



Finance, Administration and Operations Committee

Tuesday, February 18, 2014, 4:15 pm
City Hall, Council Chambers

Committee Members

Councillor J. Fullarton, Chair
Councillor J. Baker
Councillor T. Blanchard
Councillor L. Bursey
Councillor J. Earle
Mayor D. Henderson,
Ex-Officio

Areas of Responsibility:

Clerk's Office
Environmental Services
Finance Department
Fire Department
Human Resources Dept.
Operations Department
Airport Commission
Arena Advisory Board
Brockville Municipal
Accessibility Advisory
Committee (BMAAC)

CRCA
Cemetery
Health Unit
Joint Services Committee
PLMG
Police Services Board
Safe Communities Coalition
St. Lawrence Lodge
Management Board
Volunteer Awards

All legal matters [excepting
the purchase and sale of
land]

Page

AGENDA

DISCLOSURE OF INTEREST

DELEGATION(S)

1. School Travel Planning Committee
(Suzanne Rivard)

Ms. Rivard will provide an update on the School Travel Planning program. In addition, students from Westminster Public School will attend to showcase their winning art work related to the program.

2. Brockville Municipal Non Profit Housing Corporation
(Leigh Bursey, Chair)

Mr. Bursey and Ms. Erin Whitmore will speak to the Committee regarding an award Ms. Whitmore attained, Ontario Non Profit Housing Association Tenants Achievement Award.

CORRESPONDENCE

Nil.

STAFF REPORTS

- 4 - 23 1. 2014-012-02
2013 Annual Summary Report
Water Pollution Control Centre

THAT the 2013 Annual Summary Report on the City of Brockville's Water Pollution Control Centre, Attachment 1 to Report 2014-012-02 be received; and

THAT the Director of Environmental Services be designated to sign the 2013 Annual Summary Report on the City of Brockville's Water Pollution Control Centre; and

THAT the 2013 Annual Summary Report on the City of Brockville's Water Pollution Control Centre be forwarded to the MOE District Office - Kingston.

- 24 - 45 2. 2014-013-02
2013 Annual Water Quality Report
Brockville Drinking Water System

THAT the 2013 Annual Water Quality Report on the Brockville Drinking Water System, Attachment 1 to Report 2013-013-02, be received; and

THAT the Director of Environmental Services be designated to sign the 2013 Annual Water Quality Report on the Brockville Drinking Water System.

- 46 - 48 3. 2014-014-02
Establishment of Island Breakfast Committee

THAT the terms of reference for the Island Breakfast Committee be adopted; and

THAT the following persons be appointed to the Island Breakfast Committee:

<i>Peter Amo</i>	<i>Dave Beatty</i>
<i>Conal Cosgrove</i>	<i>Dan Elwood</i>
<i>Debra Hamilton</i>	<i>Kendra Lorimer</i>
<i>Steve Weir</i>	

THAT the necessary by-laws be enacted.

- 49 - 57 4. 2014-015-02
Water Rate Structure

THAT Council provides further direction to staff to perform a more detailed analysis on the water rates including billing, fire protections charges and multi-user rates being charged in the City of Brockville and users outside of the geographical borders of the City.

PRESENTATION(S)

- 58 - 73 1. 2014 Development Charges - Background Study
Council Workshop

Mr. Andrew Grunda, Watson & Associates Economists Ltd. will make a presentation to the Committee regarding development charges.

NEW BUSINESS

Nil.

FAO - CONSENT AGENDA

ADJOURNMENT

THAT the Finance, Administration and Operations Committee adjourn its meeting until the next regular meeting scheduled for March 18, 2014.

**FEBRUARY 3, 2014
REPORT TO FINANCE, ADMINISTRATION, OPERATIONS COMMITTEE –
FEBRUARY 18, 2014**

**2014-012-02
2013 ANNUAL SUMMARY REPORT
WATER POLLUTION CONTROL CENTRE**

**PETER RAABE, P. ENG.
DIRECTOR OF
ENVIRONMENTAL SERVICES**

RECOMMENDATION

THAT the 2013 Annual Summary Report on the City of Brockville's Water Pollution Control Centre, Attachment 1 to Report 2014-012-02 be received; and

THAT the Director of Environmental Services be designated to sign the 2013 Annual Summary Report on the City of Brockville's Water Pollution Control Centre; and

THAT the 2013 Annual Summary Report on the City of Brockville's Water Pollution Control Centre be forwarded to the MOE District Office - Kingston.

ORIGIN

This annual summary report covers the period January 1, 2013 through December 31, 2013, and is a requirement under our Environmental Compliance Approval 4627-9CQJMD, Section 10 (6).

ANALYSIS

We are pleased to present the 2013 Annual Summary Report for the Water Pollution Control Centre. This report provides a summary of the flow data, summary of compliance results, sampling results, abatement initiatives, sludge disposal, bypass and overflow events, and operational highlights. The annual summary report will be posted on the City's website.



P. Raabe, P. Eng.
Director of Environmental Services



B. Casselman
City Manager



CITY OF BROCKVILLE WATER POLLUTION CONTROL CENTRE

2013 ANNUAL SUMMARY REPORT FOR COUNCIL

Peter Raabe, P. Eng., Director of Environmental Services
Ed Malcomson, Supervisor – Wastewater Systems Division

DATE: February 3, 2014
FILE: E03-04

2013 ANNUAL SUMMARY REPORT FOR COUNCIL
CITY OF BROCKVILLE – WPCC

EXECUTIVE SUMMARY

The enclosed 2013 Annual Summary Report is prepared in accordance with the Environmental Compliance Approval (ECA) for the City of Brockville's Water Pollution Control Centre (WPCC) for submission to the Ontario Ministry of the Environment (MOE). A copy of this report is also made available at City Hall and on the City's website for public viewing. Included with this report are analytical data, plant flow, bypass and overflow events, biosolids data, as well as a process flow schematic of the facility.

In all cases, the City of Brockville's WPCC sampling and analysis program met or surpassed the requirements outlined in the plant's ECA. The plant overview will discuss the level of performance with regard to effluent limits specified in the ECA. In 2013 the monthly and annual plant averages for loading and discharge effluent were compliant with the limits set out in our ECA. In 2013 there was one bypass event at the Main Pumping Station.

Each year, the City of Brockville focuses on Capital and Operational targets to improve the quality of the Wastewater Treatment System. In 2013 these improvements included:

- **WPCC Secondary Treatment Project** – The first flow was introduced to the new treatment process on July 23rd, 2012. Substantial completion was awarded to the Contractor on August 14th, 2012. Works continued throughout 2013 to complete the balance of this project along with deficiencies and warranty work.
- **Dewatering** – The Humboldt Centifuge Roto-Diff (hydraulic backdrive) was sent out for a complete rebuild.
- **Digester Operations** – The shredder for the waste heat system was replaced with a new unit.
- **Main Pumping Station** – In November of 2012 J. L. Richards and Associates Ltd. were contracted by the City to complete an Environmental Assessment for the Main Pumping Station and Forcemain. The Phase II Report has been received and the public notices will go out in February of 2014.

Peter Raabe, P. Eng.
Director of Environmental Services

Ed Malcomson
Supervisor – Wastewater Systems

2013 ANNUAL SUMMARY REPORT FOR COUNCIL
CITY OF BROCKVILLE – WPCC

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2013 ANNUAL SUMMARY REPORT FOR COUNCIL
CITY OF BROCKVILLE – WPCC

1. INTRODUCTION

We are pleased to present the 2013 Water Pollution Control Centre Annual Summary Report for Council. The purpose of this Report is to provide a performance summary on the facility for the period January 1st to December 31st, 2013, and is a legal requirement under Section 10 (6) of Environmental Compliance Approval (ECA) number 4627-9CQJMD, made under section 20.2 of Part II.1 of the Environmental Protection Act R.S.O. 1990, c. E19 (Environmental Protection Act). This Annual Report must be forwarded to the Ministry of Environment no later than March 31st, 2014.

2. FACILITY DESCRIPTION

Brockville's wastewater treatment facility is a Class IV Secondary Treatment Plant with a capacity of 21,800 cubic metres per day and a peak design of 62,500 cubic metres per day. The plant is classified as a conventional secondary treatment process inclusive of screening, grit removal, primary clarification, activated sludge process with nitrification, secondary clarification, ultraviolet disinfection, with phosphorus removal, anaerobic digestion of sludge, centrifuge dewatering of sludge, centrate return to the primary clarifiers and sludge cake recycling. The main plant was built in the 1960's, and was upgraded in several phases, the most recent in 1991, 1995 and 2010 with the current Secondary Treatment Upgrade. These works also included a major upgrade to the Main Pumping Station on Water Street in 1994. **Appendix A: WPCC Process Flow Schematic** is provided.

The wastewater treatment plant services a population of approximately 22,000 as well as nearby Elizabethtown-Kitley Township retirement homes (3), the Brockville Psychiatric Hospital and the St. Lawrence Valley Correctional and Treatment Centre. There are 12 pumping stations located throughout the community to transfer wastewater to the treatment facility. The treated effluent receiver is the St. Lawrence River.

3. APPROVALS & CERTIFICATION

3.1 Environmental Compliance Approval

The City of Brockville's WPCC (Works #120000122) operates under Environmental Compliance Approval (ECA) NUMBER 4627-9CQJMD issued to the facility on October 23rd, 2013. The facility is a Class IV facility in accordance with the *Licensing of Sewage Works Operators Regulation* (O. Reg. 129/04) made under the *Ontario Water Resources Act*.

The ECA for Brockville's WPCC establishes final effluent limits for 5-day Carbonaceous Biochemical Oxygen Demand (CBOD₅), Total Suspended Solids (TSS), Total Ammonia Nitrogen (TAN), Total Phosphorus (TP), pH, E. Coli and Toxicity. The limits are based on monthly averages, and apply to concentration as well as total daily loading. The limits are used to determine compliance with the ECA. The limits are found in the lower area below the monthly data of **Appendix B: 2013 WPCC PARS Report**.

The ECA also establishes the rating of the facility for *average daily flow* or ADF. ADF is the cumulative total flow of sewage to the sewage works during the year divided by the number of days of flow. A rating is also determined for *peak flow* (the maximum rate of sewage flow for which the plant was designed). The rated ADF for the WPCC is 21,800 m³/day and the peak flow rating is 62,500 m³/day.

2013 ANNUAL SUMMARY REPORT FOR COUNCIL CITY OF BROCKVILLE – WPCC

3.2 Operator Certification

The *Licensing of Sewage Works Operators Regulation* (O. Reg. 129/04) requires owners to ensure that every operator employed in the facility holds a license applicable to that type of facility (s. 14 (1)). The City continues to ensure all operators employed at the WPCC hold a valid license for its facility.

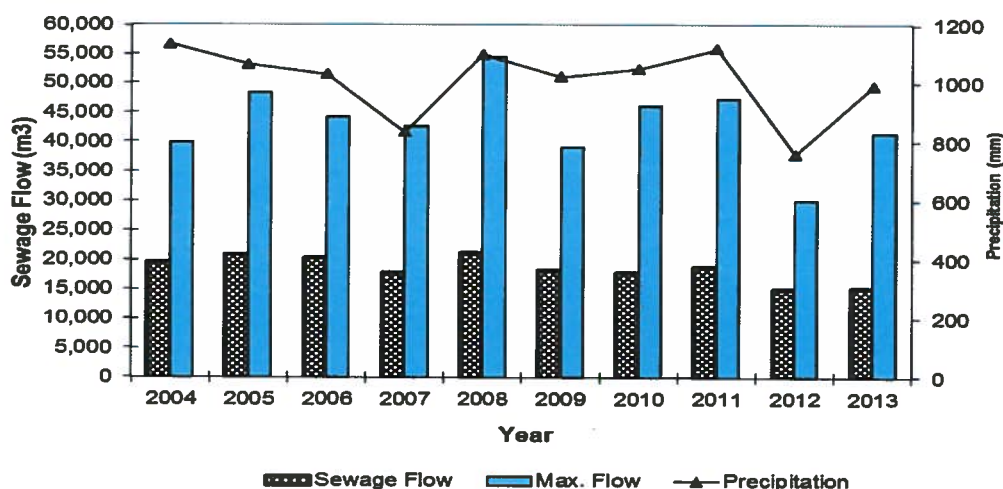
O. Reg. 129/04 also requires the designation of an overall responsible operator (ORO) for the facility and that the ORO holds a license applicable to and of the same class as or higher than the class of the facility or one level below for no longer than six months. Ed Malcomson, Supervisor of Wastewater Systems, is the designated ORO holding a Class 4 Wastewater Treatment License and a Class 3 Wastewater Collection license.

4. FLOW MONITORING DATA

4.1 Plant Flow

The wastewater flow during the reporting period is outlined in **Appendix B: 2013 WPCC PARS Report**. The total flow received during the 2013 reporting period was 5,532,572 m³ with an annual ADF of 15,158 m³ or 70% of the plant's current rated capacity. The Maximum Daily Flow of 41,468 m³ occurred on June 11th, and the minimum daily flow of 10,213 m³ occurred on September 5th. The ADF at the WPCC for 2013 compared to 2012 showed an increase of 0.60%. **Figure 1** shows the precipitation and flow graphically.

**Figure 1: Brockville WPCC
Average Annual Daily Flow vs Precipitation
2004 - 2013**



2013 ANNUAL SUMMARY REPORT FOR COUNCIL
CITY OF BROCKVILLE – WPCC

4.2 Bypasses, Spills and Overflow Events

The occurrence of a spill, bypass or overflow event results in the generation of an event report and entry into the operational log.

On May 21st, 2013 we had an Inlet Channel overflow due to heavy rainfall (15 mm in 30 minutes) flushing rags and debris from the wastewater collection system causing the screens to block and fail. The flow travelled across the WPCC property and entered two storm drain basins to the St. Lawrence River. Estimated volume discharged was approximately 50-100 m³. No samples were collected and disinfection was not established as staff resolved the issue quickly (20 minutes). A copy of the completed incident report was submitted to the MOE.

There was one bypass event at the Main Pumping Station in 2013. See **Appendix C: 2013 Bypass Summary Report**.

Chemical Usage

Ultraviolet radiation is used for disinfection.

Aluminum Sulfate (Alum) is used to aid in phosphorus removal.

The consumption of chemicals that aid in achieving effluent criteria are tracked by the treatment facility, and are outlined in **Appendix D: 2013 WPCC Annual Chemical Summary**.

5. ANALYTICAL DATA

5.1 Background

WPCC staff perform analysis on the samples collected, and participate in a Proficiency Testing Program as part of their quality assurance program. WPCC staff also send out some samples to an outside lab that is accredited with the Canadian Association for Laboratory Accreditation (CALA). Laboratory staff schedule the sampling days, and maintain a sampling schedule for the WPCC that meets the requirements of the ECA.

5.2 Sampling and Analysis Program

WPCC staff maintain a schedule of sampling Raw Influent and Final Effluent weekly as per the ECA, as well as primary effluent, raw sludge, digested sludge, activated sludge, return activated sludge, waste activated sludge and other process samples. The frequency of sampling and the testing performed met or exceeded the minimum requirement in the ECA Approval.

Toxicity tests for 2013 were all 0% mortality.

The ECA requirement for pH of the final effluent is 6.0 to 9.5. In 2013 the final effluent pH ranged from 6.30 to 7.59, which was in compliance.

2013 ANNUAL SUMMARY REPORT FOR COUNCIL
CITY OF BROCKVILLE – WPCC

5.3 Abatement Program

Waste Survey Reports continue to be updated and reviewed by abatement staff.

Abatement staff continued to monitor and work with local industry in 2013.

WPCC staff continued to review the City's existing Sewer Use By-law (12-91).

5.4 Effluent Quality Performance – Compliance Limits

The analysis results of the routine sampling at the WPCC are shown by month in **Appendix B: 2013 WPCC PARS Report** for both the raw influent and final effluent samples. Compliance was achieved in both concentration and loading for CBOD₅, TSS, TP and TAN.

Quarterly reports were submitted to City Council and monthly reports were submitted to the MOE.

6. OPERATIONS AND MAINTENANCE

6.1 Operations Log

The use of an operational log book, as required under the *Licensing of Sewage Works Operators Regulation* (O. Reg. 129/04, s. 19 (1)), to record departures from normal operating procedures, unusual or abnormal conditions, and equipment that was taken out of service, ceased to operate, underwent maintenance or repair, is kept by the facility. The highlights captured in the operational log are detailed in **Appendix E: 2013 WPCC & Pumping Stations Operational Highlights**.

6.2 Maintenance Programs

The City of Brockville uses the Work Tech preventative maintenance program to coordinate and track all plant maintenance as recommended by the original equipment manufacturer (OEM). Inspection, testing and calibration of electrical, mechanical, instrumentation and SCADA equipment is performed and documented by fully trained and qualified technicians. The equipment includes process digester gas systems, overhead cranes and gantries, fall protection devices, heating, ventilation and air conditioning (HVAC) systems, standby generator equipment and high voltage switchgear, to name a few. Critical process equipment found to be malfunctioning is repaired or replaced immediately.

6.3 Biosolids Management, Land Application and Disposal

During 2013 the City of Brockville did not apply any biosolids on Ministry of the Environment approved farmland. The City of Brockville processed the digested sludge through our centrifuge and produced a dry biosolids product. A letter was prepared and sent to the MOE indicating that no biosolids were land applied in 2013.

Appendix F: 2013 WPCC Centrifuge Sludge Feed and Cake Disposal Summary. From January 1st until September 8th, 2013 our cake was hauled to Lafleche Environmental's landfill facility for disposal. From September 9th until December 31st, 2013 our cake was hauled to DES Environmental's facility for recycling. Both haulers have a C of A to receive this material.

2013 ANNUAL SUMMARY REPORT FOR COUNCIL
CITY OF BROCKVILLE – WPCC

6.4 Effluent Monitoring Devices & Calibrations

Instrumentation equipment is maintained in accordance with OEM recommendations, or better. Historical calibration sheets are completed each time, and if the instrument is out of calibration, corrective action is implemented along with the Contractor performing the calibration. The calibration report is included in **Appendix G: 2013 Calibration Report Summary**. Various programs are in place to ensure we are current with new technologies, replace end-of-life equipment and maintain a high level of quality assurance.

6.5 WPCC & Pumping Stations – Completed and Planned Works

Appendix H: 2013 Capital Project Manager's Sheet contains the 2013 Capital Projects for the WPCC and Pumping Stations. We allocated \$320,000 in Capital to replace various pieces of equipment at the WPCC and pumping stations that were nearing the end of their life cycle. The rebuild of the Humboldt Centrifuge Roto-Diff (hydraulic backdrive) and the replacement of the heat waste system strainer was completed at a budget cost of \$45,000. The remaining \$275,000 was allocated to the Secondary Treatment Upgrade Project which includes the Main Pumping Station and Forcemain Environmental Assessment. The outstanding remaining projects will be completed in future years. These projects have been integral to refurbishing or replacing aging assets in order to maintain efficient operation and redundancy. This program utilizes risk analysis, maintenance costs and replacement analysis to give the best 10 year model possible. As always, not all risks are known and sometimes unforeseen breakdowns do occur. Excellent coordination between staff and various contractors and suppliers allows the work to be assessed and performed while keeping on track from a budget standpoint.

7 KEY CONTACTS AND REFERENCES

For further information on this report, enquiries on a related topic, or to arrange a plant tour of the wastewater treatment facilities, please contact:

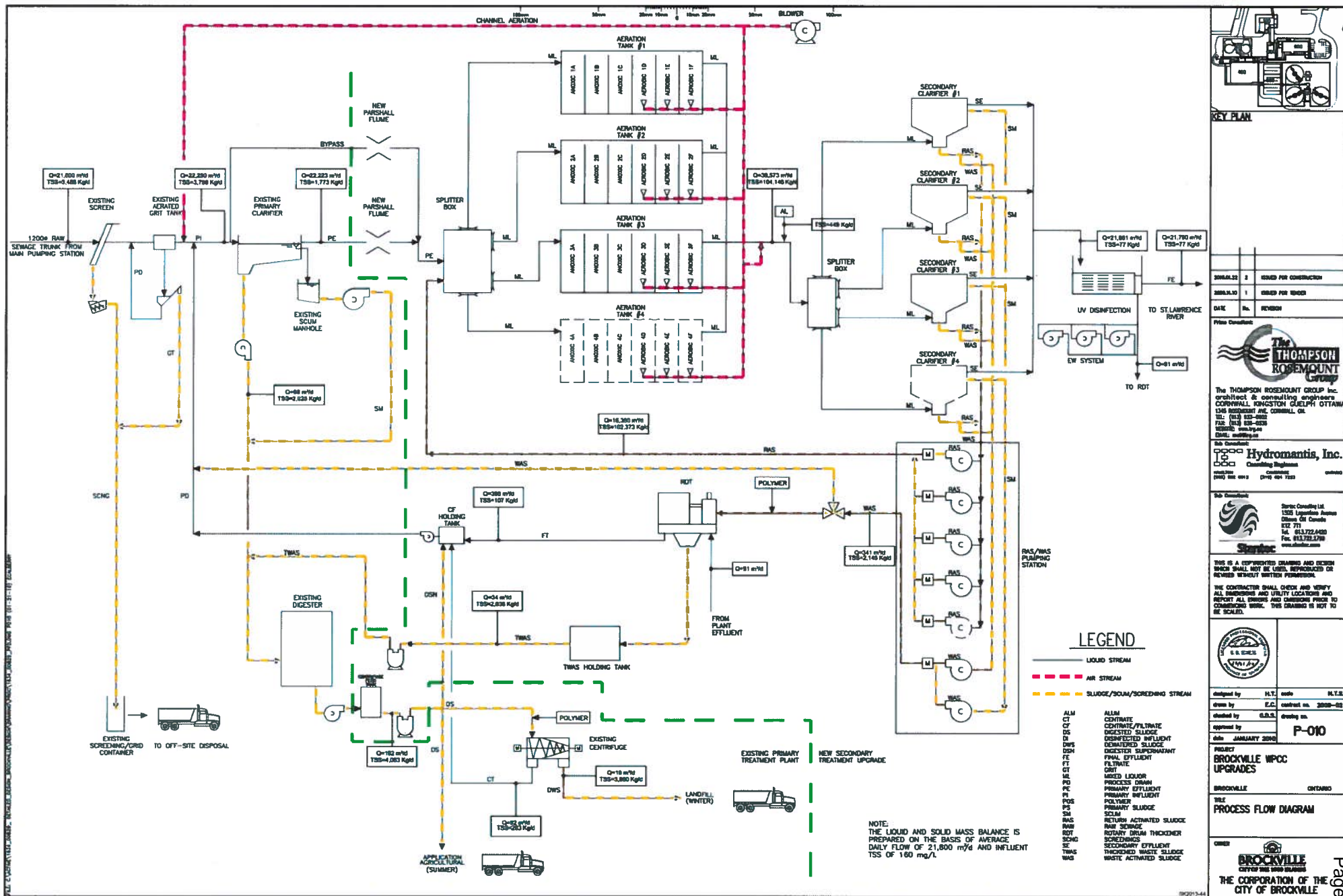
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Supervisor - Wastewater Systems
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Ministry of the Environment
Ontario Water Wastewater Certification Office
Water Environment Federation
Water Environment Equipment Association of Ontario
Ontario Agriculture and Food

www.ene.gov.on.ca
www.owwco.ca
www.wef.org
www.weao.org
www.gov.on.ca/omafra

APPENDIX A



APPENDIX B

BROCKVILLE WATER POLLUTION CONTROL CENTRE SEWAGE PLANT PERFORMANCE ASSESSMENT REPORT

MUNICIPALITY: BROCKVILLE
PROJECT: BROCKVILLE
WORKS NUMBER: 120000122

DESCRIPTION: As of August 1, 2012 a Secondary Treatment Facility, complete with two anaerobic digesters, two centrifuges for sludge thickening and two RDT's for sludge co-thickening and utilizing Alum for phosphorus removal and UV for effluent disinfection

YEAR: 2013
WATER COURSE: ST. LAWRENCE RIVER
DESIGN CAPACITY: 21.800 x 1000m3/day
PEAK DESIGN CAPACITY: 62.500 X 1000m3/day

MONTH	FLOWS			BOD/CBOD			SUSPENDED SOLIDS				PHOSPHORUS				TOTAL AMMONIA NITROGEN				E. COLI
	TOTAL FLOW 1000M3	AVG DAY FLOW 1000M3	MAX DAY FLOW 1000M3	AVG RAW BOD (mg/L)	AVG EFF CBOD (mg/L)	TOTAL LOADING EFF CBOD (kg/day)	AVG RAW SS (mg/L)	AVG EFF SS (mg/L)	TOTAL LOADING EFF SS (kg/day)	PERCENT REMOVAL	AVG RAW PHOS. (mg/L)	AVG EFF PHOS. (mg/L)	TOTAL LOADING EFF PHOS. (kg/day)	PERCENT REMOVAL	AVG RAW TAN (mg/L)	AVG EFF TAN (mg/L)	TOTAL LOADING EFF TAN (kg/day)	PERCENT REMOVAL	E. Coli (Org/100 ml) (GEOMEAN)
DEC 13	407.06	13.131	20.068	151.71	4.33	56.86	152.08	8.50	111.61	94.4	2.87	0.78	10.24	72.8	16.50	6.98	91.65	57.7	1
NOV 13	410.57	13.686	21.622	152.17	3.86	52.83	145.33	5.86	80.20	96.0	2.71	0.53	7.25	80.4	9.64	1.51	20.67	84.3	2
OCT 13	408.51	13.178	19.849	164.92	2.78	36.63	162.31	5.89	77.62	96.4	2.98	0.65	8.57	78.2	16.80	0.17	2.24	99.0	1
SEP 13	376.57	12.552	19.510	163.11	2.88	36.15	179.10	6.11	76.69	96.6	3.26	0.73	9.16	77.6	16.90	0.59	7.41	96.5	5
AUG 13	395.51	12.758	16.993	165.90	2.88	36.74	186.30	4.13	52.69	97.8	3.22	0.82	10.46	74.5	14.70	0.73	9.31	95.0	1
JUL 13	454.04	14.646	24.786	144.62	2.78	40.72	159.31	5.67	83.04	96.4	2.75	0.71	10.40	74.2	12.70	0.27	3.95	97.9	0
JUN 13	608.77	20.292	41.468	106.00	2.88	58.44	117.17	5.50	111.61	95.3	2.10	0.49	9.94	76.7	10.20	1.06	21.51	89.6	1
MAY 13	449.43	14.498	17.874	168.13	4.33	62.78	171.88	9.22	133.67	94.6	3.17	0.80	11.60	74.8	14.70	2.82	40.88	80.8	3
APR 13	542.76	18.092	33.034	112.50	5.33	96.43	118.00	9.00	162.83	92.4	2.21	0.71	12.85	67.9	8.50	4.20	75.99	50.6	4
MAR 13	537.40	17.336	34.291	104.89	4.79	83.04	111.70	6.93	120.14	93.8	2.27	0.66	11.44	70.9	13.30	10.37	179.77	22.0	2
FEB 13	396.69	14.167	18.124	158.64	6.50	92.09	146.64	6.31	89.39	95.7	2.84	0.78	11.05	72.5	9.75	9.94	140.82	-1.9	7
JAN 13	545.28	17.590	36.924	128.62	7.33	128.93	119.92	12.35	217.24	89.7	2.45	0.60	10.55	75.5	16.70	2.38	41.86	85.7	2
AVG		15.161		143.43	4.22	64.02	147.48	7.12	107.98	94.92	2.74	0.69	10.44	74.67	13.37	3.42	53.01	71.44	2
MAX			41.468	168.13	7.33		186.30	12.35		97.78	3.26	0.82			16.90	10.37			
OLD CRITERIA		21.800			35.00	763.00		45.00	981.00			1.00	22.00						N/A
NEW CRITERIA		21.800			25.00	545.00		25.00	545.00			1.00	21.80			18.0 (Nov. 1 to Apr. 30) 16.0 (May 1 to Oct. 31)	392 (Nov. 1 to Apr. 30) 349 (May 1 to Oct. 31)		200

MONTH	TOTAL LOADINGS		
	TOTAL RAW BOD (kg/day)	TOTAL RAW SS (kg/day)	TOTAL RAW PHOS. (kg/day)
DEC 13	1,992	1,997	38
NOV 13	2,083	1,989	37
OCT 13	2,173	2,139	39
SEP 13	2,047	2,248	41
AUG 13	2,117	2,377	41
JUL 13	2,118	2,333	40
JUN 13	2,151	2,378	43
MAY 13	2,438	2,492	46
APR 13	2,035	2,135	40
MAR 13	1,818	1,936	39
FEB 13	2,247	2,077	40
JAN 13	2,262	2,109	43
AVG	2,124	2,184	41
MAX	2,438	2,492	46

COMMENTS:

APPENDIX C

Facility Name: Brockville Water Pollution Control CentreReport Year: 2013

2.0 Pumping Station and Plant Bypass Monthly Summary:

MONTH	PRIMARY BYPASS			SECONDARY BYPASS		
	No. of Days (days)	Duration (hours)	Volume (1,000 m ³)	No. of Days (days)	Duration (hours)	Volume (1,000 m ³)
January						
February						
March						
April						
May						
June						
July	1	2	6.15			
August						
September						
October						
November						
December						
TOTAL	1	2	6.15	0	0	0
Volume of Bypass as % of * Average Daily Flow (ADF)			0.00011%			

ADF = (1,000 m³/d)

* % = Volume of Bypass divided by ADF divided by 365 multiplied by 100

Comments Area - Pumping Stations and Plant Bypasses

APPENDIX D

2013 Brockville WPCC Chemical Summary

Totals	011 Chemicals		
	062 Alum use (kg)	063 Alum use (L)	064 Alum dose (mg/L)
Average	604.4742466	457.7183288	38.90033241
Minimum	345.9	262.08	11.32
Maximum	2666.4	2020	97.2
Count	365	365	361
Total	220633.1	167067.19	
95 Percentile			
Exceedences	0	0	0

APPENDIX E

2013 BROCKVILLE WPCC & PUMPING STATIONS OPERATIONAL HIGHLIGHTS**1st Quarter (January, February, March)**

1. **Main Plant:**
 - Primary Clarifiers #1, #2 and #3 are currently offline due to extreme low flow conditions and the new process.
 - New Boiler #505 is in service but still has outstanding deficiencies.
 - 2013 Lifting Device Inspections completed.
 - MOE Plant Inspection was conducted February 21st, 2013. The final report has been received. The City was in compliance with the exception of Condition 11 where the MOE Inspector noted that several pieces of equipment that were installed as part of the secondary upgrade project were not included on the approved C of A. The City has subsequently made application to the MOE to have these pieces of equipment added to the C of A.
2. **Main Pumping Station:**
 - Bypasses: no bypasses to report.
 - Vibration analysis and thermal imaging was completed on all pumps, motors and control panels.
 - Pump #2 mechanical seal rebuilt.
3. **Pumping Stations:**
 - WPCC staff responded to ten (10) mechanical pump calls. No issues to report.
 - Wet wells at Chelsea Street and Georgina Street Pumping Stations were cleaned.
4. **Power Outages:**
 - There were two power outages, one at Broome Pumping Station and one at Georgina Street Pumping Station. No issues to report.
5. **Wastewater Collection System:**
 - 48 blocked sewer/camera inspections.
 - 1 blocked main response.
 - 0 sanitary sewer lateral dig-up and repair.

2nd Quarter (April, May, June)

1. **Main Plant:**
 - Primary Clarifiers #1 and #2 are currently offline due to completion of deficiencies.
 - Secondary Clarifier #3 is currently offline for cleaning, inspection and repair.
 - New Boiler #505 is in service but still has outstanding deficiencies.
 - Sludge holding tank was drained and cleaned.
 - On May 21st, 2013 at 6:55 pm we had an inlet channel overflow/bypass due to heavy rainfall flushing rags and debris from the wastewater collection system causing the screens to block and fail. The flow travelled across WPCC property and entered two storm drain basins to the St. Lawrence River. Estimated volume approximately 50 – 100 m³. No samples were collected and disinfection was not established as staff resolved the issue quickly (20 minutes). SAC, MOH and Town of Prescott WTP were notified and the proper reports completed. This incident is currently under review by the upgrade project design team.
 - Annual lifting device inspections were completed.
 - Annual plant flow meter calibrations were completed.
 - Annual outfall inspection was completed.
 - Annual fire system inspection was completed.
 - Cummins inspected and serviced the new plant diesel generator.

APPENDIX E

2013 BROCKVILLE WPCC & PUMPING STATIONS OPERATIONAL HIGHLIGHTS

- 2012 National Pollutant Release Inventory (NPRI) Report was submitted to Environment Canada.
 - 2013 1st Quarter Federal Wastewater Systems Effluent Regulations (WSER) Report was submitted to Environment Canada.
2. Main Pumping Station:
 - Bypasses: no bypasses to report.
 - Cleaned grease/rag mat off the top of the wet well.
 3. Pumping Stations:
 - WPCC staff responded to seventeen (17) mechanical/ SCADA/communication issues. No issues to report.
 - Wet well at Central Avenue Pumping Station was cleaned.
 4. Power Outages:
 - There were four power outages: WPCC, Oxford Pumping Station, Riverview Pumping Station and a planned power outage at the Main Pumping Station. No issues to report.
 5. Wastewater Collection System:
 - 44 blocked sewer/camera inspections.
 - 1 blocked main response.
 - 3 sanitary sewer lateral dig-ups and repairs.
 - Contract 2013-21 Wastewater Main Line Cleaning was completed.

3rd Quarter (July, August, September)

1. Main Plant:
 - Primary Clarifiers #3 and #4 are currently offline.
 - Secondary Clarifier #2 is currently offline for cleaning, inspection and repair.
 - New Boiler #505 is in service but still has outstanding deficiencies.
 - A new ozone generator was installed in the Dewatering Building sludge cake bay area.
 - As of September 9th, 2013 DES Environmental is responsible for the pick-up and disposal/recycling of our sludge cake.
 - 2013 2nd and 3rd Quarter Federal Wastewater Systems Effluent Regulations (WSER) Reports have been submitted to Environment Canada.
 - Septage Receiving Facility has been fully operational since July. To date there are five contractors who have entered into a Hauled Wastewater Discharge Agreement with the City.
2. Main Pumping Station:
 - On July 18, 2013 there was a two hour bypass at the Main Pumping Station due to heavy precipitation. Approximate volume of the bypass was 6,150 m³. MOE was notified of the event. Chlorination was established and samples taken.
 - A public meeting to review the Main Sewage Pumping Station and Forcemain Municipal Class Environmental Assessment was held on September 19th, 2013 from 5:30 pm – 7:30 pm at City Hall in the Council Chambers.
3. Pumping Stations:
 - WPCC staff responded to seventeen (17) mechanical/ SCADA/communication issues. No issues to report.
 - Wet wells at Oxford Avenue, Bayview Street and Broome Pumping Stations were cleaned.
 - New Grundfos pump was installed in Central Avenue Pumping Station.

APPENDIX E

2013 BROCKVILLE WPCC & PUMPING STATIONS OPERATIONAL HIGHLIGHTS

- Floors in Elizabeth Street and Bayview Street Pumping Stations were epoxy coated.
4. Power Outages:
 - There were three power outages: One at Oxford Avenue Pumping Station and two at Riverview Pumping Station. No issues to report.
 5. Wastewater Collection System:
 - 44 blocked sewer/camera inspections.
 - 0 blocked main responses.
 - 1 sanitary sewer lateral dig-up and repair.

4th Quarter (October, November, December)

1. Main Plant:
 - Primary Clarifiers #3 and #4 are currently not in use (on standby).
 - Secondary Clarifier #2 is currently not in use (on standby).
 - New Boiler #505 is in service but we are still experiencing start-up issues.
 - 2013 4TH Quarter Federal Wastewater Systems Effluent Regulations (WSER) Report has been submitted to Environment Canada.
 - To date we have seven (7) contractors registered to use the septage receiving facility.
 - December 9th, 2013 we had a Ministry of Labour Inspection. Ten (10) deficiencies were noted and addressed.
 - December 2013 approval received from TSSA for the fuel system.
 - Outfall pipe repairs completed.
 - WPCC Arc Flash Audit completed.
 - Staff are currently experimenting with a different digester sludge feed process to aid in the control of digester foaming issues. This new process may also reduce polymer usage.
2. Main Pumping Station:
 - Wet well was cleaned on October 22nd, 2013.
3. Pumping Stations:
 - WPCC staff responded to seventeen (17) mechanical/ SCADA/communication issues. No issues to report.
4. Power Outages:
 - There were two power outages: November 26th at West End, Oxford Avenue and Riverview Drive Pumping Stations and November 27th at Oxford Avenue and Riverview Pumping Stations. No issues to report.
5. Wastewater Collection System:
 - 58 blocked sewer/camera inspections.
 - 0 blocked main responses.
 - 1 sanitary sewer lateral dig-up and repair.

APPENDIX F

2013 BROCKVILLE WPCC CENTRIFUGE SLUDGE FEED & CAKE DISPOSAL SUMMARY

	221 Centrifuge - Sludge Feed			222 Centrifuge - Cake	27 Cake Weight	
Totals	% Total Solids (%)	% Volatile Solids (%)	Sludge Volume to Centrifuge (cu.m)	% Total Solids (%)	Cake Weight to Landfill - Lafleche Environmental (kg)	Cake Weight to Recycling - DES Environmental (kg)
Average	2.235869565	65.59755556	60.79198347	22.59173913	10730.38835	10513.27273
Minimum	1.79	36.74	23.36	13.22	6200	7450
Maximum	5.52	69.24	151.68	24.86	23350	12910
Count	46	45	363	46	103	55
Total			22067.49		1105230	578230
95 Percentile						
Exceedences	0	0	0	0	0	0



APPENDIX G

1602 Old Wooler Rd. Tel: (613) 398-0296
 Wooler, ON Fax: (613) 398-0294
 K0K 3M0 cell (416) 779-1456

City of Brockville
 PO Box 5000.
 Brockville Ontario
 K6V 7A5

June 17 2013

Attention: **Barry Fox**

Re: 2013 Annual Waste Water Flow Meter Calibrations

Flowmetrix thanks you for the opportunity to provide our flow meter calibration services. Mr. Curtis King attended your Brockville PCP facility on April 25th, April 26th and June 5th 2013 to verify the calibrations of your flow meters as directed. Please accept the letter as a summary of the flow meters verified, corresponding results and a brief description of the verification procedures used.

Electromagnetic Flow meters

The calibration of electromagnetic flow meters is typically verified using the appropriate manufactures calibrated flow simulator. The flow simulator when connected to the convertor *in place* of the flow tube delivers a precise signal back to the convertor that simulates a specific, calculable flow condition that is representative of specific flow conditions. The local display and local outputs are checked and documented for accuracy at each specific test point.

Level Instruments, Milltronics & Greyline

The calibration of ultrasonic level meters is typically verified using a solid level plate and measure ruler. In situations where safety or continuous operations limit direct access to the existing level sensor, the customers' level sensor is removed and a temporary secondary level sensor is attached to the transmitter allowing a ruler and level plate to be used to simulate a specific, calculable liquid level condition. The local display and local outputs are checked and documented for accuracy at each specific test point. These types of instruments are typically associated with a primary device allowing a flow calculation, and it is assumed to be programmed to provide the correct relationship between flow and level.

Calibration Summary

	Instrument	Result	Comment
1	FIT 353	Pass	None
2	FIT 366	Pass	None
3	FIT 367	Pass	none
4	FIT 369	Pass	none
5	FIT 461	Pass	none
6	FIT 511	Pass	none
7	FIT 512	Pass	none
8	FIT 602	Pass	none
9	FIT 603	Pass	none
10	FIT 713	Pass	none
11	FIT 721	Pass	none
12	FIT 722	Pass	none
13	FIT 723	Pass	none
14	FIT 724	Pass	none
15	FIT 801	Pass	none
16	FIT 834	Pass	none
17	FIT 944	Pass	none
18	FIT 953	Pass	none



APPENDIX G

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19	FIT 973	Pass	none
20	FIT 975	Pass	none
21	FIT 995	Pass	none
22	RAS # 1	FAIL	Replace
23	Raw Sludge # 1	Pass	none
24	Raw Sludge # 2	Pass	none
25	Main PS	Pass	none

If you have any questions or require further details or information please do not hesitate to contact me at your convenience.

Kind Regards

A handwritten signature in blue ink, appearing to read 'C. King'.

Curtis King C.E.T.

APPENDIX H

2013 CAPITAL PROGRAM

2013 CAPITAL PROGRAM			
PROJECT NAME:	Water Pollution Control Centre Equipment Replacement Program	YEAR PROPOSED: ITEM NO:	2013 6.2
LOCATION:	Sewage Treatment Plant and Pumping Stations		
HISTORY:	LENGTH OF PROJECT: YEAR FIRST INTRODUCED:	Ongoing - through Sewer Rate Reserve 1997	
SCOPE:	Replacement of Capital Equipment for the Water Pollution Control Centre and associated structures and pumping stations. This is to be accomplished from the Sewer Rate Reserve Fund.		
9406010	<u>WPCC BUILDINGS AND PROPERTY:</u> <u>DEWATERING OPERATIONS:</u> 1 Rebuild Centrifuge Roto-Diff (hydraulic back drive) 25,000 <u>DIGESTER OPERATIONS:</u> Waste Heat System Shredder (Replace) 20,000 <u>PUMPING STATIONS:</u>		
C4060-WPCE-CONT	CONTINGENCY:	<div>0</div> <div>45,000</div>	
WHY REQUIRED:	See the attached 10 Year Plan - Water Pollution Control Centre Capital Needs		
Advantages & Benefits	Routing such purchases through the WPCC Sewer Rate Reserve Fund provides the opportunity to account for all Capital Costs associated with the Water Pollution Control Centre in one place and to finance such work through the Sewer Use Rate User Fee. As well it allows the expenditure to take place while keeping the tax rate smooth.		

PREPARED BY (PROJECT MANAGER):

Ed Malcomson

DATE:

August 14, 2012

**FEBRUARY 3, 2014
REPORT TO FINANCE, ADMINISTRATION, OPERATIONS COMMITTEE –
FEBRUARY 18, 2014**

**2014-013-02
2013 ANNUAL WATER QUALITY REPORT
BROCKVILLE DRINKING WATER SYSTEM**

**PETER RAABE, P. ENG.
DIRECTOR OF
ENVIRONMENTAL SERVICES**

RECOMMENDATION

THAT the 2013 Annual Water Quality Report on the Brockville Drinking Water System, Attachment 1 to Report 2013-013-02, be received; and


THAT the Director of Environmental Services be designated to sign the 2013 Annual Water Quality Report on the Brockville Drinking Water System.

ORIGIN


The Safe Water Drinking Water Act, 2002 - Ontario Regulation 170, Schedule 22 requires that members of Council shall be given the annual water quality report for the preceding calendar year for their approval no later than March 31st. This report covers the period from January 1, 2013 through December 31, 2013.

ANALYSIS

Provided is a complete annual water quality report summarizing the plant description and design, flow data and water quality parameters. The 2013 Annual Water Quality Report is available at the Water Treatment Plant and on the City's website.



P. Raabe, P. Eng.
Director of Environmental Services



B. Casselman
City Manager



BROCKVILLE DRINKING WATER SYSTEM



2013 ANNUAL WATER QUALITY REPORT

P. Raabe, P. Eng., Director of Environmental Services
D. Richards, Supervisor Water Systems

DATE: February 6, 2014

EXECUTIVE SUMMARY

The City of Brockville's Water Systems Division is pleased to provide the 2013 Annual Drinking Water Quality Report. The purpose of this report is to keep the public and Council informed regarding the quality of the City's drinking water and the performance and maintenance of our water treatment and distribution systems.

The City of Brockville is dedicated to delivering a safe, reliable, drinking water supply while remaining compliant with all regulatory requirements. Achievement of those commitments is supported by risk-based process evaluation, staff competency, effective communication, and appropriate contingency/incident response measures. The managers and employees of the City of Brockville who are directly involved in the production and delivery of safe drinking water are committed to and share in the responsibilities for implementing, maintaining, and contributing to the continual improvement of the drinking water quality.

The water delivered to the consumers in the City of Brockville and a portion in the Township of Elizabethtown-Kitley continues to be safe, meeting all drinking water quality regulatory standards.

- MOE inspection on October 30th, 2013 for the Brockville Drinking Water System – inspection found no findings of non-compliance with regulatory requirements and achieved an inspection rating of 100%.
- MOE inspection on October 30th, 2013 for the Elizabethtown-Kitley Water Distribution System – inspection found no findings of non-compliance with regulatory requirements and achieved an inspection rating of 100%.

This Annual Drinking Water Quality Report is prepared in accordance with the Municipal Drinking Water Licence, Drinking Water Works Permit for the Brockville Drinking Water System and Ontario Regulation 170/03, Section 11 and Schedule 22. Included with this report are analytical data, plant flow, adverse water quality incidents and corrective action resolutions, as well as a process flow schematic of the facility.

Peter Raabe, P. Eng.
Director of Environmental Services

Don Richards
Supervisor - Water Systems

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LIST OF ACRONYMS & DEFINITIONS

AWQI	Adverse Water Quality Incidents
	Examples of adverse water results: <ul style="list-style-type: none"> ▪ An analytical result that exceeds a health-based water quality standards ▪ Any evidence that disinfection may not have been effective ▪ Low chlorine residuals
C of A	Certificate of Approval
CFU	colony forming units
CGSB	Canadian General Standards Board
DWQMS	Drinking Water Quality Management Standard
GUDI	groundwater under the direct influence of surface water
L/s	litres per second
m ³ /d	cubic metres per day
mg/L	milligrams per litre
mL	milliliter
ML/d	Mega (million) litres per day
MOE	Ministry of the Environment (Ontario)
MOH	Medical Officer of Health
PVC	Poly Vinyl Chloride
O. Reg.	Ontario Regulation
PTTW	Permit to Take Water
R.R.O.	Revised Regulations Ontario (1990)
SCADA	Supervisory Control and Data Acquisition
SDWA	Safe Drinking Water Act, 2002
WTP	Water Treatment Plant

1. INTRODUCTION

This Annual Water Quality Report is for the period from January 1st to December 31st, 2013 and includes reporting for both the municipal drinking water treatment and distribution systems that the City of Brockville owns and operates and the water distribution system that the Township of Elizabethtown-Kitley owns and the City of Brockville operates.

This report contains three different reports required for the City of Brockville and the Elizabethtown-Kitley Drinking Water Systems:

- Section 11 Annual Report, as per Section 11 of O. Reg. 170/03
- Summary report as per Schedule 22 of O. Reg. 170/03.
- Summary of the raw water values that were submitted to the Ministry of the Environment under O. Reg. 387/04.

This annual report is available to the public at no charge. Users of this drinking water system have been notified that this annual report is available by placing a notice on the City of Brockville's website and water billing inserts. The 2013 Annual Water Quality Report is available to the public at no charge at the following locations:

- City of Brockville's website - <http://city.brockville.on.ca/>
- City of Brockville – Public Library
- City of Brockville –Revenue Office, City Hall
- City of Brockville – Water Systems Division, 20 Rivers Ave., 613-342-7819 ext 221.
- Township of Elizabethtown-Kitley's website - <http://www.elizabethtown-kitley.on.ca>
- Township of Elizabethtown-Kitley's Municipal Office – 6544 New Dublin Road, RR#2 Addison

2. LEGISLATED REQUIREMENTS

2.1 Drinking-Water Systems Regulation (O. Reg. 170/03)

Under Schedule 22 of the Drinking Water Systems Regulation (O. Reg. 170/03), Summary Reports for Municipalities, annual reports to the owners of large municipal residential systems and small municipal systems are required. The summary report must be submitted no later than March 31st to members of municipal council. The contents must list the requirements of the *Safe Drinking Water Act, 2002*, the regulations, the system's approval and any order that the system failed to meet at any time during the reporting period covered, specify the duration of the failure, and the measures taken to correct the failure.

In addition, the report must include a summary of the quantities and flow rates of the water supplied during the period covered by the report, including monthly averages, maximum daily flows and daily instantaneous peak flows. The summary must be compared to the rated capacity and flows provided in the system's Municipal Drinking Water Licence.

The City of Brockville is the Owner of the Water Treatment Plant, trunk and local water distribution systems, and the City of Brockville is the Operating Authority for the Township of Elizabethtown-Kitley's water distribution system.

2.2 Summary of Regulatory Requirements

Acts and Regulations

Regulated systems must meet the requirements of Ontario's *Safe Drinking Water Act, 2002* and its regulations. Most notably, the Drinking Water Systems Regulation sets out treatment and testing requirements for all categories of regulated water systems, including small non-municipal and seasonal operations.

Safe Drinking Water Act, 2002

In the Part Two Report of the Walkerton Inquiry, Justice O'Connor recommended that the Ontario government enact a *Safe Drinking Water Act, 2002* to deal with matters related to treatment and distribution of drinking water. As articulated by Justice O'Connor, the purpose of the *Safe Drinking Water Act, 2002* is to gather in one place all legislation and regulations relating to the treatment and distribution of drinking water.

Summary of Provincial Legislation Significant to Water Operations

ACT	O. Reg.
WATER OPPORTUNITIES ACT	
➤ Water Opportunities Act, 2010	
CLEAN WATER ACT, 2006	
➤ Source Protection Areas and Regions	O. Reg. 284/10
➤ Source Protection Committees	O. Reg. 288/10
➤ Terms of Reference	O. Reg. 287/07
SAFE DRINKING WATER ACT, 2002	
➤ Drinking Water Systems Regulation	O. Reg. 170/03
➤ Certification of Drinking-Water System Operators and Water Quality Analysts	O. Reg. 128/04
➤ Drinking Water Testing Services - relating to laboratory licensing	O. Reg. 248/03
➤ Schools, private schools and day nurseries	O. Reg. 243/07
➤ Compliance and Enforcement Regulation	O. Reg. 242/05
➤ Ontario Drinking Water Quality Standards	O. Reg. 169/03
➤ Definitions of Words and Expressions Used in the Act	O. Reg. 171/03
➤ Definition of Deficiency and Municipal Drinking Water System	O. Reg. 172/03
➤ Licensing Of Municipal Drinking-Water Systems	O. Reg. 188/07
➤ Financial Plans	O. Reg. 453/07
ONTARIO WATER RESOURCES ACT	
➤ Licensing of Sewage Works Operators	O. Reg. 129/04
➤ Approval Exemption	O. Reg. 525/98
➤ Wells	R.R.O. 1990, Reg. 903
➤ Revoking Ontario Regulation 459/00	O. Reg. 175/03
➤ Revoking Ontario Regulation 505/01	O. Reg. 176/03
➤ Water Taking	O. Reg. 387/04
➤ Charges for Industrial and Commercial Water Users	O. Reg. 450/07
ENVIRONMENTAL PROTECTION ACT	
➤ Certificate of Approval Exemptions - Air	O. Reg. 524/98
ENVIRONMENTAL BILL OF RIGHTS ACT	
➤ Prescribing the Safe Drinking Water Act, 2002	O. Reg. 257/03

3. ANNUAL WATER QUALITY SUMMARY FOR 2013

The City of Brockville's Water Systems Division is responsible for the Brockville Drinking Water System under O. Reg. 170/03 including Water Treatment Plant, trunk water distribution system (elevated storage, reservoirs, booster stations) and local water distribution systems. Staff's primary responsibility is water production and treatment in compliance with all applicable legislation and municipal drinking water licences and drinking water works permits. Routine water quality testing and continuous monitoring of water quality and quantity is conducted to ensure compliance. All data from SCADA, process control point data, in-house laboratory results and external laboratory results are all captured in a WaterTrax data management system.

3.1 Water Quality Data

Raw and treated water is sampled and tested for chemical, physical and microbiological parameters in accordance with the requirements of O. Reg. 170/03 and individual municipal licences and permits. Sampling is also conducted in the distribution system primarily for bacteriological indicators and evidence of sustained chlorine residuals. Enhanced sampling programs are also defined by the Water Systems Division, and testing procedures followed and where necessary submitted to external accredited laboratory for analysis. This level of water quality monitoring ensures public health and public confidence in the water supply.

The majority of analysis is conducted by an external accredited laboratory, with some specialized analysis contracted to other accredited laboratories. In accordance with Schedule 16 of O. Reg. 170/03, all required notifications of adverse water quality incidents are provided to the Spills Action Centre and Medical Officer of Health.

Operational Testing:

The following table is a summary of the operational testing completed in 2013 (as per O. Reg. 170/03, Schedules 6 and 7).

PARAMETER TESTED:	# of Grab Samples	RANGE OF RESULTS:	
		Minimum	Maximum
Turbidity – Raw (NTU)	Continuous monitoring	0.04	4.99
Turbidity – Filter 1 (NTU)	Continuous monitoring	0.01	0.19
Turbidity – Filter 2 (NTU)	Continuous monitoring	0.01	0.15
Turbidity – Treated (NTU)	Continuous monitoring	0.02	0.99
Chlorine – Pre Filter (mg/l)	Continuous monitoring	0.00	2.34
Chlorine – Reservoir (Main Plant) (mg/l)	Continuous monitoring	0.00	2.30
Chlorine – Plant Effluent (mg/l)	Continuous monitoring	0.55	2.23
Chlorine – Distribution System Parkedale Reservoir (mg/l)	Continuous monitoring	0.63	2.33
Chlorine – Elizabethtown-Kitley Distribution System (mg/l)	52	0.64	1.58
Fluoride – Plant Effluent (mg/l)	Continuous monitoring	0.00	1.53
UV Dosage (mJ/sq. cm.)	Continuous monitoring	0	3277
UV Intensity (microW/sq cm)	Continuous monitoring	0	85
UV Transmittance (%)	365	95	95

Additional Testing as Required by the Municipal Drinking Water Licence, Order or Other Legal Instrument for 2013:

TYPE OF LEGAL INSTRUMENT:	PARAMETER
Municipal Drinking Water Licence 152-101 Section 1.5	TSS Residue – Monthly
Residue Management – Composite Sample	8 mg/L (annual average)

Microbiological Testing:

Microbiological testing completed under the Schedule 10, 11 or 12 of O. Reg. 170/03 during this reporting period.

Sample Description:	Number of Samples	Range of E.Coli Or Fecal Results CFU/100ml		Range of Total Coliform Results CFU/100ml		Number of HPC Samples	Range of HPC Results CFU/ml	
		Min.	Max.	Min.	Max.		Min.	Max.
Raw	52	0	200	8	400	54	10	2000
Treated	52	0	3	0	200	53	10	170
Distribution	478	0	0	0	2	213	10	40

Chemical Testing:

The following Tables are a summary of the chemical testing completed in 2013 (as per O. Reg. 170/03, Schedule 13).

Schedule 23

Summary of Inorganic parameters tested during this reporting period or the most recent sample results:

Parameter	Sample Date	Result Value	Unit of Measure	Exceeded the Standard	Exceeded Half the Standard
Antimony	Jan. 2/13	0.0002	mg/l	No	No
Arsenic	Jan. 2/13	0.0010	mg/l	No	No
Barium	Jan. 2/13	0.0180	mg/l	No	No
Boron	Jan. 2/13	0.008	mg/l	No	No
Cadmium	Jan. 2/13	<0.00002	mg/l	No	No
Chromium	Jan. 2/13	<0.002	mg/l	No	No
Mercury	Jan. 2/13	<0.00002	mg/l	No	No
Selenium	Jan. 2/13	<0.001	mg/l	No	No
Sodium	Jan. – Dec. (2 samples)	13.60*	mg/l	No	n/a
Uranium	Jan. 2/13	0.00027	mg/l	No	No
Nitrite	Quarterly (4 samples)	0.20*	mg/l	No	No
Nitrate	Quarterly (4 samples)	0.30*	mg/l	No	No

*average

n/a – not applicable

Schedule 24

Summary of Organic parameters sampled during this reporting period or the most recent sample results:

Parameter	Sample Date	Result Value	Unit of Measure	Exceeded the Standard	Exceeded Half the Standard
Alachlor	Jan. 2/13	<0.3	ug/l	No	No
Aldicarb	Jan. 2/13	<3	ug/l	No	No
Aldrin + Dieldrin	Jan. 2/13	<0.02	ug/l	No	No
Atrazine + N-dealkylated metabolites	Jan. 2/13	<0.5	ug/l	No	No
Azinphos-methyl	Jan. 2/13	<1	ug/l	No	No
Bendiocarb	Jan. 2/13	<3	ug/l	No	No
Benzene	Jan. 2/13	<0.5	ug/l	No	No
Benzo(a)pyrene	Jan. 2/13	<0.005	ug/l	No	No
Bromoxynil	Jan. 2/13	<0.3	ug/l	No	No
Carbaryl	Jan. 2/13	<3	ug/l	No	No
Carbofuran	Jan. 2/13	<1	ug/l	No	No
Carbon Tetrachloride	Jan. 2/13	<0.2	ug/l	No	No
Chlordane (Total)	Jan. 2/13	<0.04	ug/l	No	No
Chlorpyrifos	Jan. 2/13	<0.5	ug/l	No	No
Cyanazine	Jan. 2/13	<0.5	ug/l	No	No

Brockville Drinking Water System Annual Water Quality Report 2013

Diazinon	Jan. 2/13	<1	ug/l	No	No
Dicamba	Jan. 2/13	<5	ug/l	No	No
1,2-Dichlorobenzene	Jan. 2/13	<0.1	ug/l	No	No
1,4-Dichlorobenzene	Jan. 2/13	<0.2	ug/l	No	No
Dichlorodiphenyltrichloroethane (DDT) + metabolites	Jan. 2/13	<0.01	ug/l	No	No
1,2-Dichloroethane	Jan. 2/13	<0.1	ug/l	No	No
1,1-Dichloroethene	Jan. 2/13	<0.1	ug/l	No	No
Dichloromethane	Jan. 2/13	<0.3	ug/l	No	No
2,4-Dichlorophenol	Jan. 2/13	<0.1	ug/l	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	Jan. 2/13	<5	ug/l	No	No
Dicofop-methyl	Jan. 2/13	<0.5	ug/l	No	No
Dimethoate	Jan. 2/13	<1	ug/l	No	No
Dinoseb	Jan. 2/13	<0.5	ug/l	No	No
Diquat	Jan. 2/13	<5	ug/l	No	No
Diuron	Jan. 2/13	<5	ug/l	No	No
Glyphosate	Jan. 2/13	<25	ug/l	No	No
Heptachlor + Heptachlor Epoxide	Jan. 2/13	<0.1	ug/l	No	No
Lindane (Total)	Jan. 2/13	<0.1	ug/l	No	No
Malathion	Jan. 2/13	<5	ug/l	No	No
Methoxychlor	Jan. 2/13	<0.1	ug/l	No	No
Metolachlor	Jan. 2/13	<3	ug/l	No	No
Metribuzin	Jan. 2/13	<3	ug/l	No	No
Monochlorobenzene	Jan. 2/13	<0.2	ug/l	No	No
Paraquat	Jan. 2/13	<1	ug/l	No	No
Parathion	Jan. 2/13	<3	ug/l	No	No
Pentachlorophenol	Jan. 2/13	<0.1	ug/l	No	No
Phorate	Jan. 2/13	<0.3	ug/l	No	No
Picloram	Jan. 2/13	<5	ug/l	No	No
Polychlorinated Biphenyls (PCB)	Jan. 2/13	<0.05	ug/l	No	No
Prometryne	Jan. 2/13	<0.1	ug/l	No	No
Simazine	Jan. 2/13	<0.5	ug/l	No	No
THM (NOTE: shows latest annual average)	Quarterly (min) (4 samples)	34.98	ug/l	No	No
Temephos	Jan. 2/13	<10	ug/l	No	No
Terbufos	Jan. 2/13	<0.3	ug/l	No	No
Tetrachloroethylene	Jan. 2/13	<0.2	ug/l	No	No
2,3,4,6-Tetrachlorophenol	Jan. 2/13	<0.1	ug/l	No	No
Triallate	Jan. 2/13	<10	ug/l	No	No
Trichloroethylene	Jan. 2/13	<0.1	ug/l	No	No
2,4,6-Trichlorophenol	Jan. 2/13	<0.1	ug/l	No	No
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)	Jan. 2/13	<10	ug/l	No	No
Trifluralin	Jan. 2/13	<0.5	ug/l	No	No
Vinyl Chloride	Jan. 2/13	<0.2	ug/l	No	No

LEAD SAMPLING:**Brockville Drinking Water System**

Based on the 2013 results, Section 15 of O. Reg. 170/03, the lead sampling program for the Brockville Drinking Water System qualified and was approved for a reduced lead sampling schedule. The City of Brockville's lead sampling program will continue to sample under the "reduced" sampling requirements specified in the City of Brockville Municipal Drinking Water Licence.

Below are the 2013 winter/summer lead sampling summary results.

Sampling Period – Winter (December 15 to April 15 th)	Plumbing	Distribution
Number of individual samples	60	14
Number of sample points (locations)	30	N/A
Number of individual sample exceedances	3	0
Number of sample points with an exceedance during the period	2	N/A
Percentage of sample points with an exceedance	6.60	N/A
Is the system required to have a Corrosion Control Plan prepared?	NO	
Do the reduced sampling & frequency requirements apply to the system?	NO	
Do the plumbing sample exemptions apply to the system?	NO	

Sampling Period - Summer (June 15 th to October 15 th)	Plumbing	Distribution
Number of individual samples	60	12
Number of sample points (locations)	30	N/A
Number of individual sample exceedances	1	0
Number of sample points with an exceedance during the period	1	N/A
Percentage of sample points with an exceedance	3.30	N/A
Is the system required to have a Corrosion Control Plan prepared?	NO	
Do the reduced sampling & frequency requirements apply to the system?	NO	
Do the plumbing sample exemptions apply to the system?	NO	

Elizabethtown-Kiltley Distribution System

In September 2011 the Operating Authority applied for relief from regulatory lead sampling as there are no lead service pipes in the distribution system. Lead sampling relief was granted from the Ministry of the Environment until 2017, therefore no lead sampling was conducted in 2013.

4. BROCKVILLE DRINKING WATER SYSTEM**4.1 Water System Description**

Drinking-Water System Number:	220001263
Drinking-Water System Name:	Brockville Drinking Water System
Drinking-Water System Owner:	City of Brockville
Accredited Operating Authority:	City of Brockville
Municipal Drinking Water Licence:	152-101
Drinking Water Works Permit:	152-201
Permit To Take Water:	8577-5ZCP45

Drinking-Water System Category:	Large Municipal
Design Capacity:	36.4 ML/D
Treatment:	Direct Filtration Class III
Local Distribution:	Class II
Trunk Distribution:	Class III
Source Water:	St Lawrence River
Population Served:	22,000

Connected Drinking-Water Systems:

Drinking-Water System Number:	260007777
Drinking-Water System Name:	Elizabethtown-Kitley Distribution System
Drinking-Water System Owner:	Township of Elizabethtown-Kitley
Accredited Operating Authority:	City of Brockville
Municipal Drinking Water Licence:	257-101
Drinking Water Works Permit:	257-201
Drinking-Water System Category:	Large Municipal Class I
Water Source:	City of Brockville DWS
Population Served:	350

4.1.1 Water Treatment Plant

The City of Brockville's Water Treatment Plant is a Class III direct filtration facility located at 20 Rivers Avenue, located on the St. Lawrence River and serves the City of Brockville (population 22,000), and a portion of the Township of Elizabethtown-Kitley (population 350). The Water Distribution System is separated into a Trunk Water Distribution System and Local Water Distribution System. The Trunk WDS is a Class III System (Certificate #3811) and the Local System is a Class II System (Certificate #2193). A 900 mm raw water intake pipe equipped with zebra mussel control lies on the bottom of the St. Lawrence River extending 300 metres off shore at a depth of 10.5 metres. The treatment process has a design maximum flow rate of 36.4 ML/d and is composed of a number of sub-units:

- low lift pumping station
- coagulation and flocculation using polyaluminum chloride (PAC)
- pre- and post-filter disinfection with chlorine gas
- two granular activated carbon filters
- fluoride addition
- reservoir and high lift pumping station
- final treated water UV disinfection
- process (filter backwash residuals) wastewater treatment.

4.1.2 Treatment Chemicals Used

All chemicals used in the operation of the drinking water system meets all applicable standards set by both the American Water Works Association ("AWWA") and the American National Standards Institute ("ANSI") safety criteria standards NSF/60 and NSF/61

Chemical	Application	Supplier
Chlorine Gas	Pre, Post Filter, Plant Effluent (Primary Disinfection)	Brenntag Canada
Poly Aluminum Chloride XL-6 (SternPAC) PAX XL-1900 (ACH)	Pre Filter (Coagulant)	Kemira Water Solutions
Hydrofluorosilicic acid	Plant Effluent (Fluoride)	Brenntag Canada
Sodium Hypochlorite	Parkedale Reservoir (Secondary Disinfection)	Brenntag Canada

4.1.3 Water Distribution System – Trunk and Local Systems

The City of Brockville's Distribution system comprises of a Class III Trunk Distribution and a Class II Local Distribution. The distribution system consists of a number of underground pipes ranging in size from 100 mm in diameter to 600 mm diameter and are made of a variety of materials including, cast iron, ductile iron, poly vinyl chloride, concrete, steel, HDPE and asbestos cement. In addition there are over 8,330 service connections, 890 fire hydrants and 2,800 valves. The distribution also consists of a number of treated water storage facilities and booster stations as indicated below.

- Parkedale Avenue Reservoir
The Parkedale Avenue Reservoir, Booster Pumping Station and Re-chlorination Facility services two geographical areas which are Zone 1, which is the area South of Highway 401, and Zone 2 which is the area North of Highway 401. It is a 7,600 m³ capacity reservoir at-grade, single cell, concrete, non-baffled, treated water reservoir.
- Perth Street Elevated Storage Tank (Water Tower)
The City of Brockville has a 1,900 m³ overhead storage tank located on Perth St. It is a single cell, steel, non-baffled treated water storage tank.
- Water Booster Stations
There are three (3) booster pump stations (First Ave., Sunset Blvd., Parkedale Ave.) which are part of the distribution system. The purpose of booster stations is to ensure consistent pressure is maintained throughout the system.
- Feeder Main & Local WDS
600 mm single feeder main from the WTP to the Church St./Perth St. area where flow splits between the Water Tower and the Local and Trunk distribution systems.

4.2 2013 Flow Summary

In 2013 the maximum or peak daily raw water flow was 20,083 L/min which occurred on March 16, 2013 and was within the permitted maximum amount of 25,278 L/min, or 79% of the Permit as indicated in the table below. In addition, the annual average daily raw water flow to the WTP was 10,848,287 L/day or 29% of its maximum approved treatment capacity of 36,400,000 L/day.

Maximum Permitted Water Taking – WTP

Condition:	Maximum Permitted Water Taking
Maximum Amount of Water Taken per Minute	25,278.00 (L/min)
Maximum Amount of Water Taken per Day	36,400 (m3/d)

The Permit to Take Water specifies the maximum flow into individual treatment systems as indicated below.

Maximum Flow to Treatment System – WTP

Treatment System/Stage:	Maximum Flow Rate (m3/d)
GAC Filters – Flow	19,600 each
UV Disinfection System	36,400

The summary of the volume of water taken daily and the flows of the water supplied during the 2013 calendar year is provided in **Appendix D**, and includes 2013 flow data and historical flow of past years of pumping at the WTP.

The historical total plant effluent flow is also displayed in **Appendix D**. The total annual plant effluent flow for 2013 is 9.45% less than the total annual plant effluent flow from 2012. This information is provided for interest and to evaluate the treatment system trends over time in order to prepare for any future improvements required to meet this demand.

4.3 Adverse Test Results

In accordance with Schedule 16 of O. Reg. 170/03, all required notifications of adverse water quality incidents were provided to the Medical Officer of Health (MOH) and the Spills Action Centre (SAC). In 2013 there were a total of eight (8) reports filed with SAC as summarized below.

AWQI Incident Date	Parameter	Result	Corrective Action	Corrective Action Date
May 22, 2013 #111124	Coagulant Chemical Feed (standard is continuous)	Chemical feed pump interruption	Restored chemical feed pump operation, filter turbidity remained below 0.05 NTU	May 22, 2013
May 24, 2013 #111175	Fluoride	1.53 mg/L	Residual spike, chemical feed system shutdown analyzer cleaned and calibrated	May 24, 2013
May 29, 2013 #111273	Total Coliform	TC(2)	Flushed and re-sampled	June 3, 2013
June 28, 2013 #111990	Total Coliform	TC(2)	Flushed and re-sampled	July 3, 2013
June 29, 2013 AWQI #112027	Total Coliform	TC (1)	Flush and resample – resample results clean.	July 3, 2013
July 9, 2013 AWQI #112276	Fluoride	2.0 mg/L	Fluoride analyzer spike - manual sample taken, fluoride residual within MOE guidelines.	July 9, 2013
July 26, 2013 AWQI #112893	Total coliform	TC (11)	Flush and resampled – resample results clean.	July 29, 2013
Sept 12, 2013 AWQI #114017	E-coli	EC (3)	Resampled, raw and treated water samples mislabeled. – resample results clean.	Sept 16, 2013

4.4 Operator Certification

The *Certification of Drinking-Water System Operators and Water Quality Analysts* (O. Reg. 128/04) requires owners to ensure that every operator employed in the facility holds a license applicable to that type of facility. All operators in the Water Systems Division hold the required certifications for treatment and distribution.

4.5 Capital Projects

The 2013 Capital Project Highlights can be found in **Appendix B** of this Report. All works are subject to the annual budget process and approval by Council. A 10 Year Capital Replacement Equipment Plan has been developed that includes an extensive breakdown of all capital equipment that requires allocated funds for refurbishment or replacement. This is not included in the Annual Summary Report this year, but can be made available upon request.

5. **TOWNSHIP OF ELIZABETHTOWN-KITLEY WATER DISTRIBUTION SYSTEM**

5.1 Water System Description

The City of Brockville provides treated water from its Water Treatment Plant to the Elizabethtown-Kitley Water Distribution System (Class I) west of the City. This is facilitated through a 10 kilometer watermain that extends along County Road #2 to the Country Club, through a meter chamber and associated appurtenances. This distribution system services approximately 350 residential customers. This system was installed in 1996 by the Ministry of Transportation and the Ontario Clean Water Agency and turned over to the Township of Elizabethtown-Kitley.

A booster station at Lily Bay provides for increased pressure only. The Township Fire Department is aware of this operational constraint and does not use the distribution system for firefighting or training purposes. A continuous flushing station at Ackerman Rd. is required to maintain free chlorine residual above the regulated minimum level of 0.20 mg/L. City Staff operate and maintain this system on behalf of the Township as the "Operating Authority".

Township of Elizabethtown-Kitley

Drinking-Water System Number:	260007777
Drinking-Water System Name:	Elizabethtown-Kitley Distribution System
Drinking-Water System Owner:	Township of Elizabethtown-Kitley
Accredited Operating Authority:	City of Brockville
Municipal Drinking Water Licence:	257-101
Drinking Water Works Permit:	257-201
Drinking-Water System Category:	Large Municipal Class 1
Water Source:	City of Brockville DWS
Population Served:	350

5.2 Adverse Test Results

No adverse water quality incidents reported to SAC in 2013 for the Elizabethtown-Kitley WDS.

5.3 Historical Flow Results

A summary of the volume of water taken daily and the flows of the water supplied during the 2013 calendar year is provided in **Appendix D**.

The historical flow is also displayed in **Appendix D**. The total flow for 2013 is 6.31% less than the total flow from 2012. This information is provided for interest and to evaluate the system flow trends over time in order to prepare for any future improvements required to meet this demand.

6. CONCLUSION

The City of Brockville serves approximately 22,000 residents and about 350 residents in the Township of Elizabethtown-Kitley. One of the City's most important responsibilities is to provide its residents with clean, safe drinking water. Routine water quality testing and continuous monitoring of the water quality and quantity is completed by City Staff at the Water Treatment Plant and throughout the distribution systems to demonstrate that the City consistently meets or exceeds the standards set by the MOE.

In Ontario, water taking, treatment and distribution are governed by a number of Acts and Regulations. This report fulfills the reporting requirements of the Drinking Water System Regulation (O. Reg. 170/03) made under the Safe Drinking Water Act for all of the municipal drinking water treatment systems in the City of Brockville and the Township of Elizabethtown-Kitley, and covers the period from January 1st to December 31st 2013. As required under this same regulation, the report is prepared prior to March 31st and is filed for review and approved by both the City of Brockville's and Elizabethtown-Kitley's municipal council. Copies of the report are also on hand at the Public Library, the Revenue Office at City Hall, the Water Treatment Plant at 20 Rivers Avenue, Brockville and the Township of Elizabethtown-Kitley's Municipal Office at 6544 New Dublin Road, RR#2 Addison.

The contents of this report highlight the requirements of the Safe Drinking Water Act, the regulations, and the systems' approval including any reportable events and the corresponding corrective actions undertaken in 2013. In addition, the report also includes a summary of the quantities and flow rates of the water supplied during the calendar year, including monthly averages, maximum daily flows, and daily instantaneous peak flow rates. The summaries are compared to the rated capacity and flow rates in the system approvals.

The Water Systems Division has taken all necessary steps to comply with all regulatory requirements in the production and distribution of safe drinking water and to conform to the requirements of implementing and maintaining a Drinking Water Quality Management System. The dedication and commitment of all Water Systems Staff ensures a safe reliable drinking water supply to consumers of the City of Brockville and the a portion of the Township of Elizabethtown-Kitley.

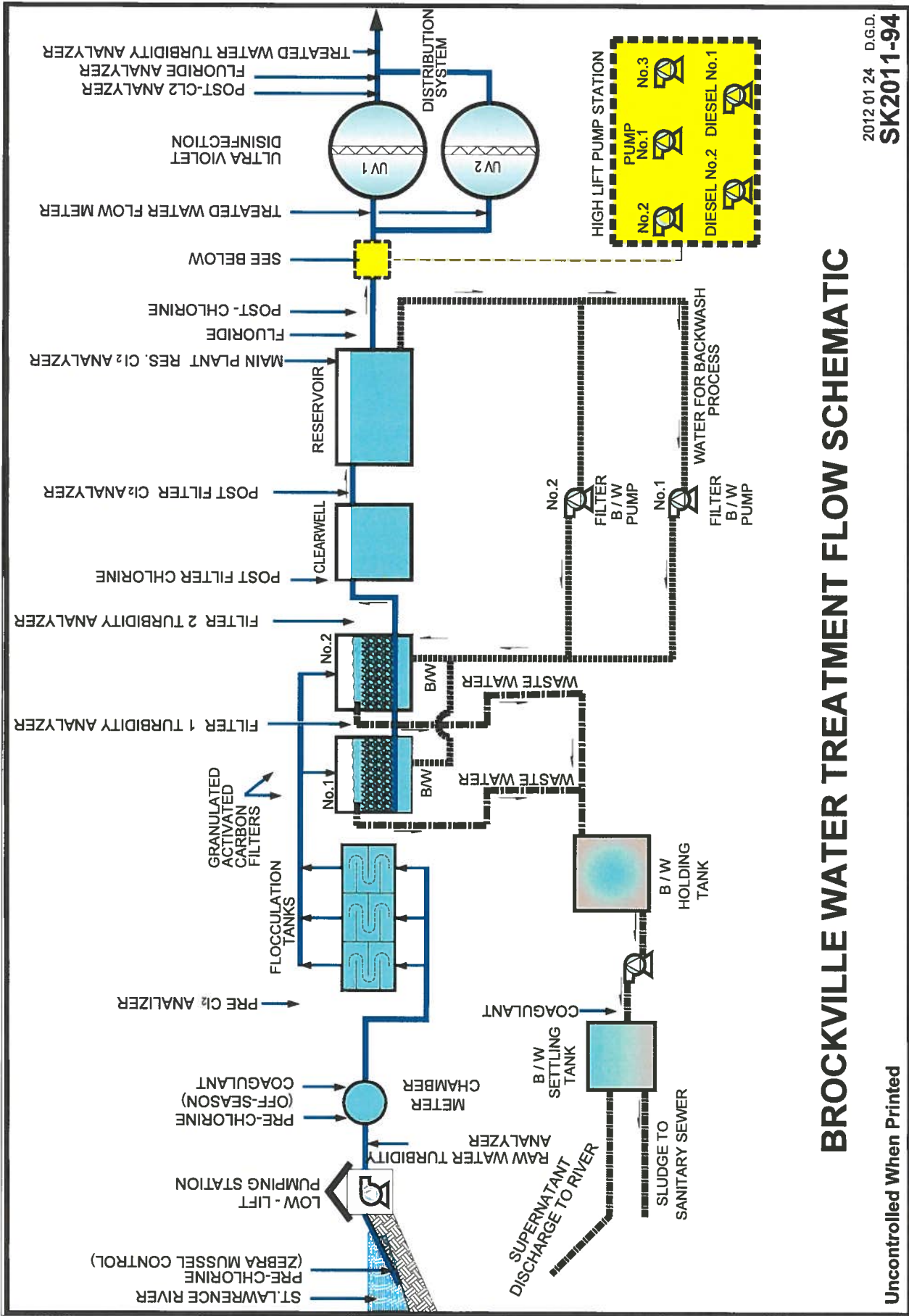
7. KEY CONTACTS

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 Phone: 613-342-8772 ext. 8257
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APPENDIX A



City of Brockville Drinking Water System Operational Plan
FIGURE 6.1 - DRINKING WATER SYSTEM PROCESS DIAGRAM

Appendix B Capital Highlights Report 2013

The 2013 Capital projects of the Brockville Drinking Water System are summarized as follows:

Capital Funds Required to Install, Repair or Replace Equipment Water Treatment:

PROJECTS:	Approximate Expenditures
Lighting Replacement	\$16,025
SCADA Computers	\$11,950
SCADA Computer Operating Software	\$34,760
Fluoride Analyzer	\$6,820
Main Plant Diesel Pumps #1 & #2 Check Valves	\$37,940
Main Plant #3 Pump & Motor Refurb	\$7,970
Wastewater Sludge Transfer Pumps	\$7,250
Low Lift Motor #3 VFD	\$19,250
Parkedale Reservoir – Zone 2 Pump #4 Refurb	\$1,500
Trunk Distribution Feedermain Condition Assessment	\$39,150
Contingency	\$24,100
TOTAL EXPENDITURES:	\$206,715

- 2013 Capital Projects Water Distribution:

- Brock Street.: Watermain from Brock and Elm to Brock and Dales Ave replaced – new connection under Buel's creek replacement of "1932" 100mm cast iron watermain was replaced with 200mm PVC pipe.
- Tunnel Avenue.: From Brock to Pearl – replacing "1890" 150mm cast Iron with 150 mm PVC
- Byng Ave: Pine to Murray – replacing 50 mm copper – replacing with 200 mm PVC.
- McCready/ Granite: Replace 100mm "1912" cast iron with 200 mm PVC, new connection to Sherwood.

Capital Funds Required to Replace Water Mains Water Distribution:

PROJECTS:	Approximate Expenditures
Brock Street	\$300,000
Tunnel	\$67,000
Byng Ave	\$68,000
McCready/Granite	\$262,000
TOTAL EXPENDITURES:	\$697,000

BROCKVILLE WATER SYSTEMS ANNUAL FLOW REPORT 2013

<u>Month</u>	<u>WTP Raw Avg Flow (m3/day)</u>	<u>WTP Raw Max Flow (m3/day)</u>	<u>WTP Raw Peak Flow (L/min)</u>	<u>WTP Raw Total Flow (m3)</u>	<u>WTP Treated Avg Flow (m3/day)</u>	<u>WTP Treated Max Flow (m3/day)</u>	<u>Rated Capacity (m3/day)</u>	<u>Rated Flow Capacity (%)</u>	<u>WTP Treated Total Monthly Flow (m3)</u>
January	11,039	13,641	14,847	342,212	11,078	13,236	36,400	36%	343,439
February	11,515	13,484	14,757	322,435	11,370	13,134	36,400	36%	318,369
March	10,217	13,760	20,083	316,735	10,335	13,497	36,400	37%	320,413
April	10,454	12,986	14,708	313,632	9,948	11,779	36,400	32%	298,449
May	12,531	15,906	19,784	388,466	10,893	13,067	36,400	36%	337,706
June	12,079	13,386	16,097	362,375	10,675	11,967	36,400	41%	320,250
July	12,355	15,585	17,250	383,019	11,474	14,059	36,400	39%	355,697
August	11,050	13,921	14,875	342,565	11,044	13,603	36,400	37%	342,387
September	10,754	14,625	14,868	322,645	10,439	13,923	36,400	38%	313,190
October	9,626	11,128	17,104	298,419	9,486	10,624	36,400	29%	294,092
November	9,115	10,890	14,298	273,469	9,271	10,117	36,400	28%	278,133
December	9,472	12,231	19,757	293,652	9,472	11,738	36,400	32%	313,187
TOTAL				3,959,624					3,815,746

BROCKVILLE WATER SYSTEMS HISTORICAL ANNUAL FLOW

<u>Year</u>	<u>TOTAL FLOW (m3)</u>
1963	5,468,128
1964	5,792,558
1965	7,026,093
1966	6,652,020
1967	6,531,729
1968	6,302,901
1969	6,174,018
1970	6,447,978
1971	6,246,122
1972	5,876,886
1973	6,179,755
1974	6,552,608
1975	7,049,823
1976	6,157,384
1977	5,862,139
1978	6,283,413
1979	6,340,110
1980	6,905,996
1981	6,324,999
1982	5,685,995
1983	6,119,997
1984	5,894,998
1985	5,451,999
1986	5,780,998
1987	5,515,998
1988	5,319,997
1989	6,034,455
1990	5,064,771
1991	5,297,094
1992	5,037,999
1993	5,013,019
1994	5,548,256

1995	5,467,001
1996	5,148,340
1997	5,698,474
1998	5,519,157
1999	5,631,225
2000	5,565,808
2001	5,726,410
2002	5,032,500
2003	5,117,740
2004	5,238,190
2005	5,625,869
2006	5,308,800
2007	5,189,831
2008	4,715,116
2009	4,332,102
2010	4,128,747
2011	4,291,115
2012	4,213,592
2013	3,815,746

ELIZABETHTOWN-KITLEY WATER DISTRIBUTION ANNUAL FLOW REPORT

Month	Avg Flow (m3)	Max Flow (l/min)	Total Flow (m3)
January	186	1,066	5,780
February	180	1,413	5,041
March	175	1,450	5,426
April	189	2,022	5,694
May	223	1,757	6,932
June	230	1,919	6,924
July	215	1,151	6,673
August	238	1,436	7,400
September	152	1,115	4,568
October	199	1,235	6,185
November	183	1,217	5,499
December	175	1,572	5,429
TOTAL			71,552

ELIZABETHTOWN WATER DISTRIBUTION HISTORICAL ANNUAL FLOW

Year	TOTAL FLOW (m3)
2004	81,913
2005	101,402
2006	99,254
2007	113,068
2008	128,460
2009	98,782
2010	95,876
2011	74,052
2012	76,372
2013	71,552



2013 WATER LOSS REPORT

	(m3)
Water Pumped from Water Treatment Plant	3,815,746
Accounted for Water	
Water sold to customers	
Residential	1,170,881
Industrial	1,713,984
Sales to Elizabethtown-Kitley (East of Brockville)	86,370
Sales to Elizabethtown-Kitley (West of Brockville) totalizer meter	71,552
Total Billed Water	3,042,787
Unaccounted for Water	772,959
Unmetered Water Used	
Flat Rate Water Users	19,000
Industrial Fire flow testing	50,000
Chlorinator Flow	22,314
Watermain Breaks	86,891
Anti-Freeze Taps	20,422
Fire Fighting and Training	7,648
Hydrant Fire Flow testing and flushing	34,099
Water for Low Lift manual vacuum priming system	95,000
Flushing Stations	139,780
Parks and Recreation Water Use	12,031
Total Unmetered Water Used	487,184
Total Lost Water	285,775
Percentage of Lost Water	7.49%



Township of Elizabethtown-Kitley

2013 WATER LOSS REPORT

	(m3)
Flow Through Totalizer meter	71,552
TOTAL METERED WATER	71,552
Water sold to Residential Customers (west of totalizer)	46,680
Total Billed Water	46,680
Unaccounted for Water	24,872
Unmetered Water Used	
Watermain Breaks	0
Localized Flushing for Sampling and Complaints	0
Hydrant Fire Flow testing	0
Flushing Stations	18,490
Total Unmetered Water Used	18,490
Total Lost Water	6,382
Percentage of Lost Water	8.92%

10 February 2014

Report to Finance, Administration and Operations Committee – February 18, 2014

2014-014-02

Establishment of Island Breakfast Committee

S.M. Seale
City Clerk

Recommendation:

THAT the terms of reference for the Island Breakfast Committee be adopted; and

THAT the following persons be appointed to the Island Breakfast Committee:

Peter Amo
Dave Beatty
Conal Cosgrove
Dan Elwood
Debra Hamilton
Kendra Lorimer
Steve Weir

THAT the necessary by-laws be enacted.

Background:

On January 14, 2014, City Council passed a resolution to designate the Island Breakfast Committee a Committee of Council and to designate the Island Breakfast as a City-sanctioned event. This Committee was established in order that the event could operate under the City's insurance coverage.

Analysis:

City Council is requested to adopt terms of reference (Attachment A) for the committee and make appointments for the Island Breakfast Committee in order to formalize its establishment.

Financial Considerations:

The financial implications arising from the establishment of this committee will be the staff time required by the Clerk's Office for the administration of the committee and the staff time within the Finance department for the administration of the finances.



S.M. Seale
City Clerk



D. Dick, C.A.
Director of Corporate Services



B. Casselman
City Manager

THE CORPORATION OF THE CITY OF BROCKVILLE
By-law xxx-2014

By-law to Establish the Island Breakfast Committee

WHEREAS an event known that the Island Breakfast was held annually in conjunction with the former Brockville Riverfest; and

WHEREAS Council recognized that some residents and area visitor's do not have the opportunity to visit an island in the St. Lawrence River and recognize that the Island Breakfast is a chance for people to visit Refugee Island; and

WHEREAS it is prohibitively expensive for insurance coverage for a volunteer group to operate this event; and

WHEREAS a group of volunteers comprised of City staff and Tourism staff desire to have the event continue and have requested Council to consider the creation of an Island Breakfast Committee to enable insurance coverage and with a view that any surplus revenues from the event would be used to build a picnic shelter on Refugee Island; and

WHEREAS at a Council meeting held on January 14, 2014, Council deemed it expedient to establish an Island Breakfast Committee to enable the holding of the annual Island Breakfast;

NOWHEREFORE the Council of the Corporation of the City of Brockville enacts as follows:

1. THAT the Terms of Reference for the Island Breakfast Committee (attached hereto as Schedule 'A') be hereby adopted.

Given under the Seal of the Corporation
of the City of Brockville and Passed this
25th day of February, 2014

Mayor

City Clerk

Island Breakfast Committee (IBC) Terms of Reference

Mission

To provide an event that will generate surplus revenue that will be slated to build a shelter on Refugee Island; upgrade bathrooms by adopting best practices in green/biodegradable technology and future development of "tent" camping sites.

1. Committee Composition and Structure

- a) The Committee will be comprised of five (5) to eight (8) members, nominated and appointed in accordance with City policy and process. Appointees must be at least 18 years of age, a Canadian Citizen, a City employee or a resident or property owner within the City of Brockville and will include:
 - a. At least one employee of the Operations Department
 - b. At least one employee of Brockville Tourism
- b) The Mayor is an *ex officio* member of IBC.;
- c) The Committee will be governed by the City of Brockville Procedural By-Law.
- d) That the length of term for all members be one year.

2. The Island Breakfast Committee will meet as required.

- 3. The Recording Secretary for the IBC will be appointed from within the Committee and work with the Clerk's Office to adhere to City policies and procedures regarding agendas and minutes.
- 4. The meeting agenda will be published at least two business days in advance of the meeting, or in accordance with City policy.

Meetings are open to all members of the public. Members of the public wishing to appear as a delegation to the Committee shall notify the Chair or Recording Secretary in advance of the agenda being set and published.

- 5. The IBC will adhere to the City's policies and procedures including, but not limited to the Purchasing By-law, Accessibility, Social Media and accounting practices.

The Island Breakfast Committee will strive to be open, transparent and accessible to the public. The Committee will publish notices, meeting agendas and minutes, on the City's website and, as appropriate, through other readily-accessible media.

February 11, 2014

**REPORT FINANCE, ADMINISTRATION AND OPERATIONS COMMITTEE
February 18, 2014**

**2014-015-02
RATE STRUCTURE**

**DAVID DICK
DIRECTOR OF CORPORATE SERVICES**

RECOMMENDATION

THAT council provides further direction to staff to perform a more detailed analysis on the water rates including billing, fire protection charges and multiuser rates being charged in the City of Brockville and users outside of the geographical borders of the City.

BACKGROUND

At the budget meeting of January 28th, 2014 council spoke to the potential of developing a service agreement system for large water users. It was discussed that the ability to provide incentives for existing large water users as well as potential new developments may be an added economic development tool for future business attraction. Staff was requested to prepare a report on this matter and report to the Finance, Administration and Operations Committee.

ANALYSIS/DISCUSSION

There are a number of billing methodologies used throughout the province to bill users for water and wastewater usage. The four main volumetric rate structures are as follows:

- | | |
|--------------------------|---|
| Uniform: | This is the most common structure used in charging for water and wastewater services. The price per unit remains constant regardless of the level of consumption and despite the class of user. Essentially cost per unit is determined by total costs divided by consumption levels. |
| Declining (Regressive): | The unit price of water decreases as the volume of water consumed increases. The cost structure charges low volume users (typically residential) the highest rate per unit. |
| Inclining (Progressive): | The main purpose of this rate structure is conservation. The unit price increase as consumption increases. |

Hump Back: This rate structure uses a combination of declining and inclining rates. Rates increase until a certain threshold is met and further consumption beyond this level is charged at a reduced rate.

The BMA Study provides details as to the relative use across participating municipalities.

(See attachment 1)

The City of Brockville uses a declining rate structure with flat rates charged to all consumers based on the size of meter servicing the property. Each flat charge includes a predetermined quantity of water with a tiered rate structure as consumption increases. Residential consumers are charged every three months whereas consumers in the ICI sector are billed monthly. (See attachment 2) Examples of billings have been provided in attachment 3. The per-unit cost of water consumed decreases as the level of increases.

The water system identifies a number of different sources of revenues. These revenues include billings applicable to residential, ICI consumers, Elizabethtown residents, rural residents, fire protection charges, miscellaneous and interest and penalties. Total billing revenues for 2012 and 2013 as well as consumption statistics are included in attachment 4. We have noted a significant overall decrease in consumption throughout the system. Residential consumption has decreased by 11% over the past 5 years, with the ICI sector decreasing by an additional 16%. We would expect overall consumption will stabilize in the next few years.

The BMA study provides details as to the comparative cost of water and wastewater and indicates the service being provided in Brockville across all meter sizes is near the bottom of all communities engaged in the study. A specific breakdown of the study is provided in attachment 5.

For further analysis, we have provided further comparative data on water consumption in excess of 145,000m³ and 330,000m³ approximating high volume consumers. Comparisons for Belleville, Smiths Falls, Kingston, Gananoque and Owen Sound have been provided in attachment 6. Brockville water bills include a charge for fire protection. This relates to the cost to provide water for fire protection and is based on an antiquated formula tied into mills. It is unknown if the Fire Protection charge is included in the water component of our comparators and if so, how is it determined.

The discussion at the budget meeting of January 28th, debated the use of water charges as an economic development tool. Council discussed using inflationary increases as a possibility for high end users. The net impact of on the largest users (>100,000m³), would be approximately \$30,000. Transferring this charge to all other consumers would increase monthly charges by \$1.00.

An alternative to imposing increases to large consumers to annual inflation would be to add an additional tier beyond a specific monthly consumption. A fourth tier at consumption in excess of 3,500 m³ for example could be charged at a further discounted rate.

CONCLUSION

The rates presently being offered by the City of Brockville for water services are at or near the bottom of municipalities across the province. If further discounting of water charges to large volume users is to be considered, it should be contemplated as part of an overall water rate study. This would include further study on the cost of fire protection and how and where to charge it as well as providing further analysis and the Multi user charge.



D. Dick, CA .CPA
Director of Corporate Services



B. Casselman
City Manager

The following table summarizes the use of rate structures across the Province.

	Water Residential	Water Non-residential
Uniform	63%	66%
Declining	13%	15%
Inclining	9%	4%
Humpback	12%	13%
Flat	2%	1%
Other	1%	1%

2013 Monthly Water Rates

Meter Size	Monthly Rate	Water included (m3)
5/8"	\$ 13.23	9
3/4"	\$ 20.58	14
1"	\$ 33.81	23
1.5"	\$ 66.15	45
2"	\$ 133.77	91
3"	\$ 301.35	205
4"	\$ 535.08	364
6"	\$ 1,203.93	819
8"	\$ 2,140.32	1,456

Graduated rates

First 227m3	\$ 0.772
Next 909m3	\$ 0.496
Excess	\$ 0.395

With the exception of the residential 5/8" meter, all users are billed monthly based on the flat rate noted above. Consumption beyond the minimum quantity is billed at \$.772 for the next 227m3, then \$.496 for the next 909m3 with any additional consumption billed at \$.395.
Residential 5/8" meters are billed every three months.

Sample billings

5/8" meter using 200m3, billed every 3 months

Flat Rate	13.23	39.69	Includes 9m3 per month
Consumption rate	173	133.56	
3 Month water bill		173.25	
Cost per m3 of water		0.86623	

1" meter using 1,500 m3 every month

Flat Rate	33.81	33.81	Includes 23m3 per month
Consumption rate	227	175.24	
next	909	450.86	
Excess	341	134.70	
Monthly bill		794.61	
Cost per m3 of water		0.529742	

2" meter using 3,000 m3 every month

Flat Rate	133.77	133.77	Includes 91m3 per month
Consumption rate	227	175.24	
next	909	450.86	
Excess	1773	700.34	
Monthly bill		1,460.21	
Cost per m3 of water		0.486738	

4" meter using 6,000 m3 every month

Flat Rate	535.08	535.08	Includes 364m3 per month
Consumption rate	227	175.24	
next	909	450.86	
Excess	4500	1,777.50	
Monthly bill		2,938.69	
Cost per m3 of water		0.489781	

Comparisons of revenue breakdowns and consumption data

Water System Revenues

	2013	2012
Billings	3,060,387	2,986,874
Fire Protection	476,774	445,265
Multi-users	74,362	70,640
Interest	23,681	19,625
Other	56,716	109,471
	<u>3,691,920</u>	<u>3,631,875</u>

Billings by user group

Residential	1,525,190	49.84%	1,456,925	48.78%
ICI	1,388,178	45.36%	1,388,776	46.50%
Etown/Rural	147,019	4.80%	141,173	4.73%
	<u>3,060,387</u>		<u>2,986,874</u>	

Consumption by user group

Residential	1,171,000	38.80%	1,252,000	38.03%
ICI	1,714,000	56.79%	1,899,000	57.69%
Etown/Rural	133,000	4.41%	141,000	4.28%
	<u>3,018,000</u>		<u>3,292,000</u>	

	Residential 200m3 5/8"	Commercial 10,000m3 2"	Industrial 30,000m3 3"	Industrial 100,000m3 4"	Industrial 500,000 m3
Brockville	639	18,442	45,228	126,015	571,740
Eastern Ontario	844	24,127	68,408	214,798	1,033,516
15,000-30,000 population	915	31,341	93,148	304,703	1,502,219
Ontario	841	27,772	80,985	263,403	1,293,169

Comparators across the Province based on BMA analysis

15,000 to 30,000 population

Eastern Ontario

Bracebridge

Kawartha Lakes

Kenora

Prince Edward County

Tillsonburg

Brockville

Niagara-on-the-Lake

Cornwall

Pelham

Quinte West

Middlesex Centre

Belleville

Thorold

Peterborough

Port Colborne

Kingston

Springwater

Ottawa

Huntsville

King

Wilmot

Kingsville

Scugog

Owen Sound

Brockville

Lincoln

East Gwillimbury

Tecumseh

Woolwich

Prince Edward County

Grimsby

Orangeville

Additional comparisons for high volume users

Annual consumption of 145,000 m3

	Water	Wastewater	FP	Total
Brockville	64,522.08	110,179.93	7,169.47	181,871.48
Belleville	161,473.67	142,096.83	719.76	304,290.26
Smiths Falls	131,227.27	131,227.27	-	262,454.54
Kingston	101,797.97	124,755.74	-	226,553.71
Owen Sound	194,406.58	194,406.58	-	388,813.16
Gananoque	186,883.34	226,272.06	-	413,155.40

Annual Consumption of 330,000 m3

Brockville	136,699.88	181,091.66	13,191.35	330,982.89
Belleville	338,449.49	287,199.29	719.76	626,368.54
Smiths Falls	296,386.61	296,386.61	-	592,773.22
Kingston	227,856.62	280,381.08	-	508,237.70
Owen Sound	438,892.92	438,892.92	-	877,785.83
Gananoque	422,161.63	511,042.60	-	933,204.22

City of Brockville

2014 Development Charges Background Study Council Workshop

February 18, 2014



Workshop Agenda

1. Purpose
2. Methodology
3. Growth Forecast
4. Increase in Need for Service
5. Service and Project Inclusions
6. Policy Issues
7. Next Steps

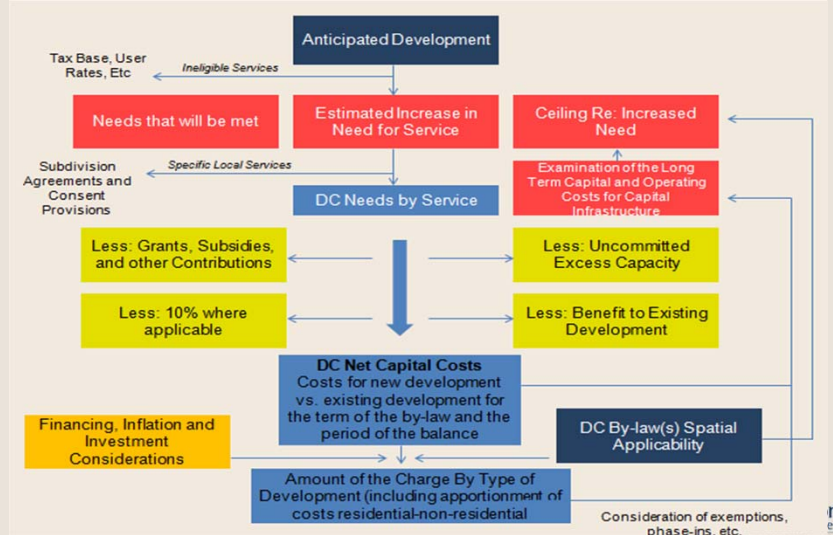


Purpose

- ❑ To recover the capital costs associated with residential and non-residential growth within the municipality
- ❑ The capital costs are in addition to what costs would normally be constructed as part of a subdivision (i.e. internal roads, sewers, watermains, roads, sidewalks, streetlights, etc.)
- ❑ Municipalities are empowered to impose these charges via the *Development Charges Act* (DCA)

2

Development Charges Methodology



3

Development Charges Methodology

1. Identify amount, type and location of growth
 - ▣ Residential and non-residential development
 - ▣ Minimum 5-year and 10-year intervals
2. Identify Servicing needs to accommodate growth
 - ▣ Service specific assessment
 - ▣ Distinguish between DC service and local service
 - ▣ Ineligible services and costs

4



Development Charges Methodology

3. Identify servicing needs to accommodate growth; a DC may not provide for:
 - ▣ Parkland acquisition
 - ▣ Town Halls
 - ▣ Tourism, Arts/Culture Facilities, Museums
 - ▣ Solid Waste Service
 - ▣ Hospitals
 - ▣ Vehicle & Equipment with avg. life of <7 yrs.
 - ▣ Computer Equipment

5



Development Charges Methodology

4. DC capital needs assessment requires
 - ▣ Consideration of 10-year average historic level of service
 - ▣ Council intention that needs will be met
 - ▣ Long-term capital and operating cost determination
5. Identify capital costs to provide services to meet the needs
 - ▣ Project specific determination

6



Development Charges Methodology

6. Capital costs may include:
 - ▣ Land acquisition (excluding parkland)
 - ▣ Capital improvements, acquisitions, leases and construction projects
 - ▣ Rolling stock with 7 years + useful life
 - ▣ Furniture and equipment for eligible services
 - ▣ Library circulation materials
 - ▣ Interest costs
 - ▣ Studies in connection to the above (including the preparation of a DC background study)

7



Development Charges Methodology

7. Capital cost assessment must have regard for:

- ▣ Uncommitted excess capacity
- ▣ Grants, subsidies and other contributions
- ▣ Benefit to existing development
- ▣ Statutory 10% deduction (soft services)
- ▣ Amounts in excess of 10 year historic service calculation
- ▣ Outstanding DC credits
- ▣ DC Reserve funds (where applicable)

8

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Development Charges Methodology

8. Net costs then allocated between residential and non-residential benefit

9. Net costs divided by growth (gross population and non-residential gross floor area) to provide the DC charge

10. Spatial applicability of the charge

- ▣ Municipal-wide vs. area-specific

9

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Development Charges Methodology

11. DC bylaw policy considerations:

- ▣ Collection timing (building permit issuance, subdivision registration for hard services)
- ▣ Statutory and non-statutory DC exemptions
- ▣ Credit policies (s.38 credits and redevelopment credits)
- ▣ Fee implementation (uniform by use, differentiated by use, exempt developments)
- ▣ Transitional policies (phase-in policies)
- ▣ Indexing policies (discretionary approach or mandatory approach)

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Growth Forecast

▣ Following sources reviewed:

- City of Brockville Official Plan, 2012, and Foundation for the Official Plan Report, 2009;
- City of Brockville Land Use and Growth Management Strategy, 2009; and
- 2004 City of Brockville Development Charges Background Study

▣ Growth forecast prepared for:

- 10-year period – 2014-2024
- 18-year period – 2014-2031

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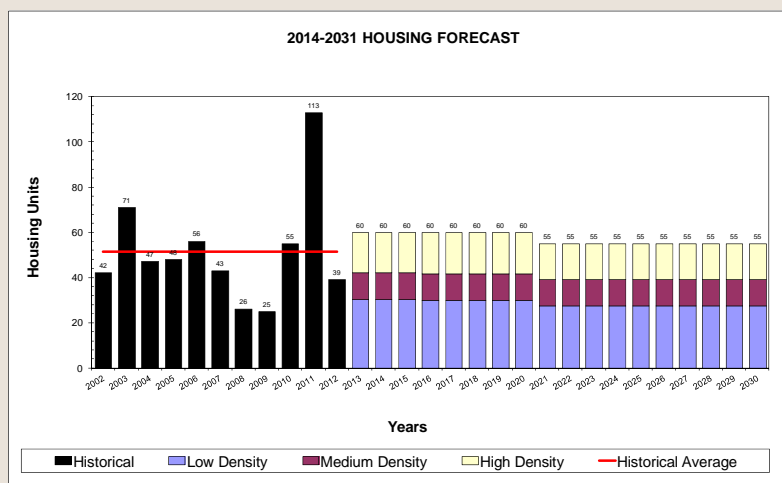


DC Growth Forecast

Time Horizon	Residential		Non-Residential	
	Net Population	Units	Employment (excl. WAH & NFPOW)	Sq.Ft. of GFA
<u>City-Wide</u>				
2014	22,167	10,412	14,197	n/a
10 Year (2014-2024)	886	588	458	337,349
2024	23,053	11,000	14,655	n/a
18 Year (2014-2031)	615	412	300	221,109
2031	23,668	11,412	14,955	n/a

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Residential Growth Forecast



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Increase in Need for Service

- 2014-2024 Forecast Period
 - Fire Protection Services
 - Police Services
 - Municipal Parking Services
 - Parks and Recreation
 - Library Services
 - Administration Services (growth-related studies)
- 2014-2031 Forecast Period
 - Roads and Related Services
 - Water Services
 - Wastewater Services

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Service and Project Inclusions (2014-2024)

Proj. No	Increased Service Needs Attributable to Anticipated Development	Timing (year)	Gross Capital Cost Estimate	Post Period Benefit / Ineligible Level of Service	Net Capital Cost	Less:			Potential DC Recoverable Cost		
						Benefit to Existing Development	Grants, Subsidies and Other Contributions	10% Statutory Deduction	Total	Residential Share	Non-Residential Share
2014-2024											
Fire Protection Services											
1	Provision for two additional officers		12,400	-	12,400	-			12,400	7,445	4,955
2	Provision for additional vehicle		163,900	-	163,900	-			163,900	98,403	65,497
3	Fire Master Plan		75,000	-	75,000	18,750			56,250	33,772	22,478
Subtotal			251,300	-	251,300	18,750			232,550	139,620	92,930
Police Services											
1	Additional Officers (1 per 520 pop.)		9,370	-	9,370	-			9,370	6,177	3,193
2	Additional Facility Space (380 sq.ft./Officer)		223,290	-	223,290	-			223,290	147,199	76,091
Subtotal			232,660	-	232,660	-			232,660	153,376	79,284
Municipal Parking Services											
1	Canteen Park Parking	2015	25,000	-	25,000	12,500		1,250	11,250	7,416	3,834
2	Hardy Park Parking	2015	32,500	-	32,500	16,250		1,625	14,625	9,641	4,984
Subtotal			57,500	-	57,500	28,750		2,875	25,875	17,057	8,818

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Service and Project Inclusions (2014-2024 – cont'd)

Prj. No	Increased Service Needs Attributable to Anticipated Development	Timing (year)	Gross Capital Cost Estimate	Post Period Benefit / Ineligible Level of Service	Net Capital Cost	Less:		Potential DC Recoverable Cost			
						Benefit to Existing Development	Grants, Subsidies and Other Contributions	10% Statutory Deduction	Total	Residential Share	Non-Residential Share
2014-2024											
Parks and Recreation Services											
1	Railway Tunnel	2014	75,000	23,426	51,574	-		5,157	46,416	44,095	2,321
2	Brook Trail Linkage	2014-16	950,000	296,735	653,265	475,000		17,827	160,439	152,417	8,022
3	Twin Pad Arena	2018-20	15,000,000	4,685,286	10,314,714	10,050,000		26,471	238,243	226,331	11,912
4	Junic Development Parkland		12,200	3,811	8,389	-		839	7,550	7,173	376
5	Bridlewood Development Parkland		11,100	3,467	7,633	-		763	6,870	6,526	343
6	Trail Extension to Aspen Drive Subdivision		500,000	156,176	343,824	125,000		21,882	196,941	187,094	9,847
Subtotal			16,548,300	5,168,901	11,379,399	10,650,000		72,940	656,459	623,636	32,823
Library Services											
1	Additional Collection Materials		90,300	-	90,300	-		9,030	81,270	77,207	4,064
Subtotal			90,300	-	90,300	-		9,030	81,270	77,207	4,064
Administration Services											
1	Official Plan Reviews		80,000	-	80,000	20,000		6,000	54,000	35,598	18,402
2	Zoning Bylaw Review		20,000	-	20,000	5,000		1,500	13,500	8,900	4,600
3	DC Background Study/Bylaw		60,000	-	60,000	-		6,000	54,000	35,598	18,402
Subtotal			160,000	-	160,000	25,000		13,500	121,500	80,096	41,404
TOTAL (2014-2024)			17,340,060	5,168,901	12,171,159	10,722,500		98,345	1,350,314	1,090,991	259,323

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Service and Project Inclusions (2014-2031)

Prj No	Increased Service Needs Attributable to Anticipated Development	Timing (year)	Gross Capital Cost Estimate	Post Period Benefit / Ineligible Level of Service	Net Capital Cost	Less:		Potential DC Recoverable Cost			
						Benefit to Existing Development	Grants, Subsidies and Other Contributions	Total	Residential Share	Non- Residential Share	
2014-2031											
<u>Roads and Related Services</u>											
1	Centre Street Reconstruction	2015	590,000	-	590,000	145,000	300,000	145,000	96,346	48,654	
2	Parkedale Ave. Widening	2018	627,500	-	627,500	62,750		564,750	375,250	189,500	
3	Stewart Blvd. Widening	2020-22	950,000	-	950,000	95,000		855,000	568,108	286,892	
4	Stewart Blvd./Central Ave. Intersection Improvement	2021	400,000	-	400,000	40,000		360,000	239,203	120,797	
5	Ormond Street and Central Avenue Intersection Improvements		120,000	-	120,000	12,000		108,000	71,761	36,239	
Subtotal			2,687,500	-	2,687,500	354,750	300,000	2,032,750	1,350,667	682,083	
<u>Wastewater Services</u>											
1	Centre Street Reconstruction		290,000	-	290,000	145,000		145,000	96,346	48,654	
2	Peden Blvd. Reconstruction		125,000	-	125,000	62,500		62,500	41,528	20,972	
3	Secondary Treatment - unfunded		15,333,000	3,861,047	11,471,953	10,663,468		808,485	537,200	271,284	
4	Col Curry Dr. Oversizing		60,000	-	60,000	-		60,000	39,867	20,133	
5	Mary St. Oversizing		38,000	-	38,000	-		38,000	25,249	12,751	
6	Shearer Dr. Oversizing		48,000	-	48,000	-		48,000	31,894	16,106	
7	W. of Strowger Blvd. Oversizing		150,000	-	150,000	-		150,000	99,668	50,332	
Subtotal			16,044,000	3,861,047	12,182,953	10,870,968		1,311,985	871,753	440,232	

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Service and Project Inclusions (2014-2031 – cont'd)

Proj No	Increased Service Needs Attributable to Anticipated Development	Timing (year)	Gross Capital Cost Estimate	Post Period Benefit / Ineligible Level of Service	Net Capital Cost	Less:		Potential DC Recoverable Cost		
						Benefit to Existing Development	Grants, Subsidies and Other Contributions	Total	Residential Share	Non-Residential Share
2014-2031										
Water Services										
1	Parkdale Ave. West Oversizing		85,000	-	85,000	-	-	85,000	56,479	28,521
2	Stewart Blvd. Oversizing		60,000	-	60,000	-	-	60,000	39,867	20,133
3	Centennial Rd. Oversizing		135,000	-	135,000	-	-	135,000	89,701	45,299
4	Windsor Dr. Oversizing		10,000	-	10,000	-	-	10,000	6,645	3,355
5	Bridlewood Dr. Oversizing		5,000	-	5,000	-	-	5,000	3,322	1,678
6	Aspen Dr. Oversizing		10,000	-	10,000	-	-	10,000	6,645	3,355
7	Centennial Rd. Oversizing		60,000	-	60,000	-	-	60,000	39,867	20,133
8	North Augusta Rd. N. Oversizing		100,000	-	100,000	-	-	100,000	66,445	33,555
9	Laurier Dr. Oversizing		20,000	-	20,000	-	-	20,000	13,289	6,711
10	California Ave. Oversizing		20,000	-	20,000	-	-	20,000	13,289	6,711
11	Hubbell St. Oversizing		32,500	-	32,500	-	-	32,500	21,595	10,905
12	Hubbell St. N. Oversizing		22,500	-	22,500	-	-	22,500	14,950	7,550
13	Park St. Oversizing		17,500	-	17,500	-	-	17,500	11,628	5,872
14	First Ave. Oversizing		22,500	-	22,500	-	-	22,500	14,950	7,550
15	Wall St. Oversizing		12,500	-	12,500	-	-	12,500	8,306	4,194
16	Water St. Oversizing		22,500	-	22,500	-	-	22,500	14,950	7,550
	Subtotal		635,000	-	635,000	-	-	635,000	421,928	213,072
Total (2014-2031)			19,366,500	3,861,047	15,505,453	11,225,718	300,000	3,979,735	2,644,348	1,335,387

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Calculated Schedule of Charges

Service	RESIDENTIAL				NON-RESIDENTIAL
	Single and Semi-Detached Dwelling	Apartments - 2 Bedrooms +	Apartments - Bachelor and 1 Bedroom	Other Multiples	(per ft² of Gross Floor Area)
Municipal Wide Services					
Roads and Related Services	2,128	1,346	851	1,609	1.22
Municipal Parking Services	46	29	18	35	0.03
Fire Protection Services	375	237	150	283	0.28
Police Services	412	261	165	311	0.24
Parks and Recreation Services	1,674	1,059	670	1,265	0.10
Library Services	207	131	83	156	0.01
Administration Services	215	136	86	163	0.12
Total Municipal Wide Services	5,057	3,199	2,023	3,822	2.00
Urban Services					
Wastewater Services	1,373	868	549	1,038	0.79
Water Services	665	421	266	503	0.38
Total Urban Services	2,038	1,289	815	1,541	1.17
GRAND TOTAL RURAL AREA	5,057	3,199	2,023	3,822	2.00
GRAND TOTAL URBAN AREA	7,095	4,488	2,838	5,363	3.17

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Residential DC Comparison (\$/single detached dwelling unit)

Rank	Municipality	Upper Tier	Lower/Single Tier	Education	Total
1	King	\$ 40,751	\$ 17,848	\$ 2,020	\$ 60,619
2	East Gwillimbury	\$ 40,751	\$ 11,617	\$ 2,020	\$ 54,388
3	Scugog	\$ 25,577	\$ 10,471	\$ 1,964	\$ 38,012
4	Lincoln	\$ 10,030	\$ 15,133	\$ -	\$ 25,163
5	Orangeville	\$ 2,572	\$ 21,362	\$ 391	\$ 24,325
6	Bracebridge	\$ 18,940	\$ 4,762	\$ -	\$ 23,702
7	Huntsville (1)	\$ 18,940	\$ 2,477	\$ -	\$ 21,417
8	Pelham - Fenwick	\$ 10,030	\$ 11,417	\$ -	\$ 21,447
9	Wilmot	\$ 12,936	\$ 6,685	\$ 1,691	\$ 21,312
10	Springwater - Elmvale	\$ 6,191	\$ 12,857	\$ 1,759	\$ 20,807
11	Niagara on the Lake	\$ 10,030	\$ 9,511	\$ -	\$ 19,541
12	Woolwich	\$ 12,936	\$ 4,826	\$ 1,691	\$ 19,453
13	Port Colborne	\$ 10,030	\$ 9,122	\$ -	\$ 19,152
14	Pelham - Fonthill	\$ 10,030	\$ 9,092	\$ -	\$ 19,122
15	Middlesex Centre - Iderton West	\$ -	\$ 17,946	\$ -	\$ 17,946
16	North Grenville - Outside Kemptonville Service Area	\$ -	\$ 17,694	\$ -	\$ 17,694
17	Tilsonburg	\$ 11,307	\$ 6,143	\$ -	\$ 17,450
18	Thorold	\$ 10,030	\$ 6,814	\$ -	\$ 16,844
19	Kingston (3)	\$ -	\$ 15,092	\$ 124	\$ 15,216
20	Middlesex Centre - Komoka/Kilworth	\$ -	\$ 15,018	\$ -	\$ 15,018
21	Middlesex Centre - Iderton	\$ -	\$ 14,635	\$ -	\$ 14,635
22	Stratford	\$ -	\$ 13,270	\$ -	\$ 13,270
23	Tecumseh	\$ -	\$ 12,082	\$ 454	\$ 12,536
24	Owen Sound	\$ 5,126	\$ 7,008	\$ -	\$ 12,134
25	Belleville	\$ -	\$ 9,638	\$ -	\$ 9,638
26	Kingsville - Cottam	\$ -	\$ 7,376	\$ 454	\$ 7,830
27	North Grenville - Inside Kemptonville Service Area	\$ -	\$ 7,539	\$ -	\$ 7,539
28	Quinte West	\$ -	\$ 7,408	\$ -	\$ 7,408
29	Brockville (Calculated)	\$ -	\$ 7,095	\$ -	\$ 7,095
30	Kingsville (2)	\$ -	\$ 6,157	\$ 454	\$ 6,611
31	Prince Edward	\$ -	\$ 5,946	\$ -	\$ 5,946
32	Elizabethtown-Kitley	\$ -	\$ 3,222	\$ -	\$ 3,222
33	Prescott	\$ -	\$ 3,142	\$ -	\$ 3,142
34	Kenora	\$ -	\$ -	\$ -	\$ -
34	Smiths Falls	\$ -	\$ -	\$ -	\$ -
34	Gananoque	\$ -	\$ -	\$ -	\$ -

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Commercial DC Comparison (\$/sq.ft. of gross floor area)

Rank	Municipality	Upper Tier	Lower/Single Tier	Education	Total
1	King	\$ 37.99	\$ 5.23	\$ 0.52	\$ 43.74
2	East Gwillimbury	\$ 37.99	\$ 3.16	\$ 0.52	\$ 41.67
3	Scugog	\$ 12.96	\$ 6.57	\$ -	\$ 19.53
4	Lincoln	\$ 11.59	\$ 7.81	\$ -	\$ 19.40
5	Niagara on the Lake	\$ 11.59	\$ 6.43	\$ -	\$ 18.02
6	Port Colborne	\$ 11.59	\$ 3.40	\$ -	\$ 14.99
7	Thorold	\$ 11.59	\$ 3.28	\$ -	\$ 14.87
8	Wilmot	\$ 9.23	\$ 3.22	\$ 1.23	\$ 13.68
9	Kingston (1)	\$ -	\$ 12.96	\$ -	\$ 12.96
10	Pelham (Fenwick & Fonthill)	\$ 11.59	\$ 1.00	\$ -	\$ 12.59
11	Woolwich	\$ 9.23	\$ 1.88	\$ 1.23	\$ 12.34
12	Orangeville	\$ 0.56	\$ 8.16	\$ -	\$ 8.72
13	Springwater	\$ 2.86	\$ 4.40	\$ 0.47	\$ 7.74
14	Belleville	\$ -	\$ 5.71	\$ -	\$ 5.71
15	North Grenville - Outside Kemptonville Service Area	\$ -	\$ 5.30	\$ -	\$ 5.30
16	Tecumseh	\$ -	\$ 4.98	\$ -	\$ 4.98
17	Middlesex Centre - Iderton West	\$ -	\$ 4.93	\$ -	\$ 4.93
18	Bracebridge	\$ 3.05	\$ 1.36	\$ -	\$ 4.41
19	Huntsville	\$ 3.05	\$ 1.18	\$ -	\$ 4.23
20	Quinte West	\$ -	\$ 4.03	\$ -	\$ 4.03
21	Middlesex Centre - Iderton	\$ -	\$ 3.95	\$ -	\$ 3.95
22	Tilsonburg	\$ 3.59	\$ -	\$ -	\$ 3.59
23	Middlesex Centre - Komoka/Kilworth	\$ -	\$ 3.41	\$ -	\$ 3.41
24	Brockville (Calculated)	\$ -	\$ 3.17	\$ -	\$ 3.17
25	Stratford	\$ -	\$ 2.74	\$ -	\$ 2.74
26	North Grenville - Inside Kemptonville Service Area	\$ -	\$ 2.24	\$ -	\$ 2.24
27	Owen Sound	\$ -	\$ 1.85	\$ -	\$ 1.85
28	Prince Edward	\$ -	\$ 1.81	\$ -	\$ 1.81
29	Kingsville - Cottam	\$ -	\$ 1.45	\$ -	\$ 1.45
30	Kingsville (3)	\$ -	\$ 0.71	\$ -	\$ 0.71
31	Prescott (2)	\$ -	\$ 0.48	\$ -	\$ 0.48
32	Elizabethtown-Kitley	\$ -	\$ -	\$ -	\$ -
32	Kenora	\$ -	\$ -	\$ -	\$ -
32	Smiths Falls	\$ -	\$ -	\$ -	\$ -
32	Gananoque	\$ -	\$ -	\$ -	\$ -

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Industrial DC Comparison

(\$/sq.ft. of gross floor area)

Rank	Municipality	Upper Tier	Lower/Single Tier	Education	Total
1	King	\$ 19.41	\$ 5.23	\$ 0.52	\$ 25.16
2	East Gwillimbury	\$ 19.41	\$ 3.16	\$ 0.52	\$ 23.09
3	Lincoln	\$ 5.20	\$ 7.81	-	\$ 13.01
4	Woolwich	\$ 9.23	\$ 1.88	\$ 1.23	\$ 12.34
5	Wilmot	\$ 9.23	\$ 1.62	\$ 1.23	\$ 12.08
6	Niagara on the Lake	\$ 5.20	\$ 6.43	-	\$ 11.63
7	Scugog	\$ 5.40	\$ 2.34	-	\$ 7.74
8	Springwater	\$ 2.86	\$ 4.40	\$ 0.47	\$ 7.74
9	Kingston (3)	\$ -	\$ 7.52	-	\$ 7.52
10	Port Colborne (1)	\$ 5.20	\$ 1.29	-	\$ 6.49
11	Thorold	\$ 5.20	\$ 1.05	-	\$ 6.25
12	Pelham (Fenwick & Fonthill)	\$ 5.20	\$ 1.00	-	\$ 6.20
13	North Grenville - Outside Kemptonville Service Area	\$ -	\$ 5.30	-	\$ 5.30
14	Tecumseh	\$ -	\$ 4.71	-	\$ 4.71
15	Bracebridge	\$ 3.05	\$ 1.36	-	\$ 4.41
16	Quinte West	\$ -	\$ 4.03	-	\$ 4.03
17	Tillsonburg	\$ 3.59	\$ -	\$ -	\$ 3.59
18	Brockville (Calculated)	\$ -	\$ 3.17	\$ -	\$ 3.17
19	Huntsville	\$ 3.05	\$ -	\$ -	\$ 3.05
20	North Grenville - Inside Kemptonville Service Area	\$ -	\$ 2.24	-	\$ 2.24
21	Middlesex Centre - Ilderton West	\$ -	\$ 1.97	-	\$ 1.97
22	Owen Sound	\$ -	\$ 1.85	-	\$ 1.85
23	Prince Edward	\$ -	\$ 1.81	-	\$ 1.81
24	Middlesex Centre - Ilderton	\$ -	\$ 1.58	-	\$ 1.58
25	Kingsville - Cottam	\$ -	\$ 1.45	-	\$ 1.45
26	Middlesex Centre - Komoka/Kilworth	\$ -	\$ 1.36	-	\$ 1.36
27	Kingsville (4)	\$ -	\$ 0.71	-	\$ 0.71
28	Orangeville	\$ 0.56	\$ -	\$ -	\$ 0.56
29	Prescott (2)	\$ -	\$ 0.48	-	\$ 0.48
30	Elizabethtown-Kitley	\$ -	\$ -	\$ -	\$ -
30	Stratford	\$ -	\$ -	\$ -	\$ -
30	Kenora	\$ -	\$ -	\$ -	\$ -
30	Smiths Falls	\$ -	\$ -	\$ -	\$ -
30	Gananoque	\$ -	\$ -	\$ -	\$ -
30	Belleville	\$ -	\$ -	\$ -	\$ -

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Policy Issues

- Imposition of Development Charges
 - DCs are generally imposed at the time of building permit issuance
 - Hard services (e.g. water, wastewater and roads) may be imposed at the time of subdivision registration
- Charges are imposed on an uniform City-wide basis, with water and wastewater charges only imposed where municipal services are available
- Area-specific charges may be imposed where servicing characteristics are distinguishable

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Policy Issues

□ DC Exemptions

- The Act provides for some mandatory exemptions but also allows municipalities the ability to provide its own exemptions
- Exemptions provide that certain classes of development will not be required to pay the charge. May be determined by:
 - Use (e.g. places of worship, farm buildings)
 - Geographic area
 - Development type
 - Service exemption

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Policy Issues

□ DC Exemptions

- In effect, it is a loss of revenue to the municipality which will have to be funded via taxes, rates, reserves or other financial resources
- The Act is specific in identifying that these costs may not be made up by increase the DC for other classes of development

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Policy Issues

- Mandatory exemptions
 - for industrial building expansions (may expand by 50% with no DC)
 - May add up to 2 apartments for a single as long as size of home doesn't double
 - Add one additional unit in medium & high density buildings
 - Local government and school boards

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Policy Issues

- DC Phase-in or Discounts
 - Used to soften impact on development, particularly in a situation where increase is significant
 - Allows time for development industry to adjust pricing
 - Beneficial for measuring impact of charges on development (i.e. non-residential)
 - Similar to exemptions, policies are a loss of revenue to the municipality which will have to be funded via taxes, rates, reserves or other financial resources

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Policy Issues

□ DC Credits:

- Credits for services provided on behalf of municipality
 - At times, developing landowners may wish to accelerate the timing of a DC project (e.g. extending a watermain, developing a park, etc.)
 - With the approval of the municipality and the value of the work agreed upon, the work may be undertaken
 - A credit will be provided for the value of the work against DC's payable

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Policy Issues

□ DC Credits:

- Redevelopment Credits
 - Act does not provide clear direction on this matter however there have been OMB hearings on these matters
 - Recognizes that former buildings (demolished or converted) had an existing provision of services allocated to the property
 - Normally the credit is equal:
 - # of units x DC for unit types (for residential)
 - sq. ft. of former building x the non-res. charge (for non-residential)
 - Generally, credit has a stipulated time period of 36-60 months

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Policy Issues

- Indexing
 - DCA provides for indexing of charges on an annual basis in accordance with the Statscan Quarterly Construction Price Statistics
 - Allows for adjustment of charges to reflect underlying cost increases and reduces municipal cashflow impact between statutory bylaw reviews
 - Indexing can be:
 - Mandatory – delegated to staff
 - Discretionary – index presented to Council annually for direction

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Next Steps

- Receive Council input on the preliminary findings
- Prepare formal DC Background Study and By-Law, including suggested DC policies and implementation strategy
- Provide statutory notice of Public Meeting (20 clear days prior to the public meeting)
- Public release of DC Background Study and By-Law (2 weeks prior to the public meeting)
- Undertake statutory Public Meeting
- Council adoption DC Background Study and DC By-Law passage

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