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Item No. 2

Halifax Regional Council November 25, 2008

TO: Mayor Kelly and Members of Halifax Regional Council

SUBMITTED BY:

Brad Anguish, Director of Business Planning & Information Services

DATE: October 28, 2008

SUBJECT: Harbour Solutions Project -2nd Quarter Report -

July to September, 2008

INFORMATION REPORT

ORIGIN

This report originates from the Council session of October 22, 2002 when staff was authorized to submit quarterly reports for the duration of the project.

BACKGROUND

HRM has entered into five contracts to date for the implementation of the Halifax Harbour Solutions Project, namely:

- an infrastructure development agreement for the construction of the three Wastewater Collection Systems on October 15, 2003 with Dexter Construction; and
- a development agreement for the construction of three advanced primary Wastewater Treatment Facilities on June 15, 2004 with D&D Water Solutions, Inc.; and
- a development agreement for the construction of a Biosolids Processing Facility on November 30, 2004 with SGE Acres Limited, and
- an operating and maintenance agreement for the Biosolids Processing Facility on November 30, 2004, with N-Viro Systems Canada Inc.; and
- an operating agreement for the transportation of dewatered biosolids from the three new Wastewater Treatment Facilities on May 31, 2006, with Seaboard Liquid Carriers Limited.

DISCUSSION

Completion of the Wastewater Treatment Facilities (WWTF), Wastewater Collection Systems (WWCS) and Biosolids Process Facility is progressing within budget. Of particular note this quarter was that harbour water quality improved so much that public beaches were re-opened on August 2nd.

Halifax

The Halifax Wastewater Collection System work during the 2nd quarter of 2008/09 continued to focus on the identification and rectification of deficiencies and the application of substantial completion process. All landscaping was completed.

The Halifax Wastewater Treatment Facility has been continuously treating sewage from Halifax since November, 2007. The contractors for the Halifax WWCS and WWTF are working towards substantial completion of the systems and rectification of deficiencies. The contractor is working on a permanent solution relating to the odour and foam emanating from a vent on the effluent pipe which is located just outside of the plant. At the time of writing of this report, staff have been advised by the contractor that the proposed permanent solutions are being evaluated. HRM will be advised of the recommended solution within a few weeks.

Dartmouth

The Dartmouth WWCS work during the 2^{nd} quarter of 2008/09 continued to focus on start-up activities of the various regulation structures and pumping stations. At the time of writing this report, all sewage from the Dartmouth sewershed, with the exception of a very small amount from Old Ferry Road, is being treated by the WWTF.

The Dartmouth WWTF work during the 2nd quarter of 2008/09 was mainly focused around the wet commissioning and the 30 days running period as defined in the contract. The Dartmouth WWTF started performance tests on September 22nd and staff are currently reviewing the results achieved to date.

Herring Cove

The Herring Cove WWCS work during the 2nd quarter of 2008/09 was mainly on the Roaches Pond retention tank, the Herring Cove Pumping Station and the Herring Cove WWTF outfall.

The Herring Cove WWTF work during 2^{nd} quarter of 2008/09 continued to focus on the completion of the building, installation of equipment, piping and cabling.

The revised completion schedule for Herring Cove is still the 1st quarter of 2009/10 for the completion of equipment installation with commissioning activities progressing in the 2nd quarter of 2009/10.

Biosolids Processing Facility

The Biosolids Processing Facility (BPF) continued to process biosolids from the Aerotech Dewatering Facility, and from the Halifax and Dartmouth WWTF. The finished product continues to meet the Class "A" biosolids standard by the Province of Nova Scotia with some product even meeting the "exceptional quality" standard.

Safety

There were no lost time incidents during this quarter.

BUDGET IMPLICATIONS

The Harbour Solutions Project spent \$2.6 million in the 2nd quarter of 2008/09 and, since the start of the project, \$304.9 million to June 30, 2008. Projections to meet the capital budget of \$332.7 million are still on target.

As all "completion dates certain" for the various components have now passed, there should be no additional inflation risk. History of the Halifax Non-Residential Construction Index over the past twenty years shows average annual inflation of just over 2%. At the beginning of the project, staff conservatively estimated annual inflation at 2.8% for budget purposes. However, fiscal years 2004/05, 2005/06, 2006/07, and 2007/08 brought inflation of 7.87%, 4.31%, 5.25%, and 7.78% respectively. In the first quarter of 2008/09, inflation was 6.24%. To mitigate this risk and financial impact, staff revised the inflation estimate to approximately 6% per year over the life of the contract and a substantial portion (\$14.7 million) of the \$18.2 million contingency was committed to address this issue.

As all of the "dates certain" for completion of the various components have now passed, staff has estimated the actual total inflation to the end of the project to be \$24.1 million, based on the inflation rates experienced and the invoices received to date. As the original inflation budget at 2.8% was \$12.3 million, the remainder of \$11.8 million was taken from the contingency budget.

It should be noted that there remain numerous potential project risks that may require funding from the uncommitted contingency balance. For example, due to recent changes in the electrical code, D&D Water Solutions Inc. has identified various areas in which the design/construction of the Herring Cove WWTF will be impacted. D&D has not yet finished their analysis of this issue and, therefore, it is not possible to quantify the actual financial impact at this time.

FINANCIAL MANAGEMENT POLICIES / BUSINESS PLAN

This report complies with the Municipality's Multi-Year Financial Strategy, the approved Operating, Capital and Reserve budgets, policies and procedures regarding withdrawals from the utilization of Capital and Operating reserves, as well as any relevant legislation.

ATTACHMENTS

Appendix A - Halifax Harbour Solutions Project -2nd Quarter Report - July to September 2008

A copy of this report can be obtained online at http://www.halifax.ca/council/agendasc/cagenda.html then choose the appropriate meeting date, or by contacting the Office of the Municipal Clerk at 490-4210, or Fax 490-4208.

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Appendix A

Halifax Harbour Solutions Project 2nd Quarter Report July to September, 2008

Introduction

The intent of this document is to provide Council and staff with a general overview of the Harbour Solutions Project progress during the period between July to September, 2008.

It is presented in sections:

Section 1 - Wastewater Collection System (WWCS)

Section 2 - Wastewater Treatment Facilities (WWTF)

Section 3 - Biosolids Processing Facility (BPF)

Section 4 - Pollution Prevention Program

Section 5 - Water Quality Sampling Program

Section 6 - Financial Information

Section 7 - Public Involvement and Information Program

Section 8 - Construction Safety

Section 1

Wastewater Collection Systems

Halifax Wastewater Collection System

Works during the 2nd quarter of 2008/09 were focused on operating all the regulation structures as well as identification and repair of deficiencies.

All landscaping work was completed during the quarter.

Dartmouth Wastewater Collection System

Works during the 2nd quarter of 2008/09 concentrated on connecting the regulation structures to the interceptors in order to deliver the Dartmouth sewer shed flows to the Dartmouth WWTF. All sewer sheds were connected with the exception of Old Ferry Road and Tupper Street during the quarter.

All landscaping work was completed during the quarter as well as a portion of the remaining asphalt paving.

During the 3rd quarter of 2008/09, connections of the Old Ferry and Tupper Street sewer sheds will be completed.

Herring Cove Wastewater Collection System

During the 2nd quarter of 2008/09, construction work continued at the Roaches Pond retention tank, the Herring Cove Pumping Station and the Herring Cove STP Outfall. The Herring Cove Pumping Station work included the advancement of the mechanical and electrical work. Work on the off-shore section of the Herring Cove WWTF Outfall continued with the completion of the placement of the marine portion of the outfall.

During the 3rd quarter of 2008/09, remaining work on Roaches Pond Retention Tank will be completed. The work at the Herring Cove Pumping Station will continue and the off-shore section of the Herring Cove WWTF Outfall will be completed where remaining work is limited to covering the outfall with rock protection and connecting the diffuser ports.

Section 2

Wastewater Treatment Facilities

Halifax Wastewater Treatment Facility

Civil, Architectural, and Structural Work

During the 2nd quarter of 2008, work continued on repair of deficiencies. Landscaping of the site was completed.

Mechanical & Electrical Work

Mechanical and electrical work concentrated on identification and repair of deficiencies, including items in the odour control system and the ventilation system.

Substantial Completion

The documents, permits and approvals that are required for transfer of the Halifax WWTF to HRM were submitted to HRM during the quarter. As of the end of September, HRM was still reviewing the documentation for completeness. It has subsequently been decided by HRM not to accept the transfer of the WWTF until several items such as deficiency list valuations, content in O&M Manuals, and facility performance issues have been dealt with.

Dartmouth Wastewater Treatment Facility

Civil, Architectural, and Structural Work

During the 2nd quarter, interior finishing work continued and was essentially completed. Remaining landscaping work was completed. Repair work on deficiencies was also initiated.

Mechanical & Electrical Work

Repair work on deficiencies was initiated.

Commissioning

Commissioning started on July 10, 2008. The Performance Test was started on September 22, 2008.

Herring Cove Wastewater Treatment Facility

Civil Work

Interior painting and block work continued with the work substantially completed. Exterior block work was started and is also substantially completed. Coating of water bearing structures was also started.

Mechanical & Electrical Work

Installation of equipment, piping and cabling continued with good progress being made.

The revised completion schedule for Herring Cove is still anticipated to be in the 1st Quarter of 2009/2010. The completion of equipment installation, and commissioning of computers will occur in the 2nd Quarter of 2009/2010.

Section 3

Biosolids Processing Facility

The Biosolids Processing Facility (BPF) continued to process biosolids from the Aerotech Dewatering Facility, and from the Halifax and Dartmouth WWTF. The finished product continues to meet the Class "A" biosolids standard by the Province of Nova Scotia with some products even meeting the "exceptional quality" standard.

Section 4

Pollution Prevention Program

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This program has been designed and implemented to reduce the levels of organic and inorganic compounds, toxins and other matter currently entering the municipal stormwater and wastewater sewer systems, and ultimately, freshwater and marine environments including Halifax Harbour.

The P2 program requires compliance with Halifax Water's Rules and Regulations through planning, education, inspections and monitoring at the source of these discharges from all industrial, commercial and institutional locations within HRM. Additionally, educational information is provided through various mediums for the residential sector to allow direct participation by the public in the protection of our natural marine and freshwater resources.

Staff previously provided updates to Council on the status of this program. Since the last update provided to Regional Council, activities that P2 staff have undertaken or completed include the following:

- Staff, during this reporting period, have continued with inspections of businesses within the Dartmouth WWTF sewershed for compliance with Halifax Water's Rules and Regulations. It is estimated that over 90% of identified businesses have been inspected within this sewershed. Particular emphasis has recently been directed to identify observations of elevated pH values at the Dartmouth WWTF.
- P2 staff responded to 14 separate environmental incidents or related investigations since the previous report. Some of these events were related to the release of hydrocarbons into stormwater systems.
- P2 staff have produced and continue to deliver pollution prevention radio advertisements to promote environmental responsibility and awareness for the general public.
- Staff activities in the monitoring of food preparation sector continues to be a priority area with 63 inspections and directions issued regarding grease trap maintenance. Staff have participated in the development of a Canadawide strategy for the management of fat, oil and grease (FOG) through participation in the Canadian Water and Wastewater Association. Reduction of the amount of (FOG) that is discharged to municipal sewer systems will correspond to a reduction in Soluble and Total BOD influent loadings to the HSP WWTF's and may result in a reduction of system operation and maintenance costs. An educational brochure has been completed and is now distributed to food establishments during on-going inspections.
- The P2 program has been managing the disconnection of 30 private sewage outfalls to the Harbour, 15 located each in Dartmouth and Halifax. With the exception of 3 recently discovered locations, all known dischargers have been corrected. The remaining 3 are subject to the same disconnect protocol that has been used for all other private outfalls.

Elevated chloride levels have been observed in sections of monitored infrastructure which may indicate sea water inflow. This condition is being investigated to identify appropriate control options.

To date, the P2 program has been following a business plan in which the program objective is to have pollution prevention fully implemented on a sewer shed basis consistent with the HSP commissioning.

As previously reported, the Halifax WWTF sewer shed has been completed and the Dartmouth WWTF sewershed is anticipated to be completed in 2008. This represents in excess of 5,500 inspections to date. The program will then continue with inspections of all non-residential locations for the Herring Cove sewershed and will then extend to all businesses within the serviced sewer sheds throughout HRM.

Section 5

Harbour Water Quality Monitoring August 2008 Update

The Harbour water quality monitoring program was initiated in June, 2004. Samples are collected at 35 stations in the harbour, from the head of Bedford Basin to the harbour mouth past McNabs Island. Stations are located down the centre of the harbour, and at various additional points including areas of recreational use such as the yacht clubs. Since 2006, additional samples have been taken in Dartmouth Cove, Fairview Cove, and new sampling sites were established at Herring Cove. Additional sampling was performed at Fairview Cove during 2007 to monitor for effects of sewage diversion due to construction at the Duffus Street pumping station. Sites have been added in late 2007/2008 around the NW Arm to monitor for changes as the Halifax plant comes online.

Regular sampling continues on a bi-weekly basis for bacteria, metals, nutrients and water chemistry. Samples are collected at the surface and 10 metres at each site. The data are compiled into bi-weekly and quarterly summary reports. Testing for oils and biochemical oxygen demand (a measure of organic constituents in the water) has been discontinued at regular sampling sites due to levels which are routinely below detection limits. Methods for more sensitive detection of metals have been instituted. The program remains on schedule and below budget.

The purpose of the program is to establish existing baseline water quality conditions in the harbour, and to track changes as each of the three new treatment plants is commissioned in 2008 (Halifax and Dartmouth) and 2009 (Herring Cove). The sampling program is scheduled to continue through 2009. Based upon oceanographic modelling of the harbour, it is predicted that the water quality objectives set by HRM, adapted from the Halifax Harbour Task Force, will be met through the advanced primary sewage treatment provided for Halifax and Dartmouth. Water quality objectives differ for different parts of the harbour, but for the Outer Harbour, Northwest Arm and Bedford Basin, it was predicted that guidelines for contact recreation will be met. With full commissioning of the Halifax plant in 2008, conditions in the Northwest Arm and Point Pleasant Park areas have rapidly improved. Beaches were opened at Black Rock and the Dingle for the month of August. Contact recreation guidelines were met, the only exceptions being the few days during or immediately following heavy rainfall events, when designed wet weather overflows occur at some points in the collection system. A few remaining leak situations in the NW Arm trunk sewer were detected in the bacterial data.

These were mostly remediated during 2008. More intensive monitoring for fecal coliform and enterococci bacteria was ongoing near key overflow points during summer 2008.

Fecal coliform bacteria levels are much reduced throughout the middle and inner harbour, with commissioning of the Halifax plant. Levels in NW Arm and the Basin are reduced below swimming guideline limits, except following heavy rain events. Metals levels are low throughout the harbour, as are BOD levels. Oxygen levels are depressed in the deeper waters of Bedford Basin at various times, likely due to decomposition of organic materials. Oxygen levels are often too low, below the desired objective. Overall, water quality objectives in the harbour are now often being met, based on the various measured parameters. Further improvement is expected with commissioning of the Dartmouth plant and will be reported to Council in the very near future.

Quarterly reports and weekly/bi-weekly data reports and spreadsheets are available online at: http://www.halifax.ca/harboursol/waterqualitydata.html

Section 6

Financial Information

As of September 2008, the Harbour Solutions Project has spent \$304.9 million of its \$332.7 million capital budget. Spending for the 2nd quarter of 2008/09 just completed was \$2.62 million, of which \$0.32 million was spent on the wastewater collection system, \$1.81 million on the wastewater treatment facilities, and \$.05 million on the biosolids processing facility. Contract management, the Public Involvement & Information Program, aggressive pollution prevention, water quality monitoring, inflation, community liaison committees and administration totalled \$0.44 million.

In October 2002, Council granted approval in principle to commence a series of increases, not to exceed \$0.29, to the Environmental Protection Charge as a means of funding the Harbour Solutions Project. The series of increases has now been completed, with the HSP portion of the EPC rate now being \$0.66.

Inflation

Over the life of the project, 2004/05 was an extraordinary year for construction-related inflation in HRM in terms of its strong increase. In 2005/06 the inflation trend stabilized somewhat, and was lower than the revised inflation projection of 6% (4.31% vs. 7.87% in 2004/05). Inflation for fiscal years 2006/07 and 2007/08 was 5.25%, and 7.78% respectively, while the first quarter of 2008/09 saw inflation of 6.24%.

As of June 2008, \$11.82 million over and above budgeted inflation of \$12.3 million has been spent on the sewage collection system and the sewage treatment plants. As the completion dates for all components have passed, there should be no further inflation incurred.

Contingency Spending

The contingency budget of \$18.20 million is largely set aside for addressing inflation beyond budgeted levels. The contingency is also being used to fund small items that have arisen through the contract amendments.

Actual and planned spending of contingency funds is as follows (shown in millions).

Realized inflation in excess of budget	\$11.82
Amount committed for diffusers	2.50
net of CSIF contribution	(2.50)
Amount committed for other amendments	0 .91
Herring Cove Water & Sewer	1.66
Commitments	0.25
Uncommitted	3.56
Total	\$18.20

Commitments listed above include a larger Fournier press and a larger chemical storage tank. It should also be noted that there remain numerous potential project risks that may require funding from the uncombined contingency balance, such as an insurance allowance, and possible changes to the design/construction of the of the Herring Cove WWTF, as identified by D&D. However, the analysis of this issue is not yet completed, and , therefore, it is not possible to quantify the actual financial impact at this time.

Canadian Strategic Infrastructure Fund (CSIF)

Because of the delays in the completion of various components of the Harbour Solutions Project, negotiations are currently underway with CSIF. Per the existing agreement, the end date for receipt of the balance of the \$30M project contribution is March 31, 2009. As the contributions occur only after the completion of the applicable project component, it is anticipated that CSIF will extend the end date until March 31, 2010.

	2 nd Quarter	Year to Date	Project Total	Budget	Budget Adjustments		Revised Budget
					Net HST	Contingency	J
Firm Price Contracts Wastewater Collection System Wastewater Treatment Facilities Biosolids Processing Facility Net HST Community Liaison Committees Land Pre-Construction Contract	0.32 1.81 0.05 - 0.06	0.57 11.41 0.12 - 0.06	117.80 124.36 12.34 6.73 4.92 7.11	112.3 136.9 12.5 9.6 7.0 4.8 7.1	3.9 4.7 0.5 -9.6	1.16	117.4 141.6 13.0 8.7 4.8 7.1
Total Firm Price Costs	2.24	12.16	273.26	290.2	-0.5	2.82	292.52
Variable Costs Admin., Contract Mgt., Communications Contingency Inflation	0.38	0.49 - 1.88	8.87 22.74	12.0 18.2 12.3	0.5	-14.64 11.82	12.0 3.6 24.6
Total Variable Costs	0.38	2.37	31.61	42.5	0.5	-2.82	40.2
Harbour Solutions Project Total Cost	2.62	14.52	304.87	332.7			332.7
Funding EPC Reserve Levies	-	-	160.2	160.2			160.2
Long Term Debt NS Municipal Finance Corp. Federation of Canadian Municipalities	-	-	110.0 20.0	110.0 20.0			110.0 20.0
Cost Sharing: Province* Canada Strategic Infrastructure Fund	-	-	6.01 20.85	10.0 30.0			10.0 30.0
Potential short-term debt	-	-		2.5			2.5
Total Funding	-	-	317.06	332.7			332.7

^{*} The Province of Nova Scotia has committed \$30 million to the Project over a 15 year span. The \$10 million shown above in the table represents the portion that will be received during the construction period Harbour Solutions Project

Section 7

Public Information and Involvement Program

The Marketing, Design and Print Services section of the Corporate Communications Office assumed responsibility for the Public Information and Involvement Program for the Harbour Solutions Project in the fall of 2003.

Public Messaging

In collaboration with staff from a number HRM departments, as well as private sector sponsors, Harbour Solutions Project (HSP) staff presented the 1st Annual Dingle and Black Rock Beach Parties, August 2nd.

Councillors Sue Uteck and Linda Mosher hosted their area events. Mayor Kelly and a number of other councillors also braved the less than stellar weather to participate in the festivities. Despite rain, fog and drizzle, hundreds of residents and invited guests turned out for the historic re-opening of these beaches. The day included swimming in the harbour, food, entertainment and fun activities for all, especially the children. By all accounts, the event was a success, weather not withstanding.

The event received local and national media coverage by all the main media outlets. The success and widespread media coverage of the event helped bring home to the public the impact and positive results the Harbour Solutions Project is having on our harbour.

Harbour Solutions continues to be a major player in the Naturally Green Newsletter. This environmentally focussed in-house produced piece is distributed to approximately 162,000 households in HRM. The latest edition was released Oct.14, 2008 with Harbour Solutions occupying 2.5 of the newsletter's twelve pages. This edition focussed on the August 2nd reopening celebration of Black Rock and Dingle beaches, biosolids, including a detailed explanation of the advanced-primary wastewater treatment process.

Corporate Communications, in its work with the P2 group, continues to run a radio campaign with the Metro Radio Group(Q104, C100, CJCH, KIXX and Sun FM). The campaign focuses on pollution prevention and the protection of our harbour. Previous radio ad campaigns have been award winning and we hope this latest campaign will be equally successful. The ads continue to make the link between HSP and pollution prevention.

Corporate Communications designed a user-friendly map outlining the various harbour related activities that will be possible once the HSP is up and running. The map has appeared in a number of publications throughout the quarter including, The Boating News, Boom and Halifax magazines and continues to be very well received. Boom Magazine also published a lengthy article on Harbour Solutions with copy supplied by Corporate Communications.

Community Liaison Committees (CLC)

The Herring Cove CLC has essentially completed their mandate with respect to the WWTF exterior design. The focus of the CLC is now on the landscaping around the WWTF, the Herring Cove pumping station and Latter's Pond recreation area. Staff from HRM's Community Development division are now assisting in these efforts.

Corporate Communications staff will continue to meet with CLC members as required. Corporate Communications also continues to work with the community to address any concerns that might arise during construction.

In Dartmouth the new trail system is essentially complete. Staff are working with Councillor Barkhouse to coordinate remaining Community Liaison Fund allocation and landscaping plan for the WWTF.

Presentations

Presentations are developed on an on-going basis for conferences, workshops and community groups. The presentations are updated regularly to correspond with project progress. These presentations are available on compact discs and on the HSP website.

Three Harbour Solutions display units continue to be used at public meetings, trade/home shows, WWTF openings and other events. The display units focus on the positive message of the project, stewardship and integrating of messaging with HRM's Pollution Prevention Program.

As part of our presentation materials, Mayflower Models has been contracted to construct 3 scale models of the new wastewater treatment plants. The Halifax and Dartmouth models are complete. These are a valuable tool in explaining the advanced primary treatment process.

Harbour Solutions Website

The Harbour Solutions website continues to be updated on a regular basis and is a valuable, user-friendly public source of information on the Project. PIIP staff continue to maintain the site for Harbour Solutions. The site features a large photo gallery, reference materials, past and current presentations, construction notices informing residents of any possible traffic impacts and a large collection of information related to the wastewater collection system, wastewater treatment plants and the biosolids processes.

Construction Communications

A PIIP staff member attends the Harbour Solutions construction meetings to liaise with Dexter and D&D, as well as, other HRM departments to stay informed about construction that could impact the public/businesses, and ensure communications are developed to address these impacts. A PIIP member also attends, where required, meetings with businesses and residents that may be directly impacted by HSP related construction activity.

Construction updates are mailed as required to stakeholders and posted on the website, along with notices of impending construction and their impacts. Newspaper and radio ads, media releases and web postings continue to be developed for construction that may impact traffic.

Signage

PIIP staff liaised with the federal and provincial governments to design, produce and install temporary construction signage for the sites of the three Wastewater Treatment Facilities. More detailed permanent signage has been designed by Corporate Communications for the three WWTF sites as well as building mounted plaques.

Correspondence

As requested and/or required, letters and e-mails are drafted to address concerns/enquiries from citizens regarding the Project. PIIP staff also regularly respond to numerous requests for HSP information from the general public, interest groups, media, Mayor Kelly and HRM Councillors, staff and others. Letters are also drafted for the CLC's and other levels of government.

Section 8

Construction Safety

There were no lost time incidents during this quarter.