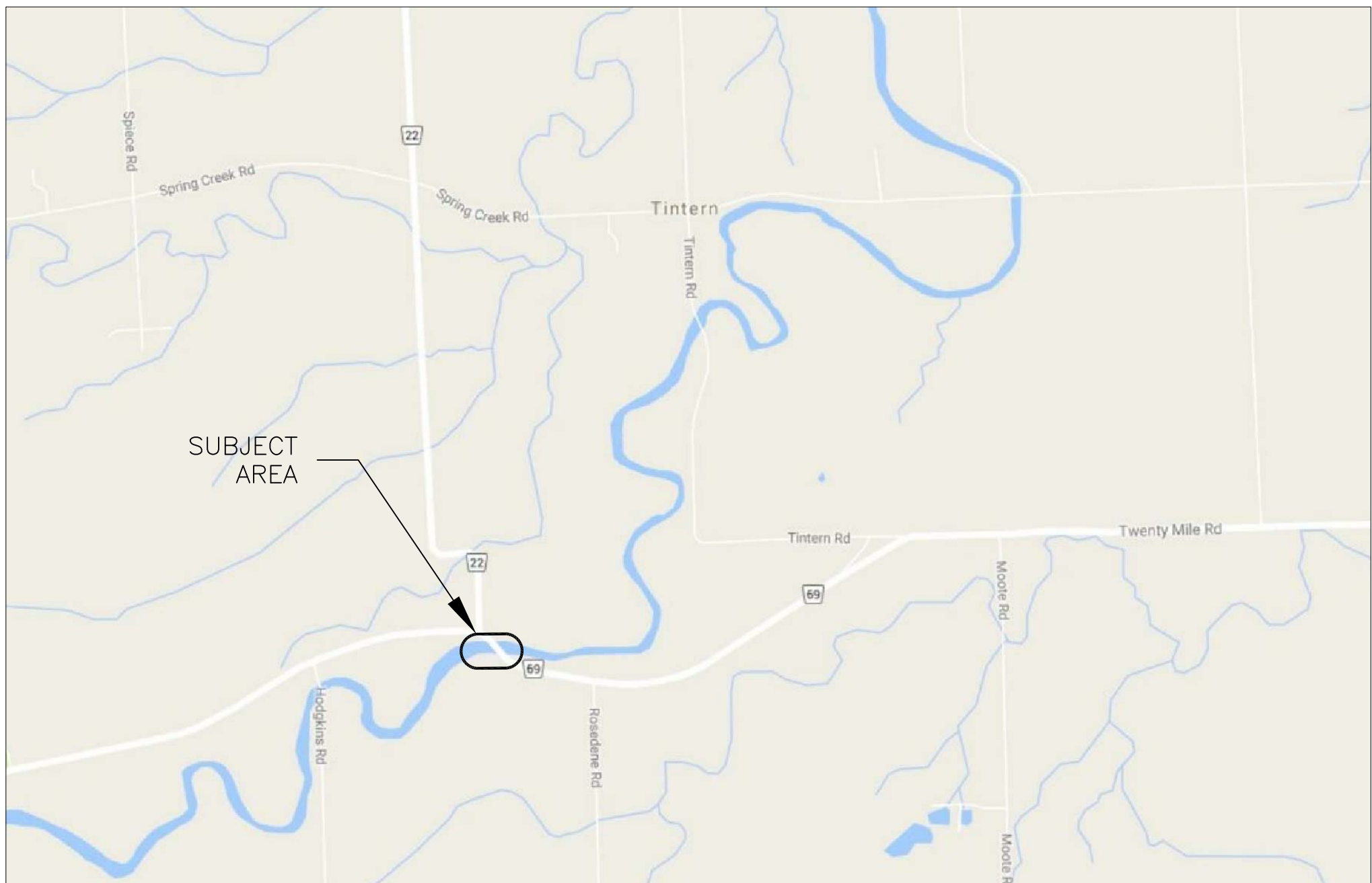
Submitted by:

Carmelo D'Angelo, BSc, MPA
Chief Administrative Officer

This report was prepared in consultation with Frank Tassone, Associate Director Transportation Engineering, and reviewed by Tracie Byrne, Procurement Manager, Brian McMahon, Program Financial Specialist, Sterling Wood, Legal Counsel, and Carolyn Ryall, Director Transportation Services.

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TENDER SUMMARY

	RANKIN CONSTRUCTION	BOB HENDRICKSEN CONSTRUCTION	DUFFERIN CONSTRUCTION	IEFFAGE INNOVATIVE CANADA	TORONTO ZENITH CONTRACTING
TOTAL SECTION 1 - GENERAL	\$ 861,002.00	\$ 1,101,220.00	\$ 770,840.00	\$ 844,000.00	\$ 1,439,890.00
TOTAL SECTION 2 - BRIDGE	\$ 6,547,970.00	* \$ 8,811,410.00	* \$ 7,232,687.60	\$ 6,986,275.00	\$ 7,952,548.00
TOTAL SECTION 3 - ROADS	\$ 745,038.00	\$ 1,327,769.00	\$ 963,300.10	\$ 930,410.00	\$ 1,115,168.00
TOTAL SECTION 4 - LANDSCAPING	\$ 140,815.00	\$ 220,314.00	\$ 136,454.50	\$ 194,420.00	\$ 181,052.00
TOTAL SECTION 5 - ELECTRICAL	\$ 3,100.00	\$ 3,746.00	\$ 3,104.00	\$ 3,400.00	\$ 8,180.00
TOTAL TENDER (EXCLUDING HST):	\$ 8,297,925.00	* \$ 11,464,459.00	* \$ 9,106,386.20	\$ 8,958,505.00	\$ 10,696,838.00
Total Tender Price as Printed in 'Form of Tender':	\$ 8,297,925.00	\$ 11,584,459.00	\$ 9,106,386.20	\$ 8,958,505.00	\$ 10,696,838.00

* Corrected Value

PW 46-2018 APPENDIX 3
TOTAL PROJECT BUDGET
Contract Award

Contract 2018-T-102 (RN18-02) Replacement of Reece Bridge (Structure No. 069205), Regional Road 69 (Twenty Mile Road) Over Twenty Mile Creek, in the Township of West Lincoln

	Total Council Approved Budget	Budget Increase/ Reallocation	Revised Budget	Expended as of August 1, 2018	Contract Award/Forecasted Spend	Budget Remaining
<u>Total Estimated Project Cost (10RC1022)</u>						
(a) Construction (including Construction Contingency and non-refundable HST 1.76%)*	7,700,000	750,000	8,450,000	-	8,443,968	6,032
(b) Project Contingency	350,000		100,000	-	100,000	-
(c) Property Acquisition	50,000		50,000	50,000	-	-
(d) Consulting Engineering Services						-
i. Detailed Design	430,000		420,000	418,376	-	1,624
ii. Contract Administration & Inspection		200,000	425,000	-	425,000	-
ii. Geotechnical Service-Quality Control			100,000	-	100,000	-
(e) Project Management (In-House) and Operations	150,000		75,000	15,466	55,000	4,534
(f) Utility Relocation	200,000		40,000	35,170	-	4,830
(g) Subsurface investigation	50,000		50,000	50,000	-	-
(i) Miscellaneous	102,500		272,500	251,456	38,064	(17,020)
Total Estimated Project Cost	9,032,500	950,000	9,982,500	820,468	9,162,032	0

* Total Contract Award is equal to i) \$8,297,925 before tax; ii) \$8,443,968 including non-recoverable HST of 1.76%; iii) \$9,376,655 including 13% HST

Subject: Environmental Centre Expansion

Report to: Public Works Committee

Report date: Tuesday, September 25, 2018

Recommendations

1. That report PW 37-2018 **BE RECEIVED** for information.

Key Facts

- Special Reference
 - Given Section 275 of the Municipal Act, 2001, and Regional Council's delegated authority to the Chief Administrative Officer (CAO) via report GM 8-2018, that the CAO consider and authorize:
 - That this report will incur expenditures or liability which exceeds \$50,000; and
 - That staff proceed with the approved financing in the amount of \$1,000,000 from the capital budget for the Replacement of the Centralized Maintenance Facility and that the projects **BE FUNDED** as follows:

Water capital reserve	\$500,000
Wastewater capital reserve	\$500,000
 - That staff proceed with a budget adjustment to transfer the approved and fully initiated \$2,000,000 from the Replacement of the Centralized Maintenance Facility projects in Water and Wastewater to a newly created Environmental Centre Expansion project in the Construction, Energy and Facilities Management division,
 - Should the CAO incur an expenditure or liability great than \$50,000, then the CAO will report to the new Council all actions taken pursuant to this decision
- The purpose of this report is to inform Council of the basis upon which the CAO is being requested to exercise his authority to approve the initiation of the remaining approved funding in the amount of \$1,000,000 from the Replacement of the Centralized Maintenance Facility (1ZCW1401 and 1ZSW1403) to fund the detailed design for the Expansion of the Environmental Centre (20000946).
- To date \$1,000,000 in funding has been initiated from the Replacement of the Centralized Maintenance Facility (1ZCW1401 and 1ZSW1403) with intended use for land acquisition and a high level conceptual design and has been partially committed to the design work for the expansion of the environmental centre project.

- Staff are looking for approval from Council for a budget adjustment to move the approved funding in the Replacement of the Centralized Maintenance Facility (1ZCW1401 and 1ZSW1403) of \$2,000,000 to the Construction, Energy and Facilities Management division and be carried out as a facilities project for the Expansion of the Environmental Centre (20000946) to align with the revised direction of the project.
- “Class D” construction cost estimates (with a tolerance of +/- 20-30% as per [Guide to Cost Predictability in Construction](https://www.cca-acc.com/wp-content/uploads/2016/07/GuideCostPredictability.pdf) (https://www.cca-acc.com/wp-content/uploads/2016/07/GuideCostPredictability.pdf)) have been estimated based on the conceptual design at \$17,000,000 and will be presented to Council for consideration as part of the 2019 Capital Budget.
- The existing Centralized Maintenance facility will be declared surplus, decommissioned and sold.

Financial Considerations

Projects 1ZCW1401 and 1ZSW1403 were previously approved by Council with \$1,000,000 each for a total of \$2,000,000 for land acquisition and design of a new Centralized Maintenance Facility. Of those amounts, a total of \$1,000,000 for the land acquisition was initiated by Council. The remaining \$1,000,000 requires initiation to proceed with detailed design.

Construction funds will be requested through the 2019 capital budget. A “Class D” construction cost estimate of \$17,000,000 has been completed based on the results of the conceptual design prepared by AECOM. Full construction costs inclusive of contingency and other internal costs are budgeted at \$20,000,000.

Analysis

Recently the Water & Wastewater (W-WW) Division was reorganized into four (4) sections; Water Operations & Maintenance, Wastewater Operations & Maintenance, Engineering and Integrated Systems. The reorganization relocated approximately 70 staff from the existing Central Maintenance Facility (980 Major Street, Welland) to their respective area water or wastewater facility. However, this resulted in Integrated Systems (IS) staff (42) being split between two locations, the Environmental Centre and the existing Central Maintenance Facility.

The existing Central Maintenance Facility, where the majority of IS staff currently reside, is an old vehicle sales and maintenance facility, which is located next to a heavy industry (forge) and is not suitable in size nor does it support a collaborative working environment for W-WW staff. The constant vibrations combined with the age of the structures have resulted in buildings that are deteriorating and posing health and safety

concerns for its occupants. The Region will continue to incur higher operational and maintenance costs each year the facility remains in service.

The reorganization and migration from a Central Maintenance model to a Hybrid model significantly reduced the number of W-WW staff the new Central Maintenance Facility had to accommodate, a requirement that had previously made an EC Expansion option impractical. The proposed expansion to the existing Environmental Centre (EC) includes evaluating the overall fit and function of the building as a whole; to consider layout optimization and increase operational/space efficiencies as a means to further promote our Corporate One Team culture. The layout will be optimized to include the four (4) W-WW Sections and Waste Management (WM) staff (41) from Campbell West and potentially the Niagara Region Material Recycling Facility (MRF); pending Council decision on 2017-RFP-25 MRF: Business Valuation, Strategic Option Evaluation and Market Analysis. Amalgamating W-WW and WM divisions together in one location will further promote improved communication and collaboration across Public Works.

The addition to the Environmental Centre, expected to be approximately 39,000 ft², will be constructed to include a service shop for skilled trade's personnel, parking for regional and staff vehicles and training facilities. Schematic design is currently underway with construction proposed to follow in 2019. The existing Central Maintenance Facility will be declared surplus and sold by Niagara Region.

The project will be designed to be compatible with both the "Brock" District Plan and the Regional Headquarters Campus Master Plan – International Plaza. To help ensure the design remains compatible and meets all business unit requirements an inter-department project working group has been assembled consisting of W-WW Services, WM Services, Planning and Development Services, and Construction, Energy and Facilities Management staff.

Given that the scope of the project has changed to expand an existing corporate building, and that the WM group will also be using the newly expanded facility, it is recommended by staff that the project and associated budgets be managed by the Construction, Energy and Facilities Management group. A budget adjustment is recommended in this report to move previously approved funding from the current projects to a newly created facilities project, construction costs will be funded through the levy and recovered in subsequent years by indirect allocations to the occupants of the facility.

Alternatives Reviewed

Prior to the reorganization of W-WW and the adoption of the new hybrid maintenance model, the new facility had to accommodate an additional 100 maintainers and support staff which left limited options outside of a new stand-alone Central Maintenance Facility. Staff initially planned on building a new facility in a central location along the

406 corridor and included funds in the 2014 capital budget for land acquisition and design. Several sites were considered without any viable options being identified at the time.

Following the reorganization and the reallocation of approximately 70 staff back to their respective area W-WW facilities, these reduced requirements allowed staff to consider an Environmental Centre Expansion as a viable alternative. An Environmental Centre Expansion solution will allow staff to bridge the physical gap between the remaining Integrated Systems staff at the existing Central Maintenance Facility and the other W-WW sections they support at the Environment Centre. Having all staff in one location promotes synergies between groups, facilitates better communications and will reduce annual operational expenses (i.e. mileage). The expansion will provide much needed space requirements in the existing Environmental Centre and free up space in Campbell West with the relocation of WM staff, both of which are at or near capacity and will not accommodate any future growth in their current state.

Relationship to Council Strategic Priorities

Doing business differently/ organizational excellence - Housing all W-WW Integrated Systems and WM staff in one location; improves staff collaboration and team work across Public Works.

Other Pertinent Reports

PW 113-2013

Water and Wastewater: 2014 Budget, Rate Setting and Requisition Report

Prepared by:

Craig, Courteau
Associate Director, W-WW Integrated
Systems
Public Works

Recommended by:

Ron Tripp, P.Eng.
Commissioner
Public Works Department

Submitted by:

Carmelo D'Angelo, BSc, MPA
Chief Administrative Officer

This report was prepared in consultation with Michael Leckey, Program Financial Specialist, Beth Brens, Manager Program Financial Support, Mislav Koren, Project Manager Building, Laurie Nelson, Manager Facilities Projects & Asset Management, and reviewed by Melanie Steele, Associate Director Reporting and Analysis, Margaret Murphy, Associate Director Budget Planning & Strategy, Mike Janas, Associate Director Water Operations, Maintenance and Staff Development, Anthony Cimino, Associate Director W-WW Engineering, Joseph Tonellato, Director W-WW Services, Adam Niece, Program Financial Specialist, Sherri Tait, Associate Director Waste Collection & Diversion, and Catherine Habermehl, Director Waste Management Services.

Subject: Award of Contract 2018-T-122 (RN 18-22) Garner Road Biosolids Facility Upgrade

Report to: Public Works Committee

Report date: Tuesday, September 25, 2018

Recommendations

1. That Report PW 41-2018 **BE RECEIVED** for information.

Key Facts

- Special Reference
 - Given Section 275 of the *Municipal Act, 2001*, and Regional Council's delegated authority to the Chief Administrative Officer via report GM 8-2018, that the Chief Administrative Officer consider and authorize:
 - That this report will incur expenditures or liability which exceeds \$50,000; and
 - That staff proceed with the gross budget increase for the Garner Road Biosolids Facility Upgrade Project (10SW1220) by \$1,741,863 (inclusive of 1.76% non-refundable HST) and that the increase be funded from the Capital Variance – Wastewater Project
 - Should the Chief Administrative Officer incur an expenditure or liability greater than \$50,000, then the CAO will report to the new Council all actions taken pursuant to this decision.
- The proposed work at the Garner Road Facility is to replace the mixing systems for the three (3) sludge storage tanks at the site and is required as the systems have reached the end of their service life. A failure of the current system would jeopardize the Region's ability to maintain the capacity needed for all of the biosolids produced by all the WWTPs and residuals from the Decew and Grimsby WTP.
- This project is scheduled for construction in October 2018, subject to the approval of this report, and is anticipated to be completed by May 31, 2019.
- A public tender for this project was undertaken through competitive bid process, 2018-T-122, in order to select the General Contractor. The tender package was released on July 11, 2018 and closed on August 16, 2018. A total of five (5) bids were received with the lowest compliant bid being received from ASCO Construction in the amount of \$4,700,386 (including HST).
- The total tendered amounts (excluding HST) are listed below in ascending order:

ASCO Construction Ltd. (Mississauga)

\$4,159,653

SONA Construction Ltd. (Hamilton)	\$4,400,823
Baseline Constructors Inc. (Waterloo)	\$4,598,000
BGL Contractors Corp. (Waterloo)	\$4,660,810
Merit Contractors Niagara (St. Catharines)	\$4,801,500

- Each tender submission included Addendums No. 1, 2 and 3 as well as the necessary tender deposit and Agreement to Bond. The tenders were reviewed and no arithmetic errors were found.
- This project has been approved for \$1,236,490 Federal and Provincial funding through the Clean Water and Wastewater Fund (CWWF) with a project completion deadline of March 31, 2020.
- The approval of the contract award will be submitted to the CAO for consideration by virtue of the delegated authority under the Restricted Acts after Nomination Day (GM 8-2018).

Financial Considerations

Project 10SW1220 (Garner Road Biosolids Facility Upgrade) has a previously approved capital budget of \$3,500,000. The total estimated project cost after the award of Contract 2018-T-122 (RN 18-22) is \$5,241,863 (inclusive of 1.76% non-refundable HST), as detailed in Appendix 3 – Total Estimated Project Cost. A budget increase is therefore required in the amount of \$1,741,863 (inclusive of 1.76% non-refundable HST), to be funded from the Capital Variance – Wastewater Project. Partial Federal and Provincial funding of \$1,236,490 has been awarded through the Clean Water and Wastewater Fund (CWWF).

Analysis

The Garner Road Biosolids Facility is located northeast of the intersection of Chippawa Creek Road (Niagara Regional Road 63) and Garner Road in the City of Niagara Falls, as shown in Appendix 1. This Biosolids Facility consists of ten (10) clay lined lagoons, three (3) storage tanks, and two (2) storm water ponds. The facility occupies 31 hectares and was originally constructed in 1986, while the three storage tanks were added in 1998.

The current storage tank mixing systems at the Garner Road facility are part of the original 1998 installation and have reached the end of their service life. If a failure of the current mixing system were to occur the site would have to shut down, which would jeopardize the Region's ability to maintain the capacity needed for all of the biosolids produced by all the WWTPs and residuals from Grimsby and Decew WTP.

The intent of this project is to replace the existing submersible mixing system of all three (3) storage tanks with a suitable external hydraulic mixing alternative that will address

key operational and maintenance issues. In addition to the required equipment, a budget increase in the amount of \$261,250 (excluding HST) is required to provide contract administration and fulltime inspection due to the criticality of the work and to ensure there is no disruption to the regular operations at the Garner Road facility. Tetrattech WEI Inc. was retained through the competitive bid process (2012-RFP-30) to provide detailed design services and will be responsible for all construction related services.

Contract award requires resources from Enterprise Resource Management Services in order to execute the required contract documents. Water & Wastewater staff will be providing resources throughout the project in order to manage the contract with assistance from Enterprise Resource Management Services on contract/project payments.

Alternatives Reviewed

Do Nothing – this alternative does not address the maintenance issues associated with the mixing systems on the current storage tanks and does not ensure reliable infrastructure to support growth and economic development in the Niagara Region. Irreparable mechanical failure of this equipment is imminent if these mixers are not replaced promptly and would cause a catastrophic loss of service at the Garner Road Biosolids Facility.

Relationship to Council Strategic Priorities

This recommendation is related to the Fostering Growth strategic priority since the planned rehabilitation will ensure reliable infrastructure to support growth and economic development within the Niagara Region.

Other Pertinent Reports

None

Prepared by:

Albert Succi
Project Manager – W-WW Engineering
Public Works Department

Recommended by:

Ron Tripp, P.Eng.
Commissioner
Public Works Department

Submitted by:

Carmelo D'Angelo, BSc, MPA
Chief Administrative Officer

This report was prepared in consultation with Lisa Vespi, P.Eng. Senior Project Manager, W-WW Engineering; Michael Leckey, Program Financial Specialist W-WW, and reviewed by Tony Cimino, Associate Director W-WW and Joseph Tonellato, P.Eng., Director W-WW;

Appendices

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Appendix 1 – Key Plan

Contract No. 2018-T-122 (RN 18-22) GARNER ROAD BIOSOLIDS FACILITY UPGRADE



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Appendix 2 – Summary of Bids

Contract No. 2018-T-122 (RN 18-22)
GARNER ROAD BIOSOLIDS FACILITY UPGRADE

Bidder	Total Tender Price (excludes HST)
ASCO Construction Ltd. (Mississauga)	\$4,159,653
SONA Construction Ltd. (Hamilton)	\$4,400,823
Baseline Constructors Inc. (Waterloo)	\$4,598,000
BGL Contractors Corp. (Waterloo)	\$4,660,810
Merit Contractors Niagara (St. Catharines)	\$4,801,500

**PW 41-2018 APPENDIX 3
TOTAL PROJECT BUDGET
Contract Award**

Contract 2018-T-122 (RN18-22) Garner Road Biosolids Facility Upgrade, in the City of Niagara Falls

	Total Council Approved Budget	Revisions per PW 41-2018	Revised Project Budget	Expended & Committed as of September 6, 2018	Forecast	Budget Remaining
<u>Total Estimated Project Cost (10SW1220) *</u>						
(a) Construction (includes 10% contract contingency)	2,963,729	1,269,114	4,232,844	-	4,232,844	-
(b) Project Contingency	318,182	158,350	476,532	-	476,532	-
(c) Consulting Engineering Services						
i. Detailed Design	55,073	66,195	121,267	66,294	54,973	-
ii. Contract Administration & Inspection	70,520	199,653	270,173	-	270,173	-
iii. Peer Reviews	-	-	-	-	-	-
(d) Project Management (In-House) and Operations	77,233	38,375	115,608	12,330	103,277	-
(e) Materials Testing	15,264	10,176	25,440	-	25,440	-
(f) Miscellaneous	-	-	-	-	-	-
Total Estimated Project Cost	3,500,000	1,741,863	5,241,863	78,625	5,163,239	-
<u>Project Funding Sources</u>						
Regional reserves & debt (includes Federal Gas Tax funding)	(2,263,510)	(1,741,863)	(4,005,373)			
CWWF	(1,236,490)	-	(1,236,490)			
	(3,500,000)	(1,741,863)	(5,241,863)			

* All costs above include the non-refundable 1.76% portion of HST.

Subject: Niagara Falls Wastewater Treatment Plant Upgrade

Report to: Public Works Committee

Report date: Tuesday, September 25, 2018

Recommendations

1. That Report PW 45-2018 **BE RECEIVED** for information.

Key Facts

- Special Reference
 - Given Section 275 of the *Municipal Act, 2001*, and Regional Council's delegated authority to the Chief Administrative Officer via report GM 8-2018, that the Chief Administrative Officer consider and authorize:
 - That this report will incur expenditures or liability which exceeds \$50,000; and
 - That staff proceed with the single source award to Environmental Infrastructure Services Inc. (EIS) in the amount of \$820,785 (excluding contingency and HST) in accordance with Purchasing Bylaw 2016-02 Section 18(a)(iv) as urgency exists due to an MECP Provincial Official Order issued on July 26, 2018 for the assessment and enhanced conceptual design of the upgrades to: (1) the secondary treatment (replacement aeration) system, and (2) the anaerobic digestion system at the existing Niagara Falls Wastewater Treatment Plant (WWTP).
 - Should the Chief Administrative Officer incur an expenditure or liability greater than \$50,000, then the CAO will report to the new Council all taken pursuant to this decision.
- The purpose of this report is to provide an update on the status of the Niagara Falls WWTP secondary treatment and digestion systems and to seek approval for the single source to Environmental Infrastructure Services Inc. (EIS) for the assessment and enhanced conceptual design in order to expedite detailed design and construction to meet the conditions set by the Ministry of Environment, Conservation and Parks (MECP).
- In the recent years, there has been a number of Environmental Compliance Approval (ECA) non-compliances related to CBOD, TSS, TP, and E. coli in the Niagara Falls WWTP effluent discharge (compliance and objective limit exceedances).
- MECP issued a Provincial Official Order dated July 26, 2018 with a number of requirements including a requirement for the submission of an ECA Amendment for

the secondary treatment system to the MECP by January 2, 2020. This will require a minimum of 90% complete detailed design.

- Before initiating full detailed design of the new aeration system as well as the anaerobic digestion system, preliminary steps including condition assessments, process review, mass balances, design basis, and enhanced predesign will need to be completed immediately on a priority basis.
- The anticipated schedule for the future stages of design is: 2018 (predesign), 2019 (detailed design), and 2020 (construction).

Financial Considerations

Project 10SW1517 (Niagara Falls WWTP Upgrade) has a previously approved capital budget of \$2,100,000. To date a total of \$76,877 of funds have been spent or committed, leaving an uncommitted amount of \$2,023,123 available. Therefore sufficient budget is available to accommodate this award.

Construction funds will be requested through future the capital budget process in future years.

Analysis

The Niagara Falls WWTP is owned and operated by Niagara Region. The Plant was originally constructed in 1963 and has been upgraded periodically since then with the main upgrades occurring in 1982 (plant expansion), and 1986 (conversion to secondary treatment). It is located at the intersection of Stanley Avenue and Swayze Drive in the City of Niagara Falls. The existing sewer infrastructure consists of storm, sanitary, and combined sewers, and 20 sewage pumping stations (SPS). The sanitary and combined sewers discharge to the Niagara Falls WWTP. The service area covers approximately 60 square kilometres.

The existing service population consists of approximately 80,000 year-round residents; however, Niagara Falls experiences seasonal changes in population due to visiting tourists. It is estimated that Niagara Falls hosts approximately 14 million tourists per year, primarily between the months of May and September.

Under normal operating conditions, the Niagara Falls WWTP provides treatment via screening, grit removal, primary clarification, rotating biological contactors (RBC): total of 35 (5 trains of 7) contactor units for biological treatment, secondary clarifiers, and disinfection via chlorination/dechlorination. Ferric chloride is added for chemical phosphorus removal. A polymer feed system is available to provide chemically enhanced primary treatment (CEPT).

Figure 1 in Appendix 2 presents a process flow diagram (PFD) of the Niagara Falls WWTP liquid treatment and solids management trains, and Figure 2 presents an aerial image of the Niagara Falls WWTP site.

The rated average day flow (ADF) capacity of the Niagara Falls WWTP is 68,300 m³/d. The Plant is also rated for a peak dry weather flow rate of 136,400 m³/d and a peak wet weather flow rate of 205,000 m³/d.

Waste sludge is stabilized by two-stage anaerobic digestion, and the resulting biosolids are dewatered on-site. Waste sludge from the Queenston WWTP is also hauled to the Niagara Falls WWTP for stabilization and dewatering. The dewatered cake is disposed off-site.

Treated effluent is discharged to the Queenston Power Canal.

The existing facility is old and has experienced operational difficulties, including failures of the RBC shafts, bearings, gearboxes, and turnbuckles. In addition, significant sulfide loading to the RBC system has resulted in growth of hydrogen sulfide oxidizing bacteria on the RBC media and mechanical equipment failures. The RBCs have historically operated within typical organic loading values, however, increases in influent flow and loadings could result in decreased BOD removal and development of anaerobic conditions in the first stage RBCs, which would favour the growth of nuisance organisms.

To date, there have been a number of ECA non-compliances related to CBOD, TSS, TP, and E. coli in the effluent (compliance and objective limit exceedances).

Previous studies were completed in 2014 and 2017 by XCG Consultants (now Cole Engineering Group) to review options for the secondary treatment system. Upon further review, additional information related to asset condition, process optimization and design scoping is required to progress the secondary treatment and digestion systems into detailed design and ultimately construction. Additionally, the 2016 MSP identified a new WWTP in south Niagara Falls that will impact the flows to the existing WWTP, which requires further review and confirmation of existing and future flows for process optimization and design.

In addition to the secondary biological system (new aeration system to replace RBCs) and aging infrastructure related deficiencies described above, the plant has experienced anaerobic digester failures in the recent years (2014 and 2017).

MECP issued a Provincial Official Order dated July 26, 2018 with a number of requirements including a requirement for the submission of an ECA Amendment for the secondary treatment system to the MECP by January 2, 2020. The Order creates urgency in completing this complex design for the secondary treatment.

Given the magnitude and intricacies associated with the scope of work, staff recommend a phased approach to design – Phase 1) Assessment and Enhanced Conceptual Design Phase 2) Detailed Design. Fully understanding the condition and operation of the WWTP will facilitate a seamless transition into Phase 2 (detailed design) and aims to eliminate ambiguity and increase accuracy in scope, costing and understanding of risks. This phased-design approach is utilized by other municipalities in Southern Ontario on large scale facility upgrades. The Region will also be implementing this on the Anger Avenue Wastewater Treatment Plant upgrade project (20000695) using a competitive procurement model, via a Request for Proposals call from prequalified consultants (using 2017-RFPQ-03).

Liquid (i.e., secondary treatment) and solids (digestion) treatment trains are included in Phase 1 of the scope of the work as it allows for a holistic view of the interconnected WWTP operations. Also, in addition to the issued Order, MECP is monitoring and aware of the digester issues that NFWWTP has experienced. Phase 2 scope can be developed and detailed design for the liquid and solids treatment trains can then be separated, if necessary. Controls will be put into place to ensure that one portion of the project is not holding up another, especially for secondary treatment.

The Project team has worked collaboratively to develop the following comprehensive scope required to successfully complete Phase 1:

Conduct condition assessments and reporting for the following:

- Existing secondary clarifiers and gallery
- Existing primary clarifiers (1, 2, and 3) and chlorine contact tank
- Existing secondary digester (Digester 4) and gallery
- Existing main power substation and standby power

Conduct individual studies and develop tech memos as follows:

- Design basis and mass balance
- New aeration system
- Secondary clarifier and RAS/WAS pumping
- Chlorination and dechlorination tank
- Upgrades of aeration system for existing aerated grit system and primary effluent channels
- Hydraulic profile
- Feasibility to relocate existing ferric system and provide flexibility for alternative chemicals
- Feasibility of sludge thickening to optimize sludge digestion system
- New primary digestion system
- Upgrading requirements to the existing secondary digester and biogas system
- Upgrading requirements to the main power substation and standby power

Conduct a topographic survey of the project site.

Generate Project Scoping Report (PSR)

- Compliance with all applicable acts, regulations, codes and standards
- Compliance with design standards
- Project constraints / opportunities
- Site layout
- Field investigation analysis and results summary (with reports appended)
- Confirmation and/or modification of the plant conceptual design basis and criteria
- Conceptual design and scope for wastewater treatment (liquid train)
- Conceptual design and scope for wastewater treatment (solids train)
- Conceptual design and scope for power supply and distribution
- Conceptual design and scope for Control and SCADA system
- Conceptual design and scope for site plan upgrades
- Identification of potential construction constraints
- Identification of plant operation constraints during construction
- Preliminary project schedule
- Cost estimate to +/- 20% (Class 'C' cost estimate)
- Pending significant issues to be addressed/resolved during design stage
- Conceptual design drawings
- Registers / Plans

Detailed design (Phase 2) will follow immediately after the completion of Phase 1.

Alternatives Reviewed

The anticipated schedule for the secondary treatment and digestion system upgrades is 2018 (predesign), 2019 (detailed design), and 2020 (construction). Based on projects completed of similar scope and size, phase 1 could take up to 1 year and phase 2 could take 1.5 years to 2 years to complete. To meet the requirements of the MECP Order of an ECA Amendment submission by January 2, 2020, this work will have to be significantly expedited. The following are alternatives that have been reviewed by staff:

- 1) Do nothing – not a viable option considering the July 26, 2018 MECP Order and the recent ECA non-compliances reported for the Niagara Falls WWTP effluent discharge. Niagara Region can be fined by MECP if this condition is not met.
- 2) Single source (Phase 1) and single source (Phase 2) – viable option but not recommended at this point. Assuming award following October 4, 2018, this option provides the maximum duration for detailed design (phase 2) to approximately one year, however, is not being recommended at this point as it does not promote formal competitive procurement at any design phase.
- 3) Formal RFP procurement (Phase 1) and formal RFP procurement (Phase 2) – not a viable option as this only allows for 5 months to complete the detailed design (phase 2). Based on similar projects, this is inadequate time to complete the works.

- 4) Single source (Phase 1) and formal RFP procurement (Phase 2) – viable and recommended option. Assuming award following October 4, 2018 Council meeting, this option allows for approximately 5 months for phase 1 and approximately 8 months for phase 2. It also promotes formal competitive procurement in phase 2.

Staff recommend that Environmental Infrastructure Services Inc. (EIS) be awarded phase 1 in accordance with Purchasing Bylaw 2016-02 Section 18(a)(iv) as urgency exists and there is limited time to obtain services by means of an open or roster request for proposals. EIS has provided an aggressive timeline for delivery of the Project Scoping Report, which is five (5) months from award. Presuming phase 2 is awarded through formal procurement, the schedule for detailed design is anticipated to be Spring 2019 to January 2020 (approximately 8 months), which is very aggressive but necessary to satisfy the MECP's Provincial Official Order.

EIS was selected for phase 1 due to their involvement at NFWWTP during the digester failures, their extensive knowledge and staff expertise in wastewater treatment in the Region and other municipalities across Ontario, intimate knowledge of Region's design manual, and for their commitment to the Region and understanding of the significance of the current compliance issues. EIS will assign dedicated staff to this assignment for the duration to ensure consistency, quality, and timely delivery. The Region has had great success with EIS in terms of coordination, delivery, quality, and risk management. Region staff are familiar with the proposed EIS Project team having worked closely on other recent Regional projects.

EIS letter proposal, including scope, team, cost and schedule is attached for reference (Appendix 1). The total amount being recommended for single source assignment is \$820,785.00 (excluding HST and contingency).

Other Pertinent Reports

N/A

Prepared by:

Shahab Shafai, M.Sc., P.Eng.
Associate Director of Wastewater
Public Works Department

Recommended by:

Ron Tripp, P.Eng.
Commissioner
Public Works Department

Submitted by:

Carmelo D'Angelo, BSc, MPA
Chief Administrative Officer

This report was prepared in consultation with Lisa Vespi, P.Eng. Senior Project Manager, W-WW Engineering and Michael Leckey, Program Financial Specialist W-WW and reviewed by Joe Tonellato, Director W-WW Services.

Appendices

Appendix 1	EIS Letter Proposal
Appendix 2	Process Flow Diagram Niagara Falls Wastewater Treatment Plant



August 20th, 2018
Our Ref: PEE18-103

via: Email

Ms. Lisa Vespi, P.Eng.
Senior Project Manager
Water & Wastewater Services
Regional Municipality of Niagara
3501 Schmon Parkway
P.O. Box 1042 Thorold, ON L2V 4T7

Dear Ms. Vespi:

Re: Niagara Falls Wastewater Treatment Plant (NFWWTP) Secondary Treatment and Digestion System Project Scoping and Conceptual Design

Environmental Infrastructure Solutions Inc. (EIS) is pleased to submit a cost proposal for the scope of work related to NFWWTP Secondary Treatment and Digestion System Project Scoping and Conceptual Design. Our understanding of the scope of work is in line with the terms of reference provided by the Region and outlined below:

- Conduct condition assessments and reporting for the following:
 - Existing secondary clarifiers and gallery:
 - Estimate remaining service life for main structure of tanks;
 - Recommend upgrades to existing structures and all components to allow future operation for a minimum of 20 years;
 - Conduct risk evaluation for structural modifications to the existing clarifiers to suit the requirements of hydraulic capacity increase and new RAS system and provide recommendations;
 - Existing primary clarifiers (1,2 and 3) and chlorine contact tank
 - Existing secondary digester (Digester #4) and gallery
 - Estimate remaining service life for major components;
 - Verify and identify actual capacities for each major component;
 - Recommend upgrades to suit new demand;
 - Existing main power substation and standby power
 - Estimate remaining service life for main structure and roof;
 - Recommend upgrades if required.

- Conduct Individual Studies and Tech Memos as follows:
 - Design basis and Mass balance
 - Review and verify plant influent loadings;
 - Review and verify secondary influent loadings and required treatment efficiency;
 - Compute and define material/media that will be released or discharged to the environment and solids train;
 - Compute and define design criteria for demand of chemicals;
 - New aeration system
 - Aeration tanks;
 - Air blower system;
 - Secondary clarifier and RAS/WAS pumping
 - Upgrade of existing secondary clarifier and/or new tankage requirement;
 - RAS/WAS pumping system;
 - Chlorination and dechlorination tank
 - Upgrades of aeration system for existing aerated grit system and primary effluent channels
 - Hydraulic profile
 - Maximum available heads and capacities of existing facility and each unit process;
 - Proposed revised water levels according to required hydraulic capacities for each unit process;
 - Required flow measurements and plant effluent flow monitoring to meet ECA requirements;
 - Feasibility to relocate existing ferric system and provide flexibility for alternative chemicals
 - Feasibility of sludge thickening to optimize sludge digestion system
 - New primary digestion system
 - Primary digester;
 - Control building;
 - Upgrading requirements to the existing secondary digester and biogas system
 - Secondary digestion and piping system;
 - Biogas handling/storage;
 - Existing waste gas burner (WGB) system;
 - Upgrading requirements to the main power substation and standby power

- Generate Project Scoping Report (PSR)
 - The PSR shall include the following and must be in place prior to the Region proceeding with the design RFP:
 - Compliance with all applicable acts, regulations, codes and standards;
 - Compliance with design standards (i.e. Project Design Manual, Niagara SCADA Standards, Niagara Peninsula Standard Contract Document, Niagara Peninsula CAD Standards, etc.)
 - Project constraints / opportunities;
 - Site layout;
 - Field investigation analysis and results summary (with reports appended);
 - Confirmation and/or modification of the plant conceptual design basis and criteria as follows:
 - Plant hydraulic loading and data;
 - Influent parameter and loading;
 - Plant effluent limits and objectives;
 - Raw sludge and scum generation, WAS and scum generation (to be loaded to solids train)
 - Conceptual design and scope for wastewater treatment (liquid train);
 - Conceptual design and scope for wastewater treatment (solid train);
 - Conceptual design and scope for power supply and distribution;
 - Conceptual design and scope for Control and SCADA system;
 - Conceptual design and scope for site plan upgrades;
 - Identification of potential construction constraints;
 - Identification of plant operation constraints during construction;
 - Preliminary project schedule;
 - Cost estimate to +/- 20% (Class 'C' cost estimate);
 - Pending significant issues to be addressed/resolved during design stage;
 - Conceptual design drawings;
 - Registers / Plans.
- Conduct a topographic survey of the project site in accordance with ASCE 38-02 quality level D and C. At a minimum the survey shall identify the location of all surface and underground features and shall include but not be limited to:
 - Property boundaries including identifiable properties bars or markers;
 - Roadway and driveway limits including surface classification, sidewalks, curb & gutter, roadway centerline, edge of pavement, shoulders, etc.;

- Limits of structures and/or buildings including finished floor elevations;
- Limits and types of fencing and gates;
- Location of above ground/below ground utilities and their appurtenances (i.e. poles and guy wires, pedestals, vaults, manholes, electrical boxes, valve boxes, meters, gas regulators, traffic signals, etc.);
- Location of buried infrastructure (i.e. watermain, storm sewer, sanitary sewer including valve boxes, manholes, catch basins, hydrants, valve chambers, drain chambers, air release chambers, curb stops, clean outs, ditch inlets, etc.)
- Size, type and invert elevations of all sewers;
- Elevations of all buried infrastructure are to be verified in the field (i.e. Invert elevations of sewers, top of nut elevation on valves, top of watermain and/or forcemain in chambers, etc.);
- Location, diameter and dripline of all trees and shrubs and flower beds;
- All street signs complete with description;
- Limits of ditches and natural watercourses including top of bank and ditch inverts and size and type of all culverts and headwalls; and
- Any and all surface features that may have an impact or be disturbed during construction within the project boundary.

Project Schedule

Since we understand the urgency of this assignment, we have put together a very aggressive schedule with a completion date of early January 2019. However, we would like to inform the Region that the condition assessments outlined above are on the critical path of our schedule and delays associated with the scheduling of these intrusive investigations may negatively impact our anticipated deliverable dates. A copy of our tentative baseline schedule has been enclosed with this letter.

Engineering Fees

Our engineering fees associated with this assignment are presented in the Engineering Fees Estimate Table enclosed with this letter.

In Closing

EIS would like to thank the Regional Municipality of Niagara for this bidding opportunity and we look forward to a positive consideration.

Should you have any questions on the submitted quote, please do not hesitate to contact the undersigned.

Yours truly,

ENVIRONMENTAL INFRASTRUCTURE SOLUTIONS INC.

Horia Ispas, P.Eng, PMP
Project Manager

HI/db

Enclosures:

1. Baseline Project Schedule
2. Engineering Fees Estimate Table

Draft

Engineering Fees Estimate Table

Niagara Falls WWTP Secondary Treatment and Digestion System Upgrades Project Scoping and Conceptual Design
EIS Proposal No.: PEE18-103

Task Description	Rona Ispas, P.Eng., PMP Project Manager	Ronnie Wang, B.Eng. Technical Manager/ Process Lead	Andre Maricic, P.Eng. Mechanical Lead	John Liu, M.Sc., P.Eng. Electrical&C Lead	Aleksandar Jovic, P.Eng. Structural Lead	Benji Yu, P.Eng., PMP Civil Lead	Harun Raza, M.Sc., P.Eng. Structural Field Testing Lead	Thomas Gondo, OLS Topographic Survey Lead	Blisa Sherej, P.Eng. Technical Support and Writer	Chloe Wei, M.Eng. Technical Support	Louis Dai, M.Eng. Technical Support	Mahm Paei, B.Eng. Technical Support	CAD Support	Clerical Support	Total Hours	Total Engineering Fees	Disbursements	Total Task Costs
Place of Employment:	EIS	EIS	EIS	EIS	EIS	EIS	BME	Lejan	EIS	EIS	EIS	EIS	EIS	EIS				
Hourly Rate (\$):	\$140	\$140	\$120	\$130	\$130	\$120	LS	LS	\$120	\$90	\$90	\$90	\$80	\$60				
PROJECT MANAGEMENT																		
Project Meetings and Teleconferences (Allowed for 10 x 4 Hrs. Biweekly Meetings and 10 x 2 Hrs. Teleconferences)	60.0	60.0		30.0											150.0	\$ 20,700.00	\$ 1,035.00	\$ 21,735.00
Draft Project Scoping Report Workshop (Allowed for full day 8 Hrs. Workshop)	8.0	8.0		8.0											24.0	\$ 3,280.00	\$ 164.00	\$ 3,444.00
Project Management and Reporting Total Hours:	68.0	68.0	0.0	38.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	174.0			
Project Management and Reporting Total Fees:	\$ 9,520.00	\$ 9,520.00	\$ -	\$ 4,940.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		\$ 23,980.00	\$ 1,199.00	\$ 25,179.00
CONDITION ASSESSMENTS AND REPORTING																		
Existing Secondary Clarifiers and Gallery	8.0	24.0			16.0				40.0		40.0			16.0	144.0	\$ 40,920.00	\$ 2,046.00	\$ 42,966.00
Existing Primary Clarifiers (1,2 and 3)	8.0	8.0			16.0				40.0		40.0			16.0	128.0	\$ 28,680.00	\$ 1,434.00	\$ 30,114.00
Existing Chlorine Contact Tank	8.0	8.0			16.0				40.0		40.0			16.0	128.0	\$ 23,680.00	\$ 1,184.00	\$ 24,864.00
Existing Secondary Digester (Digester #4) and Gallery	8.0	8.0			16.0				40.0		40.0			16.0	128.0	\$ 33,680.00	\$ 1,684.00	\$ 35,364.00
Existing Main Power Substation and Standby Genset	8.0	24.0	80.0	80.0					40.0	80.0	80.0			16.0	408.0	\$ 44,640.00	\$ 2,232.00	\$ 46,872.00
Condition Assessments and Reporting Total Hours:	40.0	72.0	80.0	80.0	64.0	0.0	0.0	0.0	200.0	80.0	240.0	0.0	0.0	80.0	936.0			
Condition Assessments and Reporting Total Fees:	\$ 5,600.00	\$ 10,080.00	\$ 9,600.00	\$ 10,400.00	\$ 8,320.00	\$ -	\$ 70,000.00	\$ -	\$ 24,000.00	\$ 7,200.00	\$ 21,600.00	\$ -	\$ -	\$ 4,800.00		\$ 171,600.00	\$ 8,580.00	\$ 180,180.00
SYSTEM AND PROCESS STUDIES AND REPORTING																		
Design Basis and Mass Balance	16.0	60.0							40.0	60.0	60.0	50.0		24.0	310.0	\$ 32,180.00	\$ 1,609.00	\$ 33,789.00
Aeration Tanks	16.0	60.0		16.0	16.0				40.0	60.0		50.0		24.0	282.0	\$ 30,940.00	\$ 1,547.00	\$ 32,487.00
Air Blower System	16.0	60.0	8.0	8.0	8.0				40.0	60.0		50.0		24.0	274.0	\$ 29,820.00	\$ 1,491.00	\$ 31,311.00
Secondary Clarifiers Upgrades	16.0	60.0							40.0	60.0	60.0	50.0		24.0	310.0	\$ 32,180.00	\$ 1,609.00	\$ 33,789.00
RAS/WAS Pumping System	16.0	40.0		8.0					40.0	60.0		50.0		24.0	238.0	\$ 25,020.00	\$ 1,251.00	\$ 26,271.00
Chlorination and Dechlorination Tank	16.0	40.0			8.0				40.0	60.0		50.0		24.0	238.0	\$ 25,020.00	\$ 1,251.00	\$ 26,271.00
Existing Aerated Grit System and Primary Effluent Channels	16.0	40.0							40.0	60.0		50.0		24.0	230.0	\$ 23,980.00	\$ 1,199.00	\$ 25,179.00
Hydraulic Profile	16.0	80.0							40.0	60.0		50.0		24.0	270.0	\$ 29,580.00	\$ 1,479.00	\$ 31,059.00
Ferric System Upgrades	16.0	60.0	8.0						40.0	60.0	60.0	50.0		24.0	318.0	\$ 33,140.00	\$ 1,657.00	\$ 34,797.00
Feasibility of Sludge Thickening for Sludge Digestion System Optimization	16.0	60.0							40.0	60.0	60.0	50.0		24.0	310.0	\$ 32,180.00	\$ 1,609.00	\$ 33,789.00
Primary Digestion System and Control Building Upgrades	16.0	40.0							40.0	60.0	60.0	50.0		24.0	290.0	\$ 29,380.00	\$ 1,469.00	\$ 30,849.00
Secondary Digestion and Piping System Upgrades	16.0	40.0			8.0				40.0		60.0	50.0		24.0	238.0	\$ 25,020.00	\$ 1,251.00	\$ 26,271.00
Biogas System (Handling/Storage and WGB) Upgrades	16.0	40.0	16.0						40.0		60.0	50.0		24.0	246.0	\$ 25,900.00	\$ 1,295.00	\$ 27,195.00
Main Power Substation and Standby Genset Upgrades	16.0	40.0	80.0	120.0	8.0				40.0		60.0	50.0		24.0	438.0	\$ 50,220.00	\$ 2,511.00	\$ 52,731.00
System and Process Studies and Reporting Total Hours:	224.0	720.0	112.0	152.0	48.0	0.0	0.0	0.0	560.0	660.0	480.0	700.0	0.0	336.0	3,992.0			
Condition Assessments and Reporting Total Fees:	\$ 31,360.00	\$ 100,800.00	\$ 13,440.00	\$ 19,760.00	\$ 6,240.00	\$ -	\$ -	\$ -	\$ 67,200.00	\$ 59,400.00	\$ 43,200.00	\$ 63,000.00	\$ -	\$ 20,160.00		\$ 424,560.00	\$ 21,228.00	\$ 445,788.00
PROJECT SCOPING AND REPORTING																		
Generate Draft Project Scoping Report	40.0	40.0	40.0	40.0	40.0	16.0			80.0	80.0	80.0	80.0		40.0	576.0	\$ 61,920.00	\$ 3,096.00	\$ 65,016.00
Generate Final Project Scoping Report	8.0	8.0	2.0	2.0	2.0	2.0			16.0					16.0	56.0	\$ 6,120.00	\$ 306.00	\$ 6,426.00
Project Scoping and Reporting Total Hours:	48.0	48.0	42.0	42.0	42.0	18.0	0.0	0.0	96.0	80.0	80.0	80.0	0.0	56.0	632.0			
Project Scoping and Reporting Total Fees:	\$ 6,720.00	\$ 6,720.00	\$ 5,040.00	\$ 5,460.00	\$ 5,460.00	\$ 2,160.00	\$ -	\$ -	\$ 11,520.00	\$ 7,200.00	\$ 7,200.00	\$ 7,200.00	\$ -	\$ 3,360.00		\$ 68,040.00	\$ 3,402.00	\$ 71,442.00
ENHANCED CONCEPTUAL DESIGN																		
Generate Conceptual Design Drawings	16.0	40.0	16.0	16.0	16.0	40.0							500.0		644.0	\$ 58,720.00	\$ 2,936.00	\$ 61,656.00
Topographic Survey						40.0									40.0	\$ 34,800.00	\$ 1,740.00	\$ 36,540.00
Enhanced Conceptual Design Total Hours:	16.0	40.0	16.0	16.0	16.0	80.0	0.0	0.0	0.0	0.0	0.0	0.0	500.0	0.0	684.0			
Enhanced Conceptual Design Total Fees:	\$ 2,240.00	\$ 5,600.00	\$ 1,920.00	\$ 2,080.00	\$ 2,080.00	\$ 9,600.00	\$ -	\$ 30,000.00	\$ -	\$ -	\$ -	\$ -	\$ 40,000.00	\$ -		\$ 93,520.00	\$ 4,676.00	\$ 98,196.00
TOTAL PROJECT STAFF HOURS:	396.0	948.0	250.0	328.0	170.0	98.0	0.0	0.0	856.0	820.0	800.0	780.0	500.0	472.0	6,418.0			
TOTAL PROJECT UPSET LIMIT (EXCLUDING HST):	\$ 55,440.00	\$ 132,720.00	\$ 30,000.00	\$ 42,640.00	\$ 22,100.00	\$ 11,760.00	\$ 70,000.00	\$ 30,000.00	\$ 102,720.00	\$ 73,800.00	\$ 72,000.00	\$ 70,200.00	\$ 40,000.00	\$ 28,320.00		\$ 781,700.00	\$ 39,085.00	\$ 820,785.00

Project Schedule

Niagara Falls WWTP Secondary Treatment Scoping and Conceptual Design
EIS Proposal No.: PEE18-103

ID	Task Name	Start	Finish	August	September	October	November	December	January
				Aug	Sep	Oct	Nov	Dec	Jan
0	Project Summary	Mon 18-08-27	Fri 19-01-04						
1	1 Project Management	Mon 18-08-27	Fri 19-01-04						
2	1.1 Conduct Progress Meetings and Teleconferences, Submit Deliverables, other PM Duties	Mon 18-08-27	Fri 19-01-04						
3	2 Condition Assessments	Mon 18-08-27	Fri 18-09-21						
4	2.1 Conduct Condition Assessment and Reporting for Existing Secondary Clarifiers and Gallery	Mon 18-08-27	Fri 18-09-21						
5	2.2 Conduct Condition Assessment and Reporting for Existing Primary Clarifiers 1, 2 and 3	Mon 18-08-27	Fri 18-09-21						
6	2.3 Conduct Condition Assessment and Reporting for Existing Chlorine Contact Tank	Mon 18-08-27	Fri 18-09-21						
7	2.4 Conduct Condition Assessment and Reporting for Existing Secondary Digester (Digester #4) and Gallery	Mon 18-08-27	Fri 18-09-21						
8	2.5 Conduct Condition Assessment and Reporting for Existing Main Power Substation and Standby Genset	Mon 18-08-27	Fri 18-09-21						
9	3 System and Process Studies and Reporting	Mon 18-09-24	Fri 18-12-21						
10	3.1 Generate and Submit Report on Design Basis and Mass Balance	Mon 18-09-24	Fri 18-10-19						
11	3.2 Generate and Submit Report on Aeration Tanks	Mon 18-10-08	Fri 18-11-16						
12	3.3 Generate and Submit Report on Air Blower System	Mon 18-10-15	Fri 18-11-09						
13	3.4 Generate and Submit Report on Secondary Clarifiers Upgrades	Mon 18-10-01	Fri 18-11-16						
14	3.5 Generate and Submit Report on RAS/WAS Pumping System	Mon 18-10-15	Fri 18-11-09						
15	3.6 Generate and Submit Report on Chlorination and Dechlorination Tank	Mon 18-09-24	Fri 18-10-19						
16	3.7 Generate and Submit Report on Existing Aerated Grit System and Primary Effluent Channels	Mon 18-09-24	Fri 18-10-19						
17	3.8 Generate and Submit Report on Hydraulic Profile	Mon 18-10-08	Fri 18-11-30						
18	3.9 Generate and Submit Report on Ferric System Upgrades	Mon 18-10-15	Fri 18-11-09						
19	3.10 Generate and Submit Report on Feasibility of Sludge Thickening for Sludge Digestion System Optimization	Mon 18-09-24	Fri 18-11-02						
20	3.11 Generate and Submit Report on Primary Digestion System and Control Building Upgrades	Mon 18-11-05	Fri 18-12-14						
21	3.12 Generate and Submit Report on Biogas System (Handling/Storage and WGB) Upgrades	Mon 18-11-05	Fri 18-12-07						
22	3.13 Generate and Submit Report on Main Power Substation and Standby Genset Upgrades	Mon 18-10-29	Fri 18-12-21						
23	4 Project Scoping and Reporting	Mon 18-11-26	Fri 19-01-04						
24	4.1 Generate and Submit Draft Project Scoping Report	Mon 18-11-26	Fri 19-01-04						
25	5 Enhanced Conceptual Design	Mon 18-09-24	Fri 18-12-21						
26	5.1 Generate and Submit Conceptual Drawings	Mon 18-09-24	Fri 18-12-21						

EIS Proposal No.: PEE18-103

Critical

Critical Split

Critical Progress

Task

Split

Task Progress

Baseline

Baseline Split

Baseline Milestone

Milestone

Summary Progress

Summary

Project Summary

External Tasks

External Milestone

Deadline

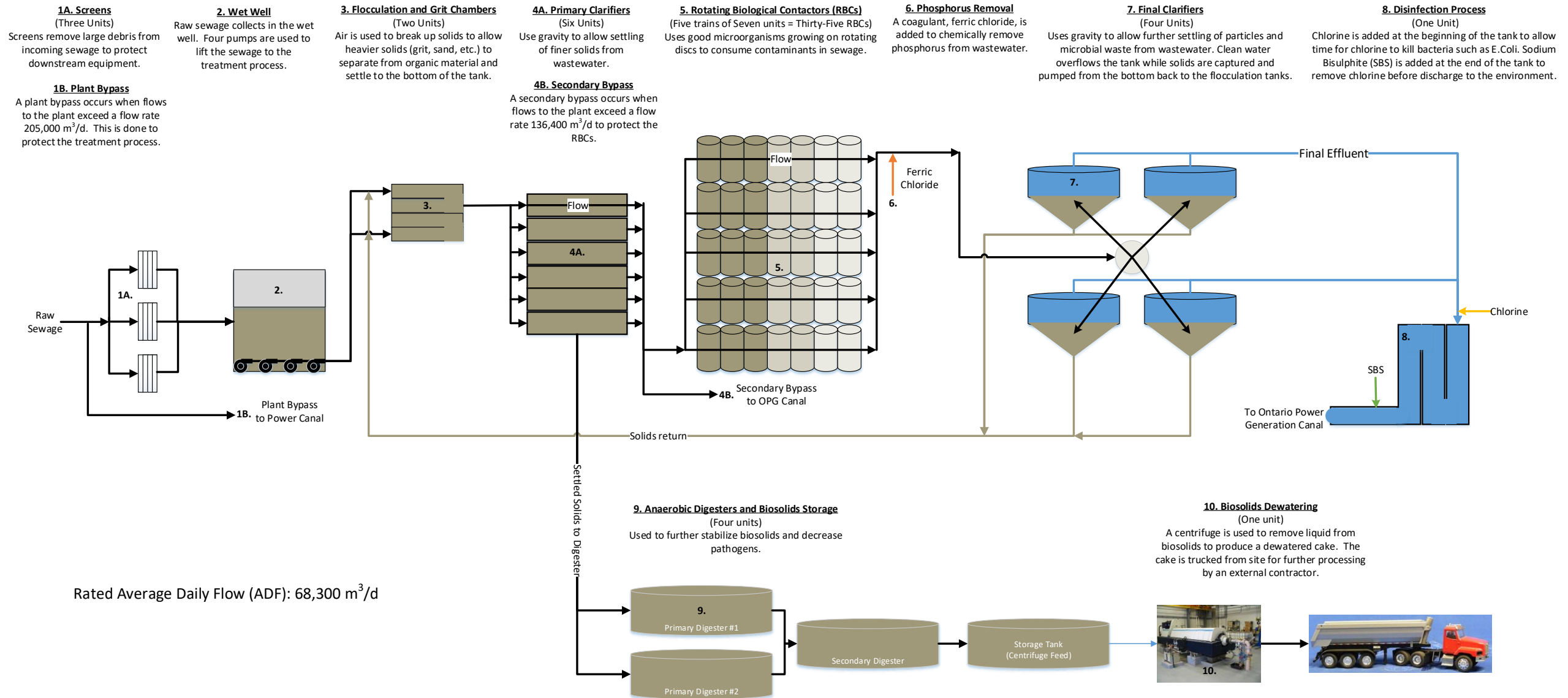


Figure 1: Process Flow Diagram (PFD), Niagara Falls Wastewater Treatment Plant

Subject: Award of Contract 2018-T-127 (RN 18-27) Stamford Interceptor Rehabilitation Phase 1

Report to: Public Works Committee

Report date: Tuesday, September 25, 2018

Recommendations

1. That Report PW 29-2018 **BE RECEIVED** for information.

Key Facts

- Special Reference
 - Given Section 275 of the *Municipal Act, 2001*, and Regional Council's delegated authority to the Chief Administrative Officer via report GM 8-2018, that the Chief Administrative Officer consider and authorize:
 - That this report will incur expenditures or liability which exceeds \$50,000; and
 - That staff proceed with awarding Contract 2018-T-127 (RN 18-27) - Stamford Interceptor Rehabilitation Phase 1 to Liqui-Force Services (Ontario) Inc. at their bid price (for the Niagara Region- Stamford Interceptor and St. Catharines Valley Road Sewer Rehabilitation works only) of \$10,597,980.20 (including HST), subject to confirmation of cost sharing by the City of St. Catharines.
 - That staff proceed with the gross budget increase for the Stamford Interceptor Rehabilitation Phase 1 Project (10SW1512) of \$2,088,632 (inclusive of non-refundable HST) for the regional portion of the work and that the increase be funded from the Capital Variance – Wastewater Project
 - That staff proceed with the gross budget increase for the share of work done on behalf of the City of St. Catharines totalling \$823,192 (inclusive of non-refundable HST) funded in full through cost sharing agreements.
 - Should the Chief Administrative Officer incur an expenditure or liability greater than \$50,000, then the CAO will report to the new Council all steps taken pursuant to this decision.
- The project is required to renew approximately 2,314 meters of trunk sanitary sewer ranging in diameter from 1050 to 1200 mm including respective manholes from Dorchester Road to the CN Railway (approximately 900m north of Morrison Street) in the City of Niagara Falls. In 2014, a condition assessment was completed and it was confirmed that this sewer displayed significant structural damage due to

hydrogen sulphide corrosion. Since then, the Region has had to install construction fencing around the first manhole due to severe deterioration resulting in safety concerns. This sewer services a large area of Niagara Falls with a serviced population of approximately 30,000 residents including major tourism destinations such as Marineland. Failure of this sewer would be catastrophic. See Appendix 1 - Key Plan.

- A prequalification of General Contractors for the project was undertaken through 2017-RFPQ-10 on November 1, 2017. A total of four (4) General Contractors (Pipeflo, Insituform, Liqui-Force, and Clean Water Works) were prequalified.
- Following 2017-RFPQ-10, the four (4) prequalified General Contractors were then invited to submit bids for the project. The tendering process was completed three (3) times as there were issues with the compliance and completeness of the tender submissions. Purchasing and Legal staff were consulted throughout the entire procurement process
- This project has been approved for \$1,549,667 Federal and \$774,833 provincial funding, for a total of \$2,324,500 through the Clean Water and Wastewater Fund (CWWF) with a project completion deadline of March 31, 2020.

Financial Considerations

Project 10SW1512 (Sewer & Forcemain Prgm – Stamford Interceptor) has a previously approved capital budget of \$7,650,000. The total estimated project cost after the award of Contract 2018-T-127 (RN 18-27) is \$10,561,824 (inclusive of non-refundable HST) as detailed in Appendix 2 – Total Estimated Project Cost.

The contract award includes both regional components as well as components for the City of St. Catharines. The regional portion of the contract award is \$8,720,617 (inclusive of non-refundable HST). The contract costs for the components related to the City of St. Catharines (inclusive of non-refundable HST) is \$823,192. Total contract award is \$9,543,809 (inclusive of non-refundable HST).

Total regional costs are expected to be \$9,738,632. The initially approved project budget for the regional portion of costs was \$7,650,000, therefore a budget increase of \$2,088,632 is required; to be funded from the Capital Variance – Wastewater Project. It should be noted also that partial funding of \$2,324,500 (\$1,549,667 Federal and \$774,833 Provincial) has been previously awarded through the Clean Water and Wastewater Fund (CWWF).

The total cost of \$823,192 for work to be performed on behalf of the City of St. Catharines was not included in the original budget of \$7,650,000. A gross budget adjustment will therefore be required to further increase the project budget by this

amount and will be fully recovered through cost sharing agreement with the City of St. Catharines, with no regional cost impact. The City has indicated they are requesting the necessary budget adjustments to fund their works from their respective council. If necessary, these portions of works can be removed from the Contract based on the conditions set out in the Contract.

Analysis

In 2014, the Region undertook a condition assessment of 71 sections of sewers within four (4) various trunk sanitary sewers including the Stamford Interceptor sewer immediately upstream to the Niagara Falls WWTP. Sewer sections were reviewed using CCTV inspections and in-field robotic testing of the interior wall of select sewer pipes that were found to be in the worst visual condition during the CCTV Review. Manhole condition assessments consisted of CCTV and man entry inspections which documented and photographed evidence of deterioration. Phase 1 of the Stamford Interceptor sewer condition assessment consisted of 23 sewer sections and 24 manholes. This assessment identified numerous areas of spalled concrete exposing the re-enforcing steel within the concrete sewers due to hydrogen sulphide corrosion and was therefore recommended for immediate rehabilitation. Since then, the Region has had to install construction fencing around the first manhole due to severe deterioration resulting in safety concerns. This sewer services a large area of Niagara Falls with a serviced population of approximately 30,000 residents including major tourism destinations such as Marineland.

In addition, this project was scheduled to be completed cooperatively and cost shared between the Region, Town of Fort Erie, City of St. Catharines and City of Niagara Falls. The Town of Fort Erie and City of St. Catharines had included rehabilitation works on their respective sewer systems along Dominion Road (Lakeshore Road to Beachview Avenue) and Valley Road respectively to promote cost savings by sharing the Contractor's mobilization and general administration costs between the various projects. The City of Niagara Falls had included Section 6 of the Millennium Trail along the Stamford Interceptor alignment located within the OPG corridor between Dorchester Road and Drummond Road. By including the Millennium Trail scope to this project, the Region and City were expediting the trail construction which would have otherwise been delayed until the Stamford Interceptor works was completed due to Ministry of Labour requirements for contractor separation of working zones.

GHD was retained by Niagara Region through 2015-RFP-26 to complete the detailed design, tendering and contract administration and inspection for this project on November 13, 2015. GHD was also retained through informal quote to complete geotechnical investigations during design. Their contract will be extended to conduct materials testing and inspection services during construction.

A prequalification process was initiated through 2017-RFPQ-10 and a total of four (4) General Contractors (Pipeflo, Liqui-Force, Insituform, Clean Water Works), who have performed similar complex rehabilitation projects in the past, were prequalified. These contractors were then invited to submit tenders for the Stamford Interceptor Rehabilitation Phase 1 through 2018-T-118 initiated on May 11, 2018. The tender was issued as a two envelope process, which included a technical validation to allow the Project team the opportunity to validate specified high risk items for compliance prior to opening of prices. A total of two (2) submissions were received on June 12, 2018 from three of the prequalified Contractors (Pipeflo, Liqui-Force with Insituform). Upon submission, GHD conducted the technical validation to confirm that submissions were in accordance with contract specifications. It was determined that each submission was deemed technically non-compliant due to missing or incomplete information. Given that there were no compliant bidders, Tender 2018-T-118 was cancelled. Each Contractor was notified of their non-compliances and their unopened cost envelope was returned.

Purchasing and Legal staff were consulted extensively during this process to ensure proper measures for notification and re-tendering were adhered to.

Tender 2018-T-118 was cancelled and reissued on June 20, 2018 to all four (4) pre-qualified bidders through Tender 2018-T-125. The tender was issued as a two envelope process, however, the Project team included a submission checklist as well as simplified the forms required for the technical validation for ease of bidding. One (1) submission was received on June 29, 2018 from Liqui-Force with Insituform as a subcontractor. Upon validation check, it was noted that required pages were again omitted, as such, the submission was deemed incomplete and disqualified. Given that there were no compliant bidders, Tender 2018-T-125 was cancelled.

Following 2018-T-125, Purchasing and W&WW Engineering staff conducted separate debrief sessions with each of the pre-qualified contractors to identify issues with the tendering process in order to address concerns prior to reissuing the tender so as to encourage multiple compliant bid submissions.

Feedback from the debrief sessions was considered and incorporated in a revised Contract package. As such, the project completion dates were extended to ensure a feasible schedule and some of the technical validation submittal requirements were deferred until after the contract award by the successful proponent. The tender was reissued on July 16, 2018 to all four (4) pre-qualified bidders through Tender 2018-T-127. One (1) submission was received on August 3, 2018 from Liqui-Force with Insituform using a two envelope process. Envelope One (technical validation) underwent a technical review and determined that the submission was technically compliant. Liqui-Force was notified and invited to attend the public opening of Envelope Two (bid submission) on July 3, 2018.

The tender submission included Addendums No. 1 and 2 as well as the necessary tender deposit and Agreement to Bond. The tender was reviewed and a few minor arithmetic errors were found. The tender price for Liqui-Force Services Inc. was revised to \$11,953,352.26 (including HST). The following is a breakdown of the bid received (including HST) per Municipality.

- Niagara Region – Stamford Interceptor: \$9,683,861.32
- St. Catharines – Valley Road Sewer Rehabilitation: \$914,118.88
- Fort Erie – Sewer & Manhole Rehabilitation: \$308,052.33
- Niagara Falls – Millennium Trail & Landscaping: \$1,047,319.73

GHD has reviewed the bids and have provided a recommendation to award Contract 2018-T-127 (RN 18-27) to Liqui-Force Services (Ontario) Inc.

Unfortunately, following the tender close, the Region received formal notification from the Town of Fort Erie and City of Niagara Falls to indicate their withdrawal from the project due to shortfall of approved funds and that neither Fort Erie nor Niagara Falls intended to proceed with any budget adjustments. These municipalities will review and adjust their respective scope of work and proceed with their project on their own. This scope is being deleted from the contract award in accordance with the Contract documents.

The adjusted Contract price as a result of deleting these respective works is \$10,597,980.20 (including HST). Staff therefore recommends that the tender submitted by Liqui-Force Services (Ontario) Inc be accepted as revised following the Niagara Falls and Fort Erie deletions.

Contract award requires resources from Enterprise Resource Management Services in order to execute the required contract documents. Water & Wastewater staff will be providing resources throughout the project in order to manage the contract with assistance from Enterprise Resource Management Services on contract/project payments. The City of St. Catharines and City of Niagara Falls will be notable participants in the project. GHD will be completing Contract Administration, Inspection and Materials Testing services on this project.

Alternatives Reviewed

Option 1 – Proceed with Contract Award

This alternative would enable staff to proceed with Contract Award to Liqui-Force Services (Ontario) Inc. to address the maintenance issues with this sewer and ensure reliable infrastructure for the residents of Niagara Falls. As per the Contract documents, the Region reserves the right to remove scope as needed. The Contract award includes the City of St. Catharines scope and excludes the Town of Fort Erie and the City of Niagara Falls scope.

This is the preferred option as it would not only address the degrading condition of the existing sewer system but also permit the local municipalities to complete their respective rehabilitation and pedestrian trail works.

Option 2 - Do Nothing

This alternative does not address the maintenance issues with this sewer and does not ensure reliable infrastructure to support growth and economic development. Structural failure of this sewer is imminent if this sewer is not rehabilitated promptly and is permitted to continue to suffer deterioration, due to the hydrogen sulphide gases. Failure of this trunk sewer would cause a catastrophic loss of service and result in a significant amount of untreated sewage spilled to the Sir Adam Beck #2 Hydro Power Canal along with residential basement flooding.

Option 3 – Cancel Tender & Reissue as Multiple Tenders

This alternative would consist of cancelling the current tender (2018-T-127) and revising the project scope of work to develop multiple smaller contracts. Priority can be given to the critical areas which are of imminent failure.

This alternative is not preferred because of the indirect costs associated with the bypass pumping system and general administration. These items would be required for each contract and therefore increase the total overall project cost. Furthermore, this would also lengthen the construction period due to the re-tendering process and the time to complete each contract consecutively.

Although the City of Niagara Falls has withdrawn from the Region's project, the City is anticipating to proceed on their own with construction of the Millennium Trail. This trail cannot be constructed until the Stamford Rehabilitation works are complete as the construction activities for the Stamford project would impact the area and therefore damage the trail. Delay in the Region's project would in turn delay the trail works.

Staff recommends Option 1 and to proceed with Contract Award.

Relationship to Council Strategic Priorities

This recommendation is related to the Fostering Growth strategic priority since the planned rehabilitation will ensure reliable infrastructure to support growth and economic development within the City of Niagara Falls and City of St. Catharines.

Other Pertinent Reports

- None

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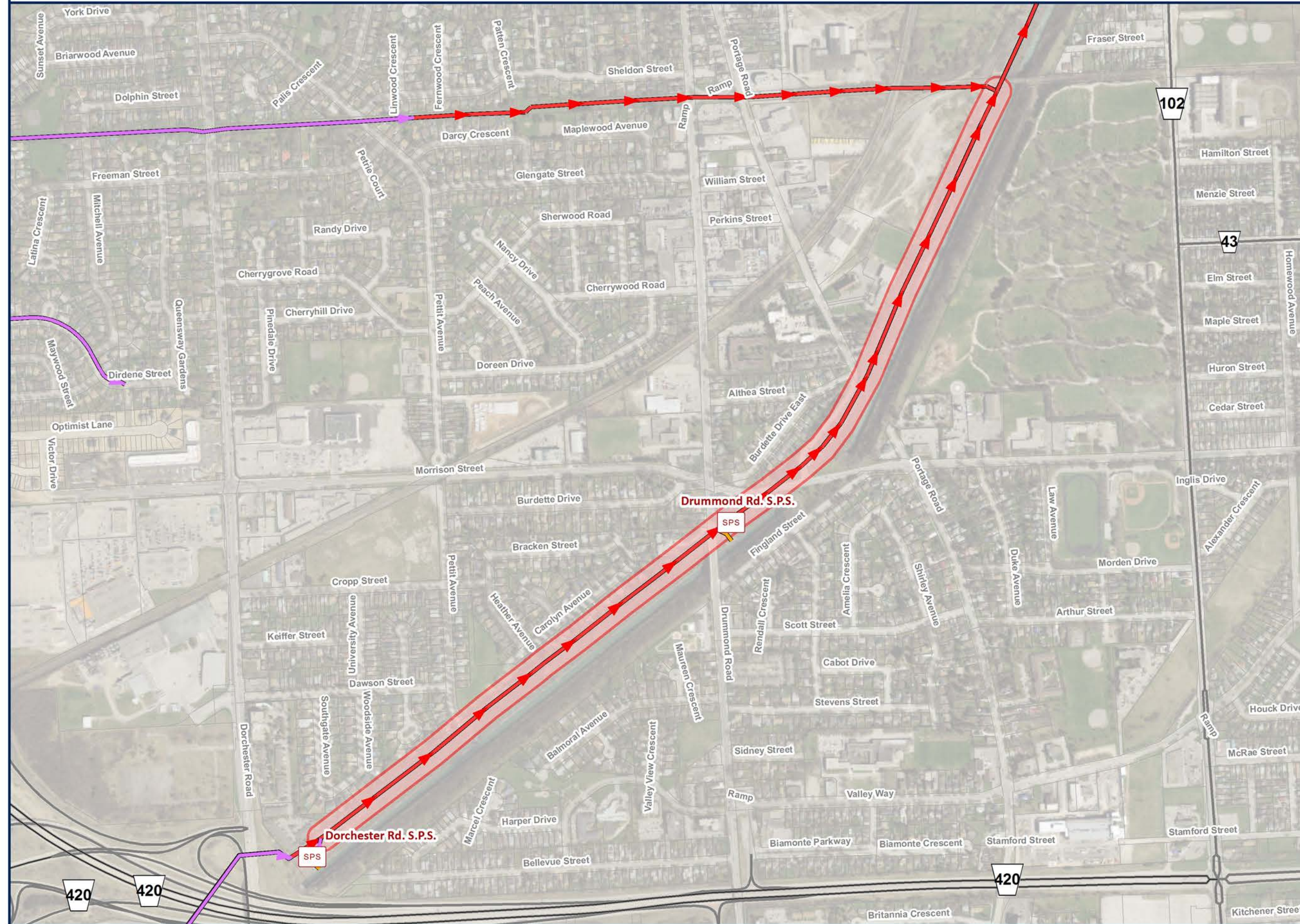
Submitted by:

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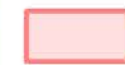


This report was prepared in consultation with Lisa Vespi, P.Eng. Senior Project Manager, W-WW Engineering; Michael Leckey, Program Financial Specialist W-WW, Tracie Byrne, Manager Purchasing Services, and reviewed by Joseph Tonellato, P.Eng., Director W-WW; Bart Menage, Director, Procurement and Strategic Acquisitions, and Donna Gibbs, Director Legal & Court Services.

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Legend

-  Notice of Project Extents
-  Wastewater Treatment Plant
-  Sewage Pumping Station
-  Force Main
-  Sanitary Gravity Pipe

0 100 200 400M

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This map was compiled from various data sources and is current as of July, 2018.

Niagara Region makes no representations or warranties whatsoever, either expressed or implied, as to the accuracy, completeness, reliability, currency or otherwise of the information shown on this map.

**PW 29-2018 APPENDIX 2
TOTAL PROJECT BUDGET
Contract Award**

Contract 2018-T-127 (RN18-27) Stamford Interceptor Rehabilitation Phase 1, in the City of Niagara Falls

Total Estimated Project Cost (10SW1512) *

	Total Council Approved Budget	Revisions per PW 29-2018	Revised Project Budget	Expended & Committed as of June 29, 2018	Forecast / Contract Award	Budget Remaining
(a) Construction **						
i. Regional portion (includes 7% contract contingency) **	5,634,000	3,086,617	8,720,617	-	8,720,617	-
ii. Cost Sharing - City of St. Catharines **	-	823,192	823,192	-	823,192	-
(b) Project Contingency	433,000	-	433,000	-	433,000	-
(c) Consulting Engineering Services						
i. Detailed Design	400,000	(200,000)	200,000	147,317	52,683	-
ii. Contract Administration & Inspection	-	250,000	250,000	-	250,000	-
iii. Peer Reviews	-	18,262	18,262	18,262	-	-
(d) Project Management (In-House) and Operations	233,000	(158,000)	75,000	23,596	51,404	-
(e) Materials Testing	-	25,952	25,952	-	25,952	-
(f) Miscellaneous	950,000	(934,199)	15,801	15,801	-	-
Total Estimated Project Cost	7,650,000	2,911,824	10,561,824	204,976	10,356,848	-

Project Funding Sources

Regional reserves & debt (includes Federal Gas Tax funding)	(5,325,500)	(2,088,632)	(7,414,132)			
CWWF	(2,324,500)	-	(2,324,500)			
Municipal Cost Sharing - St. Catharines	-	(823,192)	(823,192)			
	(7,650,000)	(2,911,824)	(10,561,824)			

* All costs above include the non-refundable 1.76% portion of HST.

**Total contract cost includes both Regional and municipal cost sharing amounts. The total contract award is \$10,597,980 including 13% HST. The \$9,543,809 amount included above is the amount with only the 1.76% non-refundable portion of HST included.