



## **SPECIAL COUNCIL MEETING**

**Tuesday, November 23, 2021**

**Due to COVID-19 all meetings will be held electronically**

**All meetings can be viewed at:**

**City of Welland website: <https://www.welland.ca/Council/LiveStream.asp>**

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1. **COMMITTEE-OF-THE-WHOLE (IN-CAMERA) (5:00 p.m.)**  
**(See yellow tab)**
  - Proposed or pending acquisition or disposition of land by the municipality or local board; and
    - *Seeley Street.*
    - *Sale of south east corner of Lewis & Classic Avenue.*
  - A trade secret or scientific, technical, commercial, financial or labour relations information, supplied in confidence to the municipality or local board, which, if disclosed, could reasonably be expected to prejudice significantly the competitive position or interfere significantly with the contractual or other negotiations of a person, group of persons, or organization;
    - *Notre Dame Rowing Club Lease.*
    - *11 Kingsway Transfer of Lands Agreement.*
    - *Auditors Report.*
  
2. **ARISE FROM COMMITTEE-OF-THE-WHOLE (IN-CAMERA)**
  
3. **OPEN SPECIAL COUNCIL MEETING FOLLOWING COMMITTEE-OF-THE-WHOLE (IN-CAMERA)**
  - 3.1 **ADDITIONS/DELETIONS TO AGENDA**
  - 3.2 **CALL UPON THE CITY CLERK TO REVIEW COMMITTEE-OF-THE-WHOLE (IN-CAMERA) TO BE ADDED TO BLOCK**
  - 3.3 **DISCLOSURES OF INTEREST**
  - 3.4 **COUNCILLORS TO DETERMINE AGENDA ITEMS AND BY-LAWS TO BE REMOVED FROM BLOCK FOR DISCUSSION IN COMMITTEE-OF-THE-WHOLE (OPEN) (See pink tab)**
  
4. **ORAL REPORTS AND DELEGATIONS**
  - 4.1 **PRESENTATIONS**
    - 05-51** Adam Beres, Manager of Fleet, Equipment and Purchasing re: By-law and the Purchasing Policy update.  
**(Background information included in Council members packages).**



## **SPECIAL COUNCIL MEETING AGENDA – Page 2**

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**4.2 DELEGATION(S) (maximum 5/10/5 policy) - Nil**

**4.3 AGENCIES, BOARDS, COMMISSIONS AND COMMITTEES REPORT(S)**

**21-4** Councillor McLeod, Chair, Budget Review Committee - meeting of November 15, 2021.

**4.4 LEGISLATED PUBLIC HEARINGS/MEETINGS - Nil**

**5. COMMITTEE-OF-THE-WHOLE (OPEN)**  
**(to discuss items removed from Agenda Block)**

**6. BY-LAWS (SEE AGENDA INDEX)**

**7. CONFIRMATORY BY-LAW**

A By-law to adopt, ratify and confirm proceedings of the Council of the Corporation of the City of Welland at its meeting held on the 23<sup>rd</sup> day of November, 2021.  
Ref. No. 21-1

**8. ADJOURNMENT**



## ***SPECIAL COUNCIL MEETING AGENDA***

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### **AGENDA BLOCK**

**1. BUSINESS ARISING FROM MINUTES, PREVIOUS MEETINGS AND OTHER ITEMS REFERRED FROM COUNCIL FOR DISCUSSION: Nil**

**2. COMMITTEE AND STAFF REPORTS**

**1. Business Arising from Committee-of-the-Whole (closed) - Nil**

**1. 2. Budget Review Committee Report to Council - November 15, 2021**

**3. Staff Reports**

**2 - 3                    FIN-2021-34                    Director of Finance/Chief Financial Officer/Treasurer,  
S. Fairweather - Temporary Borrowing. Ref. No. 21-4  
(See By-law 1)**

**4 - 5                    FIN-2021-35                    Director of Finance/Chief Financial Officer/Treasurer,  
S. Fairweather - External Audit Services - RFP 19-15 (Revised).  
Ref. No. 21-4 (See By-law 2)**

**6 - 8  
Remove From  
Block                    FIN-2021-36                    Director of Finance/Chief Financial Officer/Treasurer,  
S. Fairweather - Amendments to City of Welland Purchasing  
Policy. Ref. No. 05-51 (See By-law 3)**

**9 - 11                    TRANS-2021-17                    Chief Administrative Officer, S. Zorbas - Paving of Transit  
Operations Facility - Phase 2 of 2. Ref. No. 21-13 (See By-law 4)**

**12 - 21                    TRANS-2021-18                    Chief Administrative Officer, S. Zorbas - Proposed Reduced  
Service Plan. Ref. No. 21-13**

**22 - 160                    ENG-2021-31                    Director of Infrastructure Services, SM. Millar - Hunter's Pointe  
Booster Pumping Station Operating Agreement. Ref. No. 05-114  
(See By-law 5)**



## ***SPECIAL COUNCIL MEETING AGENDA INDEX – Page 2***

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### **Page No.**

#### **3. NEW BUSINESS - Nil**

#### **4. BY-LAWS**

**MAY BE VIEWED IN THE CLERK'S DIVISION PRIOR TO THE MEETING IF DESIRED.**

1. A By-law authorizing the Temporary Borrowing of up to \$9,000,000 to meet current and capital expenditures for the year. Ref. No. 21-4  
(See Report FIN-2021-34)
2. A By-law appoint Grant Thorton LLP to provide External Audit Services to the Corporation of the City of Welland and its local boards. Ref. No. 21-4  
(See Report FIN-2021-35)
3. A By-law to amend By-law 2015-1; being a By-law to establish and adopt a Purchasing Policy; and to repeal By-law 2009-181. Ref. No. 05-51  
(See Report FIN-2021-36)
4. A By-law to authorize entering into contract with Hamilton Paving Inc. for paving of the Transit Operations Facility. Ref. No. 21-13  
(See Report TRANS-2021-17)
5. A By-law to authorize entering into an agreement with the Regional Municipality of Niagara for the operation of the Hunter's Pointe Water Booster Pumping Station.  
Ref. No. 05-114  
(See Report ENG-2021-31)
6. A By-law to authorize into a Reciprocal Agreement with 439 King Welland Inc. operating as the Grand Canal Retirement Residence for enhanced membership, program utilization and space allocation.  
Ref. No. 06-84
7. A By-law to amend By-law 2019-138, being a By-law to appoint certain Members of Council as Vice Mayor for the period from December 1, 2021 to November 14, 2022.  
Ref. No. 21-12  
(Update to Vice Mayor appointment By-law - Councillor Van Vliet – December 1, 2021 to March 31, 2022, Councillor Mastroianni – April 1, 2022 to July 31, 2022, Councillor Speck – August 1, 2022 to November 14, 2022).





## BUDGET REVIEW COMMITTEE MEETING MOTIONS REQUIRING COUNCIL APPROVAL

Monday, November 15, 2021

5:03 p.m.

Council Chambers/Virtual Zoom Meeting

**Councillor D. McLeod in the Chair**

**Members in Attendance:** Mayor Campion, Councillors J. Chiochio, T. DiMarco, B. Fokkens, B. Green, M. Grimaldi, J. Larouche, A. Moote, C. Richard, G. Speck, and L. Van Vliet.

The following is a Summary of Motions and Recommendations from the Budget Review Committee requiring Council approval:

### **1. REPORT R&C-2021-22 – EMPIRE SPORTSPLEX OPERATING / SERVICE PLAN**

*THAT THE BUDGET REVIEW COMMITTEE recommends to Council for approval the issuance of a Request for Proposal (RFP) for a third-party vendor to operate the Empire Sportsplex canteen and authorize the execution of all related agreements through the City Clerk and Mayor.*

### **2. WATER HAULAGE RATE STRUCTURE**

*THAT THE BUDGET REVIEW COMMITTEE approves and recommends to Council for approval that effective January 1, 2022, the water haulage consumption rate be increased to \$1.467/m<sup>3</sup>, the water haulage administration fee be increased to \$140/month, and that water haulage accounts continue to be billed monthly.*



As recommended by the Budget Review Committee at its meeting of November 15, 2021.

Date Submitted: November 23, 2021

Submitted by Steven Fairweather, Director of Finance / Chief Financial Officer / Treasurer, on behalf of the Budget Review Committee.

  
(Signature)

**SPECIAL COUNCIL**  
**FINANCE DEPARTMENT**

APPROVALS	
DIRECTOR	
CFO	
CAO	

**REPORT FIN-2021-34**  
**NOVEMBER 23, 2021**

21-4

**SUBJECT:      TEMPORARY BORROWING**

**AUTHOR:       ELIZABETH PANKOFF, MBA, CPA, CGA**  
**MANAGER OF BUDGETS & FINANCIAL REPORTING/DEPUTY**  
**TREASURER**

**APPROVING     STEVEN FAIRWEATHER, CPA-CA, MPA, DPA,**  
**DIRECTOR:     DIRECTOR OF FINANCE / CHIEF FINANCIAL OFFICER / TREASURER**

**RECOMMENDATION:**

THAT THE COUNCIL OF THE CITY OF WELLAND authorizes the Chief Financial Officer/Treasurer to borrow, on an interim basis, up to \$9,000,000 to meet current and capital expenditures for the year while awaiting permanent funding by way of taxation, water, and sewer billings, provincial/federal grants, and regional debentures; and further

THAT Welland City Council directs the City Clerk to prepare the necessary By-law.

**ORIGIN AND BACKGROUND:**

Staff in the past has reported annually to Council seeking the authority for a Temporary Borrowing Bylaw. However, the City of Welland under subsection 407(1) of the Municipal Act, 2001 is required to enact a Temporary Borrowing Bylaw. This Bylaw sets the maximum limit that Council authorizes the Chief Financial Officer/Treasurer to temporarily borrow while awaiting funding. There is no requirement to have Council approve such a Bylaw annually.

Staff are requesting Council to enact a Temporary Borrowing Bylaw establishing the borrowing limit of up to \$9,000,000 and requiring the Chief Financial Officer/Treasurer to report annual to Council on the borrowing activity. This Bylaw would remain in effect until a change is requested to the borrowing limit.

**COMMENTS AND ANALYSIS:**

During the course of the year, the City has occasionally required short-term operating borrowings, sometimes for as little as one day, while awaiting tax or water payments, which generally arrive on or very close to due dates. The reason such a high borrowing limit is required is that individual payments can be in the millions of dollars, i.e., each regional levy is approximately \$9,000,000.

In addition to operating expenditures, the municipality must provide temporary or bridge financing for capital projects while awaiting tax payments, provincial/federal grants, and regional debenture issues, which normally occur once a year in the early summer.

**FINANCIAL CONSIDERATION:**

The need to temporarily borrow is not always required. Therefore yearly budgets will be developed assuming no borrowing will be required. .

**OTHER DEPARTMENT IMPLICATIONS:**

Not applicable.




**SUMMARY AND CONCLUSION:**

Although every effort is made to minimize borrowing positions, situations invariably arise where it is unavoidable. The recommendation addresses these situations.

**ATTACHMENTS:**

None.

**SPECIAL COUNCIL**  
**FINANCE DEPARTMENT**

APPROVALS	
DIRECTOR	
CFO	
CAO	

**REPORT FIN-2021-35**  
**NOVEMBER 23, 2021**

21-4

**SUBJECT: EXTERNAL AUDIT SERVICES – RFP19-15 (REVISED)**

**AUTHOR: ELIZABETH PANKOFF, MANAGER OF BUDGETS & FINANCIAL REPORTING/DEPUTY TREASURER  
and  
ADAM BERES – MANAGER FLEET, EQUIPMENT & PURCHASING**

**APPROVING DIRECTOR: STEVEN FAIRWEATHER, CPA-CA, MPA, DPA,  
DIRECTOR OF FINANCE / CHIEF FINANCIAL OFFICER / TREASURER**

**RECOMMENDATION:**

THAT THE COUNCIL OF THE CITY OF WELLAND appoints Grant Thornton LLP as the City auditors for 2021, 2022, and 2023; and further

THAT Welland City Council authorizes the Clerk to prepare the necessary By-law to enter into an agreement with Grant Thornton LLP; and further

THAT Welland City Council authorizes the Treasurer to enter discussions with the City auditor at the expiry of their term for a five-year extension on mutual agreeable terms and report back to Council for approval.

**ORIGIN AND BACKGROUND:**

The City issued RFP 19-15 on October 18, 2019, for audit services. In response to this RFP, the City received four submissions. With the resignation of the successful bidder, staff need to secure a new City auditor. To expedite the process, staff reached out to the three other proponents who submitted to the original proposal. Staff requested confirmation from each proponent if they wished to continue in the process and if they could honour their originally submitted pricing, or if they wished to submit revised pricing.

Staff received responses from all three proponents to the original RFP.

**COMMENTS AND ANALYSIS:**

The responses received from all three proponents were evaluated based on the original RFP's evaluation weighting criteria. Based on the scoring of the RFP, Grant Thornton LLP received the highest ranked score.

**FINANCIAL CONSIDERATION:**

The City budgets annually for audit services. The cost for these services has been built into the 2022 budget.

**OTHER DEPARTMENT IMPLICATIONS:**

The appointment of the City Auditor also appoints the auditor for City boards and commissions. As the City auditor, they will conduct audits of the following boards and commissions:

- City of Welland Trust Funds
- Welland Public Library
- Niagara Central Dorothy Rungeling Airport
- Welland Downtown BIA
- North Welland BIA
- Youngs Sportsplex
- Welland Courthouse

Once Council has appointed the City auditor, staff will advise the various boards and commissions of the decision along with their quoted price.

**SUMMARY AND CONCLUSION:**




That Council appoint Grant Thornton LLP as the city's auditor for the fiscal years 2021, 2022, and 2023 as they received the highest ranked score.

**ATTACHMENTS:**

None.



**SPECIAL COUNCIL**  
**CORPORATE SERVICES**  
**FINANCE DIVISION**

APPROVALS	
DIRECTOR	
CFO	
CAO	

05-51

**REPORT FIN-2021-36**  
**NOVEMBER 23, 2021**

**SUBJECT: AMENDMENTS TO CITY OF WELLAND PURCHASING POLICY**

**AUTHOR: ADAM BERES, MANAGER OF FLEET, EQUIPMENT & PURCHASING**

**APPROVING DIRECTOR: STEVEN FAIRWEATHER, CPA-CA, MPA, DPA,  
DIRECTOR OF FINANCE / CHIEF FINANCIAL OFFICER / TREASURER**

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**RECOMMENDATION:**

THAT THE COUNCIL OF THE CITY OF WELLAND approves and supports staff recommendations to amend the Requisition and Purchasing Methods and Approval Authority (Schedule B) of the current Purchasing Policy as outlined in Appendix I.

THAT Welland City Council directs the City Clerk to update appropriate by-laws to support the updated Purchasing Policy.

**ORIGIN AND BACKGROUND:**

The Purchasing Policy and companion By-Law was last updated in 2017. As per Part 1 of the Policy - Purpose, Goals and Objectives, one of the goals is to "maintain timely and relevant policies and procedures" and will be reviewed every five (5) years or earlier to evaluate its effectiveness.

**COMMENTS AND ANALYSIS:**

One of the main updates within the proposed is to update the threshold of pre-approved projects (items receiving Council approval during the budgetary process) requiring City Council final approval. The advantage of this would be increasing project start time efficiency while being mindful of Council's valuable time. It is important to note, if accepted, Council will receive a quarterly memo of projects awarded that are greater than the amount indicated within the attached presentation.

**FINANCIAL CONSIDERATION:**

Not applicable.

**OTHER DEPARTMENT IMPLICATIONS:**

The updated thresholds will reduce the amount of staff reports submitted for Final Approval to Council for the pre-approved projects. The proposed updates have been reviewed by the Corporate Leadership Team.

**SUMMARY AND CONCLUSION:**

THAT THE COUNCIL OF THE CITY OF WELLAND approves the recommendations put forth by staff to update the indicated Schedule at the thresholds indicated and update the language within the Policy as appropriate to reflect this new schedule.

THAT Welland City Council direct the City Clerk to amend the current By-Law as appropriate.

**ATTACHMENTS:**

Appendix I – Requisition and Purchasing Methods and Approval Authority, Revised Schedule B 2021



#### 4. SCHEDULE B: Requisition and Purchasing Methods and Approval Authority




PROPOSED

Dollar Value	Minimum Purchasing Method / Requirements	Section Reference	Approval Authority
<b>Non-Sealed (Informal) RFx</b>			
≤ \$10,000	Direct Purchase / Payment Card Purchase Minimum 2 Written Quotations on company letterhead	52-53	Any Employee authorized by a Manager
>\$10,000 to < \$100,000	Request for Bid Minimum 3 Written Quotations on company letterhead	55	Manager and Director
<b>Sealed (Formal) RFx (Total Dollar value of Contract)</b>			
> \$100,000 to <\$500,000	Minimum 3 Written Responses for Quotation, Tender OR Request for Proposal	56, 61-64	C.A.O. and C.F.O.
> \$500,000	Minimum 3 Written Responses for Quotation, Tender OR Request for Proposal	57-60, 61-64	City Council
<b>Professional Services (Consultants)</b>			
<\$100,000	Request for Proposal - Minimum 3 proposals	73	C.A.O. and C.F.O. or Designate(s)
>\$100,000	Request for Proposal - Minimum 3 proposals	74	City Council
<b>Purchase By Negotiation</b>			
≤ \$25,000	<b>"Purchase by Negotiation"</b> , Refer to Section 75 for a detailed description whereby inviting tenders or quotations may be waived.	75-77	C.F.O. and Director or Designate(s)
>\$25,000 to ≤ \$100,000			C.A.O. and C.F.O. or Designate(s)
> \$100,000			City Council
<b>Emergency Purchases</b>			
≤ \$50,000	"Emergency Purchase", means purchases made during an event in the City, which in the opinion of the C.A.O. or C.F.O. or Director or their authorized designate(s), requires an immediate purchase in order to prevent a serious delay in acquiring needed Goods and/or Services, which delay reasonably could result in a danger to life, excessive damage to property and/or the environment, or the suspension of the provision of an essential service. This may also be in accordance with the Emergency Management Plan as described by visiting: <a href="https://www.niagararegion.ca/emergency/emergency-plan.aspx">https://www.niagararegion.ca/emergency/emergency-plan.aspx</a> and / or the <u>Emergency Management and Civil Protection Act, R.S.O. 1990, c. E.9</u> and appropriate revisions.	78-79	Director or Designate(s)
> \$50,000 to <\$100,000			C.F.O. and Director, Report to CAO
>\$100,000 to <500,000			C.A.O. and C.F.O. or Designate(s)
> \$500,000			City Council

Appendix 1



**SPECIAL COUNCIL**  
**OFFICE OF CAO**  
**TRANSIT DIVISION**

APPROVALS	
DIRECTOR	
CFO	
CAO	

21-13

**REPORT TRANS-2021-17**  
**NOVEMBER 23<sup>RD</sup>, 2021**

**SUBJECT: PAVING OF TRANSIT OPERATIONS FACILITY – PHASE 2 OF 2**

**AUTHOR: EDWARD ZAHRA, TRANSIT MANAGER**

**APPROVING DIRECTOR: STEVE ZORBAS, CAO**

**RECOMMENDATIONS:**

THAT Welland City Council award Hamilton Paving Inc. the contract to complete the project as the successful tender; and further,

THAT Welland City Council authorizes the Mayor and Clerk to execute all necessary by-laws and agreements.

**ORIGIN AND BACKGROUND:**

The Transit Operations Facility underwent paving of the existing lot in the summer of 2018 and an installation of a gravel pad in 2019 for additional outdoor bus storage. Staff are seeking to complete the project halted due to the COVID-19 pandemic and have the remaining unpaved portion paved, in addition to repairing some of the current degraded asphalt.

**COMMENTS AND ANALYSIS:**

The total area to be paved is approximately 2,400 m<sup>2</sup>. Of the total amount, approximately half is currently paved and in poor condition, whereas the remaining area is entirely unpaved and a mix of loose gravel and dirt. Included in the scope of work will be for a painted designated walkway and parking spaces for visitors and staff.

This item has been added to the minutes from our Joint Health and Safety Committee (JHSC) due to the concern of tripping hazards, by way of the many potholes, and slipping hazards during inclement weather.

Further to the safety concerns, completion of the paving will assist in snow removal in the winter and be graded to allow appropriate drainage throughout the year. In addition, the heavy vehicular traffic from both Welland Transit's revenue fleet, and that of the construction vehicles anticipated to arrive intermittently during construction of the facility, will benefit from an even ground surface as this directly supports less wear and tear on items including but not limited to suspension components, tires, and wheels.

**FINANCIAL CONSIDERATION:**

Staff adhered to the City's Purchasing Policy and sourced three (3) quotes from qualified contractors. The list of quotes provided are shown in the table below:

<b>Company/Organization</b>	<b>Price (including City Tax of 1.76%)</b>
Brennan Paving - Niagara	\$91,838
Hamilton Paving Inc.	\$89,040
Van Jon Paving Ltd.	\$90,821

Funding is to be committed from Capital Project - Maintenance Yard Enhancements: 10-810-18076, available remaining budget of \$294,798.

**OTHER DEPARTMENT IMPLICATIONS:**

Facilities will act as the project manager for the duration of the work as well as completing the painting of lines and walkways.

**SUMMARY AND CONCLUSION:**

Staff recommends Council to approve the qualified paving contractor to complete the project for the safety and operational concerns outlined in this report.

**ATTACHMENTS:**

APPENDIX A: Aerial Image of area to be completed

Appendix A:





**SPECIAL COUNCIL**  
**OFFICE OF CAO**  
**TRANSIT DIVISION**

APPROVALS	
DIRECTOR	[Signature]
CFO	[Signature]
CAO	[Signature]

21-13

**REPORT TRANS-2021-18**  
**NOVEMBER 23<sup>RD</sup>, 2021**

**SUBJECT:                            PROPOSED REDUCED SERVICE PLAN**

**AUTHOR:                            EDWARD ZAHRA, TRANSIT MANAGER**

**APPROVING DIRECTOR:    STEVE ZORBAS, CAO**

**RECOMMENDATIONS:**

THAT THE COUNCIL OF THE CITY OF WELLAND receives for information report TRANS 2021-18 – Reduced Service Plan; and further

THAT Welland City Council authorizes staff to implement the proposed plan if required.

**ORIGIN AND BACKGROUND:**

On October 19<sup>th</sup>, 2021, Welland City Council approved staff to put forward a Vaccination Policy for the protection of all employees from the COVID-19 virus. All employees were required to submit their vaccination status by November 19<sup>th</sup>, 2021, at 3:00 PM, to allow Management an opportunity to affect necessary changes to their operations.

**COMMENTS AND ANALYSIS:**

As aforementioned, Welland Transit is proactively considering the potential shortage in staff due to non-compliance with the Policy that becomes in effect as of December 2<sup>nd</sup>, 2021. According to the policy, employees who are either non-vaccinated, have been single vaccinated, or double vaccinated prior to the two-week, post vaccine period, must participate in rapid antigen testing to be in compliance with the policy.

In the event employees who are not vaccinated, do not participate in the testing component, a reduced service plan was developed to provide minimal impact to our customers and provide a consistent and reliable service. Without this reduction plan, reliability in deliverable service becomes unpredictable due to the cancellations that would transpire. Currently, overall ridership continues to hover at 31.5% of pre-COVID-19 levels.

The proposed plan effectively reduces service by 25% of that currently delivered by Welland Transit. This percentage was based off current statistics provided from City Staff of employees that have either not disclosed vaccination status, or those who have, but are unvaccinated.

With a customer focused service model, the proposed plan would see the following levels in comparison to the current service levels:

	Current Service Level		Proposed Reduced Service Level	
	Headway	Duration	Headway	Duration
Sunday	60 min	10:00 am - 6:00 pm	60 min	10:00 am - 6:00 pm
Weekday (M-F)	30 min	6:00 am - 11:00 pm	30 min 60 min 30 min 60 min	6:00 am - 10:00 am 10:00 am - 3:00 pm 3:00 pm - 7:00 pm 7:00 pm - 11:00 pm
Saturday	60 min 30 min*	6:00 am - 10:00 pm *Routes 506,508,509 operator 30 min service from 9:30 am - 6:00 pm	60 min	10:00 am - 6:00 pm

#### **FINANCIAL CONSIDERATION:**

Reducing overall service by 25% in turn reduces Operating expenses at the same rate, with the exception of regular scheduled maintenance of the fleet. Implementing the plan ahead of cancelling service ad-hoc, reduces the amount of anticipated overtime costs when efforts are made to provide the most amount of service to the customer base.

#### **OTHER DEPARTMENT IMPLICATIONS:**

N/A

#### **SUMMARY AND CONCLUSION:**

It is the recommendation from staff that Council approves the reduced service plan to go in effect from December 5<sup>th</sup>, 2021, and may continue into the 2022 service calendar pending compliance rates. Staff wish to ensure customers of Welland Transit are not adversely affected by decisions made by employees to be in non-compliance of the Council approved policy. In addition, this proactive approach allows staff to provide a consistent and reliable service to the ridership of Welland Transit. . It is assumed, in hopes, that all staff will be in compliance with the Vaccine Policy on or before the December 2<sup>nd</sup>, 2021, deadline, and the reduction in service is not required.

#### **ATTACHMENTS:**

Appendix A: 25% Reduced Service Schedule

Appendix A

Public Timetable

Route 501 - Outbound (Weekday)

Effective: 9/5/2021

	A.M.										P.M.	
DEPART WELLAND BUS TERMINAL	6:00	6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:30	11:30	12:30	1:30
OAKLAND AV & LINCOLN ST	6:10	6:40	7:10	7:40	8:10	8:40	9:10	9:40	10:40	11:40	12:40	1:40
ROACH AV & ST GEORGE ST	6:15	6:45	7:15	7:45	8:15	8:45	9:15	9:45	10:45	11:45	12:45	1:45
ARRIVE ONTARIO RD & IRON ST	6:19	6:49	7:19	7:49	8:19	8:49	9:19	9:49	10:49	11:49	12:49	1:49
DEPART WELLAND BUS TERMINAL	2:30	3:00	3:30	4:00	4:30	5:00	5:30	6:30	7:30	8:30	9:30	10:30
OAKLAND AV & LINCOLN ST	2:40	3:10	3:40	4:10	4:40	5:10	5:40	6:40	7:40	8:40	9:40	10:40
ROACH AV & ST GEORGE ST	2:45	3:15	3:45	4:15	4:45	5:15	5:45	6:45	7:45	8:45	9:45	10:45
ARRIVE ONTARIO RD & IRON ST	2:49	3:19	3:49	4:19	4:49	5:19	5:49	6:49	7:49	8:49	9:49	10:49

Public Timetable

Route 501 - Inbound (Weekday)

Effective: 9/5/2021

	A.M.										P.M.	
DEPART ONTARIO RD & IRON ST	6:20	6:50	7:20	7:50	8:20	8:50	9:20	9:50	10:50	11:50	12:50	1:50
KING ST & FOURTH ST	6:23	6:53	7:23	7:53	8:23	8:53	9:23	9:53	10:53	11:53	12:53	1:53
ARRIVE WELLAND BUS TERMINAL	6:27	6:57	7:27	7:57	8:27	8:57	9:27	9:57	10:57	11:57	12:57	1:57
DEPART ONTARIO RD & IRON ST	2:50	3:20	3:50	4:20	4:50	5:20	5:50	6:50	7:50	8:50	9:50	10:50
KING ST & FOURTH ST	2:53	3:23	3:53	4:23	4:53	5:23	5:53	6:53	7:53	8:53	9:53	10:53
ARRIVE WELLAND BUS TERMINAL	2:57	3:27	3:57	4:27	4:57	5:27	5:57	6:57	7:57	8:57	9:57	10:57

Public Timetable

Route 502 - Outbound (Weekday)

Effective: 9/5/2021

	A M											P M		
DEPART WELLAND BUS TERMINAL	6:00	6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:30	11:30	12:30	1:30		
BRIDLEWOOD DR & 10 BRIDLEWOOD DR	6:07	6:37	7:07	7:37	8:07	8:37	9:07	9:37	10:37	11:37	12:37	1:37		
ARRIVE CHIPPAWAYAN TR & NIAGARA COLLEGE	6:12	6:42	7:12	7:42	8:12	8:42	9:12	9:42	10:42	11:42	12:42	1:42		
DEPART WELLAND BUS TERMINAL	2:30	3:00	3:30	4:00	4:30	5:00	5:30	6:30	7:30	8:30	9:30	10:30		
BRIDLEWOOD DR & 10 BRIDLEWOOD DR	2:37	3:07	3:37	4:07	4:37	5:07	5:37	6:37	7:37	8:37	9:37	10:37		
ARRIVE CHIPPAWAYAN TR & NIAGARA COLLEGE	2:42	3:12	3:42	4:12	4:42	5:12	5:42	6:42	7:42	8:42	9:42	10:42		

**Public Timetable**

**Route 502 - Inbound (Weekday)**

**Effective: 9/5/2021**

	A M											P.M.		
DEPART CHIPPAWAYAN TR & NIAGARA COLLEGE	6:13	6:43	7:13	7:43	8:13	8:43	9:13	9:43	10:43	11:43	12:43	1:43		
RICE RD & THOROLD RD	6:20	6:50	7:20	7:50	8:20	8:50	9:20	9:50	10:50	11:50	12:50	1:50		
ARRIVE WELLAND BUS TERMINAL	6:27	6:57	7:27	7:57	8:27	8:57	9:27	9:57	10:57	11:57	12:57	1:57		
DEPART CHIPPAWAYAN TR & NIAGARA COLLEGE	2:43	3:13	3:43	4:13	4:43	5:13	5:43	6:43	7:43	8:43	9:43	10:43		
RICE RD & THOROLD RD	2:50	3:20	3:50	4:20	4:50	5:20	5:50	6:50	7:50	8:50	9:50	10:50		
ARRIVE WELLAND BUS TERMINAL	2:57	3:27	3:57	4:27	4:57	5:27	5:57	6:57	7:57	8:57	9:57	10:57		

**Public Timetable**

**Route 503 - Outbound (Weekday)**

**Effective: 9/5/2021**

	A M										P.M.	
DEPART WELLAND BUS TERMINAL	6:00	6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	11:00	12:00	1:00
FITCH ST & PRINCE COURT & PRINCE	6:05	6:35	7:05	7:35	8:05	8:35	9:05	9:35	10:05	11:05	12:05	1:05
FIRST AV & NORWAY AV	6:08	6:38	7:08	7:38	8:08	8:38	9:08	9:38	10:08	11:08	12:08	1:08
ARRIVE NIAGARA COLLEGE - WELLAND CAMPUS	6:14	6:44	7:14	7:44	8:14	8:44	9:14	9:44	10:14	11:14	12:14	1:14
DEPART WELLAND BUS TERMINAL	2:00	3:00	3:30	4:00	4:30	5:00	5:30	6:00	7:00	8:00	9:00	10:00
FITCH ST & PRINCE COURT & PRINCE	2:05	3:05	3:35	4:05	4:35	5:05	5:35	6:05	7:05	8:05	9:05	10:05
FIRST AV & NORWAY AV	2:08	3:08	3:38	4:08	4:38	5:08	5:38	6:08	7:08	8:08	9:08	10:08
ARRIVE NIAGARA COLLEGE - WELLAND CAMPUS	2:14	3:14	3:44	4:14	4:44	5:14	5:44	6:14	7:14	8:14	9:14	10:14

**Public Timetable**

**Route 503 - Inbound (Weekday)**

**Effective: 9/5/2021**

	A M										P.M.	
DEPART NIAGARA COLLEGE - WELLAND CAMPUS	6:15	6:45	7:15	7:45	8:15	8:45	9:15	9:45	10:15	11:15	12:15	1:15
NIAGARA ST & ELMVIEW ST	6:22	6:52	7:22	7:52	8:22	8:52	9:22	9:52	10:22	11:22	12:22	1:22
ARRIVE WELLAND BUS TERMINAL	6:27	6:57	7:27	7:57	8:27	8:57	9:27	9:57	10:27	11:27	12:27	1:27
DEPART NIAGARA COLLEGE - WELLAND CAMPUS	2:15	3:15	3:45	4:15	4:45	5:15	5:45	6:15	7:15	8:15	9:15	10:15
NIAGARA ST & ELMVIEW ST	2:22	3:22	3:52	4:22	4:52	5:22	5:52	6:22	7:22	8:22	9:22	10:22
ARRIVE WELLAND BUS TERMINAL	2:27	3:27	3:57	4:27	4:57	5:27	5:57	6:27	7:27	8:27	9:27	10:27



**Public Timetable**

**Route 504 - Outbound (Weekday)**

**Effective: 9/5/2021**

	A.M.										P.M.	
DEPART WELLAND BUS TERMINAL	6:00	6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	11:00	12:00	1:00
FITCH ST & OAK ST	6:08	6:38	7:08	7:38	8:08	8:38	9:08	9:38	10:08	11:08	12:08	1:08
ARRIVE WOODLAWN RD & 519 WOODLAWN RD	6:12	6:42	7:12	7:42	8:12	8:42	9:12	9:42	10:12	11:12	12:12	1:12
DEPART WELLAND BUS TERMINAL	2:00	3:00	3:30	4:00	4:30	5:00	5:30	6:00	7:00	8:00	9:00	10:00
FITCH ST & OAK ST	2:08	3:08	3:38	4:08	4:38	5:08	5:38	6:08	7:08	8:08	9:08	10:08
ARRIVE WOODLAWN RD & 519 WOODLAWN RD	2:12	3:12	3:42	4:12	4:42	5:12	5:42	6:12	7:12	8:12	9:12	10:12

**Public Timetable**

**Route 504 - Inbound (Weekday)**

**Effective: 9/5/2021**

	A.M.										P.M.	
DEPART WOODLAWN RD & 519 WOODLAWN RD	6:13	6:43	7:13	7:43	8:13	8:43	9:13	9:43	10:13	11:13	12:13	1:13
CALLA TR SOUTH & AQUADOR DR	6:21	6:51	7:21	7:51	8:21	8:51	9:21	9:51	10:21	11:21	12:21	1:21
ARRIVE WELLAND BUS TERMINAL	6:27	6:57	7:27	7:57	8:27	8:57	9:27	9:57	10:27	11:27	12:27	1:27
DEPART WOODLAWN RD & 519 WOODLAWN RD	2:13	3:13	3:43	4:13	4:43	5:13	5:43	6:13	7:13	8:13	9:13	10:13
CALLA TR SOUTH & AQUADOR DR	2:21	3:21	3:51	4:21	4:51	5:21	5:51	6:21	7:21	8:21	9:21	10:21
ARRIVE WELLAND BUS TERMINAL	2:27	3:27	3:57	4:27	4:57	5:27	5:57	6:27	7:27	8:27	9:27	10:27

**Public Timetable**

**Route 505 - Outbound (Weekday)**

**Effective: 9/5/2021**

	A.M.										P.M.	
DEPART WELLAND BUS TERMINAL	6:00	6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:30	11:30	12:30	1:30
EAST MAIN ST & 939 EAST MAIN ST	6:08	6:38	7:08	7:38	8:08	8:38	9:08	9:38	10:38	11:38	12:38	1:38
ARRIVE SUTHERLAND AV & COMMUNITY CARE	6:11	6:41	7:11	7:41	8:11	8:41	9:11	9:41	10:41	11:41	12:41	1:41
DEPART WELLAND BUS TERMINAL	2:30	3:00	3:30	4:00	4:30	5:00	5:30	6:30	7:30	8:30	9:30	10:30
EAST MAIN ST & 939 EAST MAIN ST	2:38	3:08	3:38	4:08	4:38	5:08	5:38	6:38	7:38	8:38	9:38	10:38
ARRIVE SUTHERLAND AV & COMMUNITY CARE	2:41	3:11	3:41	4:11	4:41	5:11	5:41	6:41	7:41	8:41	9:41	10:41

**Public Timetable**

**Route 505 - Inbound (Weekday)**

**Effective: 9/5/2021**

	A.M.										P.M.	
DEPART SUTHERLAND AV & COMMUNITY CARE	6:12	6:42	7:12	7:42	8:12	8:42	9:12	9:42	10:42	11:42	12:42	1:42
LINCOLN ST & 300 LINCOLN ST	6:17	6:47	7:17	7:47	8:17	8:47	9:17	9:47	10:47	11:47	12:47	1:47
ARRIVE WELLAND BUS TERMINAL	6:27	6:57	7:27	7:57	8:27	8:57	9:27	9:57	10:57	11:57	12:57	1:57
DEPART SUTHERLAND AV & COMMUNITY CARE	2:42	3:12	3:42	4:12	4:42	5:12	5:42	6:42	7:42	8:42	9:42	10:42
LINCOLN ST & 300 LINCOLN ST	2:47	3:17	3:47	4:17	4:47	5:17	5:47	6:47	7:47	8:47	9:47	10:47
ARRIVE WELLAND BUS TERMINAL	2:57	3:27	3:57	4:27	4:57	5:27	5:57	6:57	7:57	8:57	9:57	10:57

## Public Timetable

## Route 506 - Outbound (Weekday)

Effective: 9/5/2021

	A.M.										P.M.	
DEPART WELLAND BUS TERMINAL	6:00	6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	11:00	12:00	1:00
KING ST & SEVENTH ST	6:07	6:37	7:07	7:37	8:07	8:37	9:07	9:37	10:07	11:07	12:07	1:07
ARRIVE ONTARIO RD & SOUTHWORTH ST	6:14	6:44	7:14	7:44	8:14	8:44	9:14	9:44	10:14	11:14	12:14	1:14
DEPART WELLAND BUS TERMINAL	2:00	3:00	3:30	4:00	4:30	5:00	5:30	6:00	7:00	8:00	9:00	10:00
KING ST & SEVENTH ST	2:07	3:07	3:37	4:07	4:37	5:07	5:37	6:07	7:07	8:07	9:07	10:07
ARRIVE ONTARIO RD & SOUTHWORTH ST	2:14	3:14	3:44	4:14	4:44	5:14	5:44	6:14	7:14	8:14	9:14	10:14

## Public Timetable

## Route 506 - Inbound (Weekday)

Effective: 9/5/2021

	A.M.										P.M.	
DEPART ONTARIO RD & SOUTHWORTH ST	6:15	6:45	7:15	7:45	8:15	8:45	9:15	9:45	10:15	11:15	12:15	1:15
HAGAR ST & WELLINGTON ST	6:20	6:50	7:20	7:50	8:20	8:50	9:20	9:50	10:20	11:20	12:20	1:20
ARRIVE WELLAND BUS TERMINAL	6:27	6:57	7:27	7:57	8:27	8:57	9:27	9:57	10:27	11:27	12:27	1:27
DEPART ONTARIO RD & SOUTHWORTH ST	2:15	3:15	3:45	4:15	4:45	5:15	5:45	6:15	7:15	8:15	9:15	10:15
HAGAR ST & WELLINGTON ST	2:20	3:20	3:50	4:20	4:50	5:20	5:50	6:20	7:20	8:20	9:20	10:20
ARRIVE WELLAND BUS TERMINAL	2:27	3:27	3:57	4:27	4:57	5:27	5:57	6:27	7:27	8:27	9:27	10:27

## Public Timetable

## Route 508 - Outbound (Weekday)

Effective: 9/5/2021

	A.M.										P.M.		
DEPART WELLAND BUS TERMINAL	6:00	6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:30	11:30	12:30	1:30	
PRIMEWAY DR & WALMART	6:06	6:36	7:06	7:36	8:06	8:36	9:06	9:36	10:36	11:36	12:36	1:36	
ARRIVE SEAWAY MALL	6:12	6:42	7:12	7:42	8:12	8:42	9:12	9:42	10:42	11:42	12:42	1:42	
DEPART WELLAND BUS TERMINAL	2:30	3:00	3:30	4:00	4:30	5:00	5:30	6:30	7:30	8:30	9:30	10:30	
PRIMEWAY DR & WALMART	2:36	3:06	3:36	4:06	4:36	5:06	5:36	6:36	7:36	8:36	9:36	10:36	
ARRIVE SEAWAY MALL	2:42	3:12	3:42	4:12	4:42	5:12	5:42	6:42	7:42	8:42	9:42	10:42	

## Public Timetable

## Route 508 - Inbound (Weekday)

Effective: 9/5/2021

	A.M.										P.M.		
DEPART SEAWAY MALL	6:13	6:43	7:13	7:43	8:13	8:43	9:13	9:43	10:43	11:43	12:43	1:43	
RIVER RD & WOODLAWN RD	6:21	6:51	7:21	7:51	8:21	8:51	9:21	9:51	10:51	11:51	12:51	1:51	
ARRIVE WELLAND BUS TERMINAL	6:27	6:57	7:27	7:57	8:27	8:57	9:27	9:57	10:57	11:57	12:57	1:57	
DEPART SEAWAY MALL	2:43	3:13	3:43	4:13	4:43	5:13	5:43	6:43	7:43	8:43	9:43	10:43	
RIVER RD & WOODLAWN RD	2:51	3:21	3:51	4:21	4:51	5:21	5:51	6:51	7:51	8:51	9:51	10:51	
ARRIVE WELLAND BUS TERMINAL	2:57	3:27	3:57	4:27	4:57	5:27	5:57	6:57	7:57	8:57	9:57	10:57	



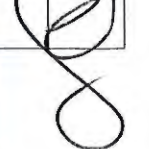
**Public Timetable****Route 509 - Outbound (Weekday)****Effective: 9/5/2021**

	A.M.										P.M.	
DEPART WELLAND BUS TERMINAL	6:00	6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	11:00	12:00	1:00
NIAGARA ST & ROGER DR	6:06	6:36	7:06	7:36	8:06	8:36	9:06	9:36	10:06	11:06	12:06	1:06
ARRIVE SEAWAY MALL	6:09	6:39	7:09	7:39	8:09	8:39	9:09	9:39	10:09	11:09	12:09	1:09
DEPART WELLAND BUS TERMINAL	2:00	3:00	3:30	4:00	4:30	5:00	5:30	6:00	7:00	8:00	9:00	10:00
NIAGARA ST & ROGER DR	2:06	3:06	3:36	4:06	4:36	5:06	5:36	6:06	7:06	8:06	9:06	10:06
ARRIVE SEAWAY MALL	2:09	3:09	3:39	4:09	4:39	5:09	5:39	6:09	7:09	8:09	9:09	10:09

**Public Timetable****Route 509 - Inbound (Weekday)****Effective: 9/5/2021**

	A.M.										P.M.	
DEPART SEAWAY MALL	6:10	6:40	7:10	7:40	8:10	8:40	9:10	9:40	10:10	11:10	12:10	1:10
NIAGARA COLLEGE - WELLAND CAMPUS	6:15	6:45	7:15	7:45	8:15	8:45	9:15	9:45	10:15	11:15	12:15	1:15
ARRIVE WELLAND BUS TERMINAL	6:27	6:57	7:27	7:57	8:27	8:57	9:27	9:57	10:27	11:27	12:27	1:27
DEPART SEAWAY MALL	2:10	3:10	3:40	4:10	4:40	5:10	5:40	6:13	7:13	8:13	9:13	10:13
NIAGARA COLLEGE - WELLAND CAMPUS	2:15	3:15	3:45	4:15	4:45	5:15	5:45	6:18	7:18	8:18	9:18	10:18
ARRIVE WELLAND BUS TERMINAL	2:27	3:27	3:57	4:27	4:57	5:27	5:57	6:30	7:30	8:30	9:30	10:30

**SPECIAL COUNCIL**  
**INFRASTRUCTURE SERVICES**  
**ENGINEERING DIVISION**

APPROVALS	
DIRECTOR	
CFO	
CAO	

05-114

**REPORT ENG-2021-31**  
**November 23, 2021**

**SUBJECT: HUNTER'S POINTE BOOSTER PUMPING STATION  
OPERATING AGREEMENT**

**AUTHOR: ERIK METSA, C.E.T.  
PROJECT MANAGER**

**APPROVING  
MANAGER: LIVIA MCEACHERN, P.ENG.  
MANAGER OF ENGINEERING**

**APPROVING  
DIRECTOR: SHERRI-MARIE MILLAR, P.ENG.  
DIRECTOR OF INFRASTRUCTURE SERVICES**

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**RECOMMENDATIONS:**

1. THAT THE COUNCIL OF THE CITY OF WELLAND enter into an agreement with the Niagara Region to operate the Hunter's Pointe Water Booster Pumping Station; and further
2. THAT Council directs staff to prepare the necessary by-law and documents to execute the operating agreement; and further
3. THAT Council authorizes the Mayor and Clerk to execute all necessary documents to execute the operating agreement.

**ORIGIN AND BACKGROUND:**

In the late 1990's, development was started in the northeast corner of the City of Welland with the construction of the Highlands Subdivision. The development has continued to grow through several phases of construction and is approaching full build-out.

Further to the receipt of applications for the Hunter's Pointe golf course and South Village developments, proposing an additional 1,400 units of primarily residential homes, the existing residents of the Highlands Subdivision expressed concerns about lower than desirable water pressure.

To that end, a water booster pumping station was constructed at 8 Daimler Parkway to address water pressure concerns and support additional development demands.



**COMMENTS AND ANALYSIS:**

The construction of the Hunter's Pointe Water Booster Pumping Station, by Bronte Construction Ltd. was formally commissioned on March 12<sup>th</sup>, 2021, and is currently under the one-year post-construction warranty period.

As agreed by the parties at the onset of the design phase, and as referenced in Council report ENG-2019-04, the City owned water booster pump station will be operated by the Niagara Region. Regional staff have the specific expertise needed to operate and maintain booster pumping stations and do so for other local area municipalities. The pump station is also connected to the Region's SCADA (Supervisory Control and Data Acquisition) monitoring system for continuous remote viewing of the operation.

An agreement (see Appendix II) detailing the roles and responsibilities of both the City and the Region regarding the ownership, operation and maintenance of the Hunter's Pointe Water Booster Pumping Station has been prepared for execution between the parties.

**FINANCIAL CONSIDERATION:**

The Region has agreed to operate the water booster pumping station for a fee of One Thousand Dollars (\$1000.00) per month plus the applicable HST as outlined in the attached Hunter's Pointe Water Booster Pumping Station Operating Agreement.

**OTHER DEPARTMENT IMPLICATIONS:**

The Niagara Region will operate and maintain the water booster pumping station however the City's Parks and Public Works divisions will be responsible for lawn maintenance and snow clearing around the building on a go forward basis.

The City's Legal Services division will provide assistance with the execution of the Operating Agreement and operating fee payments to the Region will be made with assistance from Financial Services staff.

**SUMMARY AND CONCLUSION:**

The City owns the Hunter's Pointe Water Booster Pumping Station at 8 Daimler Parkway, constructed to address water pressure concerns and support additional development demands in the Highlands Subdivision neighbourhood. The Niagara Region has the expertise and SCADA (Supervisory Control and Data Acquisition) support systems to effectively operate and maintain the water booster pumping stations and do so for several other local area municipalities.

Therefore, staff recommends that the City enter into an agreement with the Niagara Region for the operation of the Hunter's Pointe Water Booster Pumping Station.

**ATTACHMENTS:**

Appendix I – Location Plan

Appendix II – Hunter's Pointe Water Booster Pumping Station Operating Agreement





Legend

-  Parcels
-  Booster Station



# Hunter's Pointe Booster Pumping Station Appendix I - Location Plan

The information contained in this map may represent unintended errors or distortions of fact and the City of Welland (the City) makes no representations or warranties, express or implied, as to the accuracy or completeness of the data and all information should be verified independently. This map is not a legal plan of survey. Depictions of property lines and other features are provided for schematic purposes and should be used for reference only. No part of these drawings, or information, or hard copies made from them may be reproduced and/or distributed without written permission from the City.



**HUNTER'S POINTE WATER BOOSTER PUMPING STATION  
OPERATING AGREEMENT**

**THIS AGREEMENT** made as of the 1<sup>st</sup> day of November, 2021

**BETWEEN:**

**THE REGIONAL MUNICIPALITY OF NIAGARA**  
(the "Region")

and

**THE CORPORATION OF THE CITY OF WELLAND**  
(the "City")

(each, a "Party" and together, the "Parties")

**WHEREAS** the Corporation of the City of Welland is the owner of the lands legally described in Schedule "D" and known municipally as 8 Daimler Parkway (the "Lands");

**AND WHEREAS** the Ministry of the Environment and Climate Change Resources (formerly known as the Ministry of Environment, Conservation and Parks) on 26 July, 2018 issued to the City (including its successors and assignees) a Schedule C Authorization to Alter the Drinking Water System ("Authorization") under the City's Drinking Water Works Permit #076-201 ("Permit");

**AND WHEREAS** the Authorization includes approval for the construction of a water booster pumping station to service Hunter's Pointe and adjacent lands in the City of Welland (the "Station") subject to certain terms and conditions;

**AND WHEREAS** the City is the owner of the Station, located on the Lands;

**AND WHEREAS** the Parties wish for the Region, at the City's expense, to conduct all operational and maintenance requirements of the City's Permit and Municipal Drinking Water Licence #076-101 ("Licence") with respect to the Station, as further described in Schedule "E";

**AND WHEREAS** the Parties wish the City, at its own expense, to manage all agreed-upon capital improvements to the Station, in compliance with Applicable Law, the City's Licence and Permit, and the Region's Design Standards, as further described in Schedule "B";

**AND WHEREAS** the Parties wish the City, at its own expense, to conduct all grounds maintenance on the Lands, as further described herein;

**NOW THEREFORE** this Agreement witnesses that for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, and the mutual promises herein, the Parties agree as follows:

**ARTICLE 1**

**INTERPRETATION**

**1.1 Definitions**

In this Agreement and in the recitals and schedules hereto, unless there is something in the subject matter or context inconsistent therewith, the following words, terms and expressions shall have the following meanings:

- (a) "Applicable Law" means all applicable federal, provincial, municipal and other laws, statutes, regulations, by-laws and codes, now or hereafter in existence, having the force of law and as may be amended from time to time;

- (b) "Authorization" means the Authorization to Alter the Drinking Water System, issued as Schedule C to the City's Drinking Water Works Permit #076-201 ("Permit") by the Ministry of the Environment and Climate Change Resources (formerly known as the Ministry of Environment, Conservation and Parks) on 26 July, 2018, and attached hereto as Schedule "C";
- (c) "Capital Repairs" means any repair or replacement of Works with a value greater than One Thousand Dollars (\$1,000.00);
- (d) "Confidential Information" means materials, documents and information furnished to a Party under this Agreement and designated in writing as confidential upon such furnishing (or which was developed jointly by the Parties in relation to this Agreement and designated in writing by the Parties as confidential), whether written or oral, tangible or intangible and in whatever form or medium provided; provided that the term Confidential Information shall not include information or data if: (i) it was known by or already in the possession of the Party receiving such information or data without restriction, prior to its disclosure by the disclosing Party; (ii) it is lawfully obtained by the receiving Party from a third Party without restriction; (iii) it is developed by the receiving Party completely independent of any disclosure by a disclosing Party; or (iv) it is ascertainable from a commercially available product;
- (e) "Design Standards" means The Regional Municipality of Niagara's Water-Wastewater Project Design Manual, Revision 2, Effective August 2019, more particularly described in Schedule "B" attached hereto;
- (f) "Lands" means the property owned by the City and known municipally as 8 Daimler Parkway in the City of Welland in The Regional Municipality of Niagara and more particularly described in Schedule "D" attached to this Agreement;
- (g) "Licence" means the City of Welland's Municipal Drinking Water Licence #076-101 as issued by the Ministry of the Environment and Climate Change Resources (formerly known as the Ministry of Environment, Conservation and Parks) on 2 May, 2017, and attached hereto as Schedule "C";
- (h) "Operating Authority" means the Accredited Operating Authority, being The Corporation of the City of Welland, as further described in the Municipal Drinking Water Licence, as attached as Schedule "E",
- (i) "Permit" means the City of Welland's Drinking Water Works Permit #076-201 as issued by the Ministry of the Environment and Climate Change Resources (formerly known as the Ministry of Environment, Conservation and Parks) on 10 June, 2016 and attached hereto as Schedule "F";
- (j) "Primary Representative" means the Region's Associate Director, Water Operations & Maintenance and the City's Manager of Public Works, Public Works Division, Infrastructure Services;
- (k) "Services" means the services set out in section 4.1 and Schedule "A" of this Agreement;
- (l) "Station" means the water booster pumping station constructed on the Lands for the purpose of servicing Hunter's Pointe and adjacent lands in the City of Welland.
- (m) "Works" means the components of the Station as listed and described on pages 1 and 2 of the Authorization.

## **1.2 Interpretation Not Affected by Headings, Etc.**

Grammatical variations of any terms defined herein shall have similar meanings; words importing the singular meaning shall include the plural and vice versa; and

words importing the masculine gender shall include the feminine and neuter genders and vice versa. The division of this Agreement into separate Articles, Sections, Subsections, Paragraphs, and Subparagraphs, and the insertion of headings and references are for convenience of reference only and shall not affect the construction or interpretation of this Agreement.

### 1.3 Governing Law

This Agreement is governed by the laws of the Province of Ontario and the laws of Canada applicable therein. The Parties agree, subject to the provisions of Article 11 respecting dispute resolution, that any legal actions arising out of this Agreement must be commenced in the Regional Municipality of Niagara in the Province of Ontario.

### 1.4 Currency

Unless otherwise indicated, all dollar amounts referred to in this Agreement are in lawful money of Canada.

### 1.5 Schedules

The following schedules are attached to this Agreement and incorporated herein:

- Schedule "A" - List of Services
- Schedule "B" - Niagara Region's Water-Wastewater Project Design Manual
- Schedule "C" - Authorization to Alter the Drinking Water System, issued as Schedule C to the City's Drinking Water Works Permit #076-201 ("Permit")
- Schedule "D" - Description of Lands
- Schedule "E" - City of Welland's Municipal Drinking Water Licence #076-101("Licence")
- Schedule "F" - City of Welland's Drinking Water Works Permit #076-201, including the Authorization noted in Schedule "C"
- Schedule "G" - Description of Niagara Region's Labour and Equipment Rates
- Schedule "H" - Map of Benefitting Lands

## ARTICLE 2

### GRANT

#### 2.1 Grant of Rights to the Region

The City grants to the Region, upon and subject to the terms, covenants, limitations and provisions set out in this Agreement,

- (a) the non-exclusive right to enter the Lands for the purpose of providing the Services under this Agreement; and
- (b) the authority to carry out any and all work that the Region, in its discretion, determines is required at the Lands and on the Works for the Station in order to maintain compliance with both the Licence and Permit.

## ARTICLE 3

### TERM

#### 3.1 Term

The term of this Agreement shall commence on November 1, 2021 and shall continue for a period of five (5) years ending on October 31, 2026, unless terminated

sooner in accordance with the provisions of Article 10. The Agreement shall be reviewed relative to costs:

- (a) at the one year point; and/or
- (b) at time of reissuance of the City's Permit and/or Licence

and amended as may be required and agreed to by both Parties, with the possibility of extension if agreed to by both Parties.

#### **ARTICLE 4**

##### **THE SERVICES**

- 4.1 The Region shall perform the Operation and Maintenance services (the "Services") as further described in Schedule "A".
- 4.2 The Region may accept absorbing the costs of consumables; however, any equipment, replacement or repair shall be at the sole cost of the City.
- 4.3 Should the Region identify any required repairs, the Region will notify the City within a reasonable time period. Such repairs may be undertaken by the Region, and billed back to the City; or the City can use their discretion to perform the repairs themselves, at their sole cost.
- 4.4 The Region may be authorized to undertake emergency actions (excluding association regulatory reporting or Capital Repairs) as required to ensure continued operation of the Station; however the City is ultimately responsible to perform said emergency actions.
- 4.5 In order to fulfill its obligations under this Agreement, the City shall provide the Region with a 24 hour emergency contact listing to deal with matters involving contractors, suppliers and deficiencies.
- 4.6 In order to fulfill its obligations under this Agreement, the City shall perform all maintenance of the Lands surrounding the Station, including but not limited to grass-cutting and snow removal.

#### **ARTICLE 5**

##### **COMPENSATION**

##### **5.1 Fees for Services – Routine Operations**

- (a) The City shall pay to the Region fees in the amount of One Thousand Dollars (\$1,000.00)/month plus the applicable HST as compensation for the Services performed by the Region under Section 4.1, and more specifically described in Schedule "A" of this Agreement.
- (b) Invoices shall be paid by the City to the Region on a monthly basis. Each monthly payment shall be received by the Region within thirty (30) days of the day the Invoice to be provided by the Region to the City is given pursuant to the Notice provisions of section 12.4.
- (c) Third-Party billings for Station utilities shall be issued by the third Party provider directly to the City for payment.

##### **5.2 Fee Calculations – Routine Operations**

- (a) The monthly costs as set out in Section 5.1 above, shall include payment for completion of Services as outlined in Section 4.1, and more specifically described in Schedule "A" of this Agreement. These payments represent payment for all such services and include, but are not limited to:
  - i. Required labour;
  - ii. Required equipment;
  - iii. Required materials;

- iv. Disbursements; and
- v. Harmonized Sales Tax ("HST")

### **5.3 Fees for Services – Emergency Actions**

- (a) The City shall pay to the Region fees calculated in accordance with Schedule "G" plus the applicable HST as compensation for any emergency actions performed by the Region under this Agreement.
- (b) Invoices for emergency actions shall be prepared by the Region and submitted to the City following completion of an emergency response.
- (c) Invoices shall be paid by the City to the Region on a monthly basis. Each monthly payment shall be received by the Region within thirty (30) days of the day the invoice to be provided by the Region to the City is given pursuant to the Notice provisions of Section 12.4.
- (d) The Region undertakes to use best efforts to mitigate emergency expenditures.

## **ARTICLE 6**

### **CITY'S OBLIGATIONS**

#### **6.1 Municipal Drinking Water Licence and Drinking Water Works Permit**

- (a) In addition to its obligations under Article 5 and elsewhere in this Agreement, the City shall comply with the applicable provisions of its Permit and Licence.
- (b) At all times, the City shall remain the Operating Authority of the drinking water system, in accordance with the Permit and Licence.
- (c) As noted in Section 4.6 above, the City shall be responsible for all maintenance of the Lands surrounding the Station.

## **ARTICLE 7**

### **MUTUAL OBLIGATIONS**

#### **7.1 Compliance with Laws**

The City and the Region shall observe, abide and comply promptly with all Applicable Law and with all requirements of all municipal and licensing authorities, including but not limited to, the Ministry of the Environment and Climate Change Resources (formerly known as the Ministry of Environment, Conservation and Parks), the Ministry of Labour, Training and Skills Development, and all other lawful authorities respecting the Services to be provided by the Region under this Agreement, and more specifically, both Parties shall comply with the Licence and Permit as those documents apply to the responsibilities of each of the Parties pursuant to the Agreement.

#### **7.2 Reporting of Adverse Water Quality Incidents**

- (a) The Region shall promptly report to the City any known or suspected water quality issue identified in the course of completing Services performed under Section 4.1, and more specifically described in Schedule "A" of this Agreement.
- (b) The City shall hold all responsibility for reporting Adverse Water Quality Incidents as per the requirements of Applicable Law and municipal and licensing authorities as noted in Section 7.1 of this Agreement.

#### **7.3 Review of Agreement**

- (a) At the end of each Operating Year, or when a new Licence or Permit is issued to the City, the Region and the City shall meet to review the provisions of this Agreement. Such meeting shall be coordinated by the City of Welland.

- (b) Both Parties agree to negotiate in good faith the changes to the Agreement recommended as a result of this review but neither Party shall be obligated in advance to agree to any particular change.
- (c) Unless the Parties agree otherwise in writing, for the duration of the review of this Agreement, the terms and conditions of this Agreement shall remain in force and effect.

## ARTICLE 8 INSURANCE

### 8.1 Insurance

- a) Both Parties shall, at each Party's sole cost and expense, maintain insurance coverage which the City and the Region mutually agree to be appropriate for the Region to carry out its obligations under this Agreement. At a minimum, each Party shall carry FIVE MILLIONS DOLLARS (\$5,000,000.00) of commercial general liability insurance and shall have their policy endorsed to add the other Party as an Additional Insured, providing proof of same on a certificate of insurance at time of signing of this Agreement.
- b) Both Parties shall, at each Party's sole cost and expense, maintain Automobile Insurance (OAP1) for both owned and leased vehicles with inclusive limits of not less than TWO MILLION DOLLARS (\$2,000,000). Coverage must also apply in the event the operations of the insured resulted in a pollution condition including remediation costs.
- c) Niagara Region shall maintain Property Insurance upon all improvements and contents owned by Niagara Region or for which Niagara Region is legally liable, or which is installed by or on behalf of Niagara Region, and which is located in or about the Station including, but not limited to, fittings, installations, alterations, additions, partitions, trade fixtures, and anything in the nature of a Niagara Region improvement as well as Niagara Region's furniture and contents in an amount of no less than full replacement cost.
- d) The City shall maintain All Risk property insurance coverage for property of every description and kind owned or leased by the City or for which the City is legally liable for the purpose of this agreement including, without limitation, the Station, inventory, stock in trade, fixtures, furniture and equipment and other improvements in an amount sufficient to cover the full replacement cost thereof. Such insurance shall include an Extra Expense and Additional Increase in Cost of Working Business Interruption policy. The policy will include an agreement by the insurer(s) to waive their rights to a claim, action, counterclaim or crossclaim against Niagara Region with respect to damage to property owned or leased by the City.

## ARTICLE 9 INDEMNITIES

### 9.1 Indemnity by the City

Save for negligence, the City shall indemnify and save harmless the Region, its elected officials, officers, employees, contractors and agents from and against all claims, orders and charges and all costs and expenses including legal fees and disbursements (including all legal fees and disbursements in connection with any and all appeals) arising in any way out of the design or performance or non-performance of the Station in this Agreement. Without limiting the generality of the foregoing, such claims include:

- (a) all claims for personal injury or death;
- (b) all claims in respect of damage to real or personal property;
- (c) all claims relating to any infringement of any right or privilege; and
- (d) all claims, orders, and charges with respect to non-compliance with the City's obligations as the Drinking Water System Owner and Operating Authority under the Licence and/or Permit.

## 9.2 Indemnity by the Region

Save for negligence, the Region shall indemnify and save harmless the City, its elected officials, officers, employees, contractors and agents from and against all claims, orders and charges and all costs and expenses including legal fees and disbursements (including all legal fees and disbursements in connection with any and all appeals) arising from the Region's breach of this Agreement or Region's negligent provision of the Services. Without limiting the generality of the foregoing, such claims include:

- (a) all claims for personal injury or death;
- (b) all claims in respect of damage to real or personal property;
- (c) all claims relating to any infringement of any right or privilege; and
- (d) all claims, orders, and charges with respect to non-compliance with the Region's Licence and/or Permit;

which arise out of the Services provided by the Region at the Station.

## ARTICLE 10

### TERMINATION

#### 10.1 Early Termination

Either Party may terminate this Agreement by providing one hundred and twenty (120) days' written notice to the other Party.

#### 10.2 Survival on Termination

Notwithstanding termination of this Agreement pursuant to this Article 10, the rights and obligations which have accrued or arisen hereunder prior to the time of such termination or which directly result from such termination shall continue and shall not be affected or prejudiced thereby and such rights and obligations including the provisions of Article 9 of this Agreement, shall survive such termination and shall apply, mutatis mutandis, to the Parties and to the Station.

#### 10.3 Accord and Satisfaction

No action taken by the Region or receipt by the Region of any payment which would have been authorized under this Agreement, after the effective date of termination of this Agreement, shall be construed to revive this Agreement or nullify such termination.

## ARTICLE 11

### DISPUTE RESOLUTION

#### 11.1 Dispute Resolution

The Region's Associate Director, Water Operations & Maintenance and the City's Manager of Public Works, Public Works Division, Infrastructure Services are

designated as Primary Representatives for resolution of disputes relevant to this Agreement.

If a dispute occurs between the Parties concerning any matter governed by this Agreement, the Primary Representative of the Party raising the dispute shall promptly advise the Primary Representative of the other Party in writing, and the two Primary Representatives shall work together and use all reasonable efforts to resolve the dispute.

If the Primary Representatives are unable to resolve the dispute informally within five (5) business days of it being referred to them, the dispute shall be forwarded in writing to the Region's Commissioner of Public Works and the City's Director of Infrastructure Services for resolution. Using direct communications, the Commissioner and Director will have fifteen (15) business days from the matter being referred to them to resolve the dispute.

If the Commissioner and Director do not resolve the dispute, the dispute may, with the consent of both Parties, be referred to and finally resolved by arbitration under the *Arbitration Act, 1991*, S.O. 1991, c. 17, as amended. The place of arbitration will be located within The Regional Municipality of Niagara, in the Province of Ontario.

## ARTICLE 12

### GENERAL PROVISIONS

#### 12.1 Confidentiality

Subject to the obligations of each of the City and the Region under the *Municipal Freedom of Information and Protection of Privacy Act*, R.S.O. 1990, c. M.56, as amended, and for the duration of this Agreement and following the Term of this Agreement, each Party shall, except with the prior written consent of the other Party:

- (a) not use or disclose to any other person or entity any Confidential Information disclosed by any Party, except as necessary for the performance of their respective responsibilities under this Agreement; and
- (b) limit access to all Confidential Information disclosed by any Party to such employees, agents, consultants, affiliates, lenders and advisors as have a direct need to know in connection with this Agreement.

#### 12.2 Disclaimer of Partnership

The Parties disclaim any intention to create a partnership or to constitute either of them the agent of the other. Nothing in this Agreement shall bind the Parties or any of them as partners or agents nor, except as may be expressly provided in this Agreement, constitute any of them the agent of the other Party. No Party shall be, or by reason of any provision herein contained be deemed to be, the agent or legal representative of the other Party whether for purposes of this Agreement or otherwise, nor shall either Party have any power or authority to act for, or assume any obligations or responsibility on behalf of, the other Party.

#### 12.3 Force Majeure

Neither Party shall be responsible for delays or non-performance of this Agreement resulting directly or indirectly from impediments beyond its reasonable control (other than financial inability or by application of Applicable Law), including without limitation, any delay caused by fire, pandemic, or other impediment beyond the reasonable control of such Party and not caused by an act or omission of such Party, provided in the event of such delay or non-performance, the Party continues to act reasonably to resolve such delay or non-performance.



**12.4 Notices**

Any notice, direction, request or document required or permitted to be given by either Party to the other in writing shall be deemed to have been sufficiently and effectually given if delivered by hand or by prepaid registered mail at the addresses provided for below during normal business hours, or sent by electronic mail ("email") transmission to the addresses shown below.

the City at:

The Corporation of the City of Welland  
60 East Main Street, Welland, Ontario, L3B 3X4  
Attention: Director of Infrastructure Services  
Email: [sherri-marie.millar@welland.ca](mailto:sherri-marie.millar@welland.ca)

the Region at:

The Regional Municipality of Niagara  
3501 Schmon Parkway, P.O. Box 1042  
Thorold, Ontario, L2V 4T7  
Attention: Director, Water & Wastewater Services  
Email: [joseph.tonellato@niagararegion.ca](mailto:joseph.tonellato@niagararegion.ca)

or to such other address of a Party as it shall specify to the other Parties by written notice given in the manner aforesaid. Any such notice, direction, request, document or payment shall be deemed to have been given to and received by the Party to whom it is addressed if:

- (a) delivered, on the date of delivery;
- (b) mailed, on the fifth day after the mailing thereof;
- (c) email transmission before 4:00 p.m., on the date of email transmission; and
- (d) email transmission after 4:00 p.m., on the date following email transmission.

**12.5 Waiver**

No consent or waiver, expressed or implied, by a Party to or of any breach or default by another Party in the performance by such other Party of its obligations hereunder shall be deemed or construed to be a consent or waiver to or of any other breach or default in the performance by such other Party hereunder. Failure on the part of a Party to complain of any act or failure to act of another Party or to declare another Party in default, irrespective of how long such failure continues, shall not constitute a waiver by such first-mentioned Party of its rights hereunder.

**12.6 Amendments**

This Agreement may not be modified or amended except with the written consent of both Parties.

**12.7 Further Assurances**

The Parties hereto agree that they will from time to time at the reasonable request of the other Party execute any documents and take such further action as may be required to accomplish the purposes of this Agreement.

**12.8 Successors and Assigns / Assignment**

This Agreement shall enure to the benefit of and be binding upon the Parties and their respective permitted assigns and successors, which shall mean any successor to either of the Parties in accordance with any legislation providing for same. Neither this Agreement nor any rights or obligations hereunder shall be assignable by any Party without the prior written consent of the other Party.

**12.9 Time**

Time shall be of the essence of this Agreement. Any time limits specified in this Agreement may be extended with the consent in writing of both the City and the

Region, but no such extension of time shall operate or be deemed to operate as an extension of any other time limit, and time shall be deemed to remain of the essence of this Agreement notwithstanding any extension of any time limit.

**12.10 Severability**

In the event that any term, condition, or provision contained in this Agreement shall be determined invalid, unlawful or unenforceable to any extent, such term, condition or provision shall be severed from the remaining terms, conditions and provisions, which shall continue to be valid to the fullest extent permitted by law.

**12.11 Counterparts**

This Agreement may be executed in counterparts, the counterpart copies of this Agreement together constituting a full, valid, and binding Agreement among the Parties hereto.

**IN WITNESS WHEREOF** the Parties hereto have duly executed this Agreement.

DATED at Welland, this          day of                                  , 2021.

**THE CORPORATION OF THE CITY OF WELLAND**

Per: \_\_\_\_\_  
Name: Tara Stephens  
Position: Clerk

Per: \_\_\_\_\_  
Name: Frank Campion  
Position: Mayor

I/We have the authority to bind the corporation.

DATED at Thorold, this          day of                                  , 2021.

**THE REGIONAL MUNICIPALITY OF NIAGARA**

Per: \_\_\_\_\_  
Name: Bruce Zyaniga, P. Eng.  
Position: Commissioner Public Works

I have the authority to bind the corporation

## Schedule "A"

## Services/Task List for Hunters Pointe

**Booster Station.****Monthly Remote Station Inspection (Maintenance)**

- Check perimeter of property for security breaches
- Check condition of fence Check building lighting (indoor and outdoor)
- Check building (man doors, garage doors, windows, etc. lubricate if necessary)
- Inspect exterior of building (check for loose or damaged eaves trough, paint deterioration, correct signage, etc.)
- Test any flood alarms, security alarms etc.
- If maintenance staff corrects/repairs a deficiency found as a result of this inspection, any work up to 1 hour can be attributed to this work order If additional manpower, work longer than 1 hour or tech trades are needed please create a work request or ad hoc form.

**Monthly Remote Station Safety Check (Maintenance)**

- 1. Emergency lighting – check to ensure emergency lighting exists and that it is working.
- 2. Facility general lighting (outdoor and indoor) – check to ensure it exists and that it is working.
- 3. Fire Extinguisher – check that it is in place, pin intact, gauge indicates full and sign the inspection tag if it hasn't been signed in the last month.

**Biweekly Station Inspection (Maintenance)**

- Inspect Station and Grounds for general state of repair and identify any issues requiring immediate attention.

**Monthly Remote Auxiliary Power Run Test (Maintenance)****NOTE: GENSET IS NATURAL GAS**

- Notify the Operator-In-Charge prior to running the standby generator to obtain permission and coordinate testing activities.
- Refer to the Generator Checklist located at the station for specific instructions.
- Prior to running the generator, the following checks shall be completed:
- Oil Level
- Cooling System Level
- Water Level in Batteries (use only distilled water) – where applicable
- Visual Inspection (fluid puddles, loose components, bare wiring, etc.)
- Initiate starting the diesel generator by isolating utility power – by either placing the generator in test mode or by tripping the main power disconnect or transfer switch.
- After a short interval the 'transfer switch' will activate and the generator will start.

- If the generator will not start, return to utility power and immediately notify the Area Operations and Maintenance Managers.
- Once the generator has started and come to full speed, the OIC should return the station to its normal operations on standby power.
- The generator should run under load for a minimum of two hours.
- During the generator run, the following checks shall be completed – where applicable:
  - Listen for any unusual noises
  - Oil Pressure
  - Oil Temperature
  - Water Temperature
  - Exhaust Temperature
  - Hours (Runtime)
  - RPM's and Voltages
  - Frequencies
- Note: If at any time the operation fails to function according to the applicable procedure, contact the Maintenance Manager immediately. This will ensure that the situation will be addressed and any alternative actions are taken in a timely manner.
- After two hours, return to utility power.
- Once on utility power the generator will continue to run for a short period of time. (Cool Down)
- Initial and date the generator test sheet.
- Inventory any spare parts and supplies stocked at the station (ex. Coolant, belts, filters etc.)
- Record all results on the Genset check list in the log book
- Notify the Operator-In-Charge to coordinate the returning of station to utility power

#### **Semi-annual PRV/Valve Inspection and Service (Maintenance)**

- Isolate pilot system and remove screen for cleaning
- Flush pilot system
- Inspect valve for any damage
- Coordinate with operations to allow for the exercising of the valve. Using the pilot system force valve partially open to bring it off of its seat. Valve only needs to open approx. 10% for 10-20 seconds
- Exercise any hand operated valves by bringing them off of seat. (10-20% of operating range)

#### **Annual Remote Station Winter Prep**

- Check for proper functioning of all unit heaters, adjust set points for thermostats where applicable - ensure heat trace wire is functioning and enabled.
- Switch heating/cooling systems from summer mode to winter mode.
- Check perimeter of property for security breaches
- Check condition of fence and gate
- Check building lighting (indoor and outdoor)
- Check for overgrown trees and/or shrubs

- Test any flood alarms, security alarms etc.
- Check building (man doors, garage doors, windows, etc. lubricate if necessary) Inspect exterior of building (check for loose or damaged eaves trough, paint deterioration, correct signage, etc.)
- Check proper functioning of UPS
- Notify the Operator-in-Charge when task is completed Include any additions, omissions or revisions to this document
- If staff complete any additional work other than PM related tasks, a 'CMMS Ad Hoc Work Record' shall be filled out
- If it is discovered that additional work is required to be performed, which staff is unable to complete, a Work Request Form shall be filled out
- **\*\*Check expiration date on emergency eyewash bottles where applicable\*\***

#### **Annual Remote Station Summer Prep**

- Check for proper functioning of all unit heaters, adjust set points for thermostats. Where applicable - ensure heat trace wire is functioning and enabled.
- Switch heating/cooling systems from winter mode to summer mode.
- Check perimeter of property for security breaches
- Check condition of fence and gate
- Check building lighting (indoor and outdoor)
- Check for overgrown trees and/or shrubs
- Test any flood alarms, security alarms etc.
- Check building (man doors, garage doors, windows, etc. lubricate if necessary) Inspect exterior of building (check for loose or damaged eaves trough, paint deterioration, correct signage, etc.)
- Check proper functioning of UPS
- Notify the Operator-in-Charge when task is completed Include any additions, omissions or revisions to this document
- If staff complete any additional work other than PM related tasks, a 'CMMS Ad Hoc Work Record' shall be filled out
- If it is discovered that additional work is required to be performed, which staff is unable to complete, a Work Request Form shall be filled out
- **\*\*Check expiration date on emergency eyewash bottles where applicable\*\***

#### **Operational Checks (Daily or a minimum of 3 times per week)**

- Certified operator will visit station to do a general inspection of pumps/valves and equipment
- Listen for any abnormal pump noises
- Check for water leaks
- Visual inspection of station
- Check perimeter of property for security breaches
- Record inspection in station log book
- Report any findings to the operations and/or maintenance manager for immediate follow up





WATER-WASTEWATER PROJECT DESIGN MANUAL  
(ENG-PM-ALL-MAN-001)

REVISION 2  
EFFECTIVE AUGUST 2019

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## Introduction

The Water and Wastewater Services of Niagara Region have developed this Project Design Manual as a guide for staff and consulting engineers involved in the implementation of water and wastewater capital works projects within the Niagara Region. This manual provides design preferences and guidelines that must be used as minimum requirements of Niagara Region. Design consulting engineers shall ensure all applicable legislations, codes, bylaws and standards are met for the project along with design preferences described within this document. Niagara Region encourages all designers to utilize sound professional judgment, industry best practices, innovation, creativity and ingenuity within their designs.

Any project specific deviations to this manual shall be discussed and approved by Niagara Region staff prior to implementation.

## SECTION A - GENERAL

### A.1 Document Scope

This document is intended to be used for all water and wastewater projects implemented by the Capital Works Program of the Public Works Department of Niagara Region. Niagara Region expects that all staff and design consulting engineers will comply with the design preferences described within this manual unless otherwise noted within the specific project Terms of Reference or unless written approval has been received from Niagara Region.

This document does not supersede or replace any effective legislation standards and regulations governing the design of water and wastewater infrastructure.

### A.2 Reference Documents

This document is intended to be read in conjunction with the latest version of the following Niagara Region documents:

1. *Niagara Region Water and Wastewater Master Servicing Plan*
2. *Niagara Region Water and Wastewater Security Technical Specifications*
3. *Regional Municipality of Niagara Integrated SCADA Standards Manual*
4. *Niagara Region Biosolids Management Master Plan*
5. *Niagara Region Water and Wastewater Services Commissioning Guideline*
6. *Niagara Region Water and Wastewater Services Specification for Maintenance Hole Rehabilitation.*
7. *Niagara Peninsula CAD Standards*
8. *Niagara Peninsula Standard Contract Documents (NPSCD)*
9. *Niagara Region's Approved Product and Equipment List (APEL)*
10. *Niagara Region Water and Wastewater Operations Manual template*
11. *Niagara Region Chemical System Design Standard*
12. *Niagara Region Filter Media Replacement Specification*
13. *Niagara Region Water and Wastewater Services Working at Heights Procedure*
14. *Niagara Region Lighting Standards*
15. *Niagara Region's Standard Operating Procedure for Turbidity*
16. *Niagara Region's Quality Management System*
17. *Niagara Region Policy for Lettering on Steel Water Storage Tanks and Stand Pipes*
18. *Niagara Region Sewer Use Bylaw*



### A.3 Designer Responsibilities

Design of water and wastewater infrastructure shall comply with the latest version of all applicable acts, codes, bylaws, regulations, guidelines and standards including Niagara Region's *Drinking Water Quality Management System* and *Wastewater Quality Management System*.

All sections of the Project Design Manual (PDM) are related, and each section of the PDM is not necessarily complete in itself. The Designer shall read each section, in conjunction with all other sections, to ensure a complete design, and that all project requirements are met.

#### A.3.1 Approvals and Permits

The designer will be responsible for the preparation of all applicable approval/ permit applications necessary to construct the facility (including initial submission, follow-up and securing of all approvals and permits).

#### A.3.2 Non-Compliance with Design Manual

If the designer deems that deviation from this manual is in the best interest of the project, then the designer is required to make a formal request to Niagara Region's Project Manager with a memorandum identifying the deviations with an explanation of the benefits to the project.

#### A.3.3 Level of Service and Backup (Redundant) Equipment

The level of redundancy for process and equipment shall be in compliance with regulatory objectives, generally with sufficient backup devices to be able to meet peak instantaneous demand following failure (or maintenance) of one largest capacity unit. The designer shall ensure that the flow to any treatment process unit out-of-service can be routed to remaining units in service with minimum impact on their performance.

#### A.3.4 Risk Assessment

The designer is expected to complete and maintain a risk assessment in the form of a risk register which includes, but is not limited to, the following information.

1. List of all potential risks with unique identification number
2. Date risk was identified
3. Description of risk
4. Type of risk (safety, environmental, financial, social, contractual, technical, schedule, liability, etc.)
5. Stage at which project risk may occur
6. Evaluation of the probability/ likelihood and impact/ consequence of the risk
7. Ranking of the risks
8. Description of potential mitigation measures (accept, avoid, transfer, reduce)

## 9. Final decisions and status of risk

10. The risk analysis shall address the following questions.

- a) What is the criticality of each asset that is to be taken out of service?
- b) Is the facility to remain in operation while the upgrades are taking place?
- c) What contingency plans will be implemented to mitigate the risks?
- d) What costs are associated with each contingency plan?

A risk analysis meeting involving all potentially affected parties shall be required. The designer shall determine if the area municipality(ies) can be considered to be potentially affected party(ies).

### A.3.5 Hazard and Operability Review

The designer is required to complete the Hazard and Operability Review (HAZOP), which is a systematic, critical examination of the process and engineering design of the facility/ plant. The designer will audit this review through workshops at specified stages of the project. The intent of the review is to assess the potential hazard of the failure of individual equipment and the consequential effects on the facility as a whole and its potential for negative impact on the environment. The HAZOP review will identify potential hazards associated with the operation of the facility/ plant and will provide recommendations to be incorporated into the design reports relating to the following.

1. Finished water quality
2. Effluent water quality
3. Hydraulic overload
4. Emergency overflows
5. Module by-pass
6. Equipment hazards
7. Equipment failure hazards
8. Odour hazards
9. Health and safety review
10. High/low nutrient load
11. Spills to the environment
12. Specific hazards for elevated tanks

### A.3.6 Health and Safety

In addition to current health and safety guidelines and regulations, Niagara Region has the following requirements for all water and wastewater projects:

1. Roofing designs must include requirements for anchors tie-offs, or other approved means of fall restraint and fall arrest.
2. A general requirement to design facilities to eliminate confined spaces. Where the design cannot eliminate all confined spaces, all reasonable efforts must be made to reduce the quantity of confined spaces and hazards within any confined space. The space must be designed for ease of ingress, prompt egress, and have appropriate fall arrest and retrieval safeguards.
3. To allow Niagara Region to update its Confined Space Entry database accordingly.
4. Under the Health & Safety Review requirement, Niagara Region's Project Manager will coordinate with the Water/Wastewater Health & Safety Coordinator who will be involved in the design review process.
5. Access hatches to be designed with secondary fall protection grating and have four-sided protection.
6. Designs must address travel restriction, fall restriction and fall arrest for work that may be required while working at heights.
7. Designs must identify how Niagara Region's operation and maintenance staff will be protected.
8. Hazardous gas monitoring in potentially hazardous areas shall be conducted using personal, portable devices.
9. Electrical safety considerations must be made according to all applicable acts, codes, standards, and guidelines.
10. Adequate designs must integrate lock-out/tag-out requirements for all sources of energy. The location of disconnects shall be in the most logically safe location for access and operation.
11. Designs must mitigate excessive noise to the environment and to workers.
12. Where possible, designs must identify atmospheric hazards, assess these hazards with respect to incompatible emissions, and provide adequate ventilation.
13. Emergency eyewash and deluge shower stations shall be provided in the vicinity of the chemical storage areas or other potential exposure risks. The water supply should be tepid water and be compliant with American National Standards Institute (ANSI) Standard Z358.1. The water supply and eyewash/ shower facilities shall be protected from freezing.
14. With respect to the area and function of the environment, designs must provide for adequate illumination for worker safety.
15. A Designated Substance Survey (DSS) must be conducted during the design phase.
16. Prior to final commissioning, conduct Pre-Start Health and Safety Reviews as required as per Ontario regulations.

### A.3.7 Security

All water and wastewater facilities shall be designed to comply with the requirements of the Niagara Region Water and Wastewater Security Technical Specifications.

1. This shall apply to perimeter fences and gates, site property and access roads, doors, windows, access hatches, ventilation louvers, overflows and outfall sewers.
2. Site specific considerations from the local municipality must also be followed.

### A.3.8 Tender Documents

All tenders for construction will be based on the *NPSCD*. The front end of the tender document will be prepared using the latest version of Niagara Region's standard template at the time of preparation. No deviations from the standard template will be permitted without the express approval of the Project Manager and Procurement Department. In all instances the current version of the NPSCD specification sections to be included in the Tender documents and not merely referenced. In all instances the Tender Documents will contain all relevant sections and specifications and not refer to outside or third party documents.

For linear projects, Special Provisions – Contract Items (SPCI) in the *NPSCD* shall be used. Where there is no specific item specification in the SPCI, or a specification requires modification, the designer will provide the required specification, or modification, in the Special Provisions – Contract Items Supplementary (SPCIS) section.

For facility projects, a combination of SPCI, SPCIS and *Canadian National Master Construction Specification (NMS)* (16 Divisions) are to be used.

For facility and linear projects a combination of the above standards will be required.

The designer shall prepare a commissioning plan as per the *Niagara Region Water and Wastewater Services Commissioning Guidelines*, which shall be included in the tender documents.

### A.3.9 Operations Manual

The Operations Manual is a written description that provides a basis for operator training, highlighting the operation of the facility and describing the function of the facility and all associated processes. The designer shall prepare, or update, the Operations Manual in accordance with the latest version of the *Niagara Region Water and Wastewater Operations Manual template*.

### A.3.10 Energy Efficient Design

The design of any new system, building, or unit process should consider alternatives to reduce energy costs while still meeting overall objectives for operations, performance and longevity. Wherever practical and cost-effective, these ideas should be incorporated into the design.

The designer will include an energy audit benchmark for the consumption of existing equipment and unit processes to evaluate potential energy savings of an upgrade or retrofit.

The designer will select equipment and vendors that meet the performance specifications while having lower energy consumption requirements.

Refer to Section C for specific energy efficient design approaches pertaining to wastewater treatment plants.

## A.4 Design Disciplines

### A.4.1 General

The main components of facilities shall be designed for the following minimum service life targets.

Item Description	Minimum Service Life(years)
Structures	100 (post disaster)
Piping and Fittings	>80
Pumps	25
Valves	25
Paints and Coating Systems	25
Electrical	15
Controls and SCADA	10

Niagara Region Integrated Services Group will review shop drawings during the construction phase for electrical, control and SCADA equipment.

### A.4.2 Civil

#### A.4.2.1 Design Vision

Buried infrastructure shall efficiently convey water and wastewater, and its installation and maintenance shall have minimal long-term negative impacts on the existing landscape once restoration is complete.

#### A.4.2.2 Design Basis

Buried infrastructure shall be designed to meet *Ministry of the Environment Conservation and Parks (MECP) Guidelines*, to be structurally sound subject to all dead and live loading, to be capable of withstanding all thrust forces and surge and transient pressures and burial depths, and to minimize maintenance requirements. Buried infrastructure shall consist of suitable materials as specified in this manual.



#### A.4.2.3 System Layout

Buried infrastructure shall be located within the public right-of-way and shall not conflict with area municipality infrastructure or with buried utilities.

Buried infrastructure on Niagara Region property shall be located so as not to hinder future expansion of facility operations, shall be accessible for repairs or maintenance when required and shall not conflict with existing buried infrastructure.

Buried chemical feed lines in the public right-of-way and at facilities are to be installed in carrier conduits with tracer wire.

#### A.4.2.4 Facility Layout

The designer shall comply with the following requirements when expanding or upgrading treatment plants and remote facilities.

1. Provide adequate space between existing and new equipment for operation and maintenance requirements.
2. Ensure that installed equipment can be easily removed.
3. Provide flexibility in facility design to accommodate future possible changes in operation.
4. Ensure that the facility is designed to allow for future expansion works.
5. Give consideration to full site build-out conditions.
6. Give consideration to accommodating future capacity increases within the life expectancy of the asset.
7. Avoid confined spaces where possible.
8. Provide reasonable access to all areas of the site.
9. Provide low maintenance landscaping.
10. Bollards must be included to protect equipment, generators, building or other critical site components.

#### A.4.2.5 Valve Chambers

The designer shall take the following requirements for valve chambers into consideration.

1. A minimum size of 1800 mm x 2400 mm rectangular valve chamber is to be used in all combinations.
2. Chamber size shall be selected to adequately accommodate all pipe and valves
  - a) Provide minimum clearances of 1.0m on both sides of pipe and 0.30m below pipe to allow sufficient space for servicing and/ or removal of valves when required.
  - b) Valve chambers with valves too large to be removed through man-access openings shall be provided with removable access covers or with removable ceiling panels.

- c) The preference is have valve chambers installed in boulevard areas
  - d) Valve chambers located outside of vehicular traffic areas are to have exposed chamber roofs with removable access covers or hatches for equipment maintenance.
3. Valve chambers shall be designed with head room of 2.1m at a minimum and a maximum of 0.60m clearance from bottom of forcemain pipe to chamber benching.
  4. Valve chambers located in gravel shoulders shall be provided with a paved area sufficient for parking of one vehicle.
  5. All concrete valve chambers shall be provided with adequate thrust restraint, approved waterproofing, sealed joints, and must be insulated from the ground surface to below the frost depth.
  6. Adjustment units, as per OPS, shall be provided for grade adjustment(s).
  7. Chambers shall include a sump located in the vicinity of the access hatch with an appropriate discharge point.
  8. All chambers containing electrical equipment shall be provided with a float controlled sump pump which shall discharge to a sewer where possible. If discharge to a sewer is not possible then flow will be discharged to the surface, and directed away from the structure. All sump pumps shall be intrinsically safe.
  9. All access hatch drains to be piped to the sump.

#### A.4.2.6 Tracer Wire

1. All buried linear and facility piping including: watermains; forcemains; hydrant laterals; service laterals; chemical feed lines; and all other buried facility piping shall be provided with tracer wire as per the tracer wire requirements contained in this Manual.
2. Tracer wire shall not be installed through chambers, but must be placed around the outside ensuring continuity.
3. Tracer wire is not required on gravity storm and sanitary sewers.
4. Tracer wire shall be 10-gauge TWU copper wire with thermoplastic insulation recommended for direct burial.
5. For directional drilling, auguring or boring installations, three #12 AWG Solid Extra High Strength Copper Clad Steel Conductor (EHS-CCS) shall be installed with the pipe and connected to the tracer wire at both ends, or cad welded to the existing iron pipe at both ends.
6. Tracer wire shall be extended below grade in a PVC conduit to dedicated tracer wire test stations.
7. Tracer wire test stations are to be no more than 300m apart, and the location of all tracer wire test stations shall be indicated on all engineering drawings.
8. Tracer wire test stations shall be located at the property line.

### A.4.3 Architectural

#### A.4.3.1 Design Vision

Buildings for water and wastewater facilities shall be designed to match aesthetic requirements of the surrounding neighbourhood and meet the following requirements.

1. Have minimal maintenance requirements.
2. Complement the surrounding environment.
3. Provide access that meets the requirements of the Accessibility for Ontarians with Disabilities Act (AODA) where appropriate.
4. Be designed to post-disaster standards.
5. Ensure that all openings in the exterior walls are equipped with insect screens and vandal proof louvers.

#### A.4.3.2 Roofing Design

Design roofs with the following considerations:

1. Sloped roofs only.
2. Give preference to metal roofs over asphalt shingles.
3. All metal roofs shall be provided with lightning rods and grounding.
4. Provide snow guards, eaves and downspouts.
5. Downspouts to be located and oriented such that water is directed away from the structure by the shortest path possible.

#### A.4.3.3 Windows and Doors

Windows and doors must comply with Niagara Region Water and Wastewater Security Technical Specifications.

#### A.4.3.4 Wall Finishes

Interior and exterior walls shall be provided with the following finishes:

1. All interior walls shall be architecturally coordinated to provide a level of finish selected for the use or service intended. Additional consideration shall be given to humid environments typically encountered within water and wastewater facilities.
2. Painting for aesthetic purposes shall be limited to areas intended for human occupancy.
3. For bathrooms and washrooms, ceramic tile finishes will be provided on walls.
4. Graffiti resistant materials shall be considered for all exterior exposed walls and/or surfaces.

#### A.4.3.5 Floor Finishes

The floor shall be finished in accordance with the following criteria:

1. Office, laboratories, computer control rooms, lunchrooms and other general-use rooms shall be provided with non-slip ceramic tile floor finishes.
2. Concrete floors within process areas shall be provided with a slip resistant epoxy finish.
3. All other concrete floors shall be provided with non-coloured floor concrete hardener complete with floor sealer.

#### A.4.3.6 Handrails

1. All ladders, handrails and guardrails, shall be stainless steel Type 316L, aluminum 6063-T6 (acceptability of NSF-61 approved fiberglass-reinforced plastic (FRP) will be reviewed on a case by case basis) based on location of installation unless otherwise stated herein.
2. FRP will only be acceptable indoors and not at Wastewater facilities.

#### A.4.3.7 Landscaping

Landscaping shall be designed to minimize maintenance requirements and to meet the Municipality Site Plan Approval requirements. Preference shall be given to native plant or tree species in Ontario, which require minimal watering. Xeriscaping shall be considered in landscaping design where applicable.

#### A.4.3.8 Fencing, Gates and Signs

For the requirements pertaining to the facility fencing, gates and signs, refer to Niagara Region Water and Wastewater Security Technical Specifications.

#### A.4.3.9 Lighting

See Electrical Section below.

### A.4.4 Structural

#### A.4.4.1 Design Vision

The designer is to construct all structures with the overall lowest life cycle cost. All structures shall to be designed to post-disaster standards.

#### A.4.4.2 Basis of Design

Complete structural designs in accordance with the following criteria:

1. All below grade structures shall be constructed with reinforced concrete complete with water stops and Zemdren (Type II) formwork liner for all exposed surfaces.
2. Structures shall be insulated from the surface to below the frost level (minimum 1.7m) and buried structures waterproofed.

3. All miscellaneous metals within water and wastewater structures shall be type 316 L stainless steel. Fiberglass reinforced plastic may be substituted for 316 L stainless steel where deemed appropriate by the designer.
4. All materials in contact with potable water shall be American National Standards Institute / National Sanitation Foundation – 61 (ANSI/NSF-61) certified.
5. Stairway access into below grade structures is preferred. Where stairway access is not possible, access hatches shall be provided.
6. All water retaining structures shall contain a minimum of two independent cells. Each cell must be capable of being isolated for inspection and maintenance purposes without affecting the operation of the other cell(s). Each cell shall be provided with a minimum of two entry/exit points.
7. Concrete water retaining structures shall be constructed of high-performance low-shrinkage concrete. Shrinkage bar testing shall be required.
8. In addition to the Zembrain liner, a crystalline or epoxy coating system shall be considered to improve the long term durability and performance of the concrete structure in contact with water.
9. Coatings shall be designed to withstand normal operating conditions including corrosive and potentially high-chlorine environments. Minimum expected service life of coating shall be 25 years.
10. All expansion joint and caulking material must be protected from exposure to chlorine both during normal operation and during the disinfection process.
11. All ground level, partially buried and underground water retaining structures top shall be above the 100 year flood or the highest flood on record.
12. The area surrounding a ground level or below grade water retaining structure shall be graded to be free of standing water for a minimum distance of 15 metres.
13. Where a water retaining structure base slab is below the pre-construction original finished grade it is preferable to install the base slab above the ground water table.
  - a) Consideration must be given to fluctuations in the water table, therefore, a sub-structure drainage layer of granular material drained to atmosphere or a gravity drained storm sewer is required.
  - b) Maintenance hole access shall be provided at changes in directions along the drainage sewer for access and clean outs.
  - c) In the case where a gravity drainage solution is not possible, a pump dewatering system shall be provided.
14. In the event that the groundwater is expected to be unavoidable, hold down anchors shall be considered.
  - a) Pressure relieve valves shall not be used.

- b) It is the expectation of Niagara Region that a comprehensive plan which addresses buoyancy concerns and/or groundwater removal shall be developed by the designer.
  - c) Such plans shall include comprehensive operational and logistical procedures for draining the water retaining structure for inspection purposes while being mindful of groundwater conditions adjacent to the structure.
15. The designer shall provide a minimum separation of 15 metres between potable water retaining structures and sewers, drains, septic tanks and tile fields.
16. Drains, sewers and other piping located within 15 metres shall be constructed of piping material with a pressure rating suitable for a pressure test of at least 350 kPa. Such pressure tests will have zero leakage.
17. Hydraulic gradients for water retaining structures shall be compatible with specified service levels. Gradients shall be designed to accommodate water retaining structure draw down levels of current Master Servicing Plans plus a 100% allowance for future demand.

#### A.4.5 Process Mechanical

##### A.4.5.1 Design Vision

Mechanical systems shall be designed to provide ease of operation and maintenance with an emphasis on efficiency and energy conservation.

##### A.4.5.2 Equipment Tagging

1. Flat surfaces shall be provided with lamacoid nameplates.
2. Valves and equipment having curved surfaces shall be supplied with stainless steel engraved tags complete with stainless steel chain affixed to the equipment.

##### A.4.5.3 Piping

1. The designer shall ensure that all process piping can withstand all expected internal and external pressures, loads, thrust forces and transient pressures.
2. All exposed process pressure piping in water and wastewater facilities shall be, at a minimum, type 316 L schedule 10 stainless steel.
3. All piping in contact with potable water shall be ANSI/NSF-61 certified.
4. Chemical feed piping shall be Teflon.
5. All process piping shall be provided with colour-coded labels to comply with the latest edition of the *ANSI/ASME A13.1 Pipe Labeling Requirements*.
6. Colour-coded arrows shall be provided indicating the direction of flow.
7. Pipe sweating shall be controlled with ventilation and insulation.
8. Only standard pipe sizes will be used.



9. Adequate supports for all piping shall be designed and shown on drawings with appropriate details.
10. Long radius elbows are preferred.
11. Sample taps shall be installed on all suction and discharge headers.

#### A.4.5.4 Valves

1. Main process valves shall be stainless steel or cast/ductile iron complete with internal and external fusion bonded epoxy (FBE) coating, or two part liquid epoxy coating.
2. Valves shall comply with *American Water Works Association (AWWA) Specifications and Standards*.
3. All valves in contact with potable water shall be ANSI/NSF-61 certified.
4. All valves shall be of the correct type for the transmitted fluid, pressure expected and the valve use (ie. shut-off, modulating, etc.).
5. Valves and valve operators shall be oriented to meet the following requirements.
  - a) Ease of operation
  - b) Limited interference with structures and with any other equipment or piping
  - c) Space allowance requirement for maintenance and disassembly
  - d) Valves mounted higher than 2 m shall be provided with a chain operator.
6. Butterfly valves in critical locations shall be provided with a redundant gate valve.
7. Valve systems associated with water pumps with more than 100 mm of discharge shall consist of a suction isolation butterfly valve, discharge check valve, motorized butterfly valve and isolation gate valve prior to connection to the discharge header.
  - a) Ball valves, 50 mm in size, shall be located at the top and bottom of the suction and discharge piping.
8. In potable water facilities, non-buried valve type and materials shall be as follows:
  - a) Valves less than 50 mm shall be stainless steel ball valves.
  - b) Valves 75 mm to 300 mm shall be rising stem gate valves.
  - c) Valves greater than 300 mm shall be butterfly valves except for valves whose purpose is to isolate a butterfly valve. These may be gate valves.
  - d) Check valves shall be cast/ductile iron fusion bonded epoxy (inside and out) complete with stainless steel hardware.
  - e) Air release valves shall be cast iron fusion bonded epoxy (inside and out) complete with stainless steel hardware and an anti-slam device. The designer shall provide a flood protection double check valve on a vent within chambers. Air release valves associated with water systems may be direct-bury.

- f) Globe style pressure relief, surge or pressure control valves shall be cast iron fusion bonded epoxy (inside and out) with stainless steel pilots and stainless steel sensing lines complete with anti-cavity trim as required.
  - g) Sluice gates shall be fabricated from 316L stainless steel. Operators shall be located at ground level.
9. For water transmission systems, valve type and materials shall be as follows:
- a) Gate valves conforming to AWWA C509 or AWWA C515 shall be provided on transmission mains up to and including 300 mm diameter.
  - b) Butterfly valves conforming to AWWA C504 shall be provided on transmission mains 400 mm in diameter and larger.
  - c) All valves shall be housed in approved, adequately designed watertight chambers unless specified otherwise.
  - d) All valves require valve boxes and are to open left (counter clockwise) and shall have a 50 mm square standard AWWA operating nut.
  - e) Where possible, valves shall be located outside of the travelled portion of the road and intersections.
10. In wastewater facilities, non-buried valve type and materials shall be as follows:
- a) Valves 50 mm and less shall be stainless steel ball valves.
  - b) Valves 75 mm and larger shall be stainless steel knife gate or fusion bonded epoxy (inside and out) plug valves.
  - c) Knife gate valves shall be selected to meet the anticipated maximum design pressure for each side (i.e. uni-directional vs bi-directional). Specifications for bi-directional knife gate valves shall identify the anticipated maximum design pressure for each side of the valve.
  - d) Check valves shall be cast/ductile iron fusion bonded epoxy (inside and out) complete with stainless steel hardware.
  - e) Air release valves shall be cast iron fusion bonded epoxy (inside and out) with stainless steel hardware or stainless steel body. Flushing ports must be provided to clean the air valve. Direct buried air release valves are not permitted on wastewater systems.
  - f) Sluice gates shall be fabricated from 316 L stainless steel. Operators shall be located at ground level.
11. For wastewater forcemains, all direct bury valves shall be gate or plug valves.

#### A.4.5.5 Pumps and Motors

1. All equipment and motors shall be supplied with corrosion resistant metal nameplates fitted securely in a location which can be easily read.

2. Pumps and other rotating equipment shall be provided with bearings selected on the basis of a B-10 life expectancy as defined by the Anti-Friction Bearing Manufacturers Association at rated conditions of service of at least 150,000 working hours. Conventional lubricating points shall be specified.
3. Bearings for electric motors shall be constructed of double seal bearings.

#### A.4.5.6 Equipment Operating Characteristics

1. All pumps furnished shall operate satisfactorily without excessive wear, excessive lubrication or undue attention required by the operating staff. All rotating parts shall be in true dynamic balance and operate without vibration caused by mechanical defects, faulty design or misalignment of parts. The designer shall take these factors into consideration and design a system that is within acceptable tolerances.
2. To ensure that the vibration level is within the specified limit the designer shall ensure that vibration analysis for all pumps, generally 75 KW (100 HP) and up, is carried out as part of the startup procedure of the equipment and also at the end of the three month operating period. The results of the vibration analysis at the startup procedure shall be included in the Contractor-supplied Equipment Maintenance Manual.

#### A.4.5.7 Equipment Acceptance Testing

1. Pumps shall be acceptance-tested according to Hydraulic Institute Guidelines Level "A" tolerances as per the following.
  - a) Pumps less than 50 hp (37 kW) are to be supplied with a standard performance curve certified by a factory trained technician or a professional engineer.
  - b) For pumps 50 to 300 hp (37 to 224 kW), a certified factory acceptance test (FAT) is required including sign-off by a professional engineer.
  - c) For pumps greater than 300 hp (224 kW), a witnessed FAT is preferred including sign-off by a licensed professional engineer.
2. FATs shall be conducted prior to releasing such equipment for delivery to site. FATs shall be conducted with the actual motor to be used rather than a shop motor.

#### A.4.5.8 Equipment Guards

1. Equipment guards shall be provided for all rotating components, couplings, belts, chain drives and extended shafts.
2. Equipment guards shall be hot-dip galvanized steel painted yellow or stainless steel.
3. All equipment shall meet the requirements of the Ontario Health and Safety Act.

#### A.4.5.9 Equipment Maintenance Requirements

1. The designer shall provide a minimum of 1 m of clear space around all equipment for maintenance work or more as directed by the equipment supplier.

2. Equipment that requires removal for maintenance shall be provided with electrical and mechanical isolation devices to allow for removal without interfering with the operation of the process or facility.
3. In designing the layout of the equipment, the designer shall make provisions for its removal including providing a suitable lifting mechanism.
4. All equipment shall be mounted on a concrete pad with a minimum height of 100mm.

#### A.4.6 Heating, Venting and Air Conditioning (HVAC)

##### A.4.6.1 Design Vision

1. HVAC systems shall provide the necessary environmental controls to maximize the performance of the equipment in the facility, while providing comfort heating and cooling to occupants. As most facilities are largely unoccupied, the environment required for optimal equipment performance typically takes precedence.
2. Provide heating, ventilation and air conditioning equipment that meet energy efficiency requirements.
  - a) Overly complicated schemes with limited efficiency gains shall be avoided.
  - b) Heat Recovery and Energy Recovery systems shall only be included in a design where they will provide a good return on investment, have reasonable life expectancy, and require minimal maintenance.
3. Preference shall be given to the use of natural gas heating in place of electric heat.

##### A.4.6.2 Design Features

1. Under no circumstances shall fans be relied on to declassify newly constructed hazardous spaces on a continuous basis.
2. The National Fire Protection Association 820 (NFPA 820) guidelines shall be followed if older hazardous spaces must be de-rated by ventilation.
3. In a hazardous space, all permanent equipment shall be rated for the unventilated environment.
4. Ventilation shall be available when the hazardous space is occupied as follows.
  - a) Air handling unit (AHU) changeable from 3 Air Changes per hour (ACPH) to 6 ACPH controlled via a door contact switch separate from the security system.
  - b) Once the switch has been tripped the AHU will change from 3 to 6 ACPH.
  - c) Motion sensors will be located within the classified area to maintain operation at 6 ACPH.
  - d) If no motion is sensed for a period of time (i.e. 30 to 60 min) the AHU will revert to 3 ACPH. A local audible alarm will pulse on and off for 30 seconds (configurable) prior to reverting back to 3 ACPH to alert current stationary occupants of the transition.

- e) A fault in the AHU that does not allow the switch from 3 to 6 ACPH, or back to 3 ACPH, will activate a local audible alarm.
  - f) The alarm will be acknowledged locally via a button, but a fault indicator will remain on until the fault is corrected. If the alarm is not acknowledged, the local audible alarm will automatically shut off after 5 to 10 minutes (configurable) but the local fault indicator (pilot light) will remain active.
  - g) Faults within the AHU will be monitored locally and through SCADA at the receiving WWTP.
  - h) Ability for "LOCAL Control" via manual override to activate the mechanical ventilation from 3 to 6 ACPH shall be provided.
5. The heating and cooling requirements for each zone shall be achieved by a dedicated control unit linked to the master control system. However, the zone control unit must be capable of being overridden manually from the HVAC master control system.
6. Design shall consider the environment of specific areas and consider dehumidification if required for the environment and to protect equipment.

#### A.4.7 Standby Power

##### A.4.7.1 Design Vision

Sufficient backup power must be provided at all critical facilities to maintain a full level of service for at least two days following a loss of grid power. Preference is for a packaged, stand-alone system consisting of an air-cooled diesel-powered generator in a self-contained sound attenuating skin tight outdoor enclosure.

Standby power shall be provided to the following key facilities:

1. Wastewater Treatment Plants and Remote Facilities.
  - a) All facility essential loads must be capable of being fed from the plant's standby generator(s) at peak hour flow conditions in order to meet Environmental Compliance Approval (ECA) requirements.
2. Water Treatment Plants and Remote Facilities.
  - a) All facility essential loads must be capable of being fed from the plant's standby generator(s) to enable the water treatment plant to meet average day demand.
  - b) In a closed loop system where pressurized system storage is not available, the generator shall be sized to meet the pumping system power requirement for maximum day plus fire flow demand.
3. Chlorine Booster Stations. To be reviewed at the pre-design stage of the project and subject to the final decision of the design team.
  - a) All essential equipment (i.e. PLC, analyzers, flow meter, heater(s) and some lights) are to be provided with standby power.
4. Remote Storage Facilities including Elevated Water Tanks and Reservoirs.

- a) All essential equipment (i.e. PLC, analyzers, flow meter, navigation beacons, heater(s) and some lights) are to be provided with standby power.

#### A.4.7.2 Design Features

Emergency standby power systems shall be designed with the following features:

1. Diesel powered generators are preferred over natural gas.
2. Emergency standby power systems shall be registered through the MECP Environmental Activity and Sector Registry (EASR) system and shall meet requirements regarding air and noise levels as per Part III of Ontario Regulation 346/12.
3. Grounding shall be installed around the generator.
4. Radiator air cooled engines only.
5. The fuel system shall consist of a double walled tank with minimum storage capacity suitable for 48-hour operation at a full generator load starting at 75% full tank. A fuel level indicating transmitter wired to the programmable logic controller (PLC), a low and high float switch, vent whistle and a fuel leakage alarm must be provided.
6. Variances for equipment not meeting the requirements of the B139.ON code must be obtained.
7. The ventilation system shall be complete with fans, dampers, etc. to meet the required air volume for engine combustion and ventilation requirements.
  - a) The engine ventilation system shall be designed to operate with and without local utility power and also for testing of the various modes of operating conditions.
  - b) Combustion Air Ventilation dampers must be fully open before the diesel engine is permitted to start. Obtain variance from the Technical Standards and Safety Authority (TSSA) if the designer and owner choose not to meet this requirement at critical stations where it is necessary for the generator to start even if the damper fails to open.
  - c) Dampers shall "fail safe" in the open position.
  - d) All ventilators shall be vented to the exterior of the enclosure and shall be equipped with an insect screen.
8. The engine shall be started by an electrical cranking motor with power provided from storage batteries, which shall be a 24 volts system.
  - a) Provide sufficient amperage for three cycles of three cranking periods of 15 seconds duration.
  - b) The starting system shall be capable of providing three complete cranking cycles without overheating.



- c) The system shall include a fully automated battery charger to maintain the battery in a fully charged state, with an alarm to supervisory control and data acquisition (SCADA) in the event of malfunction or low battery voltage.
  - d) Storage batteries shall be provided with quick-disconnects.
9. The generator set shall be provided with a microprocessor-based control system which is designed to provide automatic starting, monitoring and control functions.
- a) The control system shall also be designed to allow local monitoring and control of the generator set and remote monitoring and control, suitable for the intended operating environment.
10. An emergency stop red mushroom head button must be provided.
11. Load bank(s) and if needed, automatic load bank controller, shall be considered for safely testing the generator. Load cell shall be automatic type, or staged cells so that during testing, generator is not subject to insufficient loading. Load bank requirements to be reviewed at the pre-design stage of the project and will be subject to the final decision of the design team. Region preference is to not use proprietary controllers on equipment.
12. The generator shall be installed on a concrete pad complete with a sub base fuel tank.
13. The following apply specifically to indoor generator installations.
- a) To eliminate hazards to personnel, safety guards shall be provided around all hot surfaces, belts, shafts, gears, rotating equipment and other moving parts.
  - b) All generator exhaust components, from the engine to the exhaust stack lagging, shall be provided with removable non-absorbent mineral wool blanket insulation.
  - c) The designer shall provide stairs and a landing to assist filling of above grade fuel tanks.

#### A.4.8 Electrical

##### A.4.8.1 Design Vision

Electrical systems shall be designed to support the process, control and monitoring infrastructure that relies on them. The design shall focus on reliability and performance needs of equipment, risk reduction, and safety. Electrical equipment shall be provided in protected locations, of sufficient quality and redundancy, so that critical processes are protected from nuisance and catastrophic failures due to electrical malfunction.

1. Seek simplicity where possible.
  - a) Utilize soft starters in place of variable frequency drives (VFDs), where feasible.
  - b) Preference for electrical panels/equipment to be placed in indoor electrical rooms, if the applicable indoor space is not available then an outdoor bus shelter-type kiosk is to be utilized,

- c) Use outdoor stand-alone generators in place of engineered buildings, where feasible,
  - d) Keep electrical equipment out of hazardous spaces, and;
  - e) Provide backup soft starters for pumps larger than 100Hp; to be reviewed at the design stage of the project and subject to the final decision of the design team.
  - f) Group essential and non-essential loads to facilitate simplistic load shedding schemes for utility power failures
2. Load shedding schemes shall be deployed to automatically shed non-essential loads during a utility power failure. Load shedding shall not be dependent on any proprietary controllers or equipment not explicitly listed in the W&WW Division's Approved Product and Equipment list (APEL) or Automation (SCADA) Standards.
  3. Important electrical equipment shall be kept separate from chlorine storage, to prevent accelerated corrosion.
  4. Electrical equipment placed in underground chambers shall be protected with a sump pump, the chamber shall be waterproofed, and devices shall meet NFPA 820 rules (explosion proof heaters, etc.). SCADA equipment shall not be placed in chambers.
  5. An electrical system coordination study must be completed to confirm electrical system protection and setting of protective devices under normal utility and facility standby power.
  6. Where VFD equipment is being used, a harmonics study is required.
  7. The designer is responsible for the updating and production of all single line diagrams in the facility where they have changed or modified the electrical power supply system.

#### A.4.8.2 Design Features

Electrical systems shall be designed with the following features:

1. Lamacoid nameplates shall be provided for all electrical equipment.
2. All wiring must be identified with permanent indelible machine printed identifying wire markers on both ends of the phase conductors of feeders and branch circuit wiring.
  - a) The phase sequence and colour coding must be maintained throughout, complying with the Canadian Standards Association C22.1 (CSA C22.1) colour code.
  - b) The control wiring must have an identical tag at both ends, including the junction box. The junction box shall have a terminal box.
3. All electric motors greater than 7.5 KW (10 HP) shall be high efficiency motors. For motors greater than 89.5 KW (120 HP), the minimum efficiency shall not be less than 94% at the specified operating point. However, the final determination shall be made based on life cycle costing analysis.
4. Multilins must be provided for motors greater than 89.5 KW (120 HP).

5. The service entrance shall be protected via transient voltage surge suppression (TVSS) and lightning arresters.
6. Power monitoring on incoming feeders must be provided and connected to SCADA.
7. For critical facilities, two separate feeds (with tie breaker) shall be installed to allow for the isolation of one feed while maintaining 75% of the total station load.
8. Single line diagrams shall be "arch D" size, water resistant, plaque mounted and must be posted in all buildings.
9. Motor control centres (NEMA ICS 2-322) must be provided for all 600V and 4160V equipment.
  - a) Indoor MCCs shall be NEMA/EEMAC 1A gasket enclosure and outdoor NEMA/EEMAC 3R enclosures.
  - b) Evaluate the cost benefit of NEMA/EEMAC 4X outdoor enclosures on a project specific basis.
  - c) A main breaker and individual lockage disconnects shall be provided for each starter, complete with removal buckets.
  - d) Arc flash labels shall be provided.
  - e) Lockable equipment disconnects at MCC shall be provided.
  - f) Local disconnects shall also be provided unless their location would be prone to flooding and damage.
10. All electrical equipment including MCCs and control panels shall be located on the main floor of a facility or if outdoors on a concrete pad all above the regional flood line.
11. Concrete pad shall be 150mm high and sized to include a 1m walkway around the enclosure.
12. Insulation resistance tests shall be performed for all wiring and equipment installed.
13. Electrical junction boxes and panels shall be mounted above flood plain elevations or potential submergence levels.
14. A free standing automatic transfer switch shall be provided for all facilities with permanent generators.
15. A free standing manual transfer switch shall be provided for all facilities without permanent generators.
16. The transfer switch and its controls shall be stand alone, independent and not integrated into the electrical switchgear and protective devices.
17. All conduits within driveways or roadways must be concrete encased complete with a 50% spare conduit capacity.

18. The preferred luminaire type for indoor and outdoor applications is light-emitting diode (LED). Photocell control for all outdoor lighting applications must be provided.
19. Outdoor light fixtures shall comply with the Niagara Region Water and Wastewater Security Technical Specifications, latest revision, for security lighting standards, as well as the Dark Skies Compliant Energy Efficiency Standards.
20. For indoor lighting fixtures, the following shall be provided.
  - a) Lighting shall be energy efficient.
  - b) The designer shall be responsible for conducting a photometric assessment to confirm the necessary number of units and optimum locations.
  - c) Locating light fixtures on high ceilings shall be avoided. For light fixtures that must be located on very high ceilings, access shall be provided for servicing by crane or other practical alternate means of accessibility.
  - d) For energy savings, occupancy sensors shall be provided for indoor lighting where reasonably practical.
21. Emergency lighting shall be provided for each building during regular operation and maintenance duties.
22. All electrical equipment shall be designed for 1m clearance for workability and maintenance purposes.

#### A.4.9 Instrumentation and Control

##### A.4.9.1 Design Vision

All instruments shall be installed in a location that is safe for workers, easily accessible, serviceable and efficiently calibrated. Devices shall be suitable for their intended environment.

##### A.4.9.2 Design Features

In general, the following instruments shall be a standard:

1. Flow measurement instruments within pressure pipe systems shall be with electromagnetic flow meters.
2. Ultrasonic level transmitters with a flume are preferred for flow measurement in open channels or gravity pipelines.
3. Level measurement shall be by pressure, ultrasonic, or radar sensors.
  - a) Provide backup float system.
  - b) Preference shall be given to ultrasonic sensors.
  - c) Level measurement design, and selected technology, shall take into account atmospheric conditions (i.e. steam, mist, etc.), floating debris, foam, loss of echo potential, etc.

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- d) Ensure that the face of the sensor does not make contact with the liquid during flooding, or high-level conditions, where the sensor may be submerged (i.e. provide flood cap, etc.).
4. Pressure transmitters shall be utilized instead of pressure switches.
  5. Heat detectors shall be implemented in generator building rooms instead of smoke detectors.



## SECTION B - Water

### B.1 Water Treatment Plants

#### B.1.1 Design Vision

Niagara Region's goal is to produce potable water that not only complies with the requirements of the Ontario Drinking Water Quality Standards (ODWQS), but also meets treated water quality objectives that in certain cases may be more stringent than the ODWQS. Internal plant operating objectives (working levels) identified in this section have been developed for various treated water quality parameters for Niagara Region's Water Treatment Plants (WTPs).

The construction of a new water treatment plant will likely be specific to the treatment needs of the source water. Typically, it is considered more practical to supply new service areas from existing treatment plants rather than constructing a new treatment plant.

The goal of a water treatment plant is to provide efficient and reliable removal and/or inactivation of contaminants and/or pathogens from the source water and supply treated water to the storage facilities. Treatment plants shall have sufficient backup controls and devices to allow for effective maintenance of all equipment without upset to treatment processes or impacts to the storage and distribution system.

#### B.1.2 Basis of Design

1. Niagara Region's water treatment plants must be capable of meeting the mandated requirements as stipulated in the *Drinking Water System Regulation (O. Reg. 170/03)* as well as the conditions specified in the Drinking Water Works Permit (DWWP) and Municipal Drinking Water License (MDWL) issued by *MECP* for these facilities.
  - a) All equipment contacting water must be NSF approved (NSF International) as stipulated in the MDWL. This includes but is not limited to NSF-61 and NSF-372.
  - b) Any water residuals that are to be discharged to the sewer or wastewater treatment plant must consider and adhere to Niagara Region's, or local, Sewer Use Bylaw.

#### B.1.3 Facility Layout

In designing the layout of water treatment plants, consideration shall be given for future expansions of the plant to its ultimate site capacity in order to maximize use of available space on the property.

1. The designer shall in all cases give consideration to maximizing the site ultimate capacity in planning the plant layout, which may be higher than capacity requirements as identified in the Water and Wastewater Master Servicing Plan.
2. Design of the expansion works shall be carried out to permit the orderly construction of the facility economically with minimal disruption of the existing facility.
3. Works must be designed for proper flow splitting at each step in the overall treatment train. Interconnections between equivalent treatment processes from different stages of overall plant development shall be incorporated into the design wherever possible.



4. No equipment, heating pipes, chemical pipes / tubing, or other pipes / tubing / conduits containing material that could cause contamination shall be installed directly over tanks, filters, etc. (i.e. open water).

#### B.1.4 Treatment Processes and Equipment

##### B.1.4.1 Water Source

Designer must also take into consideration the latest version of the *Source Protection Plan* for the Niagara Peninsula Source Protection Area prepared under the Clean Water Act and the established intake protection zones (IPZ's) described in that document. Furthermore, designers must take into consideration policies and procedures put in place to minimize potential threats to raw water quality in the design of new water sources and modifications to existing sources or intakes.

Where necessary the designer must provide revisions to the *Source Protection Plan*.

##### B.1.4.2 Water Intakes

The designer shall take into account the Region of Niagara requirement for pre chlorination at all raw water intake sites for the prevention of Zebra Mussel colonization of these structures and associated piping.

Design of water intakes and associated structures shall take into consideration the potential for formation of frazil ice which can sink and block intakes. The designer shall include features or means to address the formation of frazil ice.

Intakes shall have a minimum of 600mm of clearance from the water bed unless shown that a lesser clearance will not impact the function of the intake.

##### B.1.4.3 Low Lift Pumping

Low lift pumping stations shall be equipped with vertical turbine pumps and shall be designed without the use of foot valves.

The designer is required to comply with the general intent of Section B, Item 3.0 Water Booster Pumping Stations.

##### B.1.4.4 Disinfection Processes

In an effort to reduce the formation of disinfection byproducts (DBP's) such as Trihalomethanes (THM) and Haloacetic acids (HAA), the Niagara Region has adopted the following disinfection process which the designer is required to comply with in all future upgrades and expansion of water treatment facilities.

1. Disinfection will be provided using ultraviolet and/or a liquid chlorine solution (sodium hypochlorite) and operating with a free chlorine residual.
2. Disinfection shall meet the plant's Environmental Compliance Approval (ECA) treatment capacity and the required level of redundancy.
3. Adequate chlorine contact time (CT) must be achieved on the plant property rather than relying on a transmission main for CT.

4. Processes such as chemically-assisted filtration shall be provided that will be designed to enhance organics removal in order to reduce DBP formation potential.
5. It is recommended that a multi-barrier approach be used for cyst or oocyst removal/inactivation as a matter of good design practice and as a highly favourable approach with regulatory agencies including MECP and the United States Environmental Protection Agency (USEPA).
  - a) As a primary barrier of treatment, conventional treatment technologies (coagulation, flocculation, sedimentation, and filtration) shall be optimized to ensure high solids removal efficiency.
  - b) Generally, chlorination following conventional treatment is an effective disinfection strategy for giardia inactivation removal, meeting the MECP CT requirement.
  - c) Niagara Region's Water Treatment Plants shall be designed to achieve at least 99% (2-log) removal of cryptosporidium oocysts, 99.9% (3-log) removal of giardia cysts, and 99.99% (4-log removal) of viruses through conventional filtration (or alternative technology) and primary disinfection.

#### B.1.4.5 Taste and Odour Reduction

Performance requirements for taste and odour reduction systems will depend on the Methyl Isoborneol (MIB) and Geosmin concentrations, expressed in ng/L (nanograms per litre) present in the influent to the water plant. The following table indicates recommended performance requirements for MIB and Geosmin removal.

Influent Water MIB or Geosmin Concentrations (ng/L)	Treated Water MIB Maximum Concentration (ng/L) or Minimum Percentage Removal	Treated Water Geosmin Maximum Concentration (ng/L) or Minimum Percentage Removal
< 100 ng/L	< 10 ng/L	< 10 ng/L
100 ng/L or greater	90%	90%

For plants using granular activated carbon (GAC), the system design shall take into consideration selection of the appropriate type of media, loading rates, empty bed contact times (EBCT), mass transfer zones (MTZ), and absorption factors in order to meet Region design objectives. Pilot testing of new systems or new media shall be conducted to confirm the basis for detailed system design. Refer to the *Niagara Region Filter Media Replacement Specification*.

#### B.1.4.6 Coagulation and Flocculation

The designer shall evaluate and recommend the most appropriate coagulant chemicals and system configuration in consultation with Niagara Region.

1. The designer shall provide a minimum of two trains, sized such that with one train out of service the remaining train(s) are sized to handle a minimum of one half of the ECA capacity. Each train shall be capable of operating independently.
2. Wherever possible, flocculation tanks shall be designed to optimize g-forces provided by mechanical mixing devices.
3. Flocculation of raw water prior to sedimentation shall be achieved by mechanical mixing.

#### B.1.4.7 Sedimentation

Sedimentation tanks shall be designed for the efficient removal of particulate matter using plate settlers. A minimum of two trains shall be provided, sized such that with one train out of service the remaining train(s) are sized to handle a minimum of one half of the ECA capacity. Each train shall be capable of operating independently. Alternative technologies for the removal of particulate matter may be used if agreed to by, or identified by, Niagara Region.

For efficient operation of sedimentation processes, ensure that:

1. Sedimentation tanks shall be provided with potable water hose stations for cleaning and removal of sludge. Alternative cleaning technologies shall also be considered.
2. Automated sludge removal is the preferred solution where feasible.
3. The bottom of sedimentation tanks shall be sloped to a sump for periodic sludge removal. It is preferable that the sump shall be provided with a drainage pipe for discharge of wastewater by gravity where a suitable gravity outlet is available.
4. Where gravity outlet is not feasible, sumps shall be sized and oriented for operation with a portable submersible pump. All electrical connections required for such an operation shall be included. An appropriate location for the outlet must be selected for the removal of sludge by discharge to local sanitary sewer where available.
5. A means of isolating individual sedimentation tanks must be provided.
6. Process residuals shall be directed to the sedimentation tanks to settle out as much solids as possible.

#### B.1.4.8 Filtration

##### General

The *MECP Procedure for Disinfection of Drinking Water in Ontario* includes acceptable minimum standards for the design and operation of a conventional surface water treatment plant using coagulation, mixing, flocculation and sedimentation followed by filtration. In order to produce potable water with the lowest turbidity level, the following is required in all Region water treatment plant filtration systems.

1. Turbidity on each filter effluent line must be monitored to predict filter breakthrough and begin backwashing prior to breakthrough.

2. Air scour and backwash water systems shall be provided.
3. Plant performance shall be monitored for compliance with regulations to receive disinfection credits.
4. The unit process performance within the WTP shall be monitored.
5. Any filtered water that does not meet operational objectives for filter effluent must be rejected to waste.
6. Microbial removal must be maximized.
7. Halogenated DBP formation when chlorine is added must be minimized.
8. Chlorine addition must be minimized by removing material that increases chlorine demand.

#### Filter Design Objectives

Niagara Region has adopted the operating objective of 0.15 nephelometric turbidity units (NTUs) or lower for filter effluent turbidity. Based on this requirement, the designer shall design the filtration treatment process train to ensure that each filter shall produce water with filtered water turbidity of 0.15 NTU or less. Any filter effluent water that does not meet filtered water objectives must be diverted to waste. For turbidity control set points see the current version of *Niagara Region's Standard Operating Procedure (SOP) for Turbidity*.

#### Filter Operation

1. The designer shall provide design details of the filter operation in the pre-design report which shall, at a minimum, include the following components.
  - a) Filter Operation Description
  - b) Filter Layout and Cross-section Drawing(s)
  - c) Filter Instrumentation and Control
  - d) Filter Media
  - e) Backwash Pump and Motor Data
  - f) Backwash Wastewater Holding Tank
  - g) Air Scour System
  - h) Underdrain
2. At a minimum, the filters shall be provided with instrumentation for the monitoring of the following to ensure proper operation.
  - a) Loss of head indicator
  - b) Filtration Runtime
  - c) Flow from each filter effluent line

- d) Flow from each filter-to-waste line
  - e) Backwash flow rate to each filter
  - f) Effluent turbidity monitoring on each filter effluent line
3. Filters shall be provided with the characteristics for normal automatic operation as stipulated in *Niagara Region's SOP for Turbidity*. A detailed process description of filter operation and conditions that would trigger initiation of a backwash sequence shall be defined in the Process Control Narrative and the Operations Manual for the plant.
  4. The backwash method for filter media shall include the air scour method as part of backwash. No other filter backwash method will be accepted.
  5. Granular filter media shall comply with AWWA B100 Granular Filter Material and the *Niagara Region Filter Media Replacement Specification*.

#### B.1.4.9 High Lift Pumping

High lift pumping must comply with the general intent of Section B, Item 3.0 Water Booster Pumping Stations.

#### B.1.4.10 Chemical Feed Systems

The designer shall refer to the latest edition of the *Niagara Region Chemical System Design Standard*.

1. For monitoring flow of sodium hypochlorite and de-chlorination chemicals, Niagara Region prefers the use of flow switches. The design shall accommodate Niagara Region's critical control points for no-flow conditions and for compliance with *Niagara Region's Quality Management System*. For coagulant chemicals, Niagara Region prefers the use of magnetic flow meters.
2. In chemical filling areas, a spill containment area shall be designed to include the vehicle loading area and hose connections.
3. Monitoring equipment shall be designed to allow for the measurement of residual chlorine to 0.02 milligrams per liter (mg/l) to allow for appropriate disinfection dosage.

#### B.1.4.11 Residuals Management

Niagara Region requires that settled sludge from the treatment of residuals be discharged to a local sanitary sewer where available or the supernatant de-chlorinated prior to being discharged to the environment.

#### B.1.4.12 SCADA

The following water treatment processes shall be fully automated.

1. Inlet Works
2. Low Lift Pumping system to meet plant throughput demand
3. Flocculation System

4. Sedimentation System
5. Filtration including:
  - a) Flow equalization of flocculated raw water to each required filter
  - b) Rate of Filtration
  - c) Filter Backwashing
  - d) Air Scour Backwash System
6. High Lift Pumping system to meet water distribution system demand
7. Chemical System for:
  - a) Coagulation
  - b) Taste and Odour Control (if applicable)
  - c) Disinfection
  - d) Zebra mussel control
  - e) pH Adjustment
  - f) Chlorination of backwash water
8. UV Disinfection System
9. Residual Waste Management System
10. Distribution Monitoring

## **B.2 Water Transmission Systems**

### **B.2.1 Design Vision**

Niagara Region's vision is to design a reliable, energy efficient, structurally sound water transmission system that can sustain all operating and surge pressures, accommodate future growth, minimize the water age, and can be easily serviced by maintenance staff while minimizing the need for confined space entries.

### **B.2.2 Basis of Design**

This section outlines the minimum requirements for the design of water supply transmission systems.

#### **B.2.2.1 Design Water Demand**

The system shall be designed to meet the following criteria.

1. Peak hourly demand plus fire flow.
2. Pressure in a transmission main is not to be less than 275 kilopascals (kPa) / 40 pounds per square inch (psi) during peak hour demands at hydrant elevation.



3. Pressure in a transmission main under the condition of simultaneous peak hour flow and fire flow demands is to be not less than 140 kPa (20 psi) at the point in our system where the fire flow is being drawn.

#### B.2.2.2 Fire Flow

Fire flow requirements to be specified by the area municipalities.

#### B.2.2.3 Equivalent Population

Please refer to the current *Niagara Region's Water and Wastewater Master Servicing Plan* for estimation of water service demand for the different types of development in the design of water transmission systems.

#### B.2.2.4 Design Factors

For average daily demand values, maximum day factors and maximum hourly demand peaking factors, refer to the current version of *Niagara Region's Water and Wastewater Master Servicing Plan*.

#### B.2.2.5 Pressure

Transmission mains shall be designed to withstand all surge and transient pressures and full vacuum without consideration for benefit provided by air/ vacuum valves. That is, transmission mains shall be designed as if air/ vacuum valves are not operational.

Transient analyses shall be part of the engineering scope for all transmission mains.

### B.2.3 System Layout

#### B.2.3.1 Transmission System

The transmission system shall be designed to ensure flexibility of operation and to minimize the area of the community affected by shutdowns during water transmission network repairs. The designer shall demonstrate that water quality can be maintained throughout the transmission system. The designer shall consider the following in the design of the water transmission system.

The use of easements to loop transmission mains shall be minimized.

#### B.2.3.2 Location

#### B.2.3.3 Separation from Sewer and Wastewater Mains

The designer shall design transmission mains to ensure adequate horizontal and vertical separation between sewers and watermains.

1. Where transmission mains crossing above or below sanitary and storm sewers have insufficient cover and/or separation, the transmission main shall be completely encased with a minimum of 50mm of polystyrene insulation wrap. Insulation shall be designed to provide a minimum time to ice development after flow stoppage of 48 hours assuming the sewer is at minimum ambient temperature.

2. Where the specified vertical separation cannot be achieved, the storm and/or sanitary sewer shall be constructed of material and with joints that will comply with watermain construction standards and shall be pressure tested to ensure water tightness.

#### B.2.3.4 Private Service Connections

1. Private service connections are prohibited on transmission mains.

#### B.2.4 Pipe Requirements

##### B.2.4.1 Pipe Sizes, Material and Valves

1. All pipes shall have a minimum designed pressure rating of 1034 kPa (150 psi).
2. Transmission mains shall be sized for future growth as per the most current version of *Niagara Region's Water and Wastewater Master Servicing Plan*. Designers shall size transmission mains so as to maintain water quality but avoid unacceptable future changes in the pressure zone hydraulic grade line. All pipes shall have a maximum designed velocity of 1.5 m/s at peak hour demand.
3. The size, functionality and operational philosophy of the transmission main shall be reviewed with operations and engineering staff and determined at the preliminary design stage.
4. The designer shall include as part of the pre-design report the reasons for the selection of the proposed pipe material for the project. Where an alternative material is acceptable, the designer shall indicate this in the report and include a cost/benefit analysis of the acceptable alternative.
5. The following pipe materials are acceptable for transmission mains
  - a) Standard poly-vinyl chloride (PVC)
  - b) Fusible PVC
  - c) Molecularly oriented PVC (PVCO)
  - d) Concrete pressure pipe (CPP)
  - e) HDPE
  - f) The pipe shall transition to stainless steel prior to all underground chambers
6. In determining the suitable pipe class to be used, thrust force, internal pressure, surge pressure, live load, dead load, soil type and trench conditions shall be considered in the calculation. The above calculations and pipe manufacturer's recommendations shall be incorporated into the design.
7. Maximum allowable pipe joint deflection shall be 70% of the manufacturer's specifications. Pipe barrel bending/deflection will not be permitted.

**Pipe and Fitting Materials**

Material	Joint Type	Specification	Fittings
Polyvinyl Chloride	Gasketed Bell & Spigot	AWWA C900 & C905, CSA B137.3	PVC: AWWA C900, C905, C907, CSA B137.2, B137.3
Fusible Polyvinyl Chloride	Fused joints	AWWA C900 & C905, CSA B137.3	PVC: AWWA C900, C905, C907, CSA B137.2, B137.3
Molecularly-oriented PVCO	Gasketed Bell & Spigot	AWWA C909	PVC: AWWA C900, C905, C907, CSA B137.2, B137.3
Stainless Steel	Welded	ASTM A312, Grade 316L, minimum Schedule 10S	Stainless Steel, Type 316, ASTM A403
High Density Polyethylene (HDPE)	Butt fused	AWWA C906	HDPE - AWWA C906 Electrofusion
Pre-tensioned Conc. Cylinder Pipe	Gasketed Bell & Spigot with wrap-around cement mortar diaphragms	AWWA C303	Concrete – AWWA C303
Pre-stressed Concrete, Lined Cylinder Pipe	Gasketed Bell & Spigot with wrap-around cement mortar diaphragms	AWWA C301 & C304	Concrete – AWWA C301 & C304
Pre-stressed Concrete, Embedded Cylinder Pipe	Gasketed Bell & Spigot with wrap-around cement mortar diaphragms	AWWA C301 & C304	Concrete – AWWA C301 & C304

ASTM – American Society for Testing and Materials

**B.2.4.2 Thrust Restraint**

1. All transmission mains and thrust restraints shall be designed to withstand the maximum operating pressure plus the surge pressure to which it will be subjected. The design pressure shall not be less than that specified in Ontario Provincial Standard Specification 441 (OPSS.MUNI 441) as amended.

2. All plugs, caps, tees and bends will have approved mechanical thrust restraints. Concrete thrust blocks shall not be allowed other than in chambers.

#### B.2.4.3 Pipe Depth

1. Transmission mains shall not be less than 1.8m deep.
2. Transmission mains shall be deep enough to provide sufficient head room in valve chambers.
3. Under open ditch or unimproved roads, a minimum cover of 2.4m shall be provided to allow for future road improvements or lowering of the road profile.
4. In areas where minimum cover cannot be achieved, special provision shall be considered to protect pipe from live loading and freezing.

#### B.2.4.4 Bedding and Backfill

1. The bedding requirements for the transmission mains will depend upon the type and the class of pipe used.
2. Water transmission mains shall be provided with bedding and cover as per the Ontario Provincial Standard Drawings.
3. Bedding and cover material shall be Granular 'A' crushed limestone.
4. For all pipe, bedding shall be compacted to 100% Standard Proctor Maximum Dry Density (SPMDD).
5. The type of backfill material will usually be determined from the location of the transmission main within the right-of-way (ROW). Approved granular backfill shall be used within all road bases.

#### B.2.4.5 Valves

1. Under normal circumstances on transmission mains, three valves shall be provided on a tee intersection and four valves shall be provided on a cross intersection.
2. Line valves shall be spaced a maximum of 500m apart and shall be the same size as the transmission main.
3. All chambers shall be equipped with a flushing port or drain valve.
4. Drain valves shall be provided at each significant low point for transmission mains 400 mm and larger. All drain valves are to be located in a chamber. The valves shall have a stem to chamber roof in order to operate from the surface.
5. Air release valves shall be provided at all significant high points on large diameter transmission mains (400 mm and larger). Where air release valves are located in chambers, they shall be provided with vent lines that include a double check valve assembly for flood protection.
6. The inclusion of pressure reducing or pressure sustaining valves into transmission main will be considered on a project-specific basis.

#### B.2.4.6 Corrosion Prevention

The designer shall ensure that all metallic components in the water transmission system are protected from corrosion with appropriate protection measures.

1. As a minimum, buried metallic components shall be protected from corrosion using three-part petrolatum tape meeting International Organization for Standardization 9001 (ISO 9001 standards).
2. All components of the corrosion protection shall be supplied by the same manufacturer/ supplier.
3. All exposed metallic components shall be protected from corrosion with a suitable high performance epoxy coating. Specifications must fully identify repairs to damaged surfaces prior to and during installation.

#### B.2.4.7 Tracer Wire

Refer to General Section – Civil.

### B.3 Water Booster Pumping Stations

#### B.3.1 Design Vision

The overall objective is to design booster pumping stations that are reliable, safe, flexible, energy efficient and simple to operate and easy to maintain, meet all applicable standards, and provide a high level of service to Region customers.

#### B.3.2 Basis of Design

Designers shall take into consideration the following features at a minimum when designing water pumping stations:

1. The requirements of the Hydraulic Institute with respect to overall hydraulic design shall be followed. The designer shall pay particular attention to suction conditions for all pumps to avoid cavitation under all anticipated operating conditions.
2. Underground flow meter chambers shall be equipped with power supply, means of access and egress that are compliant with the Occupational Health and Safety Administration (OHSA) requirements, flood detection, and communications.
  - a) Control cabinets shall be installed above ground adjacent to the flow meter chamber.
  - b) Control cabinets shall be weatherproof stainless steel enclosures to avoid the need for confined space entry.
  - c) Chamber structures shall be provided with approved waterproofing.
3. Pipe sizing must accommodate future expansion.
4. The pumps selected shall cover the entire expected range of flows, including minimum flows and maximum day plus fire flows.

5. Flow circulation and water temperature rise shall be considered and evaluated for all stations during all combinations of possible demand scenarios including fire flow.
6. The advantages and disadvantages of available pump station configurations shall be evaluated, including storage with re-pumping. In-line booster pumping is not to be considered.
7. The designer shall allow the ability to isolate individual pumps.
8. Station bypass complete with check valve shall be provided.
9. For larger stations, costs and benefits of more than one discharge watermain shall be assessed.
10. A means of flood protection, detection, and alarming shall be provided.
11. The designer shall provide surge relief valves and piping and assess the need for surge tanks.
12. Energy management shall be an integral part of the design of water pumping stations. Refer to Section A on Energy Efficient Design.
13. A flow meter shall be provided on each watermain leaving the station. A pressure transmitter shall be provided on each watermain entering and leaving the station.

### B.3.3 Facility Layout

Facilities shall consider the following:

1. The layout shall provide access for emergency vehicles and cranes.
2. The potential for flooding especially in flood plains must be considered.
3. Sufficient parking for maintenance and operational vehicles must be provided.
4. The design must consider noise controls.

### B.3.4 Process Equipment

#### B.3.4.1 Pumps

The following shall apply to pumping systems:

1. The designer shall refer to the Hydraulics Institute for the design of pumping and piping systems. Particular attention shall be given to pump suction conditions and suction piping. Velocity in pump suction header must be 1.0 m/s or less.
2. Pumping systems shall be designed to have adequate available net positive suction head (NPSHA) that is greater than required net positive suction head (NPSHR) and include a 1.5 m safety margin applied to NPSHA.
3. Pumps shall typically be equipped with soft starters and shall be designed without the use of foot valves. VFDs will be considered only on a case-by-case basis and shall be agreed to by Niagara Region.



4. The designer shall size pumps and appurtenances according to the flows expected during the lifecycle of the facility and shall consider staging of pump sizes where applicable.

#### B.3.4.2 Surge Protection

Surge protection on a pump's discharge header shall be provided, and water shall be recirculated back to the reservoir where a reservoir exists or to the environment as applicable. Surge protection shall be designed on a site-specific basis and will include drainage to a local storm sewer or discharge to the environment with an air gap and de-chlorination.

#### B.3.5 Process Control

All instrumentation, appurtenances and a control system shall be provided as necessary to meet Niagara Region's requirement that the water booster pumping station be fully capable of unmanned automatic operation.

### B.4 Potable Water Storage

#### B.4.1 Basis for Design (all Storage)

1. Niagara Region's goal is to provide potable water storage that is watertight, energy efficiency, integrates well with the overall water supply and distribution systems, maintains a high level of water quality, maintains uniform water quality, and provides a high level of service to Region customers.
2. Overall system storage as well as individual storage reservoirs shall be sized to have storage components for operational needs, demand balancing (Max-Day demand), LAM fireflow requirements, and emergency storage. Reservoir capacity at the Water Treatment Plants prior to CT time are not to be used in the calculation of these storage components.
3. Where possible, new, retrofits and rehabilitation of reservoirs should consider the triple bottom line (Economic, Social, and Environmental) comparison of status quo versus a change to operational flow philosophy and to ensure water quality and minimize water age. True life cycle costs are to be assessed including any differences in pumping requirements at water treatment plants, other storage reservoirs and booster pump stations.
4. For elevated storage tanks, the designer shall complete the site layout for the facility as well as the design of the tank in terms of capacity, hydraulic levels, operating range, instrumentation, and general tank configuration. The detailed design of the tank including structural design and mixing/circulation systems (including Computational Fluid Dynamic Modelling) is to be undertaken as a design-build contract by a specialty contractor with experience in elevated water storage tanks.
5. Where a chlorination booster system is required it shall be designed per the requirements of Section B5 – Chlorine Booster System

6. The designer shall ensure that all water reservoirs are adequately mixed, have sufficient overflow capacity, sufficient ventilation capacity, and are watertight with reasonable access for maintenance.

#### B.4.2 Basis for Design (Non-Elevated Storage)

1. Non-elevated reservoirs should only be used in cases where their use, instead of an elevated reservoir, can be completely substantiated, in economic, environmental and social terms. The Region prefers to pump and add chlorine to potable water only once.
2. In-ground reservoirs shall contain a minimum of two operationally independent cells. Each cell shall be capable of full and independent operation of the pumping station/reservoir system while the other cell is in isolation.

#### B.4.3 Process Equipment

##### B.4.3.1 Process and Equipment Redundancy

1. For single reservoir systems, valving, appurtenances and controls should be provided at the WTP high lift pumping station to allow for safely pressurizing of the system (with pressure relief and related controls) during reservoir maintenance/cleaning.
2. Alternatively, for systems where multiple storage facilities are in use or proposed, the designer must show how individual storage facilities can be taken offline for maintenance/cleaning while not affecting the ability to supply water throughout the expected demand scenarios.

##### B.4.3.2 Reservoir Distribution Centre

A Reservoir Distribution Centre (RDC) is recommended to house electrical panels, chlorine analyzers, valves and other control devices.

3. RDC shall contain all reservoir and yard piping process control devices including valves, check valves, motorized inlet control valves, valve operators, process drains and other ancillary process control and/or instrumentation.
4. RDC shall include stairs or hatches with ladder access to the reservoir and adequate ventilation. Additional yard piping chambers shall be eliminated and/or reduced to a minimum.
5. Isolation valves shall not be submerged within the reservoir.

##### B.4.3.3 Circulation of Fresh Water

1. All inlet, outlet and piping within the potable water reservoir cells shall be designed to allow the circulation of fresh potable water within the reservoir cells.
2. A hydrodynamic mixing system (HMS) shall be included to provide uniform water age. Baffling is not acceptable as a means for mixing within distribution reservoirs. I.E.: Separate inlet and outlet piping must be provided.
3. Rubber "duck-bill" type check valves are a preferred method for mixing in reservoirs. Where required, (and shown by the designer to be effective), recirculation pumping shall be provided to maintain water age and temperature.

4. Reservoirs at the Water Treatment Plant shall be provided with baffling to achieve at least a  $T_{10}/T$  of 0.7. It is mandatory that the baffling be designed in accordance with the Computational Fluid Dynamic (CFD) modeling technique.

#### B.4.3.4 Storage Cell Isolation (Non-Elevated Storage)

All necessary piping and valving must be provided to allow for the bypassing of any reservoir's cell to be taken off-line for maintenance work.

1. A minimum of a two-cell reservoir must be used, with the ability to isolate any one of the reservoir's cells.
2. For water treatment reservoirs, isolation of one cell shall not impact the minimum required CT value.
  1. Manually operated butterfly valves shall be provided, as required, as well as piping to permit the isolation of the potable water reservoir cell(s) for maintenance or construction work without having to shut down the entire reservoir.
  3. Sufficient valves must be included to allow reservoir cell isolation to facilitate disinfection without impacting operation of other components of the system that must remain in service.

#### B.4.3.5 Washdown Piping (Non-Elevated Storage)

1. Washdown piping inside the potable water reservoirs shall be sized for two hoses operating at any one time.
2. A stainless steel wash down header must be provided.
3. Connection points must be provided at 30m intervals to cover the entire reservoir floor area.
4. The reservoir washdown system shall be protected by a dedicated backflow preventer.

#### B.4.3.6 Reservoir Drainage

1. The full capacity of the potable water reservoir shall be designed to be drained by gravity with controlled discharge to the municipal storm drainage system.
2. The drainage system shall incorporate a means of dechlorination prior to discharge to the storm drainage system.

#### B.4.3.7 Process Control

Process control for potable water storage facilities shall be designed to meet the following requirements:

2. The designer shall ensure that the full depth of the potable water reservoir is available for operation.
3. The flow of potable water out of a reservoir shall be metered and chlorine residual monitored.

4. An engineered potable water sampling station shall be provided. A sampling station shall be complete with 10 mm stainless steel piping complete with appropriate stainless steel valves and sink in order to permit samples to be taken at the desired location quickly. The location of sampling points is to be identified at the pre-design phase of the project.

#### B.4.3.8 Emergency Overflow

An overflow from portable water reservoirs / elevated tanks is generally not permitted at any time unless emergency conditions arise. The following requirements shall be implemented concerning emergency overflows:

1. A separate instrumentation and control system shall be provided exclusively for this function to alarm and warn of an overflow.
2. Reservoirs shall be equipped with an overflow system sized to convey 150% of the firm capacity of the upstream pumping capacity in the *Niagara Region Water and Wastewater Master Servicing Plan*. Overflow system include all overflow piping, appurtenances, chamber(s) and receiving infrastructure, from the reservoir to the receiving body. Consideration for future flow capacity shall be given. While the use of an overflow weir is not preferable, head on overflow weirs shall not exceed 200 mm.
3. For a multiple cell reservoir, the overflow system shall be capable of handling the full overflow capacity noted above, with one cell offline, regardless of which cell is offline.
4. The overflow is to be directed to an overflow chamber. Where connection from the chamber to a sewer is not possible, flows from the chamber will be directed to an overland drainage ditch, and in any case, the ultimate discharge point and/or receiving body will be identified for compliance purposes.
5. The overflow chamber will be complete with a suitable air gap, duckbill type check valve on the upstream discharge.
6. The overflow chamber shall incorporate a de-chlorination system on the downstream discharge comprising of an aluminum basket c/w stainless steel chain connected to a winch system.
7. Site grading shall take into consideration the effects of potential overflow from the reservoir drainage system. Management of overflow energy must be taken into account during the design of the facility.
8. Overflows shall not operate as vents.

#### B.4.3.9 Elevated Tanks

In addition to the requirements elsewhere in this document, elevated water storage tanks shall be designed to meet the following requirements:

1. Designed to supply peak demand rates at constant system pressures
2. Designed to include capacity for operational volume, flow equalization volume, fire storage volume and emergency volume.

3. All tanks to be designed as per latest AWWA standard.
4. Provide a painters rail and drip edge for the elevated tank.
5. Install a watertight access hatch of minimum 600mm diameter at bottom of tank, inside the support pedestal.
6. Provide a safety railing surrounding the top of the tank.
7. Circular reinforced concrete pedestal to support reservoir tank including all piping, valves and instruments at base.
8. Provide a recirculation pump system that has the capability to be manually started at the pump.
9. Provide sample points on the intake and discharge pipes. The sample points will be directed to the outer wall using stainless steel tubing, and will be complete with a shutoff valve. The sample point discharges will be routed to the chlorine analyzer(s).
10. Provide a stairway to the mezzanine level.
11. Provide a drainage system to allow for tank cleaning without contaminating riser pipe(s), and connect system into overflow pipe.
12. Provide an appropriate dehumidification system in the valve room.
13. Provide vacuum relief and overflow in tank.
14. Provide separate inlet and outlet piping.
15. Mixing system shall be provided to ensure consistent chlorine residuals and minimize water age.
16. Tank inlet elevation shall be determined at the time of mixing system design.
17. Provide double door entrance at pedestal base.
18. Seal all floors with a slip resistant coating.
19. Provide a minimum 900mm diameter access tube from the top of the pedestal to the reservoir roof.
20. Install aluminum ladders and platforms inside the pedestal and access tube.
21. The design of elevated tanks shall incorporate a central antenna base support structure for the mounting of communications systems on the top of the elevated storage tank.
22. Minimum 2mm corrosion allowance.
23. Elevated tank painting and logos shall be consistent with the Niagara Region Policy for Lettering on Steel Water Storage Tanks & Stand Pipes. Submit three variations of art work to Niagara for review and approval.



#### B.4.3.10 Structural and layout (Non-Elevated Storage)

The designer shall include the following structural and layout requirements in the design:

1. The design of a buried reservoir roof shall be based on cast-in-place reinforced concrete or pre-cast double tee concrete structure all complete with a membrane overlay. The membrane overlay shall have a 25 year roof warranty. The reservoir roof shall be covered with insulation and soil to a minimum depth of 400 mm.
2. In-ground reservoirs shall be designed with the roof slab sloped to promote drainage, and include a granular zone above the roof, below the cover material.
3. The reservoir base slab floor shall be sloped to sump pit(s).
4. The designer shall ensure that a maximum 50m egress distance is maintained from any location in each cell.

#### B.4.3.11 Reservoir Hardware (Non-Elevated Storage)

The designer shall include the following mechanical requirements in the design:

1. The overflow pipe shall be secured with a non-corrodible mesh screen installed within the pipe at a location least susceptible to damage by vandalism.
2. Hardware inside the reservoir, including ladders, handrails, etc., shall be stainless steel Type 316L or NSF-61 approved fiberglass-reinforced plastic (FRP).
3. Two aluminum access hatches, at minimum, shall be provided into each cell.
4. Where possible, access hatches shall be located adjacent to driveways or access roads for convenient access by service vehicles and cranes.
5. Submarine reservoir access hatches shall not be used.
6. Hatches shall be equipped with perimeter drains and limit switches.

#### B.4.3.12 Ventilation

1. Vents shall be designed to prevent vacuum. At no time shall a reservoir have air space pressurized or under partial vacuum.
2. Vent shall be located at least 900 mm above finished grade and be fitted with stainless steel screens to prevent entry of vermin, birds, and insects.

#### B.4.3.13 Instrumentation and Control

The designer shall include the following instruments and control systems in the design:

1. Ultrasonic level sensor in each reservoir cell.
2. Reservoir low, high and overflow alarm float in each cell.
3. Groundwater level high alarm.
4. Access house and RDC fire alarm.
5. Access house and RDC smoke alarm.



6. Access house and RDC intrusion alarm.
7. RDC flood alarm.
8. RDC low temperature alarm.

## B.5 Chlorination Booster Systems

### B.5.1 Design Vision

1. The overall objective is to design chlorination systems that are reliable, safe and simple to operate and meet all applicable design and safety standards. Niagara Region currently uses only liquid chlorine (sodium hypochlorite) at its water facilities.

### B.5.2 Basis of Design

1. This section relates primarily to Chlorination Booster Systems and post-chlorination for the purposes of secondary disinfection. Chlorination for the purpose of primary disinfection is addressed under Section B.1 Water Treatment Plants.
2. The designer shall refer to the latest edition of the *Niagara Region Chemical System Design Standard*.

### B.5.3 Facility Layout

1. Chemical feed systems shall be in separate areas or rooms to prevent impacts from passive off-gassing from chemicals on sensitive equipment.
2. Spill containment for the chemical filling area must be included in the design. The spill containment area shall include the vehicle loading area and hose connections.

### B.5.4 Process Equipment

#### B.5.4.1 Chemical Metering System Design Features

1. The metering pump panel shall be pre-mounted on high-density polyethylene board, pre-piped, pre-wired and pressure tested with Duty/Standby with Remote Control chemical feed capability. The metering panel shall include spill containment for 110% capacity of the storage tank.
2. The metering pump shall be a solenoid driven diaphragm metering pump or a peristaltic type pump complete with the following components where applicable.
  - a) A minimum of two metering pumps sized for maximum day plus fire flow demand.
  - b) A redundant chemical metering pump piped into the delivery panel must be provided that can be put into service immediately by operating the appropriate valves.
  - c) Microprocessor based electronics.
  - d) LCD display of operating status.
  - e) 4-20 mA external analog control.

- f) Meet the required metering capacity at the specified back pressure.
  - g) Auto-degassing liquid end.
  - h) Fault annunciation relay.
  - i) On/Off Keypad.
  - j) Remote On/Off capability.
  - k) Manual stroke length adjustment 0-100% with electrical readout.
  - l) Diaphragm of polytetrafluoroethylene-faced ethylene propylene diene monomer (PTFE-faced EPDM) with nylon reinforcement and steel core.
  - m) Liquid crystal display (LCD) that shows flow rate in litres per hour, frequency, stroke rate, and stroke length.
  - n) Foot valve and injection valve and a 2 m control cable.
3. The accessories package shall include the following components.
- a) Pre-mounted backpressure valve.
  - b) Pressure relief valves.
  - c) Isolation ball valves.
  - d) Pre-mounted pressure gauge complete with diaphragm isolator.
  - e) Pre-mounted calibration column.
  - f) Isolation valves, as required, for isolation of metering system and/or equipment.
  - g) Flow monitors.
  - h) Corporation stop.
  - i) Bleed valve assembly.
4. The chemical shall be contained in a vertical cylindrical tank with the following operating requirements.
- a) The sodium hypochlorite solution shall have a concentration of 12 to 14%.
  - b) The storage tank shall be equipped with a site glass, 19mm diameter, sch. 40 PVC pipe. The ball valves shall be PVC and shall meet ASTM D-1784.
  - c) A vent shall be provided as required and piped to the exterior of the building or structure.
  - d) All seals must be chlorinated polyethylene (CPE).
  - e) A separate fill opening shall be provided and 50mm pipe fill line shall be connected from the opening to the exterior of the building or reservoir complete with quick connector and cap.

- f) An ultrasonic level measuring system shall be provided.
  - g) Chemical storage and dosing facilities shall be provided, with sufficient storage and pumping capacity to meet peak and minimum flow rates and dosing targets for two weeks without refilling, where possible.
5. The chemical feed system shall be sized to provide an increase to the free chlorine residual to 1.0 mg/l at the maximum rate of flow of water into the reservoir or through the facility.
  6. The control and operation of the chemical feed system operation shall be managed by a PLC which is integrated with the plant SCADA system.
  7. The chemical shall be injected by a metering pump into the inlet and/or outlet pipe.
  8. Chemical injection points shall be positioned to promote mixing, mitigate the possibility of damage, and shall not to impede access to surrounding piping and equipment.
  9. The sodium hypochlorite tank(s) shall be located in a containment area. Requirements for the containment area are as follows:
    - a) The minimum volume of the containment area shall be equal to 110% of the total volume of the sodium hypochlorite storage.
    - b) The containment area shall be rectangular and designed to safely contain sodium hypochlorite at a 12% to 14% strength solution. The containment area will be provided with a chemical resistant coating appropriate for the chemical used.
    - c) A float level and alarm sensor shall be provided to detect liquid in the containment area. The float level shall be installed in the lowest part of the area. A digital signal complete with suitable transducer and transmit sensor cables shall be supplied with the signal sent to the PLC.
  10. The level of the chemical in the tank(s) shall be monitored by the PLC field instrumentation, which is connected to the plant SCADA system for monitoring the level from the treatment plant.
  11. An electronic read-out of the sodium hypochlorite liquid level indicator(s) must be provided at the loading station.
  12. The sealed chemical tank(s) shall be vented to the exterior of the building.
  13. The designer shall locate metering pumps within the volume of the chemical spill containment.
  14. A sanitary drain must be provided for samples containing chlorine. If a sanitary drain is not available, provisions must be made to de-chlorinate the sample flow prior to discharge to the environment.
  15. Provide a stainless steel work area complete with stainless steel sample sink.
  16. A safety eye wash and shower station must be provided as per OHSA.

## SECTION C - Wastewater

### C.1 Wastewater Linear Systems

#### C.1.1 Design Vision

The goal of Niagara Region's wastewater linear system is a reliable wastewater collection system that can accommodate future growth and minimize maintenance requirements.

Forcemains shall be designed to avoid fouling and plugging and to minimize turbulence and generation of hydrogen sulphide.

#### C.1.2 Basis of Design

This section outlines the minimum requirements for the design of wastewater collection systems.

##### C.1.2.1 Flow Calculations

Terms related to dry and wet weather flows are defined as the following.

1. Design RDII (Rain Derived Inflow and Infiltration)

$$\text{RDII} = \text{Catchment Area} \times 0.286 \text{ l/s/ha}$$

2. Design Dry Weather Flow (DWF)

$$\text{DWF} = \text{Average Sanitary Flow} + \text{Dry Weather Infiltration}$$

3. Design Peak Dry-Weather Flow (Peak DWF)

$$\text{Peak DWF} = \text{DWF} \times \text{Peaking Factor}$$

4. Design Wet-Weather Flow (WWF)

$$\text{WWF} = \text{DWF} + \text{Inflow and All Infiltration (Dry Weather and Rain Derived)}$$

5. Design Peak Wet-Weather Flow (Peak WWF)

$$\text{Peak WWF} = \text{Peak DWF} + \text{Design RDII (Catchment Area} \times 0.286 \text{ l/s/ha)}.$$

6. The peaking factors to be applied to the average flow rates such as to determine the peak flow rates are dependent on the type of development.

a) Residential – depending on population using Harmon Formula

b) Industrial, Commercial, and Institutional – expressed in equivalent population and combined with residential population, then using Harmon Formula.

##### C.1.2.2 Design Capacity

The design capacity of a gravity sewer shall be the maximum flow that can be carried by a sewer without surcharging when the sewer is full.

1. The capacity of a gravity sewer is designed to meet either one of the following:

- a) The Peak WWF when it is located upstream of combined sewer overflow (CSO) storage or when no storage exists
  - b) The Peak DWF when it is located downstream of CSO storage (appropriately sized).
2. The design capacity of a gravity sewer is assumed to be over committed when it runs surcharged during Design Peak DWF, or when it runs surcharged during Design Peak WWF with a peak hydraulic grade line less than 1.8 metres below ground elevation where basements exist or could exist.

#### C.1.2.3 Average Dry Weather Flow

The designer shall perform the wastewater design flow calculations based on the design parameters provided, using population densities by development type and loads, as published in the most current version of *Niagara Region's Water and Wastewater Master Servicing Plan*. In all cases these parameters are to be confirmed/ revised as necessary prior to start of preliminary design.

Individual studies may be required for special commercial establishments, major commercial areas, special industrial areas, and major industrial areas

#### C.1.2.4 Peak Wastewater Flow Factor

The designer shall refer to the most current version of *Niagara Region's Water and Wastewater Master Servicing Plan* for peak flow factors.

#### C.1.2.5 Infiltration Allowance

Designers shall use an infiltration rate consistent with that provided in the most current version of *Niagara Region's Water and Wastewater Master Servicing Plan*.

#### C.1.2.6 Flow Velocities

The maximum velocity shall not be greater than 3.0 m/s with the pipe flowing full, the minimum velocity shall not be less than 0.60 m/s with average dry weather flow and is preferred to be above 1.0 m/s during Peak DWF. Oversized sewers shall not be used in an attempt to justify using flatter slopes

The pipe diameter and slope shall be selected to obtain the greatest practical velocities to minimize solids settling.

#### C.1.2.7 Bedding and Backfill

1. At a minimum, sewers shall be provided with Type B bedding using Granular 'A' crushed limestone.
2. For all pipe, bedding shall be compacted to 100% SPMDD.
3. The type of backfill material will usually be determined from the location of the sewer within the ROW. Approved granular backfill shall be used within all road bases.

#### C.1.2.8 Rehabilitation of Existing Sewers and Maintenance Holes (Liners)

Where existing sewers are to be rehabilitated the following shall be required.

1. Maintenance Hole rehabilitation shall incorporate corrosion protection and leak tightness against external ground water pressure.
  - a) The amount of time that the maintenance hole is out of service shall be minimized and the proposed bypass pumping plan shall utilize sufficient capacity to accommodate the design Peak WWF. The proposed bypass plan shall be submitted to Niagara Region for review and approval prior to implementation.
  - b) Condition assessments shall, at a minimum, be according to the most current version of the National Association of Sewer Service Companies' Pipeline Assessment Certification Program (NASSCO PACP).
  - c) Material and application specifications for grout shall be adequate to ensure a sound substrate on which to install the liner.
  - d) Specifications for liner properties shall require that the liner meet minimum standards for thickness, structural strength and elasticity and chemical resistance as outlined in *Niagara Region's Water and Wastewater Services Specification for Maintenance Hole Rehabilitation*.
  - e) Minimum requirements for quality control and liner testing shall be specified.
  - f) The rehabilitation design submission shall be stamped by a professional engineer licensed to practice in the Province of Ontario.
2. In the case of structural lining of existing sewers, the designer shall require that the proposed structural liner submission include calculations and measures as follows:
  - a) The amount of time that the sewer is out of service shall be minimized and the proposed bypass pumping plan shall be sized to accommodate the full Peak WWF as per the updating design. The proposed bypass plan shall be submitted to Niagara Region for review and approval prior to implementation.
  - b) CCTV inspections shall at a minimum, be according to the most current version of NASSCO PACP.
  - c) Material and application specifications for grout shall be adequate to ensure a sound substrate on which to install the liner.
  - d) Specifications for liner properties shall require that the liner meet minimum standards for thickness, structural strength and elasticity, and chemical resistance.
  - e) Minimum requirements for quality control and liner testing shall be specified.
  - f) The liner design submission shall be stamped by a professional engineer licensed to practice in the Province of Ontario.

### C.1.3 System Layout

#### C.1.3.1 Location of Trunk Sewers

1. All new trunk sewers shall be located within the road allowance.



**C.1.3.2 Pipe Depth**

1. The top of the trunk sewer pipe shall be at a sufficient depth that it does not conflict with local infrastructure, where it can accept gravity flow from the area it services and such that the pipe contents are not susceptible to freezing.

**C.1.3.3 Service Connections**

1. Sewer services from residential, commercial, industrial, institutional and community facilities shall be connected to the nearest local area municipal sewer and not the Regional sewer main.

**C.1.4 Pipe Material**

1. The preferred pipe materials for trunk sewers are polyvinyl chloride (PVC) and reinforced concrete pipe (RCP).
2. The designer shall determine the best pipe material for use depending on the application. Other materials may be considered provided that the designer provides sufficient justification for their use.
3. The designer shall include as part of the pre-design report the reasons for the selection of the proposed pipe material for the project. Where alternative materials are acceptable, the designer shall indicate this in the report and include a full life-cycle cost/benefit analysis of all the acceptable alternatives.
4. Prior to comparisons of pipe materials, the designer shall use commercially available software or other design techniques, to determine the appropriate class of RCP required.

**Pipe Specification**

Material	Joint Type	Specification
Polyvinyl Chloride	Gasketed Bell & Spigot	Maximum dimensional ratio – DR 35 CSA B182.2, OPSS 1841
Reinforced Concrete Pipe	Gasketed Bell & Spigot. Maximum joint deflection – 13 mm.	CAN/CSA A-257, OPSS.MUNI 1820; registered with Ontario Concrete Pipe Association (OPCA)

**C.1.5 Maintenance Holes**

All maintenance holes shall be designed to eliminate heaving/lifting and other movement and to prevent infiltration, based on the following criteria:

1. All maintenance holes shall conform to the *Ontario Provincial Standard Specifications (OPSS's)* and *Ontario Provincial Standard Drawings (OPSD's)* and *CAN/CSA A-257*.
2. At maintenance holes where pipe sizes change from a smaller pipe size to a larger downstream pipe size, the pipe's obvert elevations shall be matched. It is not permissible for the downstream pipe size to be designed to be smaller than the upstream pipe size.

3. Drop maintenance holes shall be provided where the invert elevation of a sewer entering a maintenance hole is 0.9 m above the invert of the outlet sewer.
  - a) Maintenance holes with internal drops will be designed to accommodate person access. Internal drops are preferred to external drops due to servicing issues with external drops. Vortex units or approved equivalents shall be considered for maintenance holes requiring internal drops.
  - b) The drop pipe shall be one nominal size smaller than the wastewater main.
  - c) The economic feasibility of providing deeper wastewater mains versus excessive invert drops, drop maintenance holes, or excessively steep benching shall be ascertained prior to finalizing the design.
  - d) Prefabricated drops internal to the maintenance hole are only permitted on 1500 mm diameter or larger maintenance holes.
  - e) Where the maintenance hole depth exceeds 5m, safety grating must be provided. Additional safety gratings must be provided every 5m as appropriate. The minimum maintenance hole diameter in such instances shall be 1500 mm.
4. When the rate of flow and the depth of the drop are of such a magnitude that there is potential for significant entrainment of air, then the drop shaft and lower connection shall be designed to provide for release of the entrained air and ventilation of the drop shaft.
5. Where significant sections of wastewater mains are provided with watertight covers at access maintenance holes, extended vents may be required which shall be determined by the designer on a case-by-case basis. Wherever possible, the designer shall avoid placing maintenance holes in low-lying areas. Locating maintenance holes in low-lying areas will only be accepted where no other option is available and in such locations, the top of the maintenance hole shall be above the expected water level during a 10-year rain event.
6. Maintenance holes shall be provided with monolithic bases and watertight joints. Adjustment units, as per OPS, shall be provided for grade adjustment(s).
7. Tee maintenance holes may be used for wastewater mains 1200 mm or larger in diameter.
8. For institutional, commercial and industrial establishments, an inspection maintenance hole must be placed at the property line for access to the service connection in accordance with the *Niagara Region Sewer Use Bylaw (see Niagara Standard Drawing (RSD S001-R01))*.

### C.1.6 Forcemains

#### C.1.6.1 General

1. Forcemains shall be designed to withstand maximum operating pressure plus all surge and transient pressures and expected vacuum conditions without consideration

for benefit provided by air/vacuum valves. That is, forcemains shall be designed as if all air/ vacuum valves are non-functional.

2. Transient analyses shall be part of the engineering design scope for all forcemains, and shall take into account the number and timing of the pump cycles to which the main(s) will be subjected.
3. A hydraulic transient analysis shall be undertaken as part of the design process considering the worst-case failure scenario involving the most critical pump and forcemain-in-service combination. The analysis will be completed using hydraulic models based on the final sizes and layout of pumps and forcemains including locations of air/vacuum release valves.

Based on the hydraulic transient analysis, provide devices, if necessary, to protect the forcemain such as, but not limited to, air/vacuum breaker, surge valves, surge tanks, etc. Hydraulic transient analysis shall be redone for any change in the forcemain material, class, alignment, or profile.

4. Wherever feasible, the designer shall design forcemains' profiles such that they rise continuously from the pumping station to the termination point. Ideally, local high points or low points shall be avoided. Under special cases, with the approval of Niagara Region, combination air valves will be permitted at local high points in the profile if the depth of the forcemain is impractical and tunneling techniques have been evaluated and discounted.
5. All low points in the forcemain (if provided) shall be equipped with drain chambers for maintenance.
6. For new construction, wherever possible, the designer shall provide redundant pipes/ conduits/ casings for pipeline crossings of major roads or waterways.
7. Forcemains shall be designed such that provisions for cleaning are provided.
8. Forcemains shall be pressure-tested to zero leakage.
9. Isolation valves should be considered where forcemains connect into a common forcemain. Cleanouts at low points and chambers for pig launching and catching should be considered for any forcemain to facilitate inspection and maintenance.

#### C.1.6.2 Forcemain Pipe Material

The designer shall comply with the following requirements.

1. In determining the suitable pipe class to be used, live load, dead load, soil type and trench conditions shall be considered in the calculation. The pipe manufacturer's recommendations shall be incorporated into the design.
2. The following pipe materials are acceptable for forcemains.
  - a) Standard PVC
  - b) Fusible PVC

- c) Molecularly oriented PVC (PVCO)
- d) Concrete pressure pipe (CPP)
- e) HDPE.
- f) The pipe shall transition to stainless steel at all underground chambers

### Forcemain Pipe and Fitting Materials

Material	Joint Type	Specification	Fittings
Polyvinyl Chloride	Gasketed Bell & Spigot	AWWA C900 & C905, CSA B137.3	PVC: AWWA C900, C905, C907, CSA B137.2, B137.3
Fusible Polyvinyl Chloride	Fused joints	AWWA C900 & C905, CSA B137.3	PVC: AWWA C900, C905, C907, CSA B137.2, B137.3
Molecularly-oriented PVCO	Gasketed Bell & Spigot	AWWA C909	PVC: AWWA C900, C905, C907, CSA B137.2, B137.3
Stainless Steel	Welded	ASTM A312, Grade 316L, minimum Schedule 10S	Stainless Steel, Type 316, ASTM A403
High Density Polyethylene	Butt fused	AWWA C906	HDPE - AWWA C906 Electrofusion
Pre-tensioned Conc. Cylinder Pipe	Gasketed Bell & Spigot with wrap-around cement mortar diaphragms	AWWA C303	Concrete – AWWA C303
Pre-stressed Concrete, Lined Cylinder Pipe	Gasketed Bell & Spigot with wrap-around cement mortar diaphragms	AWWA C301 & C304	Concrete – AWWA C301 & C304
Pre-stressed Concrete, Embedded Cylinder Pipe	Gasketed Bell & Spigot with wrap-around cement mortar diaphragms	AWWA C301 & C304	Concrete – AWWA C301 & C304

### C.1.6.3 Thrust Restraint

1. Forcemain thrust restraints shall be designed to withstand the maximum operating pressure from the transient analysis. Adequate thrust restraint must be provided to account for all flow conditions.
2. All plugs, tees and bends shall be provided with approved mechanical thrust restraints. Concrete thrust blocks shall not be allowed.

### C.1.6.4 Pipe Size

1. Forcemains shall be sized to have a flow velocity in the range of 1.0 m/s to 2.5 m/s, with the lower limit being preferred for the initial phase.
2. The minimum size for forcemains shall be 150 mm diameter.

### C.1.6.5 Pipe Depth

1. Forcemains shall under no circumstances be less than 1.8m deep.
2. Forcemains shall be deep enough to provide sufficient head room in valve chambers.
3. Under open ditch or unimproved roads, a minimum cover shall be provided to allow for future road improvements or lowering of the road profile.
4. In areas where minimum cover cannot be achieved, special provision(s) shall be considered to protect pipe from live loads and freezing.

### C.1.6.6 Bedding and Backfill

1. The bedding requirements for the forcemains will depend upon the type and the class of pipe used. For all pipe, bedding shall be compacted to 100% Standard Proctor Maximum Dry Density (SPMDD).
2. Forcemains shall be provided with bedding and cover as per the Ontario Provincial Standard Drawings except for above compaction requirement.
3. Bedding material shall be Granular 'A' crushed limestone.
4. The type of backfill material will usually be determined from the location of the forcemain within the right-of-way. Approved granular backfill shall be used within all road bases.

### C.1.6.7 Valves

1. All air valves are to be suitable for use with wastewater and shall be low-pressure double acting types.
2. Air relief valves shall be installed over a riser with a minimum diameter of 100 mm.
3. Air valves shall be located on roadway shoulders and out of intersections.
4. Direct-buried valves are prohibited.

5. The minimum drain valve size shall be 150 mm. The valve shall have operator stem extended to the chamber roof in order to be operable from the surface. Drain pipe shall include an appropriate camlock fitting for connecting a hose to the surface.
6. Chambers, pits or access holes containing valves, blow-offs, meters or other such appurtenances to the wastewater system, shall not be located in areas subject to flooding or in areas of high groundwater

#### C.1.6.8 Corrosion Prevention

In general, it is preferred to not use buried metallic fittings in the forcemain. The designer shall ensure that all metallic components of the forcemain are protected from corrosion with appropriate protection measures.

1. As a minimum, buried metallic components shall be protected from corrosion using three-part petrolatum tape meeting ISO 9001 standards.
2. All components of the corrosion protection shall be supplied by the same manufacturer/ supplier.

#### C.1.6.9 Tracer Wire

Refer to General Section – Civil.

#### C.1.6.10 Forcemain Outlets / Transition Maintenance Holes

The designer shall make provisions for a smooth transition from forcemain pressure flow to gravity sewer flow.

1. All sewage forcemains must terminate in a transition maintenance hole on a gravity sewer. The transition maintenance hole must permit a smooth flow transition to the receiving gravity sewer maintenance hole. The forcemain shall enter the transition maintenance hole at a point not more than 0.3 m (1 ft) above the invert.
2. No other gravity sewers shall enter the transition maintenance hole.
3. The gravity main from the transition manhole to the next maintenance hole shall be at least one size larger than the forcemain and shall have sufficient capacity for all design flows.
4. Forcemain transition maintenance holes shall have a corrosion protective coating.
5. Turbulence in the outlet of the transition maintenance hole must be minimized.
6. At a minimum, the last 6 m of forcemain from the outlet shall be one nominal size larger than the forcemain.

## C.2 Wastewater Pumping Stations

### C.2.1 Design Vision

Wastewater pumping stations shall provide reliable, safe, energy efficient and low maintenance operation with low visual impact to the surrounding community.



1. Preference will be given to housing electrical equipment in outdoor MCCs and control cabinets protected from the elements including a bus shelter-type enclosure.
2. Niagara Region wastewater pumping stations shall use submersible pumps unless specified otherwise in the Request for Proposal or unless a strong case can be made for a dry well / wet well configuration by the designer.
3. Wet wells shall be designed to minimize turbulence, odour problems, frequency of maintenance, and to maximize pump life.
4. DWFs, WWFs and all operational requirements shall be confirmed prior to start of any preliminary design.
5. Pump stop levels should be designed to minimize the volume of sewage remaining in the wet well after each pump cycle.

### C.2.2 Basis of Design

Pumping station configuration shall be designed to provide the most efficient layout of pumps, equipment and piping with consideration for ease of access and maintenance.

1. All pumping station designs, both new stations and retro-fits, shall aim at eliminating (or minimizing where elimination is not feasible) the need for confined space entries into classified areas.
2. Pumps shall be selected based on the most optimal combination of pump efficiency, and full life-cycle (capital, operating and maintenance) costs.

#### C.2.2.1 Wet Wells

Wet wells shall be designed with the following considerations:

1. Wet wells shall be designed to meet Hydraulic Institute guidelines and to prevent dead zones and debris accumulation. Slope of floor benching shall be preferred 2:1 and a minimum 1:1 (other than the pump footprint).
2. Wet well capacity shall have 2 hours reserve capacity from the last duty pump start level to the invert of the inlet.
3. The depth of the wet well shall be sufficient to ensure adequate control bands for each pump within a maximum of six (6) starts per hour.
4. Pump run time shall be a minimum of 5 minutes at Design DWF. Wet well fill time shall be a maximum of 30 minutes at Design DWF.
5. Means for wet well cleaning must be provided. Provide a 50mm diameter yard hydrant complete with approved RPZ backflow preventer located near the wet well for wash down. When RPZ is located within a chamber, ensure the chamber is water tight and include a sump pump.
6. Access hatches for entry, equipment/ instrument removal, and maintenance must be provided. Hatches will have safety grating under the lid that need to be opened

separately from the lid. Drip trays on access hatches shall only drain to the ground surface.

7. Wet wells shall be water tight with zero visible leakage.
8. Other than pumps, only corrosion resistant concrete and stainless steel (316) are permitted in wet wells.
9. The wet well roof (where hatches are located) shall be at least 200 mm above the 100-year regional flood line.

#### C.2.2.2 Wet Well Ventilation

1. Declassification of classified areas by means of ventilation will not be accepted.
2. Ventilation of wet well shall meet the following requirements.
  - a) Passive ventilation is required for all wet wells complete with Schedule 10S stainless steel minimum 316L gooseneck outlet and screen. All ventilation ducts in wet well shall be stainless steel.
  - b) For entry into the wet well for maintenance and/ or operational functions, the preferred method of providing ventilation is to use portable fans implemented by operations staff.
  - c) The requirement for a positive forced air ventilation fan shall be on a project specific basis.
  - d) Ventilation fan shall be explosion proof and corrosion resistant.
  - e) Ventilation exhausts shall be directed away from nearby properties as much as practical to reduce the chance of nuisance odours.

#### C.2.2.3 Valve Room Ventilation

For stations where a valve room is required, the following shall apply.

1. Permanent ventilation equipment and duct work is required.
2. Provide positive ventilation system complete with motorized intake and exhaust dampers and fans with automatic and manual control.
3. It is not permissible to use ventilation equipment to de-rate valve room space.

#### C.2.2.4 Electrical

Electrical requirements for sewage pumping stations shall be as follows.

1. All electrical equipment shall be designed appropriately for the area classification. Where possible, for ease of service and operation, equipment must be installed in an unclassified area.
2. The designer shall ensure there are two 20A ground fault interrupt (GFI) external electrical outlets located close to the wet well and valve chamber access point.

3. Pumps with temperature and leakage sensors tied to the SCADA alarm system are required.
4. The electrical utility box shall be compact and low profile to complement the aesthetics of the location.
5. For a submersible pumping station where the electrical cabinet is located in a shelter, the cabinet shall be sized, oriented and located to permit safe maintenance work.
6. A junction box equipped with terminal strip shall be provided on the exterior of the station to facilitate changes of the float regulators.
7. A separate junction box is required for pump power supply and to enable the removal and installation of the pump.

#### C.2.2.5 Odour Control

All sewage pumping stations shall be designed to minimize the escape of odours from the wet well. The designer shall provide engineering calculations of potential for hydrogen sulfide generation in the forcemain and provide recommendations to prevent generation of odours and for odour control.

#### C.2.2.6 Wet-weather Storage and Overflows

The need for wet-weather storage at pumping stations for both new stations as well as retro-fits is to be identified by the designer during the pre-design stage.

1. Sewage Overflows must discharge to a water body, municipal drain or storm sewer. Discharge to a storm water detention pond is not permitted. Overflow lines shall be equipped with a backflow preventing valve.
2. Reserve capacity of wet well (highest pump start to overflow level) is preferred to be a minimum of 2 hours during Design Peak DWF. Designer must show wherever this is not possible.
3. The discharge from overflows is required to be monitored and measured for compliance reporting to the MECP.
  - a) The design shall incorporate a method to measure the time, duration and the quantity of overflowed sewage to meet this requirement.

C.2.2.7 Sewage Pumping Station Classification

	<b>Pumping Station Capacity</b>	<b>Type</b>	<b>Wet Well Storage Capacity</b>	<b>Number of Primary Duty Pumps Required</b>	<b>Standby Pump Requirement</b>	<b>Type of Drives</b>	<b>Standby Power</b>
1	Inflow: 0 to 120 L/s.	Submersible pumping station with single wet well and bypass inlet maintenance hole. Outdoor sound-attenuating enclosure for the standby generator. Outdoor control panel and MCC complete with bus type shelter.	Storage requirements to be discussed on a project-specific basis.	One or more pumps with a combined capacity equal to design flow. Pumping system shall be designed for the most efficient configuration under average day flow conditions.	One pump rated at peak flow.	Soft starters are preferred. VFDs only as approved by Niagara Region.	Emergency generator sized to handle design flow and all other essential loads required.
2	Inflow greater than 120 L/s.	Submersible pumping station with divided wet well. Outdoor sound-attenuating enclosure for the standby generator. Outdoor control panel and MCC complete with bus type shelter or superstructure for housing controls and MCC.	Storage requirements to be discussed on a project-specific basis.	Two or more pumps with a combined capacity equal to design flow. Pumping system shall be designed for the most efficient configuration under average day flow conditions.	One standby pump rated at the same capacity of the largest unit.	Soft starters are preferred. VFDs only as approved by Niagara Region.	Emergency generator sized to handle design flow and all other essential loads required.

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### C.2.3 Facility Layout

#### C.2.3.1 Control Building

1. For projects where a building is required, provide a building to house electrical equipment and pump controls, mechanical ventilation equipment and lighting equipment.
2. Motorized intake and exhaust louvers shall be provided for ventilation requirements.
3. Control buildings shall be equipped with wheel chair accessible washrooms.
4. Floor elevation (including base slabs for outdoor shelters) must be at least 150 mm above regional 100-year flood line.

#### C.2.3.2 Site Requirements

A paved access driveway and parking area shall be provided with adequate space for access and maneuvering by sewage hauling tanker trucks and fuel delivery trucks.

### C.2.4 Process Equipment

#### C.2.4.1 Pumps

Pumps shall be provided with the following requirements.

1. Pumps shall be high efficiency, explosion-proof, submersible, a non-clog impeller type suitable for fluid to be pumped.
2. The use of grinder pumps is only acceptable for flow rates less than 10 L/s.
3. Vibration and harmonic analysis must be conducted for pumps if installed in dry wells.
4. Pumps shall be equipped with thermal and leak detection devices.
5. Pumps must be removable from the surface utilizing guide rails.
6. Lifting equipment shall be provided for all pumps.

#### C.2.4.2 Valves

1. All valves must be installed horizontally. Vertical installations are not acceptable.
2. Valves must be located in a separate water tight valve chamber or valve room. Valves located in the wet well are not acceptable.
3. All valves shall be supplied with fully restrained dismantling coupling.
4. Each pump will be provided with a separate air release valve on its discharge pipe.

#### C.2.4.3 Process Piping and Fittings

In the design of sewage pumping station piping, the designer shall comply with the following criteria.

1. All appurtenances and connectors shall be corrosion-resistant and compatible with the piping material.

2. Piping layout shall be designed with “Y”s and not “T”s.
3. Flushing connections to facilitate cleaning of plugged lines or pumps shall be provided. Flushing connections shall be a minimum of 75mm diameter.
4. A means for draining the forcemain into the wet well is required. Drain connection is to be located prior to the isolation valve on the forcemain.
5. Flow metering shall be provided for all forcemains.

#### C.2.4.4 Surge Protection

It is preferable that the designer address flow velocities and pressures within the lift station piping and forcemain to eliminate the possibility of pressure transients and dangerous surge pressures. However, if, given the profile of the forcemain and pipe sizes are such that surges cannot be eliminated, the designer shall include a provision for adequate surge control on a pump's main discharge header. The designer must review this on a project by project basis.

#### C.2.4.5 Instrumentation

As a minimum, the following instrumentation shall be provided:

1. Wet well level ultrasonic transmitter.
2. Wet well level backup level ultrasonic transmitter.
3. Wet well operating backup floats, high level float and overflow float.
4. Flow meter on each forcemain.
5. Pressure gauge connections on each pump discharge as well as each forcemain, and, for dry well arrangements, on each pump suction.
6. Flood floats to be provided in all chambers.
7. Pump power monitor.
8. Provide temperature, smoke and fire alarms in all buildings.

#### C.2.5 Process Pump Controls

Operation of the pumps is to be controlled by an ultrasonic level control tied to the station Programmable Logic Controller (PLC) or remote programmable unit (RPU).

#### C.2.6 Wet Well / Dry Well Pumping Stations

In rare instances where the design calls for a wet well / dry well-type pumping station, the following provisions shall apply.

1. Dry well shall be physically separated from electrical room, which shall be a non-classified area.
2. Pumps are to be supplied with downstream air valves located prior to check valves to ensure priming. Suction pipe cleanouts shall be provided.



3. Wet well suction inlets shall be bell-mouth (flared) type.
4. A surge pressure relief valve with relief pipe extending from the discharge header through the dividing wall and into the wet well above the TWL. Orientation and routing of this relief pipe shall allow the pipe to drain by gravity to the wet well.
5. Flood floats shall be provided in the dry well.
6. Pressure gauge connections shall be provided on each pump suction line.
7. Permanent dry well ventilation equipment and duct work is required. Provide positive ventilation system in the dry well, complete with motorized intake and exhaust dampers and fans with automatic and/or manual control.
8. It is not permissible to use ventilation equipment to de-rate drywell space.

### **C.3 Wastewater Treatment Plants**

#### **C.3.1 Design Vision**

Niagara Region's goal is to produce effluent from each of its wastewater treatment plants that meets the effluent quality limits and objectives stipulated in each Environmental Compliance Approval (ECA).

Wastewater treatment plants and upgrades shall be designed to provide for reliable, safe, energy efficient and low maintenance operation while minimizing impacts on the surrounding community.

Internal plant operating objectives (working levels) identified in this section have been developed for various operational parameters for Niagara Region's Wastewater Treatment Plants.

Treatment plants shall have sufficient backup controls and devices to allow for effective maintenance of all equipment without upset to the process or impacts on final effluent or biosolids quality.

#### **C.3.2 Facility Layout**

In designing the layout of wastewater treatment plants, consideration shall be given for future expansions of the plant to its ultimate site capacity in order to maximize the utilization of the available space of the property.

1. Works must be designed for proper flow splitting at each step in the overall treatment train. Interconnections between equivalent treatment processes from different stages of overall plant development shall be incorporated into the design wherever possible.
2. Facility layout shall provide sufficient space for complete servicing, removal, and replacement of all process equipment without impacting operation of the facility.

### C.3.3 Treatment Processes and Equipment

#### C.3.3.1 Process and Equipment Redundancy

The designer shall consider multiple parallel treatment trains for each major process treatment step in the overall plant.

#### C.3.3.2 Inlet Works

The inlet works shall be housed in a building and designed for ease of operation for the removal of collection bins, process equipment, and cleanup of the facility so as to promote a positive working environment for the operators.

At a minimum, it shall include the following.

1. Inlet works shall be sized to handle actual peak WWF into the facility
2. Automatically cleaned screens shall be provided at all headworks. Preference shall be given to multi-rake, travelling bar screens.
3. A manually operable bypass weir gate and associated channel/piping for emergency operation shall be provided.
4. A screening compactor for the compaction of screening waste material shall be provided. Generally, the same manufacturer shall be selected for both screens and compactors to ensure compatibility.
5. Grit removal equipment shall be provided.
6. Grit and screenings shall be deposited in separate bins.
7. All wastewater originating from the grit cyclone and classifier and compactor shall be piped for return to the plant process stream.
  - a) Grit removal area and grit bins shall be designed and sized to minimize the manual labour involved with moving bins.
  - b) Preference is to have the bins as close to an exterior door and driveway as possible and in the correct orientation to allow the bin removal truck access to the bins.
8. Grit removal shall utilize aerated grit tanks or vortex grit separators without the use of air lift pumps, with preference given to aerated grit tanks. Note: Vortex grit separators are suitable when footprint is a limitation.
9. Odour control with appropriate ventilation system shall be designed to minimize the odour level in the inlet works working area.
10. Detection equipment and instrumentation is required for monitoring the operation of process equipment with a fail-safe feature that would be employed in the presence of combustible gases.
11. Parshall Flumes shall be provided in the influent and by-pass channels for flow measurement.

12. A means for the interception and removal of grease at the headworks shall be provided as well as a separate bin for the temporary storage of grease.
13. Where a septage receiving station is required, it shall be located at the head of the plant and shall include the following requirements:
  - a) Be capable of receiving hauled sewage loads from a variety of truck sizes.
  - b) An actuated valve to allow for the disposal to be directed to either the headworks or to the digesters.
  - c) Provision for source separation of hauled waste as some wastes must pass through the entire treatment process while other wastes may be directed straight to the digesters.
  - d) The septage receiving station shall be provided with a kiosk for the deposit and storage of hauled sewage manifests, a refrigerator for storage of collected samples, a writing area to allow completion of manifest information, an electric space heater, and a wash-up sink for disposal of samples and hand washing.
  - e) There shall be no classifications in this area and it shall be designed for human occupancy.
  - f) Septage receiving stations shall be laid out so that:
    - o there is adequate room for septage hauling trucks to effectively maneuver
    - o spills will be contained to the area surrounding the vehicle and hose connection, and
    - o the entire receiving area can be hosed down to a CB connected to the influent channel. See C.3.3.9 for requirements of containment area.

#### C.3.3.3 Primary Clarification

The designer shall provide a minimum of two primary clarifiers, sized such that with one clarifier out of service, the remaining capacity is more than the Design DWF (ECA capacity). Design HRT shall be no more than 2 hours for low ADF days. Design shall include for even flow splitting between clarifier units. Surface scum collector troughs shall be provided.

#### C.3.3.4 Aeration

Aeration system design shall include the following features:

1. The designer shall provide a minimum of two aeration tanks.
2. Systems shall utilize high efficiency fine bubble aeration
3. Where applicable, aeration tanks shall be designed assuming a Plug Flow reaction and to have step feed capability.

4. The aeration system is required to meet the minimum oxygen concentration and mixing requirements. Aeration systems shall be capable of achieving, at any point in the aeration tanks, a minimum dissolved oxygen (DO) concentration of 2.0 mg/L at all times. Aeration systems shall also be capable of providing sufficient mixing to maintain all mixed liquor solids in suspension for each aeration zone, with an aeration zone defined as an area of diffuser density different from a neighboring zone.
5. A flow metering device shall be provided at the main air header. For all branch air headers, each branch shall be provided with a flow meter, an isolation valve and a pressure gauge. Isolation valves shall not be used as balancing devices. Any diffuser zone will need a separate device from the isolation valve to balance airflow, if required by the design.
6. The designer shall provide required field instrumentation (including DO sensors) for the measuring of dissolved oxygen levels in each tank at mid-tank and at end of tank (2 DO sensors per tank).
  - a) The field instrumentation and related control system shall be tied to a fully automated dissolved oxygen (DO) control system which links actual DO level to blower(s) capacity and will automatically vary the air output from the blower(s) in direct response to measured DO, with the intent to keep the DO above 2 mg/L throughout the aeration process.
  - b) The type of dissolved oxygen (DO) meter shall be reviewed at the pre-design stage.

#### C.3.3.5 Secondary Clarification

1. The designer shall provide a minimum of two secondary clarifiers, sized such that with one clarifier out of service, the remaining capacity is more than the Design DWF (ECA capacity).
2. Sludge return capacity shall be designed for 100% return sludge capacity and all activated sludge flows, both return and waste, shall be metered and recorded.
3. A surface scum collector trough shall be provided.
4. Scum collector shall be fully and easily adjustable by hand with minimal tools.
5. All metal parts in clarifiers are to be stainless steel.

#### C.3.3.6 Sludge Pumping

Sludge pumps, including raw sludge pumps, return activated sludge (RAS) pumps and waste activated sludge (WAS) pumps, must be suitable for handling sludge and gritty material.

1. Each clarifier shall have a dedicated RAS pump.
2. RAS pumps are required to be sized to meet the full range of flow defined in Table 12-1 of the MECP Design Guidelines for Sewage Works (2008).
3. An on-line sludge total solids (TS) meter shall be provided and tied into SCADA.

### C.3.3.7 Effluent Disinfection

Current practice at Niagara Region is to disinfect plant effluent with liquid chlorine (sodium hypochlorite) followed by de-chlorination with injection of a second chemical. The objective is to have no presence of free chlorine in the final effluent at the outfall to the receiving stream.

### C.3.3.8 Sludge Digestion

1. The primary digesters shall be circular reinforced concrete tanks with conical floors, with one sidewall access bulkhead into the digester for inspection and cleaning.
  - a) The exterior of the tank shall be complete with pre-cast concrete panel veneer or aluminum cladding.
  - b) An insulated fixed steel cover is required for the primary digester.
  - c) Mixing equipment shall be provided for the primary digester. Secondary to primary digester volume ratios shall not be greater than 1:1.
2. Secondary digesters shall be circular reinforced concrete tanks with conical floors with one sidewall access bulkhead into the digester for inspection and cleaning.
  - a) The exterior of the tank shall also be complete with pre-cast concrete panel veneer or aluminum cladding.
  - b) An insulated steel floating cover for secondary digesters.
  - c) A supernatant line, equipped with a flow meter, shall be provided, and TS metering shall be required on all digested sludge lines leaving the secondary digester.

### C.3.3.9 Sludge Loading Station

The sludge loading station shall be designed for minimum interference to the operation of the plant during the sludge loading operation.

1. Access to the sludge loading station shall be designed to permit trucks to enter and leave the station directly without backing into or out of the station. (i.e.: drive through access)
2. A fully curbed sludge containment area shall be provided at the loading station with a catch basin in the middle of the containment area.
3. The containment area shall drain to a holding tank.
4. A hosing station shall be provided for the cleaning of spilled sludge off the truck or the containment area.
5. The sludge loading arm shall be heat traced on all outside pipe sections.
6. A lockable remote control at the sludge loading station must be provided for the starting and stopping of the sludge loading pump.
7. A magnetic flow meter in a building or chamber shall be provided to measure the volume of the sludge being pumped into the truck.

- a) An electronic readout at the sludge loading station is required to indicate the volume of sludge pumped into the truck.
- b) The electronic readout shall be visible to the driver of the tanker truck.
- c) Pumped volume data shall be date and time stamped and shall be captured and recorded by the SCADA system.

#### C.3.3.10 Sampling Stations

Automatic sampling stations are required to perform discrete or composite, flow proportional and time proportional sampling.

1. The sampler enclosure shall be weatherproof, corrosion resistant, insulated, and complete with forced air heater and thermostat, locking door and bolt down base.
2. The refrigerated sample compartment must be lockable.
3. The controller must be programmable with an LCD display.
4. In the event of a power failure, program settings and stored information shall be maintained by an internal lithium battery.
5. The installation of samplers in classified environments is to be avoided.

#### C.3.3.11 High Pressure Effluent Water System

The designer shall provide a high pressure effluent water system where required as determined by operations staff for the cleaning of process equipment and general site maintenance.

1. The high pressure effluent water system shall consist of a minimum of two pumps and a hydro-pneumatic tank to maintain system pressure when the pumps are not running. All effluent water needs to be screened/filtered to 500 micron size prior to pumping. Designer to use self-cleaning screens/filters.
2. The system shall be fully automatic with the pumps delivering the required flow and pressure at the furthest post yard hydrant of the high pressure effluent water system.
3. Yard hydrants shall be self-draining and non-freezing. Yard hydrants shall be installed above an engineered granular/geomembrane soakaway. Soakaway to be located above the higher seasonal ground water level.
4. Potable water may be provided with the same function if the effluent water cannot be used, as determined by the operations staff. All potable water service to yard hydrants shall include a RPZ backflow preventer located near the potable water service entrance to the property. Where potable water is connected, no connection shall be made to effluent water. RPZ backflow preventers must be installed in a location to prevent freezing, flooding and mechanical damage with adequate space to facilitate maintenance and testing. RPZ backflow preventers must not be installed in a vault, pit or enclosed space. There shall be no type of interconnection between the effluent water system and the potable water system. Drainage for backflow prevention



assemblies shall be provided for all installations of RPZs to accommodate discharge during testing or draining of the unit and for RPZ relief valve discharges.

5. Where effluent water is used, a nameplate shall be permanently fastened on or near every new and existing hose bib, faucet, hydrant or sill cock located on the water system.
  - a) The nameplate shall read 'Caution Non-Potable Water'.
  - b) Nameplates shall be of the lamacoid type.
  - c) Lettering shall be white, 15 mm high, and on a black background.

#### C.3.3.12 Low Pressure Hot Water Heating Systems

Low pressure piping and hot water systems shall meet the following criteria:

1. The layout of piping shall provide an expansion and contraction allowance of 100°C in water temperature to ambient at a working pressure of 860 kPa or as required to meet system requirements.
2. All heating pipes shall be installed in such a way that all high points have air relief valves and all low points have drain valves and necessary piping/facility for drainage of full system volume.
3. Piping shall be installed so that there will be no interference with the operation or installation of equipment or other piping systems, ducts, etc.
4. Piping shall ensure noiseless water circulation.
5. Pipes shall not be routed over electrical panels/ transformers.
6. An appropriate location in the heating system shall be provided for the injection of chemical into the hot water system.
7. Balancing and flow control valves shall be provided on hot water return piping from each heating unit or equipment and on the supply and return of each primary and secondary circuit. Immediately after the system is started up and prior to being put into operation, the entire system is to be balanced.

#### C.3.3.13 Circulating Pump

1. Circulating pumps are to be centrifugal pumps or close coupled vertical in-line pumps.
2. Pump installations should include a shut-off valve, and suction guide in pump suction piping; and a combination check-balance-shut-off valve assembly on the discharge.
3. A pressure gauge shall be included at the discharge side of all pumps.

#### C.3.3.14 Boiler

1. Boilers heating systems shall consist of dual gas fired boilers and have a minimum energy rating of 85% efficiency.
2. All boilers shall use tube-in-tube heat exchangers (HX).

### C.3.3.15 Instrumentation and Control

In addition to the requirements specified by the *MECP Guidelines for the Design of Sewage Works*, latest edition, the following shall apply.

1. Flow meters shall be provided on each raw influent stream, including hauled waste, final effluent, internal return or recycle lines, and side streams from sludge processing steps. The objective is to monitor flow to and from all processes sufficiently to allow for an accurate flow balance to be performed across the entire plant.
2. Total solids (TS) meters and flow meters shall be provided on all primary sludge, secondary sludge (RAS), and waste sludge (WAS) lines. The objective is to monitor all process flow sufficiently to allow for an accurate solids mass balance to be performed across the entire plant.

### C.3.4 Energy Efficient Treatment Plant (this section must be followed in addition to the above clauses when specified in the design requirements)

In addition to the following, the designer shall review Section A of this manual for general guidelines pertaining to energy efficient design.

#### C.3.4.1 Primary Treatment

The designer shall consider the potential use of chemically enhanced primary treatment (CEPT) with the goal of reducing energy costs. The designer is to perform a full cost-benefit analysis of this and other options.

#### C.3.4.2 Anoxic Selectors

Anoxic zones shall be considered for all tanks to improve settling and to allow for denitrification to reduce process aeration costs.

#### C.3.4.3 Return Activated Sludge Pumps

RAS pumps shall be provided with variable frequency drives and controllers that pace flow based on wastewater flow rate to allow for maximum turndown and energy savings.

#### C.3.4.4 Disinfection

The designer shall evaluate the cost/benefit of UV versus chemical disinfection for the application. If ultraviolet (UV) irradiation is recommended for disinfection, only low pressure systems offering the highest UV efficiency shall be used.

#### C.3.4.5 Digestion

The largest energy users in anaerobic digestion include sludge heating and sludge mixing. The designer shall consider the following opportunities to reduce energy use.

1. The cost/ benefit of alternative mixing systems with respect to energy consumption and life-cycle costs shall be considered, including newer technologies (e.g., linear motion mixers). On-off timers for hydraulic mixing systems shall be provided to reduce energy costs, while maintaining performance with slow settling anaerobic biosolids.

2. The thickening of WAS and/or primary sludge to maximize the sludge feed thickness to digestion shall be considered, resulting in lower heating costs and a smaller digester footprint for mixing.
3. Boilers with the ability to utilize both natural and digester gas shall be provided.
4. Appropriate gas metering is required to monitor the performance of gas production.
5. An incoming sludge solids meter and flow meter shall be provided.
6. Sludge pre-conditioning technologies to maximize sludge stabilization and gas production should be provided.
7. The designer should provide a sludge-to-sludge heat exchanger to recover energy from the digested sludge (typically 35 degrees C in a mesophilic digester) by pre-heating the sludge feed (typically 10 to 20 degrees C).

#### C.3.4.6 Thickening and Dewatering

Low energy technologies (gravity belt thickener, rotary drum thickener, etc.) should be used to thicken WAS or primary sludge. Effluent water should be utilized, wherever feasible, for belt/ drum cleaning.

1. The total life-cycle cost benefit analysis should be performed and considered when selecting the preferred dewatering technology including power, labour, maintenance, cake dryness, solids capture, biosolids haulage and disposal.
2. When dewatering centrifuges are preferred, structure procurement documents to favour equipment with the lowest total power requirements.
3. Polymer systems should be designed to make down at the highest possible concentration (typically 1%) to minimize potable water consumption. Effluent water should be utilized for secondary dilution to the concentration required for the thickening or dewatering process (typically 0.2 – 0.5%).
4. Consideration shall be given to specifying automated sludge thickening and dewatering equipment.

#### C.3.4.7 Drying

The following opportunities for maximizing the energy efficiency of a drying facility should be considered.

1. Dewatering technologies and/or digester feed conditioning systems should be selected to maximize the dewatering cake solids concentration to drying (i.e., minimize the energy required for evaporation).
2. Opportunities to recover waste heat or energy should be considered (e.g., digester gas, jacket and exhaust heat from co-generation facilities, etc.) in the treatment plant to off-set the costs of natural gas.
3. The feasibility of solar drying to minimize fossil fuel use should be reviewed.

#### C.3.4.8 Energy Recovery

The designer shall review opportunities for digester gas energy recovery either through co-generation, micro-turbines or gas purification to natural gas quality for injection to the local grid or for use as vehicle fuel.

1. For any co-generation facility, jacket heat recovery shall be provided at a minimum, and potentially exhaust and jacket recovery shall be provided to allow heating of the feed solids to digestion without supplemental fuels.
2. Alternative digestion pre-conditioning systems shall be reviewed to maximize gas production for co-generation or purification.
  - a) For these systems, an energy balance evaluation (i.e., energy in vs. energy out) shall be completed to determine the effectiveness of the conditioning system.
  - b) Only conditioning systems that offer a net positive energy benefit shall be utilized.

#### C.3.4.9 Other Considerations

Other considerations for energy efficiency in preliminary treatment include the following opportunities:

1. Enclosed equipment and channels with dedicated draw-off to odour control unit may be utilized to reduce air changes required in the main building area.
2. Equipment with lower overall headroom requirements shall be selected to minimize building height and ventilation air volumes.
3. Areas having Class 1, Division 1 classifications shall be designed, where appropriate. The designer may consider a system with flexibility for lower ventilation rates during winter months.
4. The designer may consider the use of heat recovery ventilators suitable for a classified environment.
5. Opportunities to minimize potable water consumption throughout the plant shall be reviewed.
6. The highest potential for headworks energy savings lies in the design of the HVAC system and area classification to reduce heating demand.

#### C.3.5 Biosolids Management

Refer to *Niagara Region's Biosolids Management Master Plan*, the latest version, for details.

**Appendix A - Glossary**

AC	Alternating Current	CAN/CGA	National Standard of Canada/Canadian Gas Association
ACI	American Concrete Institute		
AFBMA	American Friction Bearing Manufacturers	CD-ROM	Compact Disc Read-Only Memory
AGMA	American Gear Manufacturers Association	CGA	Canadian Gas Association
AISI	American Iron and Steel Institute	CGE	Canadian General Electric
AMCA	Air Moving and Control Association	CGSB	Canadian General Specification Board
ANSI	American National Standards Institute	CFD	Computational Fluid Dynamics
AODA	Accessibility for Ontarians with Disabilities Act	CPM	Critical Path Method
APEL	Approved Product and Equipment List	CPP	Concrete Pressure Pipe
ASA	American Standards Association	CPU	Central Processing Unit
ASC	Application Specific Controller	CPVC	Chlorinated polyvinyl chloride
ASCE	American Society of Civil Engineers	CRI	Colour Rendering Index
ASHRAE	American Society of Heating, Refrigerating and Air Conditioning Engineers, Inc.	CRN	Canadian Registration Number
ASTM	American Society for Testing and Materials	CSA	Canadian Standards Association
AWWA	American Waterworks Association	CSO	Combined Sewer Overflows
BOD	Biochemical Oxygen Demand	CT	Concentration Time
BUNA-N	Nitrile	DBP	Disinfection By-Products
CW	Complete With	DC	Direct Current
C.T.	Current Transformer	DI	Digital Input
CAD	Computer Aided Design	DO	Dissolved Oxygen
		DTC	Direct Torque Control
		DWF	Dry Weather Flow
		DWWP	Drinking Water Works Permit
		EASR	Environmental Activity and Sector Registry
		ECA	Environmental Compliance Approval
		EMI	Electromagnetic Interference

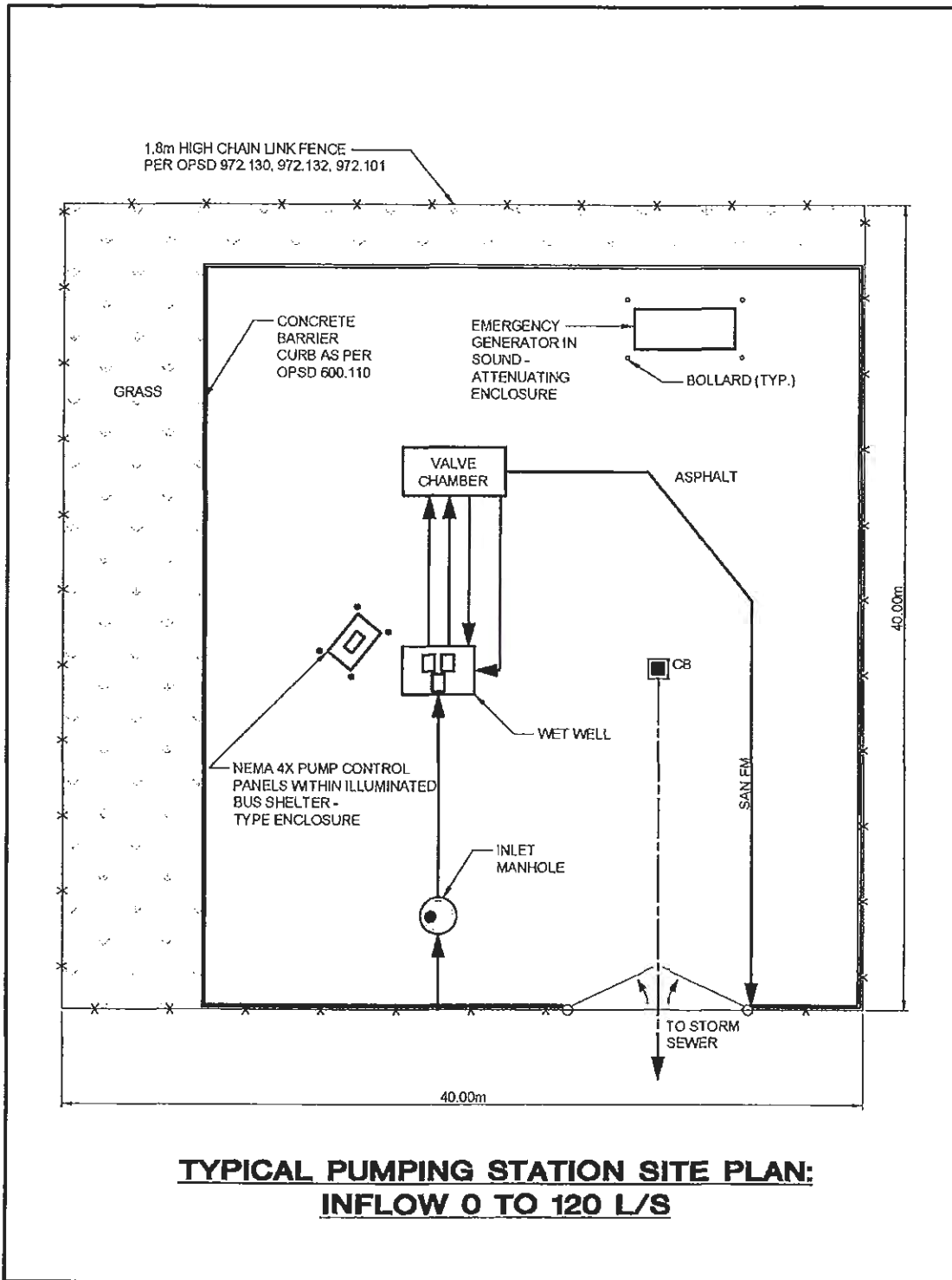
EPA	Environmental Protection Act	IEEE	Institute of Electrical and Electronic Engineers
E.T.M.	Elapsed Time Meter	IGBT	Isolated Gate Bipolar Transistor
EEMAC	Electrical and Electronics Manufacturers Association of Canada	IRQ	Interrupt Request
EEPROM	Electrically Erasable Programmable Read-Only-Memory	ISO	International Standard
EPROM	Electrically Programmable Read-Only-Memory	KPA	Kilopascals
ESA	Electrical Safety Authority	LAN	Local Area Network
FAT	Factory Acceptance Test	LCD	Liquid Crystal Display
FOM	Facility Operation Manual	LED	Light Emitting Diode
FRP	Fibreglass Reinforced Plastic	LCP	Local Control Panel
GAC	Granular Activated Carbon	LL	Low Level
GE Canada	General Electric Canada	LOS	Loss of Signal
GFI	Ground Fault Interrupt	MAC	Maximum Acceptable Concentration
GUI	Graphic User Interface	MAUA	Multi-Attribute Utility Analysis
HAA	Haloacetic Acid	MCC	Motor Control Centre
HAZOP	Hazard and Operability Review	MDWL	Municipal Drinking Water License
HDPE	High Density Polyethylene	MIB	Methyl Isoborneol
HHL	High High Level	MIGD	Million Imperial Gallons per Second
HID	High Intensity Discharge	MNR	Ministry of Natural Resources, Ontario
HMI	Human Machine Interface	MECP	Ontario Ministry of the Environment Conservation and Parks
HP	Horsepower	MOL	Ministry of Labour
HVAC	Heating, Ventilation and Air Conditioning	MOV	Metal Oxide Varistor
HWL	High Water Level	MSDS	Material Safety Data Sheet
Hz	Hertz	MSP	Master Servicing Plan
I/O	Input/Output	MTO	Ontario Ministry of Transportation
I&C	Instrumentation & Control	NASSCO	National Association of Sewer Service Companies' Pipeline
ICI	Industrial, Commercial and Institutional	PACP	
ID	Inside Diameter		

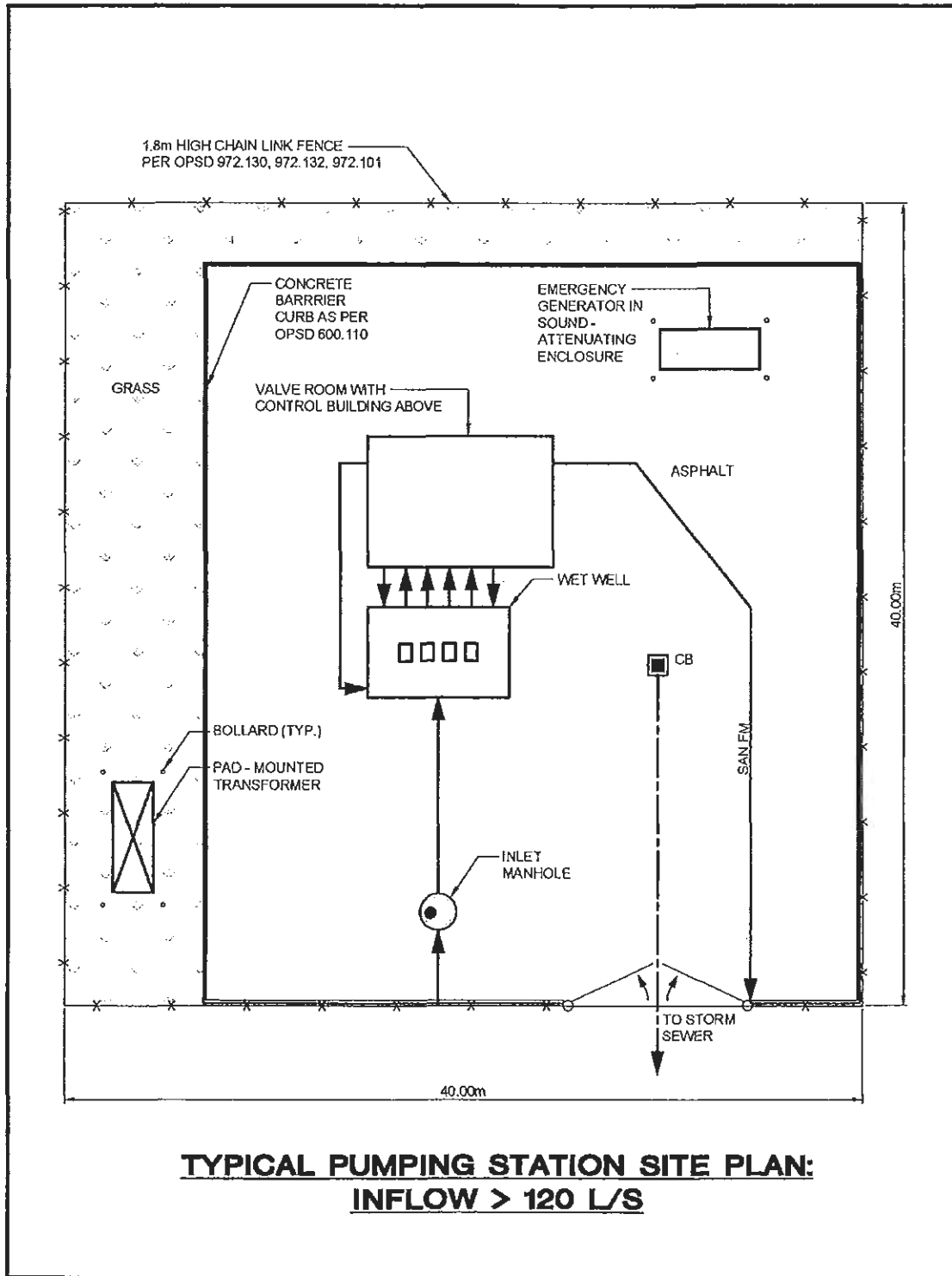
	Assessment and Certification Program	PLC	Programmable Logic Controller
N.C.	Normally Closed	PMG	Permanent Magnet Alternator
N.O.	Normally Open	PS	Pumping Station
N.P.T.	Nominal Pipe Thread	PSI	Pounds Per Square Inch
NEMA	National Electrical Manufacturers Association	PTC	Positive Temperature Coefficient
NFPA	National Fire Protection Association	PVC	Polyvinyl chloride
NPC	Noise Pollution Control	PVCO	Molecularly oriented polyvinyl chloride
NPSCD	Niagara Peninsula Standard Contract Document	PWM	Pulse Width Modulated
NSF	National Sanitary Foundation	R.R.O.	Revised Regulations of Ontario
NTU	Nephelometric Turbidity Unit	RAM	Random Access Memory
OBC	Ontario Building Code	RBC	Rotating Biological Contactor
O.D.	Outside Diameter	RCP	Reinforced Concrete Pipe
ODWS	Ontario Drinking Water Standards	Region	Niagara Region
OHSA	Occupational Health and Safety Act	RFI	Radio Frequency Interference
OESC	Ontario Electrical Safety Code	RLC	Resistive Capacitance Inductance
OPS	Ontario Provincial Standards	RMS	Root Mean Square
OPSD	Ontario Provincial Standard Drawings	RPM	Rotations Per Minute
OPSS	Ontario Provincial Standard Specifications	RPU	Remote Programmable Unit
OWRA	Ontario Water Resources Act	SAE	Society of Automotive Engineer
P&IDs	Process & Instrumentation Diagrams	SAT	Site Acceptance Test
PAC	Powdered Activated Carbon	SCADA	Supervisory Control and Data Acquisition
PCB	Polychlorinatedbiphenols	SMACNA	Sheet Metal and Air Conditioning Contractors National Association
PEO	Professional Engineers Ontario	SO <sub>2</sub>	Sulfur Dioxide
PID	Process and Instrumentation Drawing	SOP	Standard Operating Procedure
		SPS	Sewage Pumping Station
		SQL	Structural Query Language

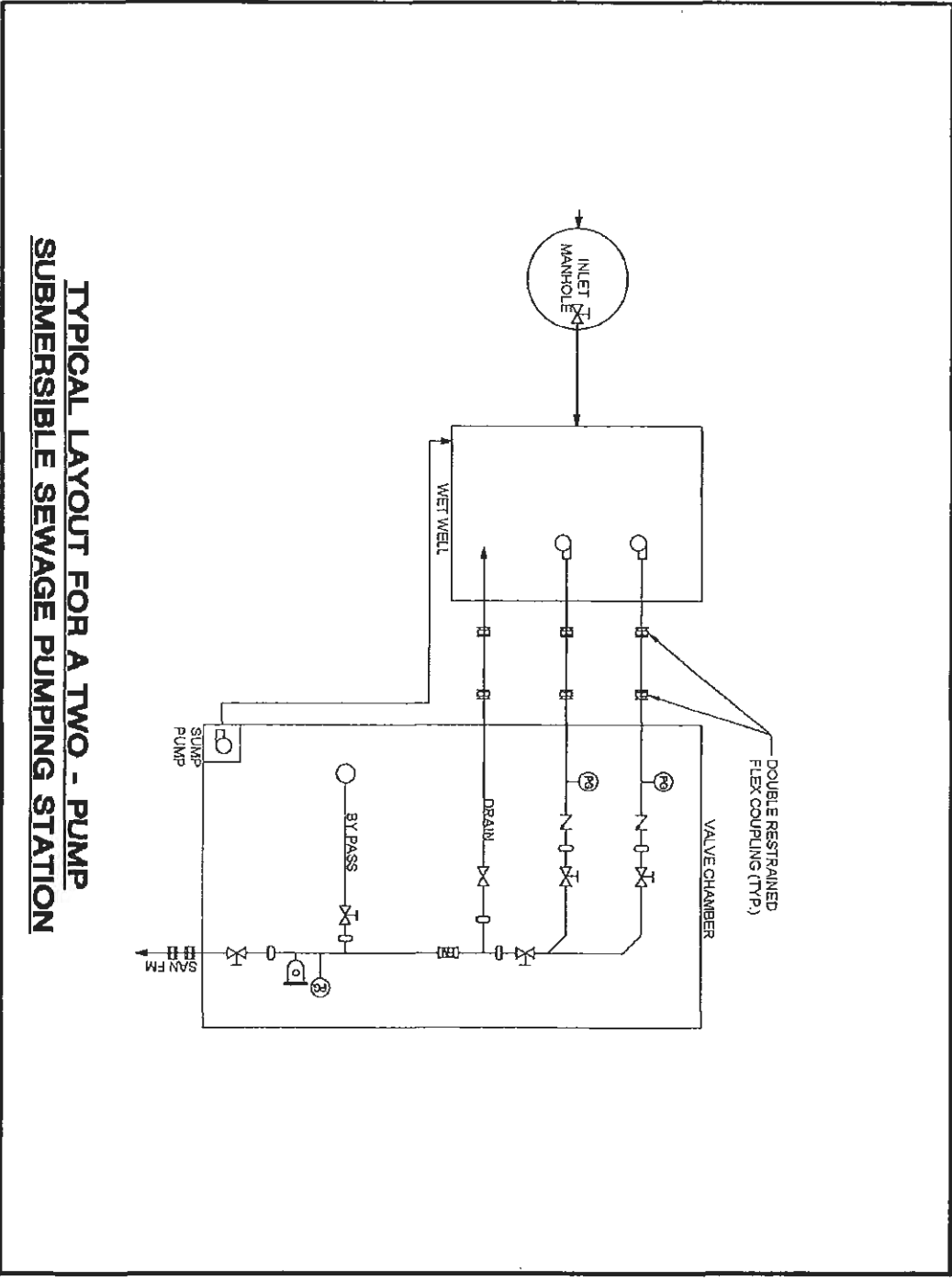


SUE	Subsurface Utility Engineering	UL	Underwriters Laboratories
T&O	Taste and Odour	USEPA	United States Environmental Protection Agency
TC/TC	Tungsten Carbide/Tungsten Carbide	UV	Ultra-Violet
THD	Total Harmonic Distortion	VAC	Voltage Alternating Current
THM	Trihalomethane	VDC	Voltage Direct Current
TS	Total Solids	VFD	Variable Frequency Drive
TSE	Technical and Scientific Equipment	WAN	Wide Area Network
TSSA	Technical Standards and Safety Authority	WEAO	Water Environment Association of Ontario
TTHM	Total Trihalomethanes	WHMIS	Workplace Hazardous Material Information System
TWH, TWU	Type of Wire, Refer to Code, Indicates Thermoplastic Vinyl-Coated Wire that is Moisture-Resistant	WWF	Wet Weather Flow
		WWTP	Wastewater Treatment Plant
		WTP	Water Treatment Plant
TWL	Top Water Level	XO	Neutral

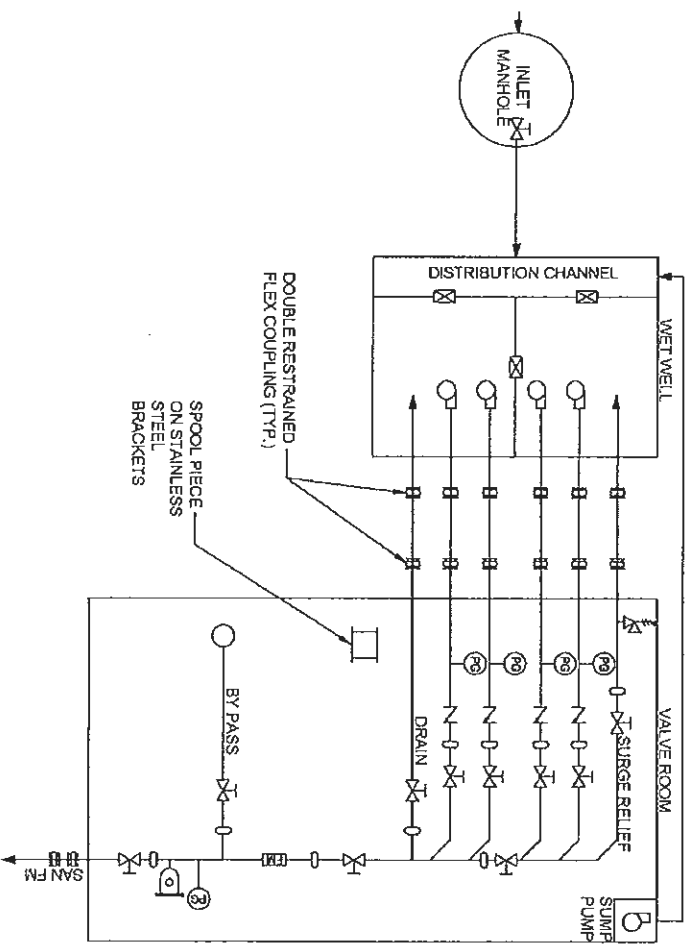
Appendix B - Schematics







**TYPICAL LAYOUT FOR A TWO - PUMP  
 SUBMERSIBLE SEWAGE PUMPING STATION**

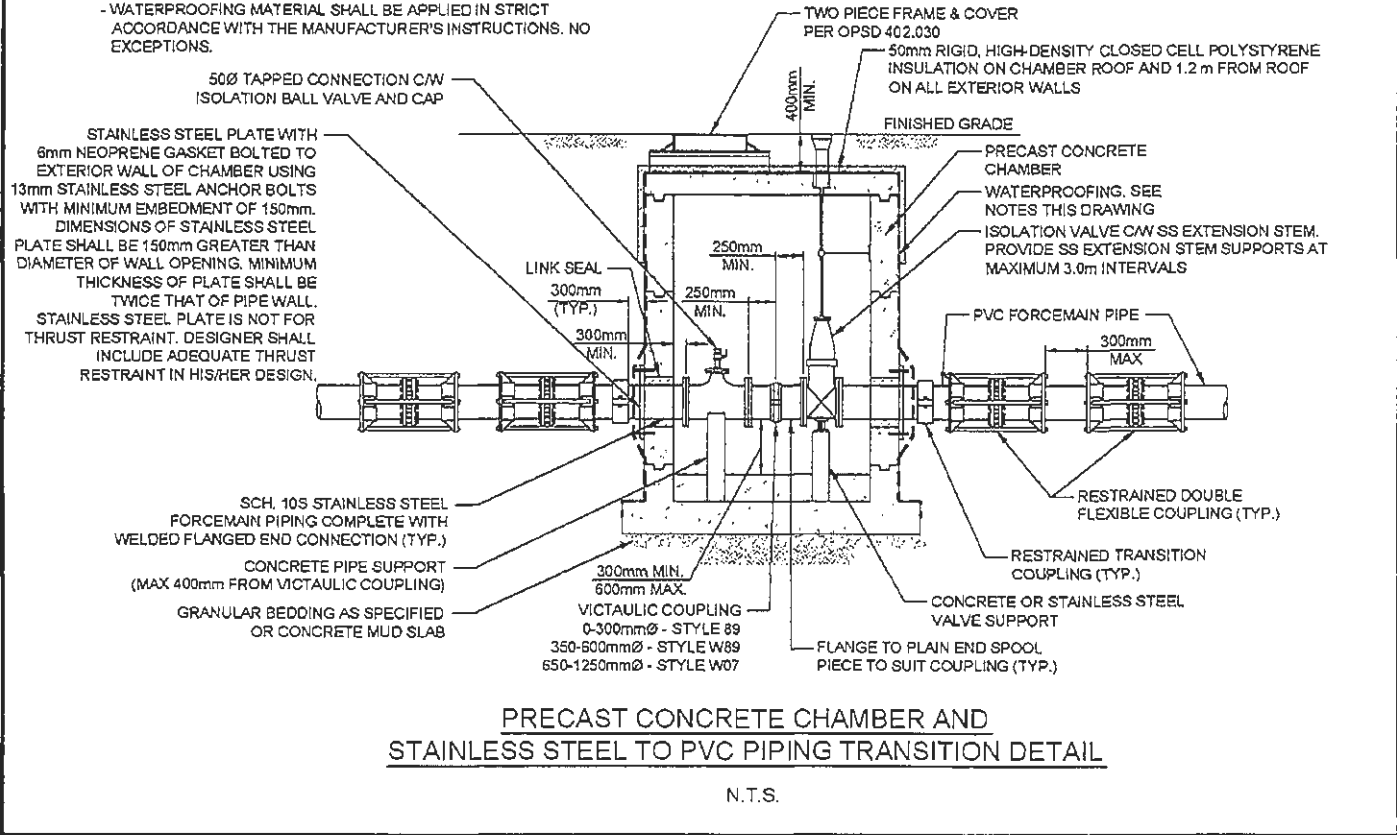


**TYPICAL LAYOUT FOR A DIVIDED WET WELL  
SUBMERSIBLE SEWAGE PUMPING STATION**

FILE C:\Gm\3D Proj\2016\15055\15055-CHAMBER WATERPROOF & PVC TRANSITION DETAIL.dwg LAYOUT Layer 1  
LAST SAVED BY: R MacDonell, 12/7/2016 8:11:21 AM PLOTTED BY: Robert MacDonell - SM 2/15/16 8:11:42 AM

**NOTES:**

1. ALL EXTERIOR METAL COMPONENTS, INCLUDING PIPING SHALL BE WRAPPED IN THREE-PART PETROLATUM TAPE MEETING ISO 9001 STANDARDS.
2. WATERPROOF ENTIRE EXTERIOR OF CHAMBER.
  - WATERPROOFING MATERIAL SHALL CONSIST OF AN SBS MODIFIED BITUMEN MEMBRANE OR A THREE-PART PETROLATUM TAPE MEETING ISO 9001 STANDARDS.
  - WATERPROOFING MATERIAL SHALL BE SEALED TO THE CONCRETE SURFACE TO ENSURE NO AIR POCKETS OR OTHER SPACES THAT MIGHT ALLOW WATER INFILTRATION.
  - WATERPROOFING MATERIAL SHALL BE APPLIED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. NO EXCEPTIONS.



## Appendix C - Acts, Codes, Standards and Guidelines

Designs shall meet the following acts, codes, standards and guidelines.

1. Ontario Ministry of the Environment Conservation and Parks (MECP) Design Guidelines
  - a) Design Guidelines for Drinking-Water Systems
  - b) Procedure for Disinfection of Drinking Water in Ontario
  - c) Design Guidelines for Sewage Works
  - d) Stormwater Management Planning and Design Manual
  - e) Water and Energy Conservation Guidance Manual for Sewage Works
  - f) Guidelines for Environmental Protection Measures at Chemical and Waste Storage Facilities
  - g) Information to be Submitted for Approval of Stationary Sources of Sound, Publication NPC-233, latest revision
2. Clean Water Act
3. Ontario Safe Drinking Water Act
4. Ontario Water Resources Act
5. Ontario Provincial Standards Specifications
6. Ontario Environmental Assessment Act
7. Ontario Environmental Protection Act
8. Ontario Building Code
9. Accessibility for Ontarians with Disabilities Act
10. Wastewater Systems Effluent Regulations
11. National Building Code of Canada
12. National Fire Code of Canada
13. National Plumbing Code
14. Canadian Standards Association
15. Guidelines for Canadian Drinking Water Quality, Health Canada
16. National Sanitary Foundation (NSF) – NSF 60 and NSF 61
17. Applicable National Fire Protection Association (NFPA) Standards
18. American National Standards Institute (ANSI)
19. American Waterworks Association (AWWA) Standards
20. Canadian Gas Association CGA B105 – Digester Gas Systems



21. Institute of Electrical and Electronic Engineers (IEEE)
22. The Instrumentation, Systems and Automation Society (ISA)
23. Canadian Electrical Code
24. Ontario Electrical Safety Code
25. Ontario Underground Infrastructure Notification Systems Act
26. American Society of Civil Engineers Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data
27. Local Area Municipal By-Laws

123  
SCHEDULE "C"

**Schedule C: Authorization to Alter the Drinking Water System**

System Owner	The Corporation of the City of Welland
Permit Number	076-201
Drinking Water System Name	Welland Distribution system
Schedule C Issue Number	1

Pursuant to the *Safe Drinking Water Act*, 2002, S.O. 2002, c. 32 and the regulations made thereunder and subject to the limitations thereof, this schedule is being issued under Part V of the *Safe Drinking Water Act*, 2002, S.O., c. 32 to the owner of the drinking water system to amend the drinking water works permit to authorize alterations to the drinking water system as follows:

**System Overview**

The **Welland Distribution System** is supplied by water treated at the Welland Water Treatment plant, owned by the Regional Municipality of Niagara. The source water is from Lake Erie and is treated by a conventional, chemically assisted filtration process. The distribution system consists of a network of watermains ranging in size from 50 mm to 750 mm. There are no storage, re-chlorination or booster pumping facilities on the Welland Distribution System.

Low pressures were identified within the Hunter's Point development area which is of high elevation relative to the hydraulic grade line of the system existing and future conditions. An in-line Booster Pumping station was recommended to address the low pressure issues.

**Proposed Alterations**

**Booster Pumping Station**

The proposed work include the construction, testing and commissioning of a new in-line water booster pumping station to increase water pressure in the Hunter's Point development area. All in accordance with the application, plans and supporting documentation listed in table 1 of this schedule

**New Hunter's Point Booster Pumping Station**

Location	Located at 8 Daimler Parkway, Welland ON
UTM Coordinates	NAD 83: UTM Zone 17, 644987.37 m E 4764449.46 m N
Description	Building housing the pumps, and other equipment and an outdoor standby generator.
Dimensions	Approximately 9.550 m long and 4.1 m wide and 3.7 m high with 300 mm suction line and 250 mm discharge line and outdoor standby natural gas standby power generator.
Equipment	Two (2) pumps rated at 5 L/s at 15 m TDH, with VFD. Two (2) pumps rated at 15 L/s at 15 m TDH, with VFD

	One (1) Fire pump rated at 140 L/s at 25 m TDH with soft starter.
	One 25 mm diameter re-circulation line with direct acting relief valve
	One 100 mm diameter re-circulation line with relief valve
Standby Power	An outdoor 100 kW standby power natural gas engine generator with weather protective and sound attenuated enclosure. With Automatic Transfer Switch and UPS to provide uninterrupted power supply to all instrumentation and other sensitive equipment during the transition period between normal power loss and generator start up.
Notes	

### Instrumentation and Controls

Flow	Flow meter measuring discharged water flow during normal operation
Pressure	Two (2) pressure transducers. One (1) on the pumping station suction header and one (1) on the pumping station discharge header.
SCADA	Controls, monitoring, recording, alarms, reporting and alarm annunciation connected to Niagara Region control system by telemetry.
Notes	All associated piping, valves, electrical and mechanical equipment, instrumentation and operation control.

### Miscellaneous

Description	300 mm diameter watermain with valves to connect from the existing 300 mm diameter watermain to the new booster pumping station suction side..
	300 mm diameter watermain with valves to connect from the new booster pumping station discharge side to the existing 300 mm diameter watermain.
	Bypass Valve, check valve on the existing 300 mm diameter watermail downstream of the connection of the suction line to the existing watermail.
	Site work
Notes	

### Licence Amendments

In consideration of the proposed alterations, the licence will be amended as follows:

Not applicable

### Applications, Plans and Supporting Documentation

Table 1	
Application dated April 20, 2018	The City of Welland Hunter's Point Water Booster Pumping Station
	Technical Memo by Associated Engineering dated April 24, 2018
	Information provided by email dated June 25, 2018
	Set of Drawings , by Associated Engineering dated June 15, 2018
Notes	

The conditions of the drinking water works permit and the licence apply, as applicable, to the alterations of the drinking water system authorized by the issuance of this schedule to the drinking water works permit.

Except as otherwise provided by the drinking water works permit and the licence, the proposed alterations described in this schedule shall be designed, developed, built, operated and maintained in accordance with this schedule and the documentation listed in Table 1.

DATED at TORONTO this 26<sup>th</sup> day of July, 2018

Signature



Aziz Ahmed, P.Eng.  
Director  
Part V, *Safe Drinking Water Act*, 2002



Ontario

Ministry of  
the Environment

## Form 2 - Record of Minor Modifications or Replacements to the Drinking Water System

### RETAIN COMPLETED FORM - DO NOT SEND TO MOE

#### Part 1 - Drinking Water Works Permit Number

*(Insert the Drinking Water Works Permit number authorizing minor modifications or replacements to the Drinking Water System)*

076-201

#### Part 2 - Description of Minor Modifications or Replacements (Use attachments if required)

Pump sizing change within the Schedule C of Hunters Pointe Booster Pumping Station reflecting as constructed conditions.

##### Original Schedule C (Obsolete):

Two (2) pumps rated 5 L/s at 15m TDH, with VFD  
 Two (2) pumps rated 15 L/s at 15m TDH, with VFD  
 One (1) Fire pump rated 140 L/s at 25m TDH with soft starter

##### New Condition per As Constructed Conditions:

Two (2) pumps rated at 6.2 L/s at 21.0 m TDH, with VFD  
 Two (2) pumps rated at 15 L/s at 21.3 m TDH, with VFD  
 One (1) Fire pump rated at 140 L/s at 27.7 m TDH, with VFD

Copy of original Schedule C attached for reference.

The description shall include:

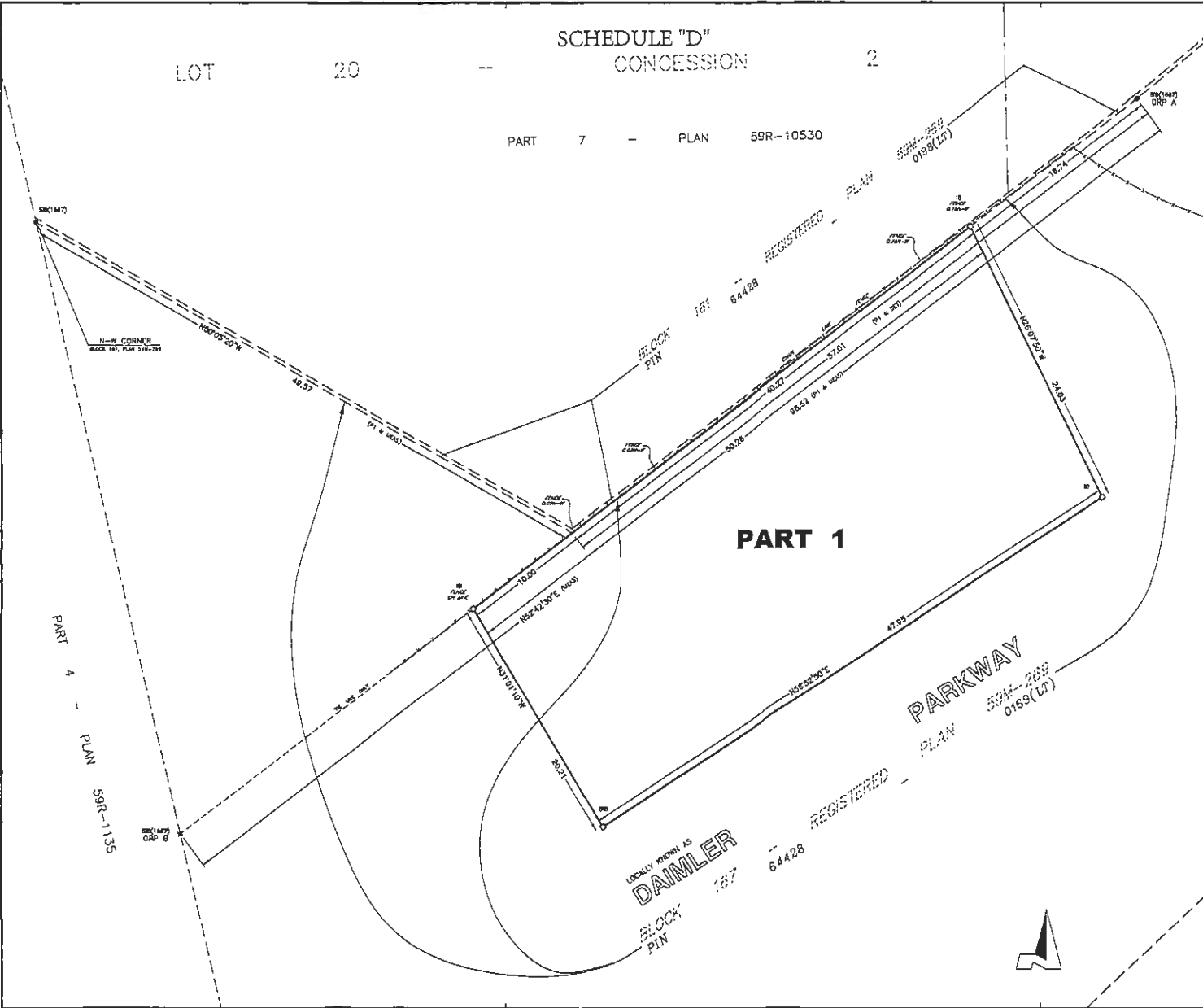
- 1) An identification of the system component being modified or replaced;
- 2) The location of the works being modified or replaced; and
- 3) A brief description of the modification or replacement

#### Part 3 - Verification by Owner

I hereby verify that

- 1) The minor modifications or replacements described in Part 2 of this form meets the requirements of the conditions of the Drinking Water Works Permit identified in Part 1 of this form which authorizes the minor modifications or replacements; and
- 2) I am authorized by the owner to complete this verification.

Name of Owner (Print)	Name of Owner Representative (Print)
The Corporation of the City of Welland	Vince Beaudoin
Signature	Date (yyyy/mm/dd)
	2021/09/21



I REQUIRE THIS PLAN TO BE DEPOSITED UNDER THE LAND TITLES ACT.

DATE JAN. 16, 2020

PLAN 59R-16615 RECEIVED AND DEPOSITED

DATE Jan 21, 2020

*D. Chambers*  
DONALD G. CHAMBERS, O. S., O.L.S.

*K. Epp*  
REPRESENTATIVE FOR LAND REGISTRAR FOR THE LAND TITLES DIVISION OF NIAGARA SOUTH(30)

PART	BLOCK	PLAN	PIN
1	PART OF BLOCK 167	REGISTERED PLAN 59M-269	PART OF PIN 64428-0169(LT)

PART 1 COMPRISES PART OF PIN 64428-0169(LT)

PLAN OF SURVEY OF  
PART OF BLOCK 167  
REGISTERED PLAN 59M-269  
**CITY OF WELLAND**  
REGIONAL MUNICIPALITY OF NIAGARA  
SCALE 1 : 200

0 1 2 3 4 5 10 20 METRES

DONALD G. CHAMBERS  
ONTARIO LAND SURVEYOR

**METRIC NOTE**  
DISTANCES AND COORDINATES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048.

**BEARING NOTE**  
BEARINGS ARE UTM GRID, DERIVED FROM OBSERVED REFERENCE POINTS A AND B BY REAL TIME NETWORK (RTN) OBSERVATIONS, UTM ZONE 17, MAG33 (GSR3) (2010)

FOR BEARING COMPARISONS, A ROTATION OF 0°59'25" COUNTERCLOCKWISE WAS APPLIED TO BEARINGS ON REGISTERED PLAN 59M-269.

**DISTANCE NOTE**  
DISTANCES ARE ROUND AND CAN BE CONVERTED TO GRID BY MULTIPLYING BY THE COMBINED SCALE FACTOR OF 0.800947.

POINT ID	NORTHING	EASTING
ORP A	4784480.40	645007.09
ORP B	4784421.92	644630.31

CO-ORDINATES CANNOT, IN THEMSELVES, BE USED TO RE-ESTABLISH CORNERS OR BOUNDARIES SHOWN ON THIS PLAN.

**LEGEND**

- MONUMENTS SURVEY MONUMENT FOUND
- SURVEY MONUMENT SET
- SIB STANDARD IRON BAR
- SSIB SHORT STANDARD IRON BAR
- IB IRON BAR
- CP CONCRETE PIN
- RIB ROUND IRON BAR
- IP IRON PIPE
- MEAS MEASURED
- WT WITNESS
- OU ORIGIN UNKNOWN
- N/S/E/W NORTH/SOUTH/EAST/WEST
- PIN PROPERTY IDENTIFICATION NUMBER
- P1 REGISTERED PLAN 59M-269
- 1067 A. MALESZYN, O.L.S.

**SURVEYOR'S CERTIFICATE**

I CERTIFY THAT:

- THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYORS ACT, THE SURVEYORS ACT AND THE LAND TITLES ACT AND THE REGULATIONS MADE UNDER THEM;
- THE SURVEY WAS COMPLETED ON THE 18th DAY OF DECEMBER, 2019.

DATE JAN. 16, 2020

*D. Chambers*  
DONALD G. CHAMBERS, O. S., O.L.S.

**CHAMBERS AND ASSOCIATES**  
SURVEYING LTD

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DRAWN BY: DHT DATE: 00084-13\_M5 DATE: 00084-13\_RP FILE NO: 05-84-13



## MUNICIPAL DRINKING WATER LICENCE

**Licence Number: 076-101**

**Issue Number: 7**

Pursuant to the *Safe Drinking Water Act, 2002*, S.O. 2002, c. 32, and the regulations made thereunder and subject to the limitations thereof, I hereby issue this municipal drinking water licence under Part V of the *Safe Drinking Water Act, 2002*, S.O. 2002, c. 32 to:

**Welland, The Corporation of the City of**

60 East Main St  
Welland, ON L3B 3X4

For the following municipal residential drinking water system:

**Welland Distribution System**

This municipal drinking water licence includes the following:

Schedule	Description
Schedule A	Drinking Water System Information
Schedule B	General Conditions
Schedule C	System-Specific Conditions
Schedule D	Conditions for Relief from Regulatory Requirements

Upon the effective date of this drinking water licence #076-101, all previously issued versions of licence #076-101 are revoked and replaced by this licence.

DATED at TORONTO this 26th day of May, 2021

Signature

Aziz Ahmed, P.Eng.  
Director  
Part V, *Safe Drinking Water Act, 2002*



## Schedule A: Drinking Water System Information

System Owner	Welland, The Corporation of the City of
Licence Number	076-101
Drinking Water System Name	Welland Distribution System
Licence Effective Date	May 26, 2021

### 1.0 Licence Information

Licence Issue Date	May 26, 2021
Licence Effective Date	May 26, 2021
Licence Expiry Date	May 25, 2026
Application for Licence Renewal Date	November 25, 2025

### 2.0 Incorporated Documents

The following documents are applicable to the above drinking water system and form part of this licence:

#### 2.1 Drinking Water Works Permit

Drinking Water System Name	Permit Number	Issue Date
Welland Distribution System	076-201	May 26, 2021

#### 2.2 Permits to Take Water

Water Taking Location	Permit Number	Issue Date
Not Applicable	Not Applicable	Not Applicable

### 3.0 Financial Plans

The Financial Plan Number for the Financial Plan required to be developed for this drinking water system in accordance with O. Reg. 453/07 shall be:	076-301
Alternately, if one Financial Plan is developed for all drinking water systems owned by the owner, the Financial Plan Number shall be:	076-301A

### 4.0 Accredited Operating Authority

Drinking Water System or Operational Subsystems	Accredited Operating Authority	Operational Plan No.	Operating Authority No.
Welland Distribution System	The Corporation of the City of Welland	076-401	076-OA1

## Schedule B: General Conditions

System Owner	Welland, The Corporation of the City of
Licence Number	076-101
Drinking Water System Name	Welland Distribution System
Licence Effective Date	May 26, 2021

### 1.0 Definitions

1.1 Words and phrases not defined in this licence and the associated drinking water works permit shall be given the same meaning as those set out in the SDWA and any regulations made in accordance with that act, unless the context requires otherwise.

1.2 In this licence and the associated drinking water works permit:

"adverse effect", "contaminant" and "natural environment" shall have the same meanings as in the EPA;

"alteration" may include the following in respect of this drinking water system:

- (a) An addition to the system,
- (b) A modification of the system,
- (c) A replacement of part of the system, and
- (d) An extension of the system;

"compound of concern" means a contaminant described in paragraph 4 subsection 26 (1) of O. Reg. 419/05, namely, a contaminant that is discharged to the air from a component of the drinking water system in an amount that is not negligible;

"CT" means the CT Disinfection Concept, as described in subsection 3.1.1 of the Ministry's Procedure for Disinfection of Drinking Water in Ontario, dated July 29 2016.

"Director" means a Director appointed pursuant to section 6 of the SDWA for the purposes of Part V of the SDWA;

"drinking water works permit" means the drinking water works permit for the drinking water system, as identified in Schedule A of this licence and as amended from time to time;

"emission summary table" means a table described in paragraph 14 of subsection 26 (1) of O. Reg. 419/05;

"EPA" means the *Environmental Protection Act*, R.S.O. 1990, c. E.19;

"financial plan" means the financial plan required by O. Reg. 453/07;

"Harmful Algal Bloom (HAB)" means an overgrowth of aquatic algal bacteria that produce or have the potential to produce toxins in the surrounding water, when the algal

cells are damaged or die. Such bacteria are harmful to people and animals and include microcystins produced by cyanobacterial blooms.

"**licence**" means this municipal drinking water licence for the municipal drinking water system identified in Schedule A of this licence;

"**Ministry**" means the Ontario Ministry of the Environment, Conservation and Parks;

"**operational plan**" means an operational plan developed in accordance with the Director's Directions – Minimum Requirements for Operational Plans made under the authority of subsection 15(1) of the SDWA;

"**owner**" means the owner of the drinking water system as identified in Schedule A of this licence;

"**OWRA**" means the *Ontario Water Resources Act*, R.S.O. 1990, c. 0.40;

"**permit to take water**" means the permit to take water that is associated with the taking of water for purposes of the operation of the drinking water system, as identified in Schedule A of this licence and as amended from time to time;

"**point of impingement**" has the same meaning as in section 2 of O. Reg. 419/05 under the EPA;

"**point of impingement limit**" means the appropriate standard from Schedule 2 or 3 of O. Reg. 419/05 under the EPA and if a standard is not provided for a compound of concern, the concentration set out for the compound of concern in the document titled "Air Contaminants Benchmarks (ACB) List: Standards, guidelines and screening levels for assessing point of impingement concentrations of air contaminants", as amended from time to time and published by the Ministry and available on a government of Ontario website;

"**licensed engineering practitioner**" means a person who holds a licence, limited licence or temporary licence under the Professional Engineers Act;

"**provincial officer**" means a provincial officer designated pursuant to section 8 of the SDWA;

"**publication NPC-300**" means the Ministry publication titled "Environmental Noise Guideline: Stationary and Transportation Sources – Approval and Planning" dated August 2013, as amended;

"**SCADA system**" means a supervisory control and data acquisition system used for process monitoring, automation, recording and/or reporting within the drinking water system;

"**SDWA**" means the *Safe Drinking Water Act*, 2002, S.O. 2002, c. 32;

"**sensitive receptor**" means any location where routine or normal activities occurring at reasonably expected times would experience adverse effect(s) from a discharge to air from an emergency generator that is a component of the drinking water system, including one or a combination of:

- (a) private residences or public facilities where people sleep (e.g.: single and multi-unit dwellings, nursing homes, hospitals, trailer parks, camping grounds, etc.),
- (b) institutional facilities (e.g.: schools, churches, community centres, day care centres, recreational centres, etc.),
- (c) outdoor public recreational areas (e.g.: trailer parks, play grounds, picnic areas, etc.), and
- (d) other outdoor public areas where there are continuous human activities (e.g.: commercial plazas and office buildings).

"**sub-system**" has the same meaning as in Ontario Regulation 128/04 (Certification of Drinking Water System Operators and Water Quality Analysts) under the SDWA;

"**surface water**" means water bodies (lakes, wetlands, ponds - including dug-outs), water courses (rivers, streams, water-filled drainage ditches), infiltration trenches, and areas of seasonal wetlands;

"**UV**" means ultraviolet, as in ultraviolet light produced from an ultraviolet reactor.

## 2.0 Applicability

- 2.1 In addition to any other applicable legal requirements, the drinking water system identified above shall be established, altered and operated in accordance with the conditions of the drinking water works permit and this licence.

## 3.0 Licence Expiry

- 3.1 This licence expires on the date identified as the licence expiry date in Schedule A of this licence.

## 4.0 Licence Renewal

- 4.1 Any application to renew this licence shall be made on or before the date identified as the application for licence renewal date set out in Schedule A of this licence.

## 5.0 Compliance

- 5.1 The owner and operating authority shall ensure that any person authorized to carry out work on or to operate any aspect of the drinking water system has been informed of the SDWA, all applicable regulations made in accordance with that act, the drinking water works permit and this licence and shall take all reasonable measures to ensure any such person complies with the same.

## 6.0 Licence and Drinking Water Works Permit Availability

- 6.1 At least one copy of this licence and the drinking water works permit shall be stored in such a manner that they are readily viewable by all persons involved in the operation of the drinking water system.

## 7.0 Permit to Take Water and Drinking Water Works Permit

- 7.1 A permit to take water identified in Schedule A of this licence is the applicable permit on the date identified as the Effective Date of this licence.
- 7.2 A drinking water works permit identified in Schedule A of this licence is the applicable permit on the date identified as the Effective Date of this licence.

## 8.0 Financial Plan

- 8.1 For every financial plan prepared in accordance with subsections 2(1) and 3(1) of O. Reg. 453/07, the owner of the drinking water system shall:
- 8.1.1 Ensure that the financial plan contains on the front page of the financial plan, the appropriate financial plan number as set out in Schedule A of this licence; and
- 8.1.2 Submit a copy of the financial plan to the Ministry of Municipal Affairs and Housing within three (3) months of receiving approval by a resolution of municipal council or the governing body of the owner.

## 9.0 Interpretation

- 9.1 Where there is a conflict between the provisions of this licence and any other document, the following hierarchy shall be used to determine the provision that takes precedence:
- 9.1.1 The SDWA;
- 9.1.2 A condition imposed in this licence that explicitly overrides a prescribed regulatory requirement;
- 9.1.3 A condition imposed in the drinking water works permit that explicitly overrides a prescribed regulatory requirement;
- 9.1.4 Any regulation made under the SDWA;
- 9.1.5 Any provision of this licence that does not explicitly override a prescribed regulatory requirement;
- 9.1.6 Any provision of the drinking water works permit that does not explicitly override a prescribed regulatory requirement;
- 9.1.7 Any application documents listed in this licence, or the drinking water works permit from the most recent to the earliest; and

- 9.1.8 All other documents listed in this licence, or the drinking water works permit from the most recent to the earliest.
- 9.1.9 Any other technical bulletin or procedure issued by the Ministry from the most recent to the earliest.
- 9.2 If any requirement of this licence or the drinking water works permit is found to be invalid by a court of competent jurisdiction, the remaining requirements of this licence and the drinking water works permit shall continue to apply.
- 9.3 The issuance of and compliance with the conditions of this licence and the drinking water works permit does not:
- 9.3.1 Relieve any person of any obligation to comply with any provision of any applicable statute, regulation or other legal requirement, including the *Environmental Assessment Act*, R.S.O. 1990, c. E.18; and
- 9.3.2 Limit in any way the authority of the appointed Directors and provincial officers of the Ministry to require certain steps be taken or to require the owner to furnish any further information related to compliance with the conditions of this licence or the drinking water works permit.
- 9.4 For greater certainty, nothing in this licence or the drinking water works permit shall be read to provide relief from regulatory requirements in accordance with section 46 of the SDWA, except as expressly provided in the licence or the drinking water works permit.

## 10.0 Adverse Effects

- 10.1 Nothing in this licence or the drinking water works permit shall be read as to permit:
- 10.1.1 The discharge of a contaminant into the natural environment that causes or is likely to cause an adverse effect; or
- 10.1.2 The discharge of any material of any kind into or in any waters or on any shore or bank thereof or into or in any place that may impair the quality of the water of any waters.
- 10.2 All reasonable steps shall be taken to minimize and ameliorate any adverse effect on the natural environment or impairment of the quality of water of any waters resulting from the operation of the drinking water system including such accelerated or additional monitoring as may be necessary to determine the nature and extent of the effect or impairment.
- 10.3 Fulfillment of one or more conditions imposed by this licence or the drinking water works permit does not eliminate the requirement to fulfill any other condition of this licence or the drinking water works permit.

## 11.0 Change of Owner or Operating Authority

- 11.1 This licence is not transferable without the prior written consent of the Director.
- 11.2 The owner shall notify the Director in writing at least 30 days prior to a change of any operating authority identified in Schedule A of this licence.
- 11.2.1 Where the change of operating authority is the result of an emergency situation, the owner shall notify the Director in writing of the change as soon as practicable.

## 12.0 Information to be Provided

- 12.1 Any information requested by a Director or a provincial officer concerning the drinking water system and its operation, including but not limited to any records required to be kept by this licence or the drinking water works permit, shall be provided upon request.

## 13.0 Records Retention

- 13.1 Except as otherwise required in this licence or the drinking water works permit, any records required by or created in accordance with this licence or the drinking water works permit, other than the records specifically referenced in section 12 or section 13 of O. Reg. 170/03, shall be retained for at least 5 years and made available for inspection by a provincial officer, upon request.

## 14.0 Chemicals and Materials

- 14.1 All chemicals and materials used in the alteration or operation of the drinking water system that come into contact with water within the system shall meet all applicable standards set by both the American Water Works Association ("AWWA") and the American National Standards Institute ("ANSI") safety criteria standards NSF/60, NSF/61 and NSF/372.
- 14.1.1 In the event that the standards are updated, the owner may request authorization from the Director to use any on hand chemicals and materials that previously met the applicable standards.
- 14.2 The most current chemical and material product registration documentation from a testing institution accredited by either the Standards Council of Canada or by the American National Standards Institution ("ANSI") shall be available at all times for each chemical and material used in the operation of the drinking water system that comes into contact with water within the system.
- 14.3 Conditions 14.1 and 14.2 do not apply in the case of the following:
- 14.3.1 Water pipe and pipe fittings meeting AWWA specifications made from ductile iron, cast iron, PVC, fibre and/or steel wire reinforced cement pipe or high density polyethylene (HDPE);
- 14.3.2 Articles made from stainless steel, glass, HDPE or Teflon®;



- 14.3.3 Cement mortar for watermain lining and for water contacting surfaces of concrete structures made from washed aggregates and Portland cement;
- 14.3.4 Gaskets that are made from NSF approved materials;
- 14.3.5 Food grade oils and lubricants, food grade anti-freeze, and other food grade chemicals and materials that are compatible for drinking water use that may come into contact with drinking water, but are not added directly to the drinking water; or
- 14.3.6 Any particular chemical or material where the owner has written documentation signed by the Director that indicates that the Ministry is satisfied that the chemical or material is acceptable for use within the drinking water system and the chemical or material is only used as permitted by the documentation.

## 15.0 Drawings

- 15.1 All drawings and diagrams in the possession of the owner that show any treatment subsystem as constructed shall be retained by the owner unless the drawings and diagrams are replaced by a revised or updated version showing the subsystem as constructed subsequent to the alteration.
- 15.2 Any alteration to any treatment subsystem shall be incorporated into process flow diagrams, process and instrumentation diagrams, and record drawings and diagrams within one year of the alteration being completed or placed into service.
- 15.3 Process flow diagrams and process and instrumentation diagrams for any treatment subsystem shall be kept in a place, or made available in such a manner, that they may be readily viewed by all persons responsible for all or part of the operation of the drinking water system.

## 16.0 Operations and Maintenance Manual

- 16.1 An up-to-date operations and maintenance manual or manuals shall be maintained and applicable parts of the manual or manuals shall be made available for reference to all persons responsible for all or part of the operation or maintenance of the drinking water system.
- 16.2 The operations and maintenance manual or manuals, shall include at a minimum:
  - 16.2.1 The requirements of this licence and associated procedures;
  - 16.2.2 The requirements of the drinking waterworks permit for the drinking water system;
  - 16.2.3 A description of the processes used to achieve secondary disinfection within the drinking water system;
  - 16.2.4 Procedures for monitoring and recording the in-process parameters necessary for the control of any treatment subsystem and for assessing the performance of the drinking water system;

- 16.2.5 Procedures for the operation and maintenance of monitoring equipment;
- 16.2.6 Contingency plans and procedures for the provision of adequate equipment and material to deal with emergencies, upset conditions and equipment breakdown;
- 16.2.7 Procedures for dealing with complaints related to the drinking water system, including the recording of the nature of the complaint and any investigation and corrective action taken in respect of the complaint;
- 16.3** Procedures necessary for the operation and maintenance of any alterations to the drinking water system shall be incorporated into the operations and maintenance manual or manuals prior to those alterations coming into operation.
- 16.4** All of the procedures included or referenced within the operations and maintenance manual must be implemented.
- 16.5** The requirement for the owner to comply with condition 16.2.3 shall come into force on December 9, 2021.

## Schedule C: System-Specific Conditions

System Owner	Welland, The Corporation of the City of
Licence Number	076-101
Drinking Water System Name	Welland Distribution System
Licence Effective Date	May 26, 2021

### 1.0 Additional Sampling, Testing and Monitoring

#### Drinking Water Health and Non-Health Related Parameters

- 1.1 For each treatment subsystem or treatment subsystem component identified in column 1 of Tables 5 and 6 and in addition to any other sampling, testing and monitoring that may be required, sampling, testing and monitoring shall be undertaken for a test parameter listed in column 2 at the sampling frequency listed in column 3 and at the monitoring location listed in column 4 of the same row.

**Table 1: Drinking Water Health Related Parameters**

Column 1 Drinking Water System or Drinking Water Subsystem Name	Column 2 Test Parameter	Column 3 Sampling Frequency	Column 4 Monitoring Location
Not Applicable	Not Applicable	Not Applicable	Not Applicable

**Table 2: Drinking Water Non-Health Related Parameters**

Column 1 Drinking Water System or Drinking Water Subsystem Name	Column 2 Test Parameter	Column 3 Sampling Frequency	Column 4 Monitoring Location
Not Applicable	Not Applicable	Not Applicable	Not Applicable

#### Environmental Discharge Parameters

- 1.2 Pursuant to Condition 10 of Schedule B of this licence, the owner may undertake the following environmental discharges associated with the maintenance and/or repair of the drinking water system:
- 1.2.1 The discharge of potable water from a watermain to a road or storm sewer;
  - 1.2.2 The discharge of potable water from a water storage facility or pumping station:
    - 1.2.2.1 To a road or storm sewer; or

- 1.2.2.2 To a watercourse where the discharge has been dechlorinated and if necessary, sediment and erosion control measures have been implemented.
- 1.2.3 The discharge of dechlorinated non-potable water from a watermain, water storage facility or pumping station to a road or storm sewer;
- 1.2.4 The discharge of potable water or non-potable water from a treatment subsystem to the environment where if necessary, the discharge has been dechlorinated and sediment and erosion control measures have been implemented.
- 1.2.5 The discharge of any excess water to a road, storm sewer or the environment, associated with the management of materials excavated as part of watermain construction or repair, where necessary sediment, erosion and environmental control measures have been implemented.

## 2.0 Source Protection

- 2.1 The owner of the drinking water system shall implement risk management measures, as appropriate, to manage any potential threat to drinking water that results from the operation of the drinking water system.
- 2.2 The owner of the system shall notify the Director in writing within thirty (30) days of any approved changes to an applicable source protection plan that impact the assessed threat level of a fuel oil system identified in Schedule A of drinking water works permit.
- 2.3 The notification required in condition 3.2 shall include:
  - 2.3.1 A description of the changes and their impact on the assessed threat level of the fuel oil system(s); and,
  - 2.3.2 A timeline for re-assessing the threat level and providing the results of the assessment to the Director.

## Schedule D: Conditions for Relief from Regulatory Requirements

System Owner	Welland, The Corporation of the City of
Licence Number	076-101
Drinking Water System Name	Welland Distribution System
Licence Effective Date	May 26, 2021

### 1.0 Lead Regulatory Relief

- 1.1 The Owner is not required to implement the Corrosion Control Plan for the City of Welland, dated November 2010 ("Corrosion Control Plan"), prepared in accordance with Sch. 15.1-11 (Corrosion Control) of O. Reg. 170/03 and accepted by the Ministry on July 4, 2011.
- 1.2 The Owner is required to implement the Lead Service Line Replacement Program as documented in the Corrosion Control Plan. Sampling points shall be as per 1.3 below and are to be in lieu of post-replacement sampling outlined in Section 7.2 of the Corrosion Control Plan.
- 1.3 For a drinking water system or drinking water subsystem identified by columns 1 and 2 of Table 1 and subject to any other applicable conditions of this licence and drinking water works permit, the owner is required to comply with the sampling requirements of columns 3, 4 and 5 of the same row.

**Table 1: Number of Sampling Points to Monitor the Effectiveness of Lead Reduction Measures**

Column 1 Drinking Water System or Drinking Water Subsystem Name	Column 2 DWS Number	Column 3 Number of Sampling Points in Plumbing that Serve Private Residences	Column 4 Number of Sampling Points in Plumbing that Does Not Serve Private Residences	Column 5 Number of Sampling Points in Distribution System
Welland Distribution System	260003149	20	0	0

- 1.4 The Owner and operating authority for the system shall ensure that the samples described in 1.3 are:
- 1.4.1 Taken during the periods described in s.15.1-4.(2) of O. Reg. 170/03;
- 1.4.2 Taken in accordance with the sampling protocol described in s.15.1-7 of O. Reg. 170/03;
- 1.4.3 Reported in accordance with the reporting requirements described in s.15.1-9 of O. Reg. 170/03.

- 
- 1.5** The Owner shall prepare an Evaluation Report to assess the effectiveness of the Lead Service Line Replacement Program. The Evaluation Report shall contain the following information, where applicable:
- 1.5.1 A list of all lead results from samples taken since the implementation of lead reduction measures at the locations listed in Table 1, column 3, 4 and 5, that includes at a minimum the sample date, name of the drinking water system, location of the sample and sample result (Lead concentration).
- 1.5.2 A list of any lead results from samples taken before and after LSL replacement, noting whether the replacement was complete (municipal and private portion) or partial (municipal or private portion).
- 1.5.3 An estimated number of LSLs remaining in the drinking water system, with a distinction between LSLs owned by the municipality and those that are privately owned.
1. A summary of current lead reduction strategies, including:
- Any key milestones of implementation;
  - Number of LSLs (private and municipal) replaced during the year;
  - An estimated number of years left to replace all of the LSLs owned by the municipality;
  - Ability to achieve reduction in lead levels and other corrosion related parameters in the distribution system and premise plumbing.
- 1.5.5. A summary of results of all other aspects of the Owner's lead mitigation strategy including:
- Lead service line replacement on public and private property;
  - Outreach and education, especially to populations vulnerable to lead in drinking water;
  - Faucet filter program, and
  - Involvement of public health authorities.
- 1.6** The Evaluation Report outlined in 1.5 shall cover each calendar year, and shall be submitted to the Director by March 31<sup>st</sup>, annually.
- 1.7** The lead sampling data shall be submitted every 6 months, no later than 30 days following the previous bi-annual sampling periods.
- 1.8** For clarity, the conditions described in 1.3, 1.4, 1.5, 1.6 and 1.7 represent measures to monitor the effectiveness of the Lead Service Line Replacement Program documented in the Corrosion Control Plan.

1.8.1 While the owner and operating authority are carrying out this monitoring program, the provisions of s.15.1-11.(9) of O. Reg. 170/03 will apply to the system.

## 2.0 Other Regulatory Relief

2.1 Not Applicable.





## DRINKING WATER WORKS PERMIT

**Permit Number: 076-201**

**Issue Number: 4**

Pursuant to the *Safe Drinking Water Act, 2002*, S.O. 2002, c. 32, and the regulations made thereunder and subject to the limitations thereof, I hereby issue this drinking water works permit under Part V of the *Safe Drinking Water Act, 2002*, S.O. 2002, c. 32 to:

**Welland, The Corporation of the City of**

60 East Main St  
Welland, ON L3B 3X4

For the following municipal residential drinking water system:

**Welland Distribution System**

This drinking water works permit includes the following:

Schedule	Description
Schedule A	Drinking Water System Description
Schedule B	General
Schedule C	All documents issued as Schedule C to this drinking water works permit which authorize alterations to the drinking water system

Upon the effective date of this drinking water works permit # 076-201, all previously issued versions of permit # 076-201 are revoked and replaced by this permit.

DATED at TORONTO this 26th day of May, 2021

Signature

Aziz Ahmed, P.Eng.  
Director  
Part V, *Safe Drinking Water Act, 2002*

## Schedule A: Drinking Water System Description

System Owner	Welland, The Corporation of the City of
Permit Number	076-201
Drinking Water System Name	Welland Distribution System
Permit Effective Date	May 26, 2021

### 1.0 System Description

- 1.1 The following is a summary description of the works comprising the above drinking water system:

#### Overview

The **Welland Distribution System** is supplied by water treated at the Welland Water Treatment plant, owned by the Regional Municipality of Niagara. The source water is from Lake Erie and is treated by a conventional, chemically assisted filtration process. The distribution system consists of a network of watermains ranging in size from 50 mm to 750 mm. There are no storage, re-chlorination or booster pumping facilities on the Welland Distribution System.

### Hunter's Point Booster Pumping Station

Location	Located at 8 Daimler Parkway, Welland ON
UTM Coordinates	NAD 83: UTM Zone 17, 644987.37 m E 4764449.46 m N
Description	Building housing the pumps, and other equipment and an outdoor standby generator.
Dimensions	Approximately 9.550 m long and 4.1 m wide and 3.7 m high.
Equipment	Two (2) pumps Equipment rated at 5 L/s at 15 m TDH, with VFD. Two (2) pumps rated at 15 L/s at 15 m TDH, with VFD One (1) Fire pump rated at 140 L/s at 25 m TDH with soft starter. One 25 mm diameter re-circulation line with direct acting relief valve One 100 mm diameter re-circulation line with relief valve
Standby Power	An outdoor 100 kW standby power natural gas engine generator with weather protective and sound attenuated enclosure.
Instruments	Flow meter measuring discharged water flow during normal operation Two (2) pressure transducers. One (1) on the pumping station suction header and one (1) on the pumping station discharge header.
SCADA	Controls, monitoring, recording, alarms, reporting and alarm annunciation connected to Niagara Region control system by telemetry.
Notes	

**Watermains**

1.2 Watermains within the distribution system comprise:

1.2.1 Watermains that have been set out in each document or file identified in column 1 of Table 1.

Table 1: Watermains	
Column 1 Document or File Name	Column 2 Date
WaterNetwork_24x36.pdf	March 2, 2021

1.2.2 Watermains that have been added, modified, replaced or extended further to the provisions of Schedule C of this drinking water works permit on or after the date identified in column 2 of Table 1 for each document or file identified in column 1.

1.2.3 Watermains that have been added, modified, replaced or extended further to an authorization by the Director on or after the date identified in column 2 of Table 1 for each document or file identified in column 1.

## Schedule B: General

System Owner	Welland, The Corporation of the City of
Permit Number	076-201
Drinking Water System Name	Welland Distribution System
Permit Effective Date	May 26, 2021

### 1.0 Applicability

- 1.1 In addition to any other applicable legal requirements, the drinking water system identified above shall be altered and operated in accordance with the conditions of this drinking water works permit and the licence #076-101.
- 1.2 The definitions and conditions of licence #076-101 are incorporated into this permit and also apply to this drinking water system.

### 2.0 Alterations to the Drinking Water System

- 2.1 Any document issued by the Director to be incorporated into Schedule C to this drinking water works permit shall provide authority to alter the drinking water system in accordance with the applicable conditions of this drinking water works permit and licence #076-101.
- 2.2 All documents issued by the Director as described in condition 2.1 shall form part of this drinking water works permit.
- 2.3 All parts of the drinking water system in contact with drinking water that are added, modified, replaced, extended shall be disinfected in accordance with a procedure approved by the Director or in accordance with the applicable provisions of the following documents:
- a) Until November 26, 2021, the ministry's Watermain Disinfection Procedure, dated November 2015. As of November 27, 2021, the ministry's Watermain Disinfection Procedure, dated August 1, 2020;
  - b) Subject to condition 2.3.2, any updated version of the ministry's Watermain Disinfection Procedure;
  - c) AWWA C652 – Standard for Disinfection of Water-Storage Facilities;
  - d) AWWA C653 – Standard for Disinfection of Water Treatment Plants; and
  - e) AWWA C654 – Standard for Disinfection of Wells.
- 2.3.1 For greater clarity, where an activity has occurred that could introduce contamination, including but not limited to repair, maintenance, or physical / video inspection, all equipment that may come in contact with the drinking water system shall be disinfected in accordance with the requirements of condition 2.3. above.
- 2.3.2 Updated requirements described in condition 2.3 b) are effective six months from the date of publication of the updated Watermain Disinfection Procedure.

- 2.4 The owner shall notify the Director in writing within thirty (30) days of the placing into service or the completion of any addition, modification, replacement, removal or extension of the drinking water system which had been authorized through:
- 2.4.1 Schedule B to this drinking water works permit which would require an alteration of the description of a drinking water system component described in Schedule A of this drinking water works permit;
  - 2.4.2 Any document to be incorporated in Schedule C to this drinking water works permit respecting works other than watermains; or
  - 2.4.3 Any approval issued prior to the issue date of the first drinking water works permit respecting works other than watermains which were not in service at the time of the issuance of the first drinking water works permit.
- 2.5 The notification required in condition 2.4 shall be submitted using the "Director Notification Form" published by the Ministry.
- 2.6 For greater certainty, the notification requirements set out in condition 2.4 do not apply to any addition, modification, replacement, removal or extension in respect of the drinking water system which:
- 2.6.1 Is exempt from subsection 31(1) of the SDWA by subsection 9.(2) of O. Reg. 170/03;
  - 2.6.2 Constitutes maintenance or repair of the drinking water system; or
  - 2.6.3 Is a watermain authorized by condition 3.1 of Schedule B of this drinking water works permit.
- 2.7 The owner shall notify the legal owner of any part of the drinking water system that is prescribed as a municipal drinking water system by section 2 of O. Reg. 172/03 of the requirements of the licence and this drinking water works permit as applicable to the prescribed system.
- 2.8 For greater certainty, the owner may only carry out alterations to the drinking water system in accordance with this drinking water works permit after having satisfied other applicable legal obligations, including those arising from the *Environmental Assessment Act*, *Niagara Escarpment Planning and Development Act*, *Oak Ridges Moraine Conservation Act, 2001* and *Greenbelt Act, 2005*.

### 3.0 Watermain Additions, Modifications, Replacements and Extensions

- 3.1 The owner may alter the drinking water system, or permit it to be altered by a person acting on the owner's behalf, by adding, modifying, replacing or extending a watermain within the distribution system subject to the following conditions:
- 3.1.1 The design of the watermain addition, modification, replacement or extension:
    - a) Has been prepared by a licensed engineering practitioner;
    - b) Has been designed only to transmit water and has not been designed to treat water;

- c) Satisfies the design criteria set out in the Ministry publication "Watermain Design Criteria for Future Alterations Authorized under a Drinking Water Works Permit – June 2012", as amended from time to time; and
  - d) Is consistent with or otherwise addresses the design objectives contained within the Ministry publication "Design Guidelines for Drinking Water Systems, 2008", as amended from time to time.
- 3.1.2 The maximum demand for water exerted by consumers who are serviced by the addition, modification, replacement or extension of the watermain will not result in an exceedance of the rated capacity of a treatment subsystem or the maximum flow rate for a treatment subsystem component as specified in the licence, or the creation of adverse conditions within the drinking water system.
- 3.1.3 The watermain addition, modification, replacement or extension will not adversely affect the distribution system's ability to maintain a minimum pressure of 140 kPa at ground level at all points in the distribution system under maximum day demand plus fire flow conditions.
- 3.1.4 Secondary disinfection will be provided to water within the added, modified, replaced or extended watermain to meet the requirements of O. Reg. 170/03.
- 3.1.5 The watermain addition, modification, replacement or extension is wholly located within the municipal boundary over which the owner has jurisdiction.
- 3.1.6 The owner of the drinking water system consents in writing to the watermain addition, modification, replacement or extension.
- 3.1.7 A licensed engineering practitioner has verified in writing that the watermain addition, modification, replacement or extension meets the requirements of condition 3.1.1.
- 3.1.8 The owner of the drinking water system has verified in writing that the watermain addition, modification, replacement or extension meets the requirements of conditions 3.1.2 to 3.1.6.
- 3.2 The authorization for the addition, modification, replacement or extension of a watermain provided for in condition 3.1 does not include the addition, modification, replacement or extension of a watermain that:
- 3.2.1 Passes under or through a body of surface water, unless trenchless construction methods are used;
  - 3.2.2 Has a nominal diameter greater than 750 mm;
  - 3.2.3 Results in the fragmentation of the drinking water system; or
  - 3.2.4 Connects to another drinking water system, unless:
    - a) Prior to construction, the owner of the drinking water system seeking the connection obtains written consent from the owner or owner's delegate of the drinking water system being connected to; and

- b) The owner of the drinking water system seeking the connection retains a copy of the written consent from the owner or owner's delegate of the drinking water system being connected to as part of the record that is recorded and retained under condition 3.3.
- 3.3 The verifications required in conditions 3.1.7 and 3.1.8 shall be:
- 3.3.1 Recorded on "Form 1 – Record of Watermains Authorized as a Future Alteration", as published by the Ministry, prior to the watermain addition, modification, replacement or extension being placed into service; and
- 3.3.2 Retained for a period of ten (10) years by the owner.
- 3.4 For greater certainty, the verification requirements set out in condition 3.3 do not apply to any addition, modification, replacement or extension in respect of the drinking water system which:
- 3.4.1 Is exempt from subsection 31(1) of the SDWA by subsection 9.(2) of O. Reg. 170/03; or
- 3.4.2 Constitutes maintenance or repair of the drinking water system.
- 3.5 The document or file referenced in Column 1 of Table 1 of Schedule A of this drinking water works permit that sets out watermains shall be retained by the owner and shall be updated to include watermain additions, modifications, replacements and extensions within 12 months of the addition, modification, replacement or extension.
- 3.6 The updates required by condition 3.5 shall include watermain location relative to named streets or easements and watermain diameter.
- 3.7 Despite clause (a) of condition 3.1.1 and condition 3.1.7, with respect to the replacement of an existing watermain or section of watermain that is 6.1 meters in length or less, if a licensed engineering practitioner has:
- 3.7.1 inspected the replacement prior to it being put into service;
- 3.7.2 prepared a report confirming that the replacement satisfies clauses (b), (c) and (d) of condition 3.1.1 (i.e. "Form 1 – Record of Watermains Authorized by a Future Alteration" (Form 1), Part 3, items No. 2, 3 and 4); and
- 3.7.3 appended the report referred to in condition 3.7.2 to the completed Form 1,
- the replacement is exempt from the requirements that the design of the replacement be prepared by a licensed engineering practitioner and that a licensed engineering practitioner verify on Form 1, Part 3, item No. 1 that a licensed engineering practitioner prepared the design of the replacement.

- 3.8 For greater certainty, the exemption in condition 3.7 does not apply to the replacement of an existing watermain or section of watermain if two or more sections of pipe, each of which is 6.1 meters in length or less, are joined together, if the total length of replacement pipes joined together is greater than 6.1 meters.

#### 4.0 Minor Modifications to the Drinking Water System

- 4.1 The drinking water system may be altered by adding, modifying or replacing the following components in the drinking water system:
- 4.1.1 Coagulant feed systems in the treatment system, including the location and number of dosing points:
- a) Prior to making any alteration to the drinking water system under condition 4.1.1, the owner shall undertake a review of the impacts that the alteration might have on corrosion control or other treatment processes; and
  - b) The owner shall notify the Director in writing within thirty (30) days of any alteration made under condition 4.1.1 and shall provide the Director with a copy of the review.
  - c) The notification required in condition 4.1.1 b) shall be submitted using the "Director Notification Form" published by the Ministry
- 4.1.2 Instrumentation and controls, including new SCADA systems and upgrades to SCADA system hardware;
- 4.1.3 SCADA system software or programming that:
- a) Measures, monitors or reports on a regulated parameter;
  - b) Measures, monitor or reports on a parameter that is used to calculate CT; or,
  - c) Calculates CT for the system or is part of the process algorithm that calculates log removal, where the impacts of addition, modification or replacement have been reviewed by a licensed engineering practitioner;
- 4.1.4 Filter media, backwashing equipment, filter troughs, and under-drains and associated equipment in the treatment system;
- 4.1.5 Spill containment works; or,
- 4.1.6 Coarse screens and fine screens.
- 4.2 The drinking water system may be altered by adding, modifying, replacing or removing the following components in the drinking water system:
- 4.2.1 Treated water pumps, pressure tanks, and associated equipment;
- 4.2.2 Raw water pumps and process pumps in the treatment system;



- 
- 4.2.3 Inline booster pumping stations that are not associated with distribution system storage facilities and are on a watermain with a nominal diameter not exceeding 200 mm;
  - 4.2.4 Re-circulation devices within distribution system storage facilities;
  - 4.2.5 In-line mixing equipment;
  - 4.2.6 Chemical metering pumps and chemical handling pumps;
  - 4.2.7 Chemical storage tanks (excluding fuel storage tanks) and associated equipment; or,
  - 4.2.8 Measuring and monitoring devices that are not required by regulation, by a condition in the Drinking Water Works Permit, or by a condition otherwise imposed by the Ministry.
  - 4.2.9 Chemical injection points;
  - 4.2.10 Valves.
- 4.3 The drinking water system may be altered by replacing the following:
- 4.3.1 Raw water piping, treatment process piping or treated water piping within the treatment subsystem;
  - 4.3.2 Measuring and monitoring devices that are required by regulation, by a condition in the Drinking Water Works Permit or by a condition otherwise imposed by the Ministry.
  - 4.3.3 Coagulants and pH adjustment chemicals, where the replacement chemicals perform the same function;
    - a) Prior to making any alteration to the drinking water system under condition 4.3.3, the owner shall undertake a review of the impacts that the alteration might have on corrosion control or other treatment processes; and
    - b) The owner shall notify the Director in writing within thirty (30) days of any alteration made under condition 4.3.3 and shall provide the Director with a copy of the review.
    - c) The notification required in condition 4.3.3 b) shall be submitted using the "Director Notification Form" published by the Ministry
- 4.4 Any alteration of the drinking water system made under conditions 4.1, 4.2 or 4.3 shall not result in:
- 4.4.1 An exceedance of a treatment subsystem rated capacity or a treatment subsystem component maximum flow rate as specified in the licence;
  - 4.4.2 The bypassing or removal of any unit process within a treatment subsystem;

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- 4.4.3 The addition of any new unit process other than coagulation within a treatment subsystem;
  - 4.4.4 A deterioration in the quality of drinking water provided to consumers;
  - 4.4.5 A reduction in the reliability or redundancy of any component of the drinking water system;
  - 4.4.6 A negative impact on the ability to undertake compliance and other monitoring necessary for the operation of the drinking water system; or
  - 4.4.7 An adverse effect on the environment.
- 4.5 The owner shall verify in writing that any addition, modification, replacement or removal of drinking water system components in accordance with conditions 4.1, 4.2 or 4.3 has met the requirements of the conditions listed in condition 4.4.
- 4.6 The verifications and documentation required in condition 4.5 shall be:
- 4.6.1 Recorded on "Form 2 – Record of Minor Modifications or Replacements to the Drinking Water System" published by the Ministry, prior to the modified or replaced components being placed into service; and
  - 4.6.2 Retained for a period of ten (10) years by the owner.
- 4.7 For greater certainty, the verification requirements set out in conditions 4.5 and 4.6 do not apply to any addition, modification, replacement or removal in respect of the drinking water system which:
- 4.7.1 Is exempt from subsection 31(1) of the SDWA by subsection 9.(2) of O. Reg. 170/03; or
  - 4.7.2 Constitutes maintenance or repair of the drinking water system, including software changes to a SCADA system that are not listed in condition 4.1.3
- 4.8 The owner shall update any drawings maintained for the drinking water system to reflect the modification or replacement of the works, where applicable.

## 5.0 Equipment with Emissions to the Air

- 5.1 The drinking water system may be altered by adding, modifying or replacing any of the following drinking water system components that may discharge or alter the rate or manner of a discharge of a compound of concern to the air:
  - 5.1.1 Any equipment, apparatus, mechanism or thing that is used for the transfer of outdoor air into a building or structure that is not a cooling tower;
  - 5.1.2 Any equipment, apparatus, mechanism or thing that is used for the transfer of indoor air out of a space used for the production, processing, repair, maintenance or storage of goods or materials, including chemical storage;

- 
- 5.1.3 Laboratory fume hoods used for drinking water testing, quality control and quality assurance purposes;
  - 5.1.4 Low temperature handling of compounds with a vapor pressure of less than 1 kilopascal;
  - 5.1.5 Maintenance welding stations;
  - 5.1.6 Minor painting operations used for maintenance purposes;
  - 5.1.7 Parts washers for maintenance shops;
  - 5.1.8 Emergency chlorine and ammonia gas scrubbers and absorbers;
  - 5.1.9 Venting for activated carbon units for drinking water taste and odour control;
  - 5.1.10 Venting for a stripping unit for methane removal from a groundwater supply;
  - 5.1.11 Venting for an ozone treatment unit;
  - 5.1.12 Natural gas or propane fired boilers, water heaters, space heaters and make-up air units with a total facility-wide heat input rating of less than 20 million kilojoules per hour, and with an individual fuel energy input of less than or equal to 10.5 gigajoules per hour; or
  - 5.1.13 Emergency generators that fire No. 2 fuel oil (diesel fuel) with a sulphur content of 0.5 per cent or less measured by weight, natural gas, propane, gasoline or biofuel, and that are used for emergency duty only with periodic testing.
- 5.2 The owner shall not make an addition, modification, or replacement described in condition 5.1 in relation to an activity that is not related to the treatment and/or distribution of drinking water.
  - 5.3 The emergency generators identified in condition 5.1.13 shall not be used for non-emergency purposes including the generation of electricity for sale or for peak shaving purposes.
  - 5.4 The owner shall prepare an emission summary table for nitrogen oxides emissions only, for each addition, modification or replacement of emergency generators identified in condition 5.1.13.

#### Performance Limits

- 5.5 The owner shall ensure that a drinking water system component identified in conditions 5.1.1 to 5.1.13 is operated at all times to comply with the following limits:
  - 5.5.1 For equipment other than emergency generators, the maximum concentration of any compound of concern at a point of impingement shall not exceed the corresponding point of impingement limit;

- 5.5.2 For emergency generators, the maximum concentration of nitrogen oxides at sensitive receptors shall not exceed the applicable point of impingement limit, and at non-sensitive receptors shall not exceed the Ministry half-hourly screening level of 1880 ug/m<sup>3</sup> as amended; and
- 5.5.3 The noise emissions comply at all times with the limits set out in publication NPC-300, as applicable.
- 5.6 The owner shall verify in writing that any addition, modification or replacement of works in accordance with condition 5.1 has met the requirements of the conditions listed in condition 5.5.
- 5.7 The owner shall document how compliance with the performance limits outlined in condition 5.5.3 is being achieved, through noise abatement equipment and/or operational procedures.
- 5.8 The verifications and documentation required in conditions 5.6 and 5.7 shall be:
- 5.8.1 Recorded on "Form 3 – Record of Addition, Modification or Replacement of Equipment Discharging a Contaminant of Concern to the Atmosphere", as published by the Ministry, prior to the additional, modified or replacement equipment being placed into service; and
- 5.8.2 Retained for a period of ten (10) years by the owner.
- 5.9 For greater certainty, the verification and documentation requirements set out in conditions 5.6 and 5.8 do not apply to any addition, modification or replacement in respect of the drinking water system which:
- 5.9.1 Is exempt from subsection 31(1) of the SDWA by subsection 9.(2) of O. Reg. 170/03; or
- 5.9.2 Constitutes maintenance or repair of the drinking water system.
- 5.10 The owner shall update any drawings maintained for the works to reflect the addition, modification or replacement of the works, where applicable.

## 6.0 Previously Approved Works

- 6.1 The owner may add, modify, replace or extend, and operate part of a municipal drinking water system if:
- 6.1.1 An approval was issued after January 1, 2004 under section 36 of the SDWA in respect of the addition, modification, replacement or extension and operation of that part of the municipal drinking water system;
- 6.1.2 The approval expired by virtue of subsection 36(4) of the SDWA; and
- 6.1.3 The addition, modification, replacement or extension commenced within five years of the date that activity was approved by the expired approval.

**7.0 System-Specific Conditions**

7.1 Not applicable

**8.0 Source Protection**

8.1 Not applicable

### Schedule C: Authorization to Alter the Drinking Water System

System Owner	Welland, The Corporation of the City of
Permit Number	076-201
Drinking Water System Name	Welland Distribution System
Permit Effective Date	May 26, 2021

#### 1.0 General

1.1 Table 2 provides a reference list of all documents to be incorporated into Schedule C that have been issued as of the date that this permit was issued.

1.1.1 Table 2 is not intended to be a comprehensive list of all documents that are part of Schedule C. For clarity, any document issued by the Director to be incorporated into Schedule C after this permit has been issued is considered part of this drinking water works permit.

Column 1 Issue #	Column 2 Issued Date	Column 3 Description	Column 4 Status	Column 5 DN#
1	July 17, 2018	Hunter's Point BPS	Completed	n/a

1.2 For each document described in columns 1, 2 and 3 of Table 2, the status of the document is indicated in column 4. Where this status is listed as 'Archived', the approved alterations have been completed and relevant portions of this permit have been updated to reflect the altered works. These 'Archived' Schedule C documents remain as a record of the alterations.

## Schedule "G"

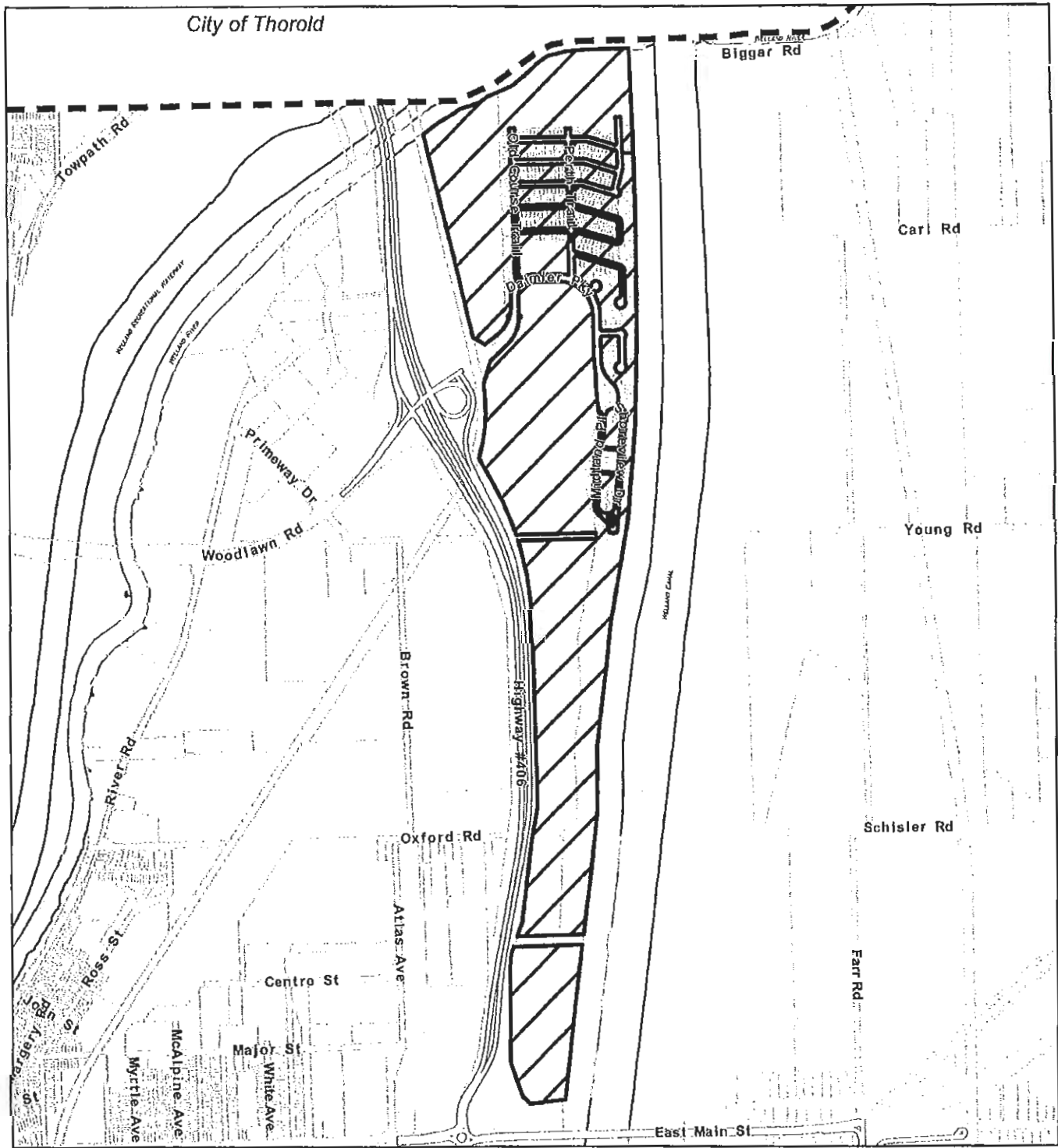
**Description of Niagara Region Labour and Equipment Rates.**

The following rates are to be applied when preparing invoices for emergency actions undertaken by the Region at the Station:

<b>Charge</b>	<b>Invoiced Rate</b>
System Operator (O. Reg. 128/04 Certified Operator)	\$36.22/hour*
System Maintenance Person	\$32.21/hour*
Skilled Trades Person	\$37.20/hour*
Vehicle cost	\$9.48/hour

\*Payroll burden of 49% applies to all labour rates to account for benefit costs and administrative costs.

The Region shall invoice the City for equipment, materials, or services procured in order to undertake emergency actions at the Station. Equipment, materials, or services procured for emergency response purposes will be invoiced at cost paid by Region plus 5% (exclusive of applicable taxes).



# LOCATION MAP

Proposed Pumping Station  
8 Daimler Parkway



**BENIFITING LANDS**



Infrastructure and  
Development Services  
Planning Division



**Standard Certificate of Insurance**

Form must be completed and signed off by your insurer or broker. Proof of liability insurance will be accepted on this form only with no alterations. Note: Checked boxes confirm coverage in place.

**Section 1: Insurer Information**

Contract/ Project/ Purchase Order Title, Number and Description ("the Contract"):

Hunters Pointe Booster Pumping Station

Named Insured: Corporation of the City of Welland

Address: 60 East Main Street, Welland, ON, L3B 3X4

Phone: 905-735-1700

Fax: 905-732-1919

**Insurers affording coverage (exact F.S.C.O. licensed name):**

Insurer(s) licensed to conduct business in Ontario and/or Canada

Insurer A: Intact Public Entities

Insurer B: Temple Insurance Company

Insurer C: Underwriters at Lloyds of London

**Additional Insured as required by the Contract:**

The Regional Municipality of Niagara

Niagara Regional Police Services Board

Other additional insureds as required by the Contract:

**Section 2: Types of Insurance****Commercial General Liability ("CGL") policy:**

Insurer A

Insurer B

Insurer C

Policy #: CP82144

Effective date: 07/01/2021

Expiry date: 07/01/2022

Each occurrence (\$): \$5,000,000.00

Deductible/SIR (\$): 0.00

**CGL Policy on a per occurrence basis including:** Bodily Injury, Death and Property Damage, Cross Liability and Severability of Interest, Blanket Contractual Liability, Premises and Operations, Personal and Advertising Injury, Products and Completed Operations, Owner's and Contractors Protective, and Non-owned Automobiles.

**Check which of the following are also included in the CGL Policy:**

Employer's liability

No sexual abuse or molestation exclusion

Tenant's legal liability

Other

**Automobile Liability ("Auto") Policy:** Insurer A Insurer B Insurer C

Policy #: A199025

Effective date: 07/01/2021

Expiry date: 07/01/2022

Limit of Liability (\$): 5,000,000

 All owned automobiles All leased automobiles**Excess/Umbrella Liability Policy:** Insurer A Insurer B Insurer C

Policy #:

Effective date:

Expiry date:

Limit of Liability (\$):

Deductible/SIR:

 Occurrence basis Excess policy Umbrella policy

Follows form to:

 CGL (above) Auto (above) Other (incl. pol. #)**Other Coverage Details:**

All insurance coverages indicated above comply with the contract except as specified below:

**Section 3: Provisions/Amendments/Endorsements**

- The above noted Additional Insured(s) has/have been added as the Additional Insured except for the Auto Policy and the Professional Liability Policy, but only with respect to liability arising out of operations of the Named Insured.
- The Policies identified above shall apply as primary insurance and not excess to any other insurance or self insurance available to the Additional Insured(s).
- Any failure to comply with any of the terms and conditions of the Policies of the Named Insured shall not affect coverage provided to the Additional Insured(s).
- In the event that there is a material change in the foregoing Policies or coverage affecting the Additional Insured(s) or cancellation of coverage before the expiration date of any of the foregoing Policies, the undersigned will give thirty (30) days prior to written notice (fifteen (15) days for auto liability) by registered mail or facsimile transmission to: The Regional Municipality of Niagara Attention: Legal Division, 1815 Sir Isaac Brock Way, Thorold, Ontario, L2V 4T7 Fax: 905-685-7931

This is to certify that the policies of insurance as described above have been issued by the undersigned to the Named Insured and are in force at this time. This Certificate of Insurance is executed and issued to the Additional Insured(s) on the date written below.

Name of insurer or broker issuing certificate: Intact Public Entities

Address: 278 Pinebush Road, Suite 200, Cambridge, ON N1T 1Z6

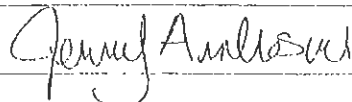
Phone: 1-800-265-4000

Fax:

Email: jenny.ambrosini@intactpublicentities.ca

Name of authorized representative or official: Jenny Ambrosini

Signature of authorized representative or official:



Date: 11/02/2021

*Background Material*

*To*

*Council Members'*

*Agenda*

# By-Law and the Purchasing Policy Update

<https://www.welland.ca/Finance/pdf/PurchasingBylawPolicy.pdf>



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## Contents, Agenda:

1. Overview
2. Local comparisons
3. Schedule B: Requisition and Purchasing Methods c/w Approval Authority - Present
4. Schedule B: Requisition and Purchasing Methods c/w Approval Authority – Proposed Future State

2

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### 1. Overview

- The By-Law was last updated in 2017
  - Maintain timely and relevant policies and procedures
  - Review at least every five (5) years
- One of the main updates is to update the threshold of projects requiring City Council approval.
  - Increase pre-approved project start time efficiency
  - Being mindful of Council's valuable time, as the budget was pre-approved
- Staff are recommending a final Council approval threshold is raised from >\$75k to \$500,000 and above.
  - In 2020, staff presented 23 reports requiring Council approval greater than \$75k. Had this threshold been the recommended amount of \$500k, only 10 reports would have needed final approval. (This excludes Professional Services)
  - Council will receive a **quarterly** memo of projects awarded >\$100,000.
- Staff are recommending a final Council approval threshold for Professional Services to be raised from \$75,000 to \$100,000.

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### 2. Local comparisons

- Local Threshold Comparison
- Increase City of Welland Council Approval from 75K to 500K
- Update impacted language throughout Policy

Municipality	Council Approved Threshold
City of Niagara Falls	*See Below
City of St Catharines	*See Below
Town of Lincoln	>250k
City of Hamilton	>250k
Town of Fort Erie	>50k
Town of Grimsby	>50k
Niagara Region	>\$mil
City of Burlington	>\$mil

\*Niagara Falls and St Catharines only require Council approval for certain circumstances as the budget received pre-approval. Council approval is only required if bids are over budget, lowest bid is not recommended, scope of work changes or additional approval is recommended from the CAO.

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3. SCHEDULE B: Requisition and Purchasing Methods and Approval Authority <span style="float: right;">CURRENT</span>			
Dollar Value	Minimum Purchasing Method / Requirements	Section Reference	Approval Authority
<b>Non-Sealed (Informal) RFX</b>			
≤ \$5,000	Direct Purchase No Competitive Process Required	52-53	Any Employee authorized by a Manager
> \$5,000 ≤ \$10,000	Request for Quotation Minimum 2 Invitational Written Quotations	54	Any Employee authorized by a Manager
> \$10,001 to < \$25,000	Request for Quotation Minimum 3 Invitational Written Quotations	55	Manager or Designate
> \$25,000 to \$75,000	Request for Quotation Minimum 3 Invitational Written Quotations	56	General Manager or Designate(s)
<b>Sealed (Formal) RFX</b>			
> \$75,000	Request for Tender/Request for Proposal Minimum 3 Openly Advertised RFX	57-60	City Council
<b>Professional Services (Consultants)</b>			
< \$75,000	Direct Assignment may be used based on response to written proposals Report shall be submitted to Council for Approval	73	City Council
> \$75,000	Request for Proposal Minimum 3 proposals	74	City Council
<b>Purchase By Negotiation</b>			
≤ \$25,000	"Purchase by Negotiation", Refer to Section 75 for a detailed description whereby inviting tenders or quotations may be waived.	75-77	General Manager or Designate
> \$25,000 to ≤ \$75,000			City Manager or Designate
> \$75,000			City Council
<b>Emergency Purchases</b>			
≤ \$25,000	"Emergency Purchase", means purchases made during an event in the City, which in the opinion of the City Manager, General manager or their authorized designate, requires an immediate purchase in order to prevent a serious delay in acquiring needed Goods and/or Services, which delay reasonably could result in a danger to life, excessive damage to property and/or the environment, or the suspension of the provision of an essential service.	78-79	General Manager or Designate
> \$25,000 to ≤ \$75,000			City Manager or Designate
> \$75,000			City Council

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4. SCHEDULE B: Requisition and Purchasing Methods and Approval Authority <span style="float: right;">PROPOSED</span>			
Dollar Value	Minimum Purchasing Method / Requirements	Section Reference	Approval Authority
<b>Non-Sealed (Informal) RFX</b>			
≤ \$10,000	Direct Purchase / Payment Card Purchase Minimum 2 Written Quotations on company letterhead	52-53	Any Employee authorized by a Manager
> \$10,000 to < \$100,000	Request for Bid Minimum 3 Written Quotations on company letterhead	55	Manager and Director
<b>Sealed (Formal) RFX (Total Dollar value of Contract)</b>			
> \$100,000 to < \$500,000	Minimum 3 Written Responses for Quotation, Tender OR Request for Proposal	56, 61-64	C.A.O. and C.F.O.
> \$500,000	Minimum 3 Written Responses for Quotation, Tender OR Request for Proposal	57-60, 61-64	City Council
<b>Professional Services (Consultants)</b>			
< \$100,000	Request for Proposal - Minimum 3 proposals	73	C.A.O. and C.F.O. or Designate(s)
> \$100,000	Request for Proposal - Minimum 3 proposals	74	City Council
<b>Purchase By Negotiation</b>			
≤ \$25,000	"Purchase by Negotiation", Refer to Section 75 for a detailed description whereby inviting tenders or quotations may be waived.	75-77	C.F.O. and Director or Designate(s)
> \$25,000 to ≤ \$100,000			C.A.O. and C.F.O. or Designate(s)
> \$100,000			City Council
<b>Emergency Purchases</b>			
≤ \$50,000	"Emergency Purchase", means purchases made during an event in the City, which in the opinion of the C.A.O. or C.F.O. or Director or their authorized designate(s), requires an immediate purchase in order to prevent a serious delay in acquiring needed Goods and/or Services, which delay reasonably could result in a danger to life, excessive damage to property and/or the environment, or the suspension of the provision of an essential service. This may also be in accordance with the Emergency Management Plan as described by visiting: <a href="https://www.niagararegion.ca/emergency/emergency-plan.aspx">https://www.niagararegion.ca/emergency/emergency-plan.aspx</a> and / or the Emergency Management and Civil Protection Act, R.S.O. 1990, c. E.9 and appropriate revisions.	78-79	Director or Designate(s)
> \$50,000 to < \$100,000			C.F.O. and Director, Report to CAO
> \$100,000 to < \$500,000			C.A.O. and C.F.O. or Designate(s)
> \$500,000			City Council

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## GENERAL COMMITTEE

Tuesday, November 23, 2021

Meeting Number 2021 – 09

*Due to COVID-19 all meetings will be held electronically  
All meetings can be viewed at:*

City of Welland website: <https://www.welland.ca/Council/LiveStream.asp>

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**1. OPEN GENERAL COMMITTEE MEETING FOLLOWING THE SPECIAL COUNCIL MEETING.**

**1.1 CALL TO ORDER BY VICE MAYOR MARY ANN GRIMALDI**

**1.2 ADDITIONS/DELETIONS TO AGENDA**

**1.3 DISCLOSURES OF INTEREST**

**1.4 ADOPTION OF MINUTES**

General Committee Meeting of September 28, 2021

**1.5 ITEMS TO BE REMOVED FROM BLOCK FOR DISCUSSION IN COMMITTEE-OF-THE-WHOLE (OPEN) (See blue tab)**

**2. VERBAL REPORTS AND DELEGATIONS**

**2.1 PRESENTATIONS**

**02-160** Tara Stephens, City Clerk and John Mascarin, Lawyer, Aird & Berlis re: Review of the Procedural By-law.

**(Background information included in Council members packages).**

**21-147** Rob Axiak, Director of Community Services re: 2022 Festivals & Events Approach.

**(Background information included in Council members packages).**

**Following the conclusion of the presentation, the Chair will open the floor for discussion and questions from General Committee regarding the presentation and the report.**



**GENERAL COMMITTEE -- Page 2**

*Tuesday, November 23, 2021*

*Due to COVID-19 all meetings will be held electronically*

*All meetings can be viewed at:*

City of Welland website: <https://www.welland.ca/Council/LiveStream.asp>

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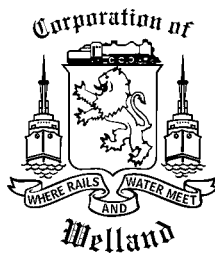
**2.2 DELEGATIONS (MAXIMUM 5/10/5 RULE) - Nil**

**2.3 AGENCIES, BOARDS, COMMISSIONS AND COMMITTEES REPORT(S) - Nil**

**3. COMMITTEE-OF-THE-WHOLE (OPEN)**  
**(Discuss items removed from Agenda Block)**

**4. ADJOURNMENT**





## GENERAL COMMITTEE

Tuesday, November 23, 2021

Meeting Number 2021 – 09

*Due to COVID-19 all meetings will be held electronically*

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Page No.

## AGENDA BLOCK

1. BUSINESS ARISING FROM MINUTES, PREVIOUS MEETINGS AND OTHER ITEMS REFERRED FROM COUNCIL FOR DISCUSSION - Nil

2. STAFF REPORTS

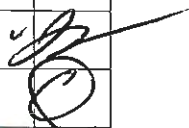
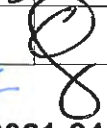
INFRASTRUCTURE & DEVELOPMENT SERVICES – L. Van Vliet, Chair

1 - 6  
Remove From  
Block

R&C-2021-24 Director of Community Services, R. Axiak – 2022 Festivals & Events Approach. Ref. No. 21-147

3. NEW BUSINESS - Nil

**GENERAL COMMITTEE**  
**COMMUNITY SERVICES**  
**RECREATION & CULTURE DIVISION**

APPROVALS	
DIRECTOR	VA
CFO	
CAO	

21-147  
**REPORT R&C-2021-24**  
**NOVEMBER 23, 2021**

**SUBJECT: 2022 FESTIVALS & EVENTS APPROACH**

**AUTHOR AND APPROVING DIRECTOR: ERIN CARL, SUPERVISOR OF FESTIVALS & EVENTS**  
**ROB AXIAK, DIRECTOR OF COMMUNITY SERVICES**

**RECOMMENDATIONS:**

THAT THE COUNCIL OF THE CITY OF WELLAND receive and file the information in this report R&C-2021-24 as related to the Festivals & Events approach for 2022 and beyond.

**ORIGIN AND BACKGROUND:**

For many years, the City of Welland has had a multitude of events throughout the City. As noted in the Parks, Recreation and Cultural Master Plan (PRCMP) festivals and events provide an opportunity for residents to gather while serving as important platforms to celebrate local culture, heritage, talent, and achievements. As we emerge from the pandemic, festivals and events can be leveraged to help bring communities and neighborhoods back together. As noted in the PRCMP, a Festivals and Events Strategy should be prepared to provide the City with a robust understanding of the resources required to effectively deliver upon its responsibilities. This strategy would provide guidance to the decision-makers and festival / event's organizers by developing:

- A long-term vision for festivals and events in Welland,
- Strategic directions, initiatives, and recommendations alongside a timeline for implementation.
- An understanding of gaps in service along with how existing infrastructure (streets, community centres, parks, etc) can be leveraged as well as any new infrastructure that may be required.
- Strategies for marketing, promoting, and funding festivals / events.
- Opportunities for collaboration between community stakeholders, City Departments, and the Region of Niagara; and
- Funding and staffing requirements associated with implementing the vision and recommended actions to bolster festivals and events.

**COMMENTS AND ANALYSIS:**

To date, Community Services have begun working on a few key initiatives as related to the above items mentioned from PRCMP. These include:

- Refreshed focus on festival and events
- A realignment of staff roles and responsibilities to focus on festivals and events

- A supervisor overseeing Festivals and Events and a Recreation Coordinator that has specifically been assigned to support festivals and events
- A direct connection with these assigned staff and various festival and event organizers (e.g. Downtown BIA) will be developed as we move into 2022
- Publishing a live calendar of events, that is ever evolving
- Marketing & Promotion strategy for Festivals and Events
- Grant opportunity seeking
- Development of a festival and events strategy.
- Create and 'Open for Business' model encouraging event providers to come to Welland
- Service enhancements to existing event process
- Introduction of event categories
  - Emphasis on Neighbourhood based events
- Reconnection with various event agencies like Festivals and Events Ontario

Moving forward, festivals and events will be classified into one of these 4 categories:

Category	Description	Examples
Neighbourhood Events	Focused to a specific neighbourhood or stakeholder group.	<ul style="list-style-type: none"> <li>• Neighbourhood Block Parties</li> <li>• Local Sport Tournaments</li> <li>• Pop Up In the Park</li> </ul>
City Events	City focused. Hosted by city or partnered with another organization to provide.	<ul style="list-style-type: none"> <li>• Grand Openings</li> <li>• Concerts on the Canal</li> <li>• Santa Clause Parade</li> </ul>
Major Events	Signature or one time festival/event that is distinguished in its focus	<ul style="list-style-type: none"> <li>• Niagara 2022 – Canada Summer Games</li> <li>• PanAm Games</li> <li>• Hometown Hockey</li> <li>• 2018 ICF World Canoe Polo Championships</li> </ul>
Organization Specific Events	An organization who rents City of Welland Facilities to provide a festival/event	<ul style="list-style-type: none"> <li>• Hockey Tournaments</li> <li>• Baseball Tournaments</li> <li>• Floatfest</li> <li>• Welland Dragon Boat Festival</li> </ul>

Each year in December, a report would be provided to council with a year-in-review of the events hosted in that year, and a highlight of the upcoming year of events, planned for the upcoming year.

### **FINANCIAL CONSIDERATIONS:**

Financial considerations will vary for each festival or event that is held based on the category above that it falls into. Not every festival or event has the same requirements. Financial considerations will be determined by:

For Neighbourhood Events

- Each will have its own budget that will be reviewed and determined within each budget cycle.

For City and Major Events

- Each budget will be determined based on requirements and partnership agreements.

#### Organization Specific Events

- Budgets are determined based on facility and equipment requirements, where the rates are totaled from the Council approved Rates and Fees for the year.

#### **OTHER DEPARTMENT IMPLICATIONS:**

Other departments, dependent on the requirements or what is stipulated within the partnership agreements will be required to assist with the festivals/events listed on the schedule. Some festivals/events will not require any equipment set up or removal, limiting the amount of coordination between multiple departments.

Assistance from Community Services as well as other departments, examples can include:

- Parks and or Public Works departments might be utilized to assist with equipment delivery, set up and removal for each festival/event.
- Communications will be involved in the sharing of promotional material through the multiple City advertising platforms.
- Community Services in the booking of the facilities/equipment, partnership/business development, ticket sales, and information services.

#### **SUMMARY AND CONCLUSION:**

In 2022, the list of festivals and events within the City of Welland is totaling approximately 100, from January to December. The list in Appendix I, is an ever-green list that is always growing and changing.

The development of a Festival and Events Strategic plan will ensure the initiatives above are implemented to establish service standards, new partnerships, and more opportunities to continue to expand the festivals and events in Welland.

The City of Welland, following government pandemic protocols, is ready for the festivals and events to make their comeback and welcome new events to our community.

#### **ATTACHMENTS**

Appendix I: 2022 Festival and Events Listing - DRAFT

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**Appendix I: 2022 Festival and Events Listing - DRAFT**

The festival and events listed below are within the City of Welland through one of the four categories listed within the report. Due to COVID-19, some events may not return in 2022 or return in a modified version. The list represents our best intentions moving forward. We are currently reaching out to various event organizers in the hope they are interested in returning. The list remains a work-in-progress and what staff are working towards.

Month	Festival/Event
December 2021	Mitten Tree
	Tree Lighting
	Christmas Market
	A Hometown Christmas
	National Child Day Free Skate
	Welland Winter Lights
	City of Welland Christmas Staff Skate
	Community Christmas Toys
	Holiday Free Skate
	New Year's Eve Skate Party
	January 2022
PA Skate Day	
Holiday Free Skate	
February 2022	Family Day
	Family Day Free Skate
	Mayor's Annual Charity Breakfast
	PA Skate Day
	Coldest Night of the Year
March 2022	March Break Activities
	Recreation and Wellness Expo
	March Break Free Skate
	Hank Borgatti Black and Gold Tournament
April 2022	Sports Promotion Awards
	Volunteer Appreciation
	Earth Day
	Canoe Kayak Ontario Training Camp
May 2022	Empire Sportsplex Grand Opening
	Youth Week Events
	Sports Hall of Fame
	Victoria Day
	Row Ontario Small Boat Trials
	South Niagara Invitational
	Support Pack Run for Mental Health
	The Myeloma Canada Ride; To Beat Myeloma
June 2022	Parks and Recreation Month
	Rose Festival (events and parade)
	Berry Bonanza
	Strawberry Social
	Niagara Regional Exhibition
	Floatfest
	Welland Dragon Boat Festival

	Canoe Kayak Ontario Sprints
	Tony Biernacki Sr. Memorial Regatta
	Rose City Triathlon
	Welland Open Water Swim
July 2022	Canada Day Celebrations
	Central Ontario Rowing Association Championships
	Row Ontario Masters Provincial Regatta
	Western Ontario Division of Canoe Kayak High Performance Regatta
	Row Ontario Provincial Championships
	Western Ontario Division of Canoe Kayak Trials and Championships
August 2022	Niagara 2022 – Canada Summer Games
	13 for 13 - Niagara 2022
	Camp Appreciation Day
	St. George Family Day
	Heritage Market
	Feast of the Assumption
	Welland Open Water Swim - CanAqua
September 2022	Seniors Month
	Dog Paddle
	Culture Days
	Mayor's Charity Event
	SNCC Hope Floats
	Triathlon Ontario Championships
	CanAqua Sport Finale
	Niagara Falls Barrelman
	SNRC Head of The Welland ~ Fall Classic
	Dragon Boat Canada Combine Camp
October 2022	Seniors Day
	Let's Get Busy Living – United Way Fundraiser
	Oktoberfest
	Give Thanks Event
	Zombie Walk
	Halloween Spooktacular – United Way Fundraiser
	Ontario University Athletics Championships
November 2022	Welland Annual Food Drive
	PA Day Skate
	National Child Day Free Skate
	Santa Clause Parade (could be early December)
December 2022	Mitten Tree
	Tree Lighting
	Christmas Market
	Welland Winter Lights
	Community Christmas Toys
	City of Welland Christmas Staff Skate
	New Year's Eve Skate Party
	New Year's Eve

### Festivals and Events with Multiple Dates

This list of festivals and events are series that take place on multiple dates or over a series of months throughout the year.

Event	Duration
Concerts on the Canal	June to August
Pop Up in the Park	July & August
Friday Night Live	April – May and August – November
Canalside Players	2 weeks April – May
Meet The Neighbours	July & August
Big Movie Nights	August – October
Mayor's Weekly Walk	All year
Mayor's All Welland Good Cogeco Show	September – June
Jackfish Tournaments	Summer Months
Music in the Plaza at Civic Square	July & August

*Background Material*

*To*

*Council Members'*

*Agenda*





## CITY OF WELLAND

Office of the Chief Administrative Officer

Clerk's Division

60 East Main Street, Welland, ON L3B 3X4

Phone: 905-735-1700 ext. 2159 Fax: 905-732-1919

E-mail: clerk@welland.ca

www.welland.ca

### MEMORANDUM

**Date:** November 23, 2021

**To:** Mayor and Members of City Council

**From:** Tara Stephens, City Clerk

**Re:** Procedural By-law Review

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It is common practice for each term of council to conduct a full review of the Procedural By-law.

This evening General Committee will discuss the suggested items included in Appendix I and vote on each item individually. As per regular practice, majority vote is required for the recommendation to be forwarded to Council for consideration.

Following the conclusion of considering the items in Appendix I, members of council will be provided an opportunity to provide additional recommendations to the procedural by-law. These items will be discussed and added for General Committee to consider at a future meeting.

A follow up meeting regarding the approved and additional recommendations will be scheduled for February 2022. At that time General Committee will consider any additional matters. Following the review at General Committee a finalized Procedural By-law will be forwarded to Council for consideration.

Before the recommendations are forwarded to Council for consideration, all matters will be reviewed with the City Solicitor to ensure it follows regular legislation and municipal law.

Attached is the following:

**Appendix I** – Suggested updates previously communicated to the City Clerk for consideration.

**Appendix II** – Delegations to Council/General Committee Request Form. This item is referred to in Appendix I.

**Appendix III** – A copy of Procedural By-law 2017-6.

02-160

**APPENDIX I**

ITEM No.	SUBMITTED BY	SUGGESTED UPDATE	COMMENTS & STAFF RECOMMENDATION
1	Staff	A time limit be established for speakers during a public meeting/hearing.	<p>Currently there is no time limit established for speakers at Public Meetings.</p> <p>A 5-minute time limit per speaker is being recommended. The establishment of a timeline is consistent with other municipalities.</p> <p>The 5 minute time limit is for residents requesting to speak in support or in opposition of the item.</p> <p>The applicant(s) would not have a time restriction.</p> <p><b><u>Recommendation:</u></b>  <b>That the Procedural By-law be updated to reflect a 5 minute time limit per speaker for public meetings.</b></p>
2	Staff	<p>Schedule B – Order of Business for Regularly Scheduled meetings of Council to include:</p> <p><b>3. OPEN COUNCIL MEETING</b></p> <p><b>1. Land Acknowledgement</b></p>	<p>Since December 2018 the Chair has been reciting the Land Acknowledgement before the national anthem during all Council meetings.</p> <p>The purpose of this recommendation is to identify the land acknowledgement within the order of business.</p> <p><b><u>Recommendation:</u></b>  <b>That Schedule B of the Procedural By-law be updated to include “Land Acknowledgement”.</b></p>

APPENDIX I

APPENDIX I

ITEM No.	SUBMITTED BY	SUGGESTED UPDATE	COMMENTS & STAFF RECOMMENDATION
3	Councillor Chiochio	<p>Schedule B – Order of Business for Regularly Scheduled meetings of Council to include:</p> <p>8. CORPORATION REPORTS  <b>3. Councillor Upcoming Activities Report</b></p>	<p>Motion approved by Council on May 7, 2019:</p> <p><i>“THAT THE COUNCIL OF THE CITY OF WELLAND re-establishes Council’s Corner to its former format prior to April 2017 to allow Councillors to communicate with the public about events and special activities in their wards and the City at the end of Council meetings”.</i></p> <p>Following the approval of the motion above, it was communicated to members of Council that the additional of this item would be considered during the review of the procedural by-law.</p> <p>In April of 2017 Council approved a motion to remove “Councillor Upcoming Activities Report” from Schedule B of the Procedural By-law.</p> <p>If council would like to proceed with the update to the Procedural By-law, it is recommended the following be included in the Procedural By-law:</p> <p><b><u>Recommendation</u></b></p> <p><b>That Councillor Upcoming Activities Report be included in Schedule B of the Procedural By-law and that a definition outlining the purpose of these reports be identified as outlined below:</b></p> <p><b><i>Councillor Upcoming Activities Reports is to promote events within the City of Welland. The order for councillors to present will be determined by the order in the queue. Members of Council cannot report an event, if it has been previously mentioned by a Councillor at the same meeting.</i></b></p>

**APPENDIX I**

ITEM No.	SUBMITTED BY	SUGGESTED UPDATE	COMMENTS & STAFF RECOMMENDATION
4	Councillor McLeod	<p>Schedule A – Delegations to Council/General Committee.</p> <p>Remove General Committee to allow for all delegation requests to appear at Council meetings.</p>	<p>Motion approved by Council on June 19, 2018:</p> <p><i>“WHEREAS General Committee is not televised; AND WHEREAS public presentations should be viewed through as many mediums as possible; AND WHEREAS well balanced Council meetings have adequate time to include public presentations. THAT THE COUNCIL OF THE CITY OF WELLAND requests staff propose a way to restore all public presentations to Council meetings”.</i></p> <p>Currently staff allow delegations to appear before Council at the request of the Mayor and/or when the request is in relation to an item currently on the council agenda for council consideration.</p> <p>All other requests to appear as a Delegations are scheduled during General Committee meetings, which are being televised on the City of Welland website.</p> <p>General Committee agendas are not often as full as Council meeting agendas therefore, scheduling delegations at General Committee meetings ensures curfew is not reached during a Council meeting, which could affect priority matters, and the need for certain items to be approved.</p> <p><b><u>Recommendation</u></b> That delegations remain currently established in the procedural by-law.</p>



**APPENDIX I**

ITEM No.	SUBMITTED BY	SUGGESTED UPDATE	COMMENTS & STAFF RECOMMENDATION
5	Staff/ Councillor Speck	Schedule the July and August Council meetings, the week following the long weekend.	<p>Currently the Procedural By-law states that Council meetings are to be held on the first and third Tuesday of each month.</p> <p>When following the procedural by-law, the meetings held in July and August usually fall after a long weekend. Some members of Council take vacations with their family at this time, which may limit the amount of time they have to review items on the council agenda.</p> <p><b><u>Recommendation:</u></b>  <b>That the July and August Council meetings dates be scheduled on the third Tuesday of the month.</b></p>
6	Staff	Delegations time limit to be 5 minutes.	<p>As our Procedural By-law allows for 10 minutes maximum to speak. Staff are recommending the time limit be reduced to 5 minutes.</p> <p><b><u>Recommendation:</u></b>  <b>That the Procedural By-law be updated to allow 5 minutes for delegations during Council and General Committee meetings.</b></p>

**APPENDIX I**

ITEM No.	SUBMITTED BY	SUGGESTED UPDATE	COMMENTS & STAFF RECOMMENDATION
7	Mayor Campion	<p>Update article 10.12 – Council Meeting, Curfew, Adjournment and Extension, to state “General Committee” meetings.</p> <p><b><u>Council/General Committee Meeting, Curfew, Adjournment and Extension</u></b></p> <p>10.12 The Council/General Committee meeting shall adjourn at 11:00 p.m. and one extension of curfew of on-half hour duration may be granted if Council agrees by 2/3 majority vote.</p>	<p>It has been suggested that article 10.12 be updated to identify “General Committee” meetings.</p> <p>Currently the procedural by-law only states “Council” meetings.</p> <p><b><u>Recommendation:</u></b>  <b>That the Procedural By-law be updated to include a curfew for General Committee meetings.</b></p>
8	Councillor Fokkens	<p>Clarification regarding Notice of Motions and how many Councillors may submit the motion.</p>	<p>Currently the Procedural By-law does not identify the number of members of council may submit a notice of motion for a similar action.</p> <p>For clarification purposes it has been recommended that the Procedural By-law be updated to reflect that only one (1) member of council may put forward a notice of motion for a similar action.</p> <p><b><u>Recommendation:</u></b>  <b>That the Procedural By-law be updated to reflect that only one (1) member of council may bring forward a notice of motion, and</b></p> <p><b>That the Procedural By-law identify that if more than one (1) member of council has a desire to bring forward a motion for a similar action the first member of Council who communicated the request for the notice of motion will be identified to introduce the item at the next regular scheduled Council Meeting.</b></p>

**APPENDIX I**

ITEM No.	SUBMITTED BY	SUGGESTED UPDATE	COMMENTS & STAFF RECOMMENDATION
9	Mayor Campion	Notice of Motions to be introduced verbally at a regular Council Meeting.	<p>This suggestion is being brought forward to request Councillors bring forward notice of motions during Council meetings to ensure viewers are aware of the notice of motion coming forward and allow additional time for staff to review the request and prepare for questions from members of council.</p> <p>The update would <b>remove</b> the following wording:</p> <p><i>“Notice shall also be deemed duly given if same is provided in writing to the Clerk no later than noon of the Monday the week prior to a regular Council meeting and reviewed by the Clerk and reproduced in the next or subsequent regular Council Agenda.”</i></p> <p><b><u>Recommendation:</u></b></p> <p><b>That the Procedural by-law be updated to reflect the following:</b></p> <p><b><u>“Article 12 – Notice of Motion</u></b></p> <p><b>12.1 A notice of motion is a written introduction of intent to Council to consider a motion at its next meeting. A notice of motion may be presented verbally at one regular Council meeting that the issue will be introduced by motion at the next or subsequent regular Council meeting for consideration by Council. The right to move a notice of motion shall be deemed to be that of the Member who introduced the Notice with the following limitations”</b></p>



**APPENDIX I**

ITEM No.	SUBMITTED BY	SUGGESTED UPDATE	COMMENTS & STAFF RECOMMENDATION
10	Staff	Delegations to Council/General Committee Request Form be included in the Procedural By-law	<p>Staff are recommending the attached "Delegations to Council/General Committee Request Form" be included in the Procedural By-law.</p> <p>The completion of the "Delegations to Council/General Committee Request Form" would be required in order for staff to proceed with scheduling the delegation request.</p> <p><b><u>Recommendation:</u></b>  <b>That the Procedural By-law include the Delegations to Council/General Committee Request Form.</b></p>



**DELEGATIONS TO COUNCIL/GENERAL COMMITTEE**  
**REQUEST FORM**

<b>*Name:</b>	
<b>Address:</b>	
<b>City:</b>	
<b>*Daytime Phone Number:</b>	
<b>Evening Phone Number:</b>	
<b>*Email Address:</b>	
<b>*Meeting Type:</b> (Ex. General Committee/Council)	
<b>Meeting Date:</b>	
<b>*Names of Presenter(s) and Titles</b>	
<b>Organization:</b>	
<b>*Subject to be discussed:</b>	

**\*Required Information**

Once complete please submit to [clerk@welland.ca](mailto:clerk@welland.ca) or drop off at the City Clerks Office, Civic Square, 60 East Main Street, Welland, Ontario, L3B 3X4

THE CORPORATION OF THE CITY OF WELLAND

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THE CORPORATION OF THE CITY OF WELLAND

BY-LAW NUMBER 2017 - 6

BEING A BY-LAW TO GOVERN THE PROCEEDING  
AND CONDUCT OF COUNCIL AND THE COMMITTEES  
THEREOF AND TO REPEAL BY-LAW 2013-126

WHEREAS section 238 of the **Municipal Act, S.O. 2001, c. 25**, as amended (hereinafter referred to as "**Municipal Act, 2001**"), provides that every municipality and local board shall pass a procedure by-law for governing the calling, notice, place and proceedings of meetings, inter alia;

AND WHEREAS Council deems it necessary and advisable to establish rules governing the order and procedure of the Council and its Committees to comply with the said **Municipal Act, 2001**.

NOW THEREFORE THE MUNICIPAL COUNCIL OF THE CORPORATION OF THE CITY OF WELLAND ENACTS AS FOLLOWS:

**ARTICLE 1 - INTERPRETATIONS**

- 1.1 In this By-law,
- (a) "Chair" means the Mayor or person presiding over the meeting;
  - (b) "City" means The Corporation of the City of Welland;
  - (c) "City Manager" means the Chief Administrative Officer of the City;
  - (d) "Clerk" means the Clerk of The Corporation of the City of Welland;
  - (e) "Committee" means any advisory or other committee, subcommittee or similar entity of which at least 50 per cent of the members are also members of one or more councils or local boards;
  - (f) "Committee-of-the-Whole" means all Members of Council present at a meeting sitting in Committee;
  - (g) "Committee-of-the-Whole In-Camera" means the same as Committee of the Whole except that all or some members of staff, media and/or public are excluded;
  - (h) "Confirmatory by-law" means a by-law that is passed to authorize the proceedings and actions of Council at its meetings and to authorize the execution of agreements and documents related to said meetings;
  - (i) "Council" means the Council of The Corporation of the City of Welland;
  - (j) "Councillor(s)" means a Member(s) of Council;
  - (k) "Defer" means to postpone discussion on a motion until a specific meeting date, time and/or place; a motion to defer is not debatable except for reasons of the appropriateness of the date, time, and place for the matter to come back for deliberation;
  - (l) "General Committee" means Members of Council acting as a standing committee to Council, operating through Corporate Services and Integrated Services;
  - (m) "Head of Council" means the Mayor;
  - (n) "In-camera meeting" means meetings closed to the public under authority of the **Municipal Act, 2001**;
  - (o) "Investigative Officer" means a person or agency appointed by Council to investigate complaints where an abuse of a closed meeting procedure is perceived;

- (p) "Mayor" means the Head of Council;
- (q) "Member" means a Member of the Council of The Corporation of the City of Welland;
- (r) "Petition" means a document addressed to the Council of the City of Welland that contains the printed name and address and signature of the petitioner, is legible, produced in ink, and contains on each page a clear description of the matter being brought forward and that the petition once submitted to the Clerk becomes a record that is publicly available. (see prescribed form of Petition attached hereto as Schedule "C");
- (s) "Point of Order" may be called to bring attention to:
  - (i) any breach of the Rules of Order of Council; or
  - (ii) any defect in the constitution of any meeting of the Council; or
  - (iii) the use of improper offensive or abusive language;
  - (iv) notice of the fact that the matter under discussion is not within the scope of the proposed motion; or
  - (v) any other informality or irregularity in the proceeding of Council.
- (u) "Point of Personal Privilege/Point of Privilege" relates to all matters affecting the rights of Members, both as individuals and as a Council and is regarded as the Member's right to correct inaccuracies or explain circumstances they believe affect themselves adversely or reflect improperly upon Council as a whole.
- (v) "Presiding Officer" means a person appointed by the Members present at a Council meeting in the event the Mayor and Vice-Mayor are not in attendance within fifteen (15) minutes after the hour appointed for the Council meeting;
- (w) "Recorded Vote" means the recording by the Clerk of the name and vote of every Member present on any matter or question;
- (x) "Refer" means to send a matter to a specific committee, staff, or other appropriate body requesting further information or for review and comment; a motion to refer is not debatable except for reasons of the appropriateness of the referral including to whom the matter is being referred and why;
- (y) "Vice Mayor" means a Member of Council appointed by by-law, in each year, with the consent of the Head of Council to act in place of the Head of Council on any body, other than on the council of another municipality, of which the Head of Council is a member by virtue of being Head of Council, in accordance with section 226 of the **Municipal Act, 2001**.

## **ARTICLE 2 - ROLES**

### **Council**

2.1 Council shall comply with the statutory roles as prescribed in **section 224 of the Municipal Act, 2001**.

### **Head of Council**

2.2 The Head of Council shall comply with the statutory roles as prescribed in **sections 225 and 241 of the Municipal Act, 2001**.

### **Order and Decorum by Head of Council**

2.3 The Head of Council shall preserve order and decorum at Council Meetings and decide matters of order subject to an appeal to the Council.



**Head of Council as Chief Executive Officer**

2.4 In addition to the duties prescribed in section 2.2 hereof, the Head of Council, when acting as chief executive officer of the municipality, shall comply with section 226.1 of the **Municipal Act, 2001**.

**Designation of a Presiding Officer**

2.5 The Head of Council may consent to the designation of a Member of Council, to preside at meetings of Council, as authorized by section 238(4) of the **Municipal Act, 2001**.

**Duties of Clerk**

2.6 The Clerk shall comply with the provisions of section 228(1) of the **Municipal Act, 2001**.

**Appointing Person to Record Council Proceedings**

2.7 The Clerk may appoint a person in accordance with section 228(4) of the **Municipal Act, 2001**, who shall have charge of recording the proceedings of Council or Committees. Such appointee or secretary to Committee shall comply with section 228(1) of the **Municipal Act, 2001**, as practical as possible, in the same manner as the Clerk.

**City Administration**

2.8 Officers and employees of the City shall comply with section 227 of the **Municipal Act, 2001**.

**City Manager**

2.9 In accordance with section 229 of the **Municipal Act, 2001**, the City may appoint a City Manager who shall comply with said section.

**ARTICLE 3 - CONFLICT OF INTEREST****Municipal Conflict of Interest Act**

3.1 That subject to the **Municipal Conflict of Interest Act, R.S.O. 1990, c.M.50**, as amended, if a Member has any pecuniary interest, direct or indirect, in any matter, he or she shall, as soon as practicable after the commencement of any meeting at which the matter is being considered, disclose his or her interest and shall not take part in the discussion or vote on any question with respect to such matter, and such disclosure of interest shall be duly noted in the minutes.

**Member Appointment**

3.2 No Member shall vote on any by-law appointing him or her to any office, nor for the provision of his or her remuneration for any service to the Corporation. This does not apply to allowance for attendance at meetings of the Council or its Committees or for traveling or other expenses of the Members.

**ARTICLE 4 - BOARDS, COMMITTEES AND COMMISSIONS**

4.1 Council may at its discretion, establish boards, committees and commissions to exercise any power under any Act with respect to the affairs or purposes of one or more municipalities, or task under the general affairs of one or more municipalities; and, shall determine what responsibilities and duties shall be assigned.

**Establishing Committees**

4.2 There shall be established annually at the first meeting of Council, or as soon thereafter as is convenient, as many standing or special committees of Council as Council deems necessary, and Council shall also make, at such meeting, any necessary appointments



to such boards, committees, commissions, Committee/Court of Revision, Committee of Adjustment, or any special purpose body as is required by statute or otherwise.

**Committee Meetings Open to Public**

4.3 All boards, committees and commissions established by Council shall have meetings open to the public, unless otherwise permitted by legislation or this by-law to be closed to the public.

**Boards, Committees and Commissions subject to Closed Meeting Investigator**

4.4 Boards, committees and commissions which by definition under the **Municipal Act, 2001**, and established by Council, may hold a portion of their meeting closed to the public, only in accordance with section 239 of the **Municipal Act, 2001**.

**Appointments to Boards, Committees and Commissions**

4.5 Appointments to boards, committees and commissions shall be by resolution of Council.

**Voting on Appointments**

4.6 In all resolutions for the appointment of any person to any body that is subject to Article 4, the candidates shall receive a majority of the votes of all Members present and voting.

**Ex Officio Privilege**

4.7 The Mayor shall be a member, ex officio, of every committee of Council with the same rights as other Members. In absence of the Mayor and on the Mayor's direction, the Vice Mayor or another Member may exercise this ex officio privilege in order to achieve a quorum for a standing committee.

**Selection of Committee Chair**

4.8 Where the membership of a committee of Council is less than the total membership of Council, the Chair of the committee will be selected by the committee, unless noted otherwise.

**Calling of Committee Meetings and Quorum**

4.9 Every standing or special committee shall meet at the call of the Chair thereof, in order to report on or consider all matters referred to it, and a majority of the members of the committee shall constitute a quorum, unless otherwise stated by Council resolution.

**Terms of Reference**

4.10 Terms of Reference for boards, committees and commissions including policies, shall be established by motion of Council or by By-law where appropriate.

**Resolutions of Committees/Only Requires Mover**

4.11 To expedite the proceedings of a committee meeting, a resolution need only be duly moved by a member of the committee and not seconded in order for the resolution to be discussed and considered.

**Committee Reports to Council**

4.12 A committee that wishes to report to Council may request, through the Chair of the committee or the staff liaison, that the Clerk add the committee report to the agenda of an upcoming meeting. A copy of the report, including any recommendations being made by any committee to Council, shall be submitted to the Clerk no later than 4:00 p.m. on the Tuesday of

the week prior to the meeting. Committees are permitted fifteen (15) minutes for their report to Council.

**Record of Boards and Commissions and Members**

4.13 The Clerk shall keep a record of all boards, committees and commissions in place and the members elected to each such board, committee and commission.

**ARTICLE 5 - NOTICE OF MEETING FOR PUBLIC**

5.1 Notice of Council Meetings and General Committee Meetings, and all other Committees of Council Meetings for public information shall consist of posting of notification of meeting on the City of Welland's website, together with posting of notification of meeting on the public bulletin board located within the Civic Square, at least 24 hours prior to the date of the meeting. For the purpose of this article, a Committee of Council is defined as a committee where the majority of the committee members are also members of Council.

**Posting of Public Notice**

5.2 Notice for public information of Special Council Meetings will be posted as soon as practical.

**Failure to Notify Public**

5.3 Failing to notify the public does not constitute improper meeting notice, and such notification is a courtesy for accountability and transparency purposes.

**Notice of Items of Public Interest**

5.4 The above notwithstanding, the Corporation shall give notice for specific items of public interest to be considered at Council meetings, in accordance with its Public Notice By-law Number 2013 – 127.

**ARTICLE 6 - CALL TO ORDER**

**Quorum of Council**

6.1 As soon after the hour fixed for the meeting, as there shall be quorum present, the Mayor shall take the Chair and call the Members to order. A majority of the Members shall constitute a quorum.

**Absence of Mayor at Council**

6.2 If the Mayor does not attend within 15 minutes after the time appointed, the Vice Mayor shall preside until the arrival of the Mayor. Or, if both the Mayor and Vice Mayor do not attend within the above mentioned time, the Clerk shall call the meeting to order and the Council shall appoint one of its Members to preside as the Presiding Officer.

**ARTICLE 7 - AGENDAS & ADDITIONS TO AGENDA**

**Announcement of Agenda**

7.1 Immediately after the Mayor calls the meeting to order, he/she shall announce the business before Council as contained in the agenda, and the Clerk shall announce additions or deletions.

**Additions to Agenda**

7.2 Any additions to the agenda of the regular meeting of Council or a Special Meeting of Council made less than twenty-four (24) hours prior to the meeting of Council shall require unanimous consent of the Members present. Unanimous consent is deemed to have

been given if no objection is made by any Member after the items have been announced by the Clerk.

**Agenda Delivery**

7.3 Copies of such agenda containing minutes, communications, by-laws or reports shall be prepared and delivered to the Mayor, the Members and the City Manager, at least 24 hours before any regular meeting of Council.

**ARTICLE 8 - DELEGATIONS APPEARING BEFORE COUNCIL/GENERAL COMMITTEE**

8.1 Delegations shall only be permitted to appear at General Committee meetings, unless the delegation wishes to speak in regard to a matter on a Council agenda, whereby that delegation shall be permitted to appear at the Council Meeting subject to the provisions of this By-law.

8.2 Any delegations appearing before Council/General Committee shall be heard at the time they are to appear, as shown on the agenda, or with the consent of Council/General Committee to change the order of Delegations, and shall comply with the rules contained in Municipal Policy No. GOV-001-0002, Delegations to Council/General Committee, attached hereto as Schedule "A".

8.3 Questions of clarification related to matters presented by delegations are permitted in accordance with Schedule "A". Members are not permitted to debate matters presented by delegations with the presenters, who are guests before Council/General Committee. During Delegations, Members are required to comply with section XI of the Code of Conduct for Members of Council – City of Welland.

8.4 Where there is an avenue for public input (i.e. Public Meeting, Public Open House, Letters of Support/Objection, Hearing, etc.) and those avenues have already been exhausted, no Delegations will be permitted on a matter that is now before Council for deliberation and decision.

**ARTICLE 9 - PETITIONS AND COMMUNICATIONS**

9.1 Petitions and communications alike shall be delivered to the Clerk, addressed to Mayor and Council, and shall be added to the next regularly scheduled meeting of Council. Such Petitions and communications must be received no later than seven (7) days prior to the next regularly scheduled meeting of Council, otherwise it shall be placed on the following Council agenda. Petitions must be in the prescribed form as set out in Schedule "C" attached hereto and forming part of this by-law to be a valid Petition.

**ARTICLE 10 - GENERAL ORDER OF PROCEDURES AT COUNCIL MEETINGS**

**Order of Business**

10.1 The order of business for regularly scheduled meetings of Council will be as set out in Schedule "B" attached hereto.

**Order and Decorum**

10.2 The Chair shall preserve order and decorum at meetings and decide matters of order, subject to an appeal to the Council.

**Rules of Order**

10.3 In all cases not provided for by these rules, in the proceedings of Council or in Committee, the Rules of Order by Bourinot shall be followed, as well as the Rules of Order and Parliamentary Procedure Speed Wheel, copyrighted by William Doherty.

**Time, As Referred in By-Law**

10.4 Whenever any time is referred to in this by-law, the same shall be Eastern Standard Time or Daylight Savings Time, whichever shall be in effect in the municipality at any particular time.

**Council Meeting, Inaugural**

10.5 In the first year of the term of office of a new Council of The Corporation of the City of Welland, an inaugural Council meeting shall be held on the first Monday in December at 7:00 p.m.

**Council Meeting Schedule**

10.6 Subsequent to the inaugural meeting, the Council shall meet on the first and third Tuesday of each month in the year at 7:00 p.m.

**Council Meeting, Following General Committee**

10.7 In addition, Council may meet following the General Committee Meetings, whenever they occur, to ratify all or part of the recommendations related to the General Committee and to consider any by-laws related thereto.

**Council Meeting, Change Date of**

10.8 Nothing in this section shall prevent Council from changing the date of any regular Council meeting, if such change is made by resolution duly passed at a Council meeting preceding the meeting which is to be changed.

**Council Meeting, Absence of Quorum**

10.9 In absence of a quorum the meeting shall be adjourned, and any question under consideration keeps its place on the agenda for the next sitting.

**Council Meeting, Location**

10.10 All meetings, including the inaugural meeting of Council shall be held in the Council Chambers at Civic Square, unless due to an emergency or for any other reason, the Council decides otherwise.

**Committee Meeting, Location**

10.11 Committee meetings shall be held in locations suitable to the needs of the Committee.

**Council Meeting, Curfew, Adjournment and Extension**

10.12 The Council meeting shall adjourn at 11:00 p.m. and one extension of Curfew of one-half hour duration may be granted if Council agrees by 2/3 majority vote.

**Special Meeting of Council**

10.13 Whenever a special meeting of Council is required, it may be called by the Mayor, or upon receipt of a Petition in writing outlining the purpose for the meeting and signed by a majority of all the Members and presented to the Clerk. Only those matters listed on the Special Council agenda shall be discussed.

**Notice of Special Meeting**

10.14 Notice of a Special Council meeting shall be made in writing calling such meeting and shall include the agenda which outlines the intention to consider only the matters contained therein, subject to section 7.2. Notice shall be delivered to each Member not less than twenty-four (24) hours prior to the time set for such meeting.

**Special Meeting, Minutes**

10.15 The Clerk shall, within seven (7) business days after the date of such special meeting send to every Member who was absent, upon request, a copy of the minutes of such special meeting.

**ARTICLE 11 - COMMITTEE-OF-THE-WHOLE IN-CAMERA MEETINGS**

11.1 Pursuant to section 239 of the **Municipal Act, 2001**, all meetings shall be open to the public except as provided herein. A meeting or part of a meeting may be closed to the public if the subject matter being considered is:

- (a) the security of the property of the municipality or local board;
- (b) personal matters about an identifiable individual, including municipal or local board employees;
- (c) a proposed or pending acquisition or disposition of land by the municipality or local board;
- (d) labour relations or employee negotiations;
- (e) litigation or potential litigation, including matters before administrative tribunals, affecting the municipality or local board;
- (f) advice that is subject to solicitor-client privilege, including communications necessary for that purpose;
- (g) a matter in respect of which a council, board, committee or other body may hold a closed meeting under another Act;
- (h) a request under the **Municipal Freedom of Information and Protection of Privacy Act**;
- (i) for the purpose of educating or training members in accordance with article 11.2, below.

11.2 Pursuant to section 239(3.1) of the **Municipal Act, 2001**, Council may close meetings to the Public if the subject matter being considered is:

- (a) being held for the purpose of educating or training the members; and
- (b) at the meeting, no member discusses or otherwise deals with any matter in a way that materially advances the business or decision-making of the Council, local board, or committee.

**Mayor and Members to Self-Regulate Committee-of-the-Whole In-Camera Meetings**

11.3 The onus shall be upon the Mayor and Members to be self-regulated in ensuring that only matters legitimately permitted to be in Committee-of-the-Whole In-camera meetings are discussed.

**Committee-of-the-Whole In-Camera, Procedure**

11.4 To hold a meeting closed to the public:

- (a) Council shall openly pass a resolution to meet in "Committee-of-the-Whole In-camera" and such resolution shall state the general nature of the matter(s) to be considered;
- (b) The Clerk shall note the time the In-camera meeting began and ended. While in an In-camera meeting, the rules of Council shall be observed as far as may be applicable, except that the taking of a vote shall not be permitted unless provided for by legislation.



**Committee-of-the-Whole, In-Camera, Chair**

11.5 A resolution of Council to go into Committee-of-the-Whole In-camera shall state that the Mayor or other Member shall be Chair of the Committee-of-the-Whole In-camera.

**Committee-of-the-Whole, In-Camera, Arise Without Report**

11.6 A motion in Committee-of-the-Whole In-camera to arise without report shall always be in order and shall take precedence over any other motion; and shall be decided without debate.

**Committee-of-the-Whole, In-Camera, Arise and Report**

11.7 Any motion in Committee-of-the-Whole In-camera to arise and report shall be decided without debate.

**Committee-of-the-Whole In-Camera Meeting, Minutes**

11.8 The Clerk shall record minutes of In-camera meetings, in accordance with section 239(7) of the Municipal Act, 2001, and will present the minutes to Council at an ensuing In-camera meeting for confirmation.

**Committee-of-the-Whole In-Camera Meeting, Approving Directions**

11.9 The Confirmatory By-law of the Corporation is deemed to authorize the directions of Council in a Committee-of-the-Whole In-camera meeting.

**Committee-of-the-Whole In-Camera Meeting, Confidentiality**

11.10 All deliberations and information and documentation received or taken while in a Committee-of-the-Whole In-camera meeting shall remain confidential. The final results of deliberations and such information and documentation may only be made public by the Clerk when such disclosure is authorized by Council, or authorized by legislation or legislative authority. All Members shall comply with Section 5 – Confidentiality of Policy HUM-001-0031 being the Code of Conduct for Members of Council.

**ARTICLE 12 - NOTICE OF MOTION**

12.1 A notice of motion is a written introduction of intent to Council to consider a motion at its next meeting. A notice of motion may be presented verbally at one regular Council meeting that the issue will be introduced by motion at the next or subsequent regular Council meeting for consideration by Council. Notice shall also be deemed duly given if same is provided in writing to the Clerk no later than noon of the Monday the week prior to a regular Council meeting and reviewed by the Clerk and reproduced in the next or subsequent regular Council Agenda. The right to move a notice of motion shall be deemed to be that of the Member who introduced the Notice with the following limitations:

- (a) At the regular meeting following the notice of motion being presented verbally, the Member who presented said notice will have the right to move the notice as a motion for debate. If the notice of motion is not moved at said meeting or the next regular meeting or unless withdrawn voluntarily by the mover before that time, the Clerk shall remove the Notice from any future agenda;
- (b) However, the member who introduced the Notice of Motion may, after a six (6) month period, re-introduce the same Notice of Motion.

12.2 All Notice of Motions referred or deferred at a Council Meeting shall be re-introduced at a future Council Meeting.

## **ARTICLE 13 - MOTIONS**

### **Motions, Moving of**

13.1 At a meeting of Council, every motion or resolution shall be in writing and when duly moved and seconded and stated by the Chair or Clerk shall be open for consideration and deemed to be in possession of the Council but may be withdrawn at any time before the vote with the unanimous consent of Council.

### **Motions, Contrary to Rules**

13.2 Whenever the Chair is of the opinion that a motion offered to the Council is contrary to law or the rules and privileges of the Council, he/she shall apprise the Members thereof before ruling the question out of order, and quote the law or rule of authority applicable to the case without argument or comment thereon.

### **Motions, Out of Order**

13.3 A motion at a regular meeting respecting any issue or matter which does not appear on the agenda of that meeting shall be ruled out of order unless added to the Agenda in accordance with Article 7.2 herein.

### **Motions, Precedence for Debate**

13.4 When a question is under debate, no motion shall be received unless it be a motion,

- (1) for adjournment;
- (2) for the previous question (call the question);
- (3) to lay on the table (postpone indefinitely);
- (4) to defer;
- (5) to refer; or
- (6) to amend;

which shall have precedence in the order in which they are named. Motions (1) to (5) shall be decided without debate except in (3), (4) and (5), where discussion as to appropriateness of time and place shall be allowed.

### **Motions, To Table**

13.5 When a motion to table prevails, the question so delayed may be called up at any subsequent meeting, by a motion, as unfinished business.

### **Motions, Point of Order**

13.6 The Member shall clearly state the Point of Order that he/she wishes to raise. When the Chair is called on to decide a Point of Order, he/she shall state the rule or authority applicable to the case and such decision is final unless successfully challenged without debate by a majority of Members present.

### **Motions, Point of Personal Privilege/Point of Privilege**

13.7 The Member shall clearly state the Point of Personal Privilege/Point of Privilege and the statement or issue which he/she wishes to correct, or explain circumstances he/she believes affect him/herself adversely; whereas, a Point of Privilege may be an issue that reflects improperly upon Council or the City as a whole or a matter that may affect the ability of the Council to carry out its business effectively and efficiently. Questions of privilege can be raised immediately after a Member feels his or her right or privileges have been infringed on, as long as no speaker is interrupted.



**Motions, Speaking on**

13.8 No Member shall speak more than twice on the same question, without leave of Council, except in explanation of a material part of his or her speech which may have been misconceived, but in no event shall he/she introduce a new matter. The above notwithstanding, debate by any one Member on any one item shall be limited to not more than 5 minutes, including staff responses to the question of the Member. The mover or in his/her place, the seconder of a resolution will be given the opportunity to open and to close debate on a motion. Should a Member other than the mover or seconder wish to speak first to a motion, the Chair shall ask the mover and seconder if they are willing to yield the floor. The City Manager may, for expediency and clarity, comment on matters before Council, as recognized by the Chair.

**Motions, Interruption of Putting the Question**

13.9 When the Chair is putting a question, no Member shall interrupt him/her, except to raise a question of order, nor shall any Member walk across or out of the room.

**Motions, Voting**

13.10 Every Member present, who has not declared a pecuniary interest, shall have one vote on any motion. If a member abstains from voting is deemed to be a vote in opposition.

13.11 The Mayor is only required to vote on matters to break a tie or when a recorded vote has been requested by a member of Council.

**Motions, Challenge the Chair**

13.11 If a Member disagrees with a decision/ruling of the Chair, he/she shall immediately following the decision of the Chair state that he/she wishes to Challenge the decision of the Chair. The Challenge is not debatable and only the giving of reasons for the Challenge is permitted. A motion to Challenge the Chair requires a seconder. The Chair shall state clearly the ruling at issue and state the reasons for his/her ruling and pose the question to the Members: "Shall the decision of the Chair be upheld?". Members voting in favour agree with the decision of the Chair. Members voting in opposition do not agree with the decision of the Chair. A tie vote in this situation sustains the decision of the Chair. The Chair may vote to create a tie, thus sustaining his or her decision. After the result of the vote is announced by the Chair, the Chair shall resume the business of Council, accordingly.

**ARTICLE 14 - AMENDMENTS TO MOTIONS****Order of Considering Amendments**

14.1 All amendments shall be put in the reverse order in which they are moved, except in filling in blanks, when the longest time and the largest sum shall be put first.

**Amendments, Deciding and Withdrawing**

14.2 Every amendment shall be made in writing and be decided upon or withdrawn before the main motion is put to a vote.

**Amendments, Amount Allowed**

14.3 Only one amendment shall be allowed to an amendment and any amendment more than one must be to the main motion.

**ARTICLE 15 - BY-LAWS****General**

15.1 Every proposed by-law shall receive first, second, and third readings prior to it being passed. All three readings may take place at the same meeting, unless otherwise required by statute.

15.2 No proposed by-law shall be passed except by the vote of the majority of Council or by such vote as may be required otherwise.

**Confirmatory By-law**

15.3 By-laws of the City must comply with various legislative requirements, and specific provisions of various legislation require Council to act by by-law. Although it is not always practical to prepare a by-law for each and every particular circumstance, a Confirmatory By-law (also known as the Ratification By-law) shall serve as authorization to capture all items and actions before Council that would not require a comprehensive and unique by-law. The Confirmatory By-law shall even temporarily hold a by-law being passed at a later date by comprehensive by-law to enable preliminary actions to occur, unless specifically stated to the contrary in the resolution. The Confirmatory By-law shall be the final order of business preceding adjournment and shall take place no later than immediately prior to Curfew.

**Effect of Resolution/By-law**

15.4 No resolution enacting a By-law passed by Council shall be deemed invalid or improperly passed by reason of the fact that such by-law, resolution, or accompanying communications or schedule or any part thereof was not read a first, second and third time (or read in full), provided all the members present determine to dispense with any of the readings or complete readings of the said by-law or resolution or any part thereof.

**ARTICLE 16 - RECORDED VOTES AND SECRET BALLOTS**

**General**

16.1 If a member present at a meeting at the time of a vote requests immediately before or after the taking of a vote that the vote be recorded, each Member present, except a Member who is disqualified from voting by an Act, shall announce his or her vote openly and the clerk shall record each vote.

**Recorded Votes**

16.2 Members shall always take their places when a recorded vote is called.

**Secret Ballot Not Allowed**

16.3 No vote shall be taken by ballot or by any other method of secret voting, except as otherwise provided, by the Municipal Act, 2001, as amended.

**ARTICLE 17 - RECONSIDERATION OF A DEFEATED RESOLUTION OR BY-LAW**

17.1 No resolution or by-law of Council previously voted upon and defeated shall during the subsequent twelve (12) month period be re-introduced, debated or re-voted upon;

- (i) where, by statute, an appeal or other remedy of the same is available, or
- (ii) after two subsequent regular meetings of Council have been held and unless a motion to reconsider same has been approved by a two-third majority vote of those Members present at either of such Council meetings.

17.2 A motion to reconsider must be brought forward by a Member who voted in opposition to the resolution or by-law.

17.3 The basis of this Article 17, is Bourinot's Rules of Order, section 37, which states that: procedures are sometimes provided not only for rescinding a motion that has been adopted, but also for reconsidering a motion that failed. A reconsideration rule usually requires advance notice in writing that a question will be reconsidered at the next meeting. The provision

is a useful one, in that conclusions occasionally may have reached too hastily or on the basis of inadequate information, and a later review may well be in the general interest. However, reconsideration should not be allowed except upon due notice and formal motion, and it is customary to insist on a two-thirds majority vote on a motion to reconsider.

**ARTICLE 18 – RESCINDING A RESOLUTION OR BY-LAW PASSED**

18.1 No resolution or by-law of Council previously voted upon and passed shall during the subsequent twelve (12) month period be re-introduced, debated or re-voted upon;

- (i) where, by statute, an appeal or other remedy of the same is available, or
- (ii) after two subsequent regular meetings of Council have been held and unless a motion to rescind same has been approved by a two-third majority vote of those Members present at either of such Council meetings.

18.2 A motion to rescind must be brought forward by a Member who voted in favour of the resolution or by-law.

**ARTICLE 19 - CONDUCT AT MEETINGS**

**Address the Chair**

19.1 Every Member when speaking shall address himself/herself through the Chair.

**Chair Identifies Speaker**

19.2 The Chair shall recognize Members who wish to speak to a matter. Once recognized, the Member may speak to the matter in accordance with Article 13.8 herein.

**ARTICLE 20 - EFFECTIVE DATE/REPEAL OF BY-LAW**

20.1 This by-law shall come into full force and take effect on the 17<sup>th</sup> day of January, 2017.

20.2 That By-law 2013-126 shall be and the same is hereby repealed upon the effective date of this by-law.

READ A FIRST, SECOND AND THIRD TIME AND PASSED BY COUNCIL  
THIS 17<sup>TH</sup> DAY OF JANUARY, 2017.

  
\_\_\_\_\_  
MAYOR

  
\_\_\_\_\_  
CLERK

CITY OF WELLAND

POLICY

**Policy Title:** Delegations to Council/General Committee

**Policy Number:** GOV-001-0002

**Date of Approval:** January 17, 2017

**Lead Role:** City Clerk

**Support Role:** Deputy Clerk

**Cross Reference:** By-law 2017-06

**Next Review Date:**

**Council File Number:** 05-28

**Policy Statement:**

The City of Welland welcomes delegations wishing to appear before City Council/General Committee, however due to time restrictions to attend to all business before Council/General Committee on any given date, the Clerk shall prioritize requests for delegations as follows:

First Priority:	No more than five (5) delegations per meeting
Second Priority:	Delegations required by legislation to be heard under specific sections of the <i>Planning Act</i> or <i>Municipal Act, 2001</i> , or other legislation under the municipality's jurisdiction.
Third Priority:	Delegations related to agenda items that meeting.
Fourth Priority:	Urgency (as determined by Clerk).
Fifth Priority:	Community interests to announce events (i.e. food drive).
Sixth Priority:	Relativity of topic to Council's authority.

When a delegation cannot be scheduled due to the priorities established by this policy, the following alternatives will be offered by the Clerk:

- Schedule to first available General Committee Meeting.
  - Schedule to first available Council Meeting.
  - Schedule to time where report is to be discussed if applicable and timely.
1. The delegation is required to submit a written request including name, address and phone number (to be reached during the day) as well as a brief explanation of the issue to be addressed and the desired action of Council/General Committee on the issue. The request must be received by the Clerk's Department no later than 4:00 p.m. on the Tuesday the week before the meeting. Failure to provide the required information on time will result in a loss of privilege to speak before Council/General Committee.
  2. It would also be advisable to forward, to the Clerk's Department by the Tuesday deadline, a copy of all written materials, PowerPoint presentations and media files to be discussed with Council/General Committee. The Clerk will ensure that all materials will be included in the Agenda packages for the Councillors and appropriate staff.
  3. If the delegation intends to read from a prepared text, a copy of this text must be filed with the City Clerk for City records.
  4. Should the delegation choose to present additional written materials at the meeting, twenty-two (22) copies should be made available for distribution.

5. Delegations will not be permitted to speak to Council/General Committee on any matter requiring a reconsideration vote of Council prior to Council voting to reconsider.
6. Delegations will be heard at the commencement of the meeting in the order they appear on the Agenda. Presentations will be limited to ten (10) minutes in length. At the conclusion of the presentation, members of Council/General Committee will be given an opportunity to question the delegation and seek clarification from either the delegation or staff. As a general rule five (5) minutes will be provided for questions of clarification for a total allotment of fifteen (15) minutes per delegation.
7. If Council/General Committee is satisfied that all reports and information pertaining to the subject have been presented, a decision will be made immediately following the presentation. However at a meeting where time is limited Council/General Committee will try to utilize the fifteen (15) minute rule for each delegation. If additional time is needed beyond the fifteen (15) minutes for debate by Council/General Committee, the matter will be referred to an appropriate time later in that meeting or another specific meeting.
8. The decision of Council/General Committee will be made in public usually while the delegation is present subject to Clause 7 above. The Clerk will confirm, in writing, the decision of Council/General Committee to the spokesperson designated in the original request for the delegation.
9. A delegation wishing to meet with Council "In Camera" will be permitted, provided the reasons for requesting such a meeting falls within the guidelines established by the Procedural By-law of Council.
10. Delegations failing to appear at their scheduled time will not be given further opportunity on the same subject unless a valid reason is provided prior to the original absence.
11. The ability for the public to speak to its government is a privilege granted by the respective government authority to its constituents in a manner the government chooses. The above notwithstanding, tradition has been (particularly at the local government level) to allow some form of deputation within a prescribed set of rules under a Procedural By-law authorized by the *Municipal Act, 2001*. Those rules should maintain the notice of privilege and the ability of a Chair to restrain anyone who abuses that privilege.

**Schedule "B" – Order of Business for Regularly Scheduled Meetings of Council**

1. COMMITTEE-OF-THE-WHOLE (IN-CAMERA)
2. ARISE FROM COMMITTEE-OF-THE-WHOLE (IN-CAMERA)
3. OPEN COUNCIL MEETING
  1. NATIONAL ANTHEM
  2. OPENING REMARKS
  3. ADDITIONS/DELETIONS TO AGENDA
  4. ADOPTION OF MINUTES
  5. CALL UPON THE CITY CLERK TO REVIEW COMMITTEE-OF-THE-WHOLE (IN-CAMERA) ITEMS TO BE ADDED TO BLOCK
  6. DISCLOSURES OF INTEREST
  7. COUNCILLORS TO DETERMINE AGENDA ITEMS AND BY-LAWS TO BE REMOVED FROM BLOCK FOR DISCUSSION IN COMMITTEE-OF-THE-WHOLE (OPEN)
4. ORAL REPORTS AND DELEGATIONS
  1. PRESENTATIONS
  2. LEGISLATED PUBLIC HEARINGS/MEETINGS
  3. DELEGATIONS
  4. AGENCIES, BOARDS, COMMISSIONS, AND COMMITTEE REPORTS
5. COMMITTEE-OF-THE-WHOLE (OPEN) TO DISCUSS ITEMS REMOVED FROM AGENDA BLOCK
6. BY-LAWS REMOVED FROM BLOCK
7. NOTICES OF MOTION
  1. COUNCILLOR MATTERS DISCUSSED WITH STAFF FOR REPORTING PURPOSES
  2. NOTICES OF MOTION (PREVIOUSLY SUBMITTED FOR DISCUSSION)
  3. CALL FOR NOTICES OF MOTION (FOR INTRODUCTION AT THE MEETING)
8. CORPORATION REPORTS
  1. MAYOR'S REPORT
  2. CITY MANAGER'S REPORT
9. CONFIRMATORY BY-LAW
10. ADJOURNMENT

**NOTE:** *The above order of proceedings for regularly scheduled Council meetings is a guideline and may be altered from time-to-time by the Mayor or Clerk to accommodate scheduling and unforeseen circumstances.*

Schedule "C"

PRESCRIBED FORM OF PETITION

To: The Council of the City of Welland  
c/o City Clerk  
60 East Main Street  
Welland, ON L3B 3X4

I/We the undersigned, petition the Council of the City of Welland as follows:

Petition Text: Enter a brief description of the matter to being brought forward here and include the text on every page of the petition.

PRINTED NAME	PRINTED ADDRESS	SIGNATURE

By signing this petition, I hereby acknowledge that this petition will become a record belonging to the City of Welland and that all information contained in this petition will be available for viewing by the public and may be reproduced in a future Council Agenda.



## 2022 Festivals and Events Approach & Beyond!



*...Our Return to Festivals & Events PLUS!*

[www.welland.ca](http://www.welland.ca)

*Bridging the past, present and future*

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## Festivals and Events

- Festivals and events are an opportunity for residents to gather while serving as important platforms to celebrate:
  - Local culture
  - Heritage
  - Talent
  - Achievements
- As we emerge from the pandemic, festivals and events can help bring communities and neighbourhoods back together! Maintain close adherence to all public health regulatory requirements.



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## Parks, Recreation and Culture Master Plan

- 2019 PRCMP notes that residents and decision makers want to see more festivals and events, while strengthening existing ones!
- Recommendation #43
  - Prepare a comprehensive Festival & Events Strategy



[www.welland.ca](http://www.welland.ca)

2019 PRCMP, pages 80 - 81

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## Key Initiatives Underway!

- ✓ Refreshed Focus on Festivals & Events
- ✓ A realignment of staff with a focus on Festivals & Events
- ✓ Publishing a calendar of events that is live and evolving
- ✓ Marketing and Promotion Strategy for Festivals & Events
- ✓ Grant Opportunity Seeking
- ✓ Development of Festivals and Events Strategy
- ✓ Create an 'Open for Business' model encouraging event providers to come to Welland
- ✓ Service Enhancements to the existing event process
- ✓ An introduction of Event Categories with an Emphasis on Neighborhood Based Events
- ✓ Reconnection with various event agencies like F.E.O
- ✓ *And More....*



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## Festival and Events Categorization

- 4 Festival and Event Categories:



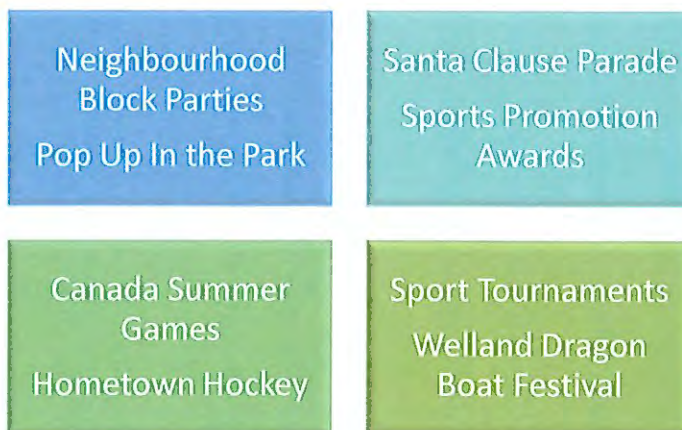
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## 2022 Festivals and Events

- Approximately 100 festivals and events scheduled, some examples are:



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## Return to Events ~ Beginning this December 2021!

- Mitten Tree Campaign
  - November 15 – December 11
  - Locations: Wellness Complex, Farmers Market, Civic Square & Niagara Centre YMCA
  - Donation of mittens, scarves, socks, toys, toiletries, etc.
- Welland Winter Lights
  - Nominations due November 26
  - Event dates: December 8 & 9
- Welland Tree Lighting Ceremony and Holiday Movies
  - November 26 at Civic Square, 5:30 pm



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## Return to Events ~ December 2021

- Christmas Markets ~ Welland Farmers Markets
  - November 27, December 4, 11 & 18
  - 7 am to Noon
- The foster Festival ~ Winter Wonderland
  - Welland Community Wellness Complex, tickets required
  - December 11 & 12
- A Hometown Christmas
  - December 18, 3:00 – 7:30 pm
  - Merritt Park Amphitheatre & Welland Farmers Market



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