BROCKVILLE
CITY OF THE 1000 ISLANDS

Operations Committee

Wednesday, July 9, 2008, 4:00 p.m.
City Hall - Council Chambers

Committee Members	Areas of Responsibility	
Councillor G. Beach, Chair	Operations	CRCA
Councillor L. Journal	Community Services	Airport Board
Councillor L. Severson	Fire	Arena Advisory Board
Mayor D.L. Henderson, Ex-Officio	Museum	Visual/Performing Arts Committee
	Library Board	PLMG
	Cemetery Board	BMAAC
	St. Lawrence Lodge Mgmt.Board	Brockville Municipal Non-Profit Housing Committee
	L,L&G Health Unit	

AGENDA

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ITEMS FOR CONSIDERATION

1. ARTISAN'S VILLAGE UPDATE

   Ms. Seale, City Clerk will provide the Committee with an update regarding the progress of the Artisan's Village proposal.

2-9 2. 2008-101-07
WATER AND WASTEWATER TREATMENT
QUATERLY REPORT (APRIL – JUNE 2008)

10-13 3. 2008-113-07 REQUEST FOR REVISION TO TRAFFIC CONTROL AT THE INTERSECTION OF ORMOND STREET AND JAMES STREET

CONSENT AGENDA

July 2, 2008

REPORT TO OPERATIONS COMMITTEE – JULY 9, 2008

2008-101-07
WATER & WASTEWATER TREATMENT QUARTERLY REPORT (APR. – JUN. 2008)

CONAL COSGROVE, P. ENG.
DIRECTOR OF OPERATIONS
MELODIE HOBBS, C.E.T.
W & WW TREATMENT SUPERVISOR

RECOMMENDED

THAT Report 2008-107-07 Water & Wastewater Treatment Quarterly Report (Apr. – Jun. 2008) be received for information purposes.

PURPOSE

This report covers the months of April, May and June 2008. The intent of the report is to keep the Committee, Council, and the public current with performance and major operational aspects of both the Water Treatment Plant/Trunk Distribution System and the Water Pollution Control Centre (wastewater treatment system), including any notable highlights, MOE Inspections and adverse conditions.

BACKGROUND

This report is submitted Quarterly, and this report represents the second quarter of 2008.

ANALYSIS/OPTIONS

A. WATER TREATMENT PLANT & TRUNK WATER DISTRIBUTION SYSTEM

The City continues to be in compliance with the Water Treatment Plant's Certificate of Approval (C of A), in addition to the Ontario Safe Drinking Water Act and Regulations. Please refer to Attachment A – Brockville Drinking Water System Performance Assessment Report to review the treatment and bacteriological sampling results.

Adverse Water Quality Incidents: No adverse water quality incidents to report for the 2nd Quarter.

Items of Note:

1. MOE Inspection: Dan White (DW Inspector – MOE) conducted the Annual Inspection for the City of Brockville's Drinking Water System (Water Treatment and Distribution) on Feb. 28th, Feb. 29th and March 4th, 2008, and we received his report on May 13th, 2008. In addition, the City of Brockville's Drinking-Water System received another 100% Inspection Result. The Mayor took the time to thank the WTP and WDS personnel for their hard work in achieving this result. We will continue these efforts over the next 18 months as we are challenged with the implementation of our Drinking Water Quality Management System (DWQMS) and new Drinking Water Licensing program.

2. Low Lift Pump Station:

   - During routine weekly testing of the diesel generator, the engine failed. A standby unit was rented. The old engine has been removed. Pricing and installation of a new engine is almost ready. The Report went to Operations Committee on June 18th.
   - Electrical Contractor working on specifications/installation application for new generator sizing to operate the Low Lift electronics and backwash pump.
   - Vibration analysis was completed on all pumps and motors.
   - The annual intake inspection was completed on May 22nd, 2008. No significant changes compared to the last two years.

3. Raw Water Meter Chamber: Calibrated raw water control valve in June with a 4-20 mA signal from Low Lift flow signal. New dehumidifiers installed to make an effort to keep the chamber as dry as possible. Engineering Division is working on the solution for the conduit collapse.

4. Trunk Water Distribution:

   - First Avenue Booster Station: Repair to the west motor was completed and the unit placed back in service. New circuit line installed and the modems were installed to connect the station to the SCADA at the main plant. Vibration analysis completed on pumps and motors. New security fencing installed along First Avenue. Outstanding deficiencies were reviewed with Peter Raabe and only a few minor items remain to be addressed. Fire flow testing was also conducted in Zone 3.
   - Sunset Booster Station: West pump was installed and placed in service. New de-humidifier was installed in chamber.
   - Elizabethtown-Kitley Distribution System:
     - Lead Sampling completed.
     - There was a loss of signal from the booster station and meter chamber. Problem with modem circuit board in communication unit; board replaced and communications restored.

- Vibration analysis was completed on the booster pumps.
- Sample flush station volume has been reduced to conserve water and lower system operating cost. Weekly flushing of system instead of continuous flushing at station.

- Parkedale Reservoir: Diesel engine failed during weekly test, shutting down on high temp. Solenoid for cooling water supply was replaced, relays in the control panel were replaced and a bird's nest was removed from the exhaust. Material was removed from the exhaust pipe and a new wire screen was fabricated to prevent the birds from entering the piping.
- Overhead Tank: A new air conditioning unit was installed in the building to cool communications equipment (MIS).

5. U.V. Reactors: Reactors 101 & 201 were serviced. Both reactors were shutdown May 30th for the summer season. Operations group have reviewed all Standard Operating Procedures including alarm conditions.

6. Backwash Pump #1 Refurbishment: Local contractor removed the pump and motor for inspection and refurbishment. The impeller required some aggressive re-work with epoxy product. The motor was in very poor condition and was not considered for refurbishment. Existing motor and pump were installed as standby until a new motor and soft start can be quoted and purchased.

7. Electrical & Controls:
   - New junction box for raw water control valve (4-20 mA signal) installed by contractor.
   - New 2" meter installed in chlorinator water supply line.
   - Plant effluent chlorine analyzer required new colour cell block to be installed.
   - Administration area lighting - problems with lighting - faulty light retrofitted with new electrical ballast and T-8 lamp – fire hazard.
   - Main Plant reservoir residual chlorine analyzer failure. The circuit board and colorimeter block shorted out causing failure. Plant compliant with contact time (CT) requirements, however, SCADA unable to provide proper CT calculation without analyzer readings. UV reactors placed in service to ensure proper calculation. New analyzer and spare circuit board colorimeter block ordered.

B. WASTEWATER TREATMENT PLANT

Please reference to Attachment B – Brockville WPCC Sewage Plant Performance Assessment Report for all Operational Data for the Quarter. In regards to compliance of carbonaceous 5-day Biochemical Oxygen Demand ($cBOD_5$), as of the end of June the 12 month revolving average effluent characteristics (concentration and loading) for $CBOD_5$ are 43.67 mg/L and 826.40 kg/day respectively and remain out of compliance with the Certificate of Approval.

Secondary Treatment Upgrade: At the Council Meeting on May 27th, 2008 Thompson Rosemount Group, Stantec Hydromantis Inc. were awarded the consulting services contract for the design and construction services for the WPCC Secondary Treatment and Disinfection Upgrade. A kick-off meeting was held on June 17th, 2008.

Items of Note:

1. Main Pumping Station Bypasses:

   On April 1st, 2008 due to heavy rainfall and snow melt there was a bypass event at the Main Pumping Station. Approximate volume of the bypass was 9,844.56 m^3. SAC was notified of the event. Chlorination was established and samples taken.

   On June 26th, 2008 at approximately 8:00 pm a severe electrical storm brought heavy rainfall and interrupted power supply to the Main Pumping Station. Due to the pumps requiring a 5 minute delay on startup (safety interlock), a bypass was required in order to prevent backup of raw sewage in the collection system, but it only lasted fourteen minutes. Approximate volume of the bypass was 1,100 m^3. SAC was notified of the event. Chlorination was established but due to the short duration of the bypass no samples were taken.

   On June 27th, 2008 at approximately 6:00 pm another severe rainfall storm occurred causing a large volume of water to come into the Main Pumping Station. Pumping capacity was not able to keep up and a bypass was required for approximately 85 minutes total. Approximate volume of the bypass was 6,900 m^3. SAC was notified of the event. Chlorination was established and samples taken.

2. Main Pumping Station Planned Bypass Phase 2: The MOE (Craig Dobiech) issued Provincial Officer's Order (POO) Number 3232-7DGPST on April 7th, 2008 for the completion of the wet well cleaning according to the City of Brockville's Standard Operating Procedure (SOP). This work was completed by WPCC Staff and Team Industrial. Craig Dobiech was also on site during this work. All required reports have been submitted to the MOE. Staff also had a meeting to review the work and have come up with some changes to the SOP. There was a large amount of debris removed from the wet well.

3. Primary Clarifiers: The chain in primary clarifier #3 cross-collectors has broken three times. All idler wheels were removed, shafts grinded, greased, reinstalled and the clarifier was placed back in service in late June.

4. Centrifuges: WPCC Staff travelled to Highland Creek Wastewater Treatment Plant on May 6th, 2008 to meet with maintenance staff and view a Humboldt centrifuge that had been disassembled for repair. Staff also learned that the existing tiles for rebuild are no longer available. The new replacement tiles are

a different size and would require modifications to the scroll. Quotes for this modification have been received and are being reviewed by staff. WPCC Staff have removed the scroll from Centrifuge #302. A contractor was on site to look at the wear. A report of repair recommendations to follow. The centrate line was high pressure cleaned by WPCC Staff and an outside contractor.

5. Pumping Stations:

- April 5th & 6th, 2008 – Pump blockages at Bayview and Oxford Avenue Pumping Stations. Both blockages were due to collection of "rags" building up around the impeller of the pump. Letters were distributed to residents in the Bayview collection area requesting their assistance in preventing future blockages by educating them on the consequences of flushing towels, face cloths and rags into the sanitary system.

- April 21st, 2008 – Pump blockage at Oxford Avenue Pumping Station due to rags.

- April 21st, 23rd, & 25th, 2008 – Forcemain break at Central Avenue Pumping Station. Outside contractor working in the area damaged the forcemain three separate days. WPCC Staff worked with the Public Works Department until all repairs were completed.

- May 13th, 2008 - Overload Trip at Elizabeth Street Pumping Station. A rag was removed from the impeller and the pump placed back in service.

- May 26th, May 31st, 2008 and June 17th, 2008 – Pump blockages at Bayview Street Pumping Station. Rags were removed from impeller and the pump placed back in service.

6. Power Outages:

- June 11th, 2008 - there was a short power outage at the Leachate Pumping Station. Repairs were completed by Hydro One.

- June 26th, 2008 - On Call Operator called in at 5:00 pm due to high levels and power outage at WPCC and Chelsea Street Pumping Station. The main plant was reset and the portable generator taken to Chelsea. Power was restored at 7:50 pm.

- June 27th, 2008 – On Call Operator called in at 5:00 pm for pump overload/trip at Central Avenue Pumping Station. The pumps would not reset due to lack of one phase of hydro feed being out. The portable generator was brought on site. Power was restored at 7:50 pm.

- June 29th, 2008 – On Call Operator called in at 6:45 pm for power outage at Central Avenue Pumping Station. The portable generator was brought on site. Power was restored at 10:30 pm.

7. Leachate: Quotes have received for a double roller rail slide system for the pumps in the south chamber to help relieve stress on the pumps and piping during operation. Pump #3 has been repaired and is ready for installation. The forcemain was pigged on June 3rd, 2008 using Team Industrial's high pressure truck. May 27th, 2008 we lost our signal for the leachate flow. It appears to be a PLC issue, our instrumentation technician and electrician are working on the problem.

POLICY IMPLICATIONS

No policy implications at this time.

FINANCIAL CONSIDERATIONS

No financial considerations at this time.

CONCLUSION

C.J. Cosgrove, P. Eng.
Director of Operations

M. J. Hobbs, C.E.T.
Supervisor, W & WW Treatment

pp D. Cyr
Director of Finance

B. Casselman
City Manager

ATTACHMENT A

BROCKVILLE DRINKING WATER SYSTEM
PERFORMANCE ASSESSMENT REPORT

	CITY OF BROCKVILLE				ELIZABETHTOWN-KITLEY			BACTERIOLOGICAL SAMPLING					
								BROCKVILLE WDS			EZK WDS		
Month 2008	Total Volume Treated (ML)	Avg. Daily Flow (ML/d)	Avg. Fl2 Residual (mg/L)	WDS Avg. FCR (mg/L)	Total Flow (ML)	Avg. Daily Flow (ML/d)	WDS Avg. FCR (mg/L)	EC	TC	HPC	EC	TC	HPC
APR	401.15	13.4	0.56	1.10	13.05	0.44	1.16	55 55 out of 55 Safe	55 55 out of 55 Safe	35 35 Out of 35 Safe	15 15 out of 15 Safe	15 15 out of 15 safe	10 10 out of 10 Safe
MAY	421.80	13.6	0.54	1.00	19.32	0.62	1.00	44 44 out of 44 Safe	44 44 out of 44 Safe	28 28 out of 28 Safe	12 12 out of 12 Safe	12 12 out of 12 Safe	8 8 out of 8 Safe
JUN	405.35	13.5	0.50	1.02	10.81	0.36	1.06	44 44 out of 44 Safe	44 44 out of 44 Safe	28 28 Out of 28 Safe	12 12 out of 12 Safe	12 12 out of 12 Safe	8 8 out of 8 Safe

FCR - Free Chlorine Residual
WDS - Water Distribution System
EZK - Township of Elizabethtown-Kitley
EC - E. coli
TC - Total Coliform
HPC - Heterotrophic Plate Count
ML - Million Litres

ATTACHMENT B

BROCKVILLE WATER POLLUTION CONTROL CENTRE
SEWAGE PLANT PERFORMANCE ASSESSMENT REPORT

MUNICIPALITY: BROCKVILLE
PROJECT: BROCKVILLE
PROJECT NUM.:
WORKS NUM.: 120000122

YEAR: 2007/2008
WATER COURSE: ST. LAWRENCE RIVER
DESIGN CAPACITY: 21.800 X 1000 m3/d
PEAK DESIGN CAPACITY: 54.500 X 1000 m3/d

DESCRIPTION: A PRIMARY TREATMENT FACILITY, COMPLETE WITH TWO PRIMARY ANAEROBIC DIGESTERS TWO CENTRIFUGES FOR SLUDGE THICKENING AND UTILIZING POLYMER FOR PHOSPHORUS REMOVAL AND SODIUM HYPOCHLORITE FOR EFFLUENT DISINFECTION.

MONTH	FLOWS			CARBONACEOUS BIOCHEMICAL O2 DEMAND				SUSPENDED SOLIDS				PHOSPHORUS				BACTI RESULTS	
	TOTAL FLOW 1000M3	AVG DAY FLOW 1000M3	MAX DAY FLOW 1000M3	AVG RAW CBOD (mg/L)	AVG EFF CBOD (mg/L)	TOTAL LOADING EFF. BOD (kg/day)	PERCENT REMOVAL	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	FECAL COLIFORM (Organisms per 100 ml)	NUMBER OF SAMPLES
JUN 08	634.55	21.152	34.128	78.67	34.33	726.15	56.4	123.38	23.13	489.25	81.3	2.42	0.55	11.63	77.3	1,340	1
MAY 08	569.72	18.378	21.223	100.00	45.86	842.82	54.1	140.11	24.44	449.16	82.6	2.79	0.68	12.50	75.6	200	1
APR 08	929.63	30.988	48.216	62.46	34.15	1058.24	45.3	99.54	23.38	724.50	76.5	1.86	0.63	19.52	66.1	1,100	1
MAR 08	744.38	24.012	32.589	76.20	39.30	943.67	48.4	137.10	20.10	482.64	85.3	2.31	0.58	13.93	74.9	244	1
FEB 08	582.85	20.098	31.481	77.67	42.70	858.18	45.0	111.44	21.10	424.07	81.1	2.35	0.61	12.26	74.0	<2	1
JAN 08	797.08	25.712	54.547	67.45	35.36	909.18	47.6	116.45	21.73	558.72	81.3	2.07	0.58	14.91	72.0	>4,000	1
DEC 07	574.49	18.532	30.871	96.40	46.20	856.18	52.1	122.30	26.40	489.24	78.4	2.88	0.74	13.71	74.3	100	1
NOV 07	524.64	17.488	23.413	94.29	39.29	687.10	58.3	133.71	29.86	522.19	77.7	2.74	0.70	12.24	74.5	20	1
OCT 07	455.79	14.703	19.144	93.33	48.58	714.27	47.9	142.58	35.83	526.81	74.9	3.12	0.92	13.53	70.5	220	1
SEP 07	412.39	13.746	17.719	140.67	69.33	953.01	50.7	162.14	37.00	508.60	77.2	3.36	1.00	13.75	70.2	2,060	1
AUG 07	436.03	14.065	15.640	114.13	41.50	583.70	63.6	153.00	32.83	461.75	78.5	3.30	0.73	10.27	77.9	272	1
JUL 07	512.42	16.530	27.797	115.73	47.45	784.35	59.0	156.50	29.40	485.98	81.2	3.42	0.78	12.89	77.2	160	1
AVG		**19.617**		**93.08**	**43.67**	**826.40**	**52.38**	**133.19**	**27.10**	**510.24**	**79.66**	**2.72**	**0.71**	**13.43**	**73.71**		
MAX			54.547	140.67	69.33		63.64	162.14	37.00		85.34	3.42	1.00				
CRITERIA		21.800			35.00	763.00			45.00	981.00			1.00	22.00			
COMPLIANCE		YES			NO	NO			YES	YES			YES	YES			

STATISTICS FOR THE MONTH OF JUNE:

2007	497.29	16.576	92.80	41.80	692.88	55.0	140.2	26.60	440.92	81.0	3.10	0.74	12.27	76.1
2006	614.21	20.474	82.40	40.80	835.34	50.5	134.7	26.30	538.47	80.5	2.79	0.70	14.33	74.9
2005	549.24	18.308	106.20	65.92	1206.86	37.9	131.2	27.63	505.85	78.9	2.79	0.61	11.17	78.1

MONTH	Total Loadings		
	TOTAL RAW CBOD (kg/day)	TOTAL RAW SS (kg/day)	TOTAL RAW P (kg/day)
JUN 08	1,664	2,610	51
MAY 08	1,838	2,575	51
APR 08	1,936	3,085	58
MAR 08	1,830	3,292	55
FEB 08	1,561	2,240	47
JAN 08	1,734	2,994	53
DEC 07	1,786	2,266	53
NOV 07	1,649	2,338	48
OCT 07	1,372	2,096	46
SEP 07	1,934	2,229	46
AUG 07	1,605	2,152	46
JUL 07	1,913	2,587	57
AVG	1,735	2,539	51
MAX	1,936	3,292	58

COMMENTS:

June 27, 2008

REPORT TO OPERATIONS COMMITTEE – JULY 9, 2008

2008-113-07
REQUEST FOR REVISION TO TRAFFIC CONTROL AT THE INTERSECTION OF ORMOND STREET AND JAMES STREET

C. J. COSGROVE, P. ENG.
DIRECTOR OF OPERATIONS
P. E. RAABE, P. ENG.
MUNICIPAL ENGINEER

RECOMMENDED

THAT a stop sign be placed on James Street in the eastbound direction at Ormond Street; and

THAT a stop sign be placed on James Street in the westbound direction at Ormond Street; and

THAT the intersection of Ormond Street and James Street be a four way stop for a period of three (3) months after which time the stop signs on Ormond Street be removed so that Ormond Street becomes a through street; and

THAT By-law 21-93 is amended accordingly.

PURPOSE

The purpose of this report is to change the existing traffic control at the intersection of Ormond Street and James Street by removing the stop condition on Ormond Street and switching it to James Street.

BACKGROUND

Through the Operations Committee, Councillor Noble put forward a motion to reverse the stop signs at Ormond Street and James Street so that Ormond Street becomes the through street and James Street traffic must stop.

ANALYSIS/OPTIONS

Currently Ormond Street traffic must stop at the intersection of James Street. Ormond Street is a narrow north-south street with no on-street parking from King Street to Pearl Street. James Street is an average width street running east-west and has on street parking on the south side of both approaches to Ormond Street (see map – Attachment 1).

The next closest stop conditions along Ormond Street are at its intersections with Pearl Street (traffic signals) and with King Street (stop sign). The next closest stop conditions along James Street are at its intersections with Park Street (four-way stop) and with Murray Street (four-way stop).

The annual average daily traffic volumes on the south leg of Ormond Street and the east and west legs of James Street are approximately equal at 1,500 vehicles with 3,200 vehicles on the north leg of Ormond Street.

The approaches to the intersection are approximately at the same grade. The only difference between the four approaches is the length of the grade along the north leg of Ormond Street. This approach can only accommodate 4 or 5 cars before the grade increases to its connection with Pearl Street. In the winter time, this can be problematic as vehicles and City buses find it difficult to "start-up" while being stopped part way down the hill and the roadway is covered with snow.

Over the past 10 years there have been a total of 16 reported collisions at the intersection for a rate of 1.6 collisions per year. Of the 16 collisions, 8 of them have been where either a north or southbound vehicle has collided with an east or westbound vehicle and 8 have been where an east or westbound vehicle has collided with a north or southbound vehicle.

There is currently a bus stop located at the intersection where both the City's green and red buses stop at James Street while traveling southbound on Ormond Street. The red bus continues southbound on Ormond Street while the green bus makes a right turn onto James Street and heads westbound.

The Emergency Medical Services (EMS) have indicated that there are no prescribed set routes that their drivers must follow and that the route taken is dependent on the driver and what they perceive as the fastest. However, it was noted that Ormond Street is used by their ambulance drivers when attending to calls in the central waterfront area. The number of calls per year in this localized area is not tracked by EMS.

In conclusion, by reversing the stop conditions at the intersection, the main benefit achieved would be the preference given to EMS and their improved response times and to the traffic volumes on the north leg of Ormond Street. However, there will be a period of time where daily users of the intersection will find it difficult to break their routine of stopping while on Ormond Street and going straight through on James Street. In order to minimize or reduce these occurrences, appropriate signage will be installed.

POLICY IMPLICATIONS

The installation of stop signs should follow the guidelines and warrants of the Ontario Traffic Manual. An amendment to the City's Traffic By-Law 21-93 would be required, if Council chooses to install the new stop signs.

FINANCIAL CONSIDERATIONS

Annually Public Works budgets for the installation of a variety of signs throughout the City including; stop, yield, parking, directional, and more. There are sufficient funds in the Public Work's 2008 Operating Budget in account G3390-3620 to accommodate the estimated cost of $1,000 to supply and install the stop signs and advance warning signs and to remove the signs from Ormond Street after the three (3) month period.

CONCLUSION

It is recommended that a four way stop be implemented at the intersection of Ormond Street and James Street for a temporary three (3) month period after which time the stop signs be removed from Ormond Street but remain in place on James Street.

C.J. Cosgrove, P.Eng.
Director of Operations

P.E. Raabe, P.Eng.
Municipal Engineer

Per D. Cyr
Director of Finance

B. Gasselman
City Manager

ATTACHMENT #1