HALIFAX
REGIONAL MUNICIPALITY

PO Box 1749
Halifax, Nova Scotia
B3J 3A5 Canada

**Item No. 9**
**Halifax Regional Council**
**September 22, 2009**

**TO:** Mayor Kelly and Members of Halifax Regional Council

**SUBMITTED BY:** Brad Anguish, Director of Business Planning & Information Services

**DATE:** September 15, 2009

**SUBJECT:** **Harbour Solutions Project - 1st Quarter Report - April 1, 2009 to June 30, 2009**

---

**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

The primary purpose of this report is to provide a historical report of quarterly project activities up until June 30, 2009 in accordance with Regional Council direction. The attachment to this report provides the required historical accounting of project activities in the format that has been used throughout the Harbour Solutions Project.

Where there have been several updates to Council and the media since June 30, 2009, staff are providing a brief overview of project progress as of September 11, 2009 within the discussion section of this cover report. Progress is being reported against the three strategic priorities identified by staff in consultation with Regional Council:

- Restore the Halifax Wastewater Treatment Facility ASAP and mitigate future flooding
- Shield tax and water/wastewater rate payers to maximum extent possible from potential additional costs
- Complete the entire Harbour Solutions Project ASAP

### Restore the Halifax Wastewater Treatment Facility ASAP and mitigate future flooding

The Halifax WWTF has been shut down since January 14, 2009 due to the wastewater flooding. All wastewater formerly treated at the Halifax WWTF is being diverted to the Halifax Harbour through the combined sewer overflows (CSOs) in the collection system. Due to the CSOs acting as settling tanks with the WWTF shut down, sewage has a longer dwell time and is creating odour challenges, especially during long hot and dry weather periods.

Odour mitigation measures are in place with two ozone generators installed adjacent to a catchbasin on the west side of Upper Water Street just north of Cogswell Street to inject ozone directly inside the collection system. The ozone generators are having a positive effect overall, but their effectiveness depends on the quantity of effluent in the tunnel, wind direction, tides and temperature. As well, activated carbon air filters have been installed in other catchbasins in the same area and are being changed out every week to maximize their effectiveness in reducing odour. Recently, Bioxide, a liquid oxidizing/neutralizing agent, has been used in the tunnel access shaft under the Cogswell Sreet. interchange and the vortex chamber within the Halifax WWTF property. Bioxide has provided good initial results and crews have ordered more product for use at these sites. All efforts are being made, and will continue to be made, to mitigate odours.

Halifax Water, on behalf of HRM, is working to resume flow through the Halifax WWTF as quickly as possible to reduce/eliminate the discharge of odour and “floatables”. Halifax Water has retained CH2M Hill to investigate the technical cause of the flooding, to make recommendations to mitigate the possibility of future flooding, and to assist in the restoration of the facility.

A two phase approach to re-commissioning has been developed. During the first phase, work on which is well underway, typical dry weather flows of wastewater will be screened and pumped through the WWTF. This will entail wet well commissioning, as well as restoration of the ventilation and odour control system, and screening system. While the flow will bypass the process and disinfection equipment, it will be screened before it is discharged to the harbour through an outfall diffuser on the sea floor, approximately one kilometre into the harbour. This will ensure better dilution (50:1) and significant reductions in odour and discharge of "floatables".

Installation and commissioning of equipment for the first phase is under way. Five refurbished sewage pumps supplemented by an external direct drive diesel pump and a new gate valve actuator (inlet valve to the plant) have been installed. All electrical junction boxes have been moved up to the street level area of the plant from the 20 metre deep wet well. Final equipment and control system checks and repairs are currently under way such that system commissioning with clean water can commence within a few days. Subject to successful clean water commissioning, the inlet gate to the plant will be opened in a heavily controlled process to commence the pumping of sewage from the gravity-fed systems first followed by flows through the Pier A (at Barrington and Inglis) and Duffus Street pumping stations. Further details related to first phase operations will be presented to Regional Council by HW staff on September 22, 2009.

The second phase will result in the final recovery of all processes and systems in the WWTF with the expectation that the plant will be fully functional in the spring of 2010. All damaged equipment will be repaired or replaced with funding for the recovery effort primarily provided by the Project's builder's risk insurance. CH2M Hill has recommended several changes to the Halifax WWTF to prevent a flooding recurrence in the future. These recommendations are currently in various states of review and/or implementation and include:

- Emergency power generators will be re-configured with proper load balancing and load shedding programs, to ensure overloading does not occur.
- The control system power panels will have dual feed power supply to ensure control power to all equipment in the wet well.
- All junction boxes will be moved up to street level.
- Electric actuator controls will be moved to a higher elevation.
- All gas and level transmitters will be moved to higher elevation.
- Floor drains from the basement will be hydraulically isolated from the basement.
- As an added level of protection, an interlock (remote control system) between the pump stations and the Halifax WWTF will be installed to improve the control of flow from the pump stations in the event of an emergency. These interlocks have been installed in Dartmouth and Herring Cove as well.

While the existing sewage pumps have been rehabilitated for short term use in phase one, five new pumps have been ordered from Germany at a cost of $2 million. Mechanical and electrical contractors have been hired and all other equipment has been ordered or is in the process of being

ordered, including a new motor control centre, such that full resumption of wastewater treatment will be achieved by Spring 2010.

**Shield tax and water/wastewater rate payers to maximum extent possible from potential additional costs**

Overall, the $333 million Harbour Solutions Project remains within budget. As a result of the flooding incident at the Halifax WWTF, there has been widespread public speculation that tax and/or rate payers will be "on the hook" for any additional costs that arise. In addition to a substantial security package that guarantees contractor performance during the three year performance warranty period following delivery of each asset to HRM, the Harbour Solutions Project also has numerous substantial insurance policies in place including property, builder's risk, professional liability, and wrap-up liability policies. The flooding incident is insured under the Project's builder's risk policy. Policy coverage provides for repair of the WWTF to its pre-incident state with all affected equipment/systems being repaired or replaced and three year warranty provisions restored. As a result, HRM and HW staff are working very closely with the Insurer to ensure their position is not prejudiced in any way such that full cost recovery in accordance with the terms of the policy can be expected.

HW has submitted two insurance claims to date. The first claim was for approximately $775K related to clean-up and protection of the WWTF immediately after the flood. HW has already received approximately $685K with the remainder of the claim still being processed. As well, HW has received approximately $400K to reimburse the 20% deposit that was required when ordering the five new replacement sewage pumps totaling $2 million. Another claim will be submitted in the next few weeks. The Insurer has also committed to providing cash flows in accordance with payment schedules to be provided by HW such that HW will not be required to incur interim financing costs associated with the major repair effort.

To the extent that HW may incur WWTF recovery costs not eligible for reimbursement under the terms of the insurance policy, staff will seek recovery from the Contractor if it is determined that the associated work should have initially been provided under the scope and terms of the Project Agreement. To ensure maximum focus remains on repairing the WWTF and completing all Project assets as soon as possible, both staff and the Contractor have reached agreement that this matter will only be dealt with after the Halifax WWTF has been returned to full operation.

Regarding the successful completion of the Harbour Solutions wastewater collection systems and treatment plants in each of Halifax, Dartmouth and Herring Cove, each of these assets has a three year performance warranty backed by corporate guarantees and a security package designed to mitigate financial risk in the event of a default by the contractors. The security package includes:

Wastewater Collection Systems:

- Performance Bond in the face amount of 100% of the Guaranteed Maximum Price (approx. $120M)

- Labour and Materials Payment Bond in the face amount of 50% of the Guaranteed Maximum Price (approx. $60M)
- Corporate Guarantee by Municipal Enterprises Limited, parent company to Dexter Construction

Wastewater Treatment Plants:

- $15 million irrevocable, stand-by Letter of Credit
- $20 million Performance Bond
- $20 million Labour and Materials Payment Bond
- Corporate Guarantees from Municipal Enterprises Limited, Degremont Ltee and Suez, all parent companies to D&D Water Solutions

The Project Agreements also include provisions which permit HRM to withhold payments if there are defaults and to hold back monies to cover the costs of any unremedied deficiencies at the Date of Substantial Completion. Additionally, HRM has withheld 10% of all payments made to date to D&D under the WWTF Agreement and Dexter under the WWCS Agreement in accordance with the requirements of the Builder's Lien Act to address any lien claims that may arise.

Staff will continue to employ the substantial remedies provided under the Project Agreements and outlined above to shield tax and water/wastewater rate payers from potential additional costs to the maximum extent possible.

**Complete the full Harbour Solutions Project ASAP**

Despite the flooding incident of January 14, 2009, all Project contractors continue to rectify deficiency items in the Biosolids Processing Facility (BPF) and Halifax WWTF and WWCS, commission the Dartmouth WWTF and WWCS, and complete construction of the Herring Cove WWTF and WWCS.

In accordance with the Transfer Agreement approved by Regional Council in June 2007, transfer of ownership, custody and control of the Halifax WWCS (with the exceptions noted below), the Halifax WWTF and the BPF, from HRM to Halifax Water, occurred on June 1st, 2009.

***Halifax***

Substantial Completion of the Halifax WWTF and WWCS was achieved on December 19, 2008 with the exception of Pier A Pumping Station and Combined Sewer Overflow (CSO) chamber, as well as the other Halifax CSO chambers excluding the Balmoral CSO chamber. These exceptions remain the responsibility of the Contractor until satisfactory substantial performance can be proven.

Work on the Halifax WWCS continues to focus on the identification and rectification of deficiencies and application of the Substantial Completion process for those components that have not yet achieved Substantial Completion.

Regarding the Halifax WWTF, beyond the flooding restoration work being conducted as described above, D&D is coordinating completion of all other deficiencies defined during the Substantial Completion process as opportunities allow.

***Dartmouth***

The Dartmouth wastewater collection system and treatment facility has been commissioning and treating flows since July 2008.

WWTF commissioning activity continues with a focus on meeting the project specifications for odour and effluent quality, prior to achieving substantial completion. Fine tuning of the facility's treatment system to improve effluent discharge quality under conditions of low solid content is ongoing.

Recently, there has been media coverage surrounding the release of foam and odour from the vent pipes outside the plant. The foam is created through the treatment process and is essentially entrained air coming out of the effluent solution that periodically rises through the vent stacks. The Contractor is working toward implementing a permanent solution whereby the foam and odour will be intercepted and redirected back into the plant for further treatment. On August 27, 2009 the first phase of this solution was implemented using temporary and readily available materials. As a result, foaming has ceased exterior to the plant and odour complaints have reduced significantly. The permanent solution is estimated to be completed in approximately two months, depending on the shipping date of required material. Perimeter odour testing continues on a daily basis until further notice.

There continues to be concern around the reliability of the TRS (total reduced sulfur) Analyzer to accurately measure odour discharged from the plant stack. Where odour is a critical contract performance requirement for substantial completion, staff and the contractor are working closely to examine all options for improving performance.

The Contractor also continues to work on deficiencies in the wastewater collection system with a view to applying for Substantial Completion. Staff anticipate receiving documentation from the Contractor supporting substantial completion of the collection system within the next two weeks. That said, Substantial Completion for Dartmouth can not be contractually achieved until the treatment facility demonstrates performance that meets Project requirements.

***Herring Cove***

Construction of the WWTF and WWCS is essentially complete with deficiency identification and rectification already under way. The "dry" testing of individual components and hydro testing of various tanks within the Herring Cove WWTF using clean water is ongoing. All necessary chemicals have been ordered. The odour control unit will be tested with chemicals prior to the introduction of wastewater.

Depending on the outcome of ongoing tests, introduction of clean water for full system testing will occur. Staff are awaiting final word from the Contractor as to when they feel the WWTF will be ready to accept sewage and commence the commissioning phase.

Regarding the WWCS, the new additional holding tank at Roaches Pond is ready to undergo a substantial completion process such that it can be put into service in the coming weeks. When combined with the newly upgraded pumping station at Roaches Pond, these components will significantly reduce/eliminate historical wet weather sewage overflows and greatly improve the water quality of MacIntosh Run.

***Biosolids Processing Facility***

The Biosolids Processing Facility has been processing product since July 2007. Since the shutdown of the Halifax WWTF in January 2009, biosolids continue to be processed from the Aerotech Dewatering Facility and the Dartmouth WWTF. The finished product continues to meet the "Class A" biosolids standard for the Province of Nova Scotia with some product meeting the "Exceptional" quality standard. Consumer demand for the finished product remains high. Application and distribution of the finished product is strictly controlled and is only made available to the consumer after a thorough nutrient management plan has been completed on the subject property.

The resolution of outstanding plant deficiencies by the Contractors has been rather slow although progress has been made on many of the smaller lower costs related items. HW and HRM staff are in the process of reaching an agreement with both SGE and N-Viro for final resolution of all plant deficiencies, the most significant deficiency being the replacement of the current dust collection system with an improved system.

## BUDGET IMPLICATIONS

As of June 2009, the Harbour Solutions Project has spent $307.25 million of its $332.7 million capital budget. Projections to meet the capital budget of $332.7 million remain on target based on staff's understanding of the forecasted insurance recoveries relative to the Halifax WWTF flooding incident as discussed earlier in this report. Staff are very encouraged by the claims experience and discussions with the Insurer to date.

As all completion "dates certain" for the various project components have now passed, there should be no additional inflation risk to the Project. 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 assumed at a rate of 2.8% was $12.3 million, the remainder of $11.8 million has been allocated from the contingency budget. The resultant uncommitted contingency balance stands at $3.44 million as of June 30, 2009.

## 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 - 1st Quarter Report - April 1 to June 30, 2009.

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.

| | | |
|---|---|---|
| Report Prepared by : | Ted Tam, P. Eng., Project Manager, Harbour Solutions Project<br>Brad Anguish, P.Eng, PMP, MBA, CD, Project Director | 490-6130 |

**Appendix A**

**Halifax Harbour Solutions Project**
**1st Quarter Report - April 1 to June 30, 2009**

## 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 April 1 and June 30, 2009.

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

### *Halifax Wastewater Collection System*

The Halifax Wastewater Collection System work during the 1st quarter of 200/10 focussed on the identification and rectification of deficiencies and application of the Substantial Completion process.

Substantial Completion was achieved on December 19, 2008 on the Halifax WWCS with the exception of Pier A Pumping Station and Combined Sewer Overflow (CSO) chamber, as well as the other CSO chambers, excluding the Balmoral CSO chamber.

### *Dartmouth Wastewater Collection System*

The Dartmouth WWCS work during the 1st quarter of 2009/10 continued to focus on addressing deficiencies. Documentation for Substantial Completion for Dartmouth also continued.

### *Herring Cove Wastewater Collection System*

The Herring Cove WWCS work during the 1st quarter of 2009/10 continued to focus on completing the Roaches Pond retention tank and the Herring Cove Pumping Station.

## Section 2

### *Halifax Wastewater Treatment Facility*

As a result of the significant wastewater flooding incident which occurred at the Halifax WWTF on January 14, 2009, the plant has not been operational for this quarter. The recovery effort to repair the Halifax WWTF is underway and is ongoing with close involvement and input from the insurance company's adjuster.

The following is a summary of the various activities relating to the recovery of the Halifax WWTF:

**Phase 1 -Pumping through the Plant:**

- B&M was hired last week of July to implement pumping through the plant
- Pumping through the plant will screen the wastewater to remove floatables and discharge through the existing plant outfall
- Potential significant reduction in the odours in the downtown area
- The wetwell area has been cleaned and disinfected as of July 27/09
- Dismantling of the cables, sensors and other equipment will be underway soon
- Ventilation system in the wetwell has been inspected and repairs are underway
- The wastewater pumps are being refurbished for this phase and likely will be on site during the last week of August
- The gate actuator has been ordered to be installed during the last week of August
- Several other sensors, level monitors will be ordered shortly, pending some technical details

At the time of writing this report, all areas of the facility are being made available to D&D to carry out the rectification of deficiency work. The remaining deficiency work will continue, however, the sequence and timing will have to be coordinated with Halifax Water's remedial work associated with the flooding incident.

**Phase 2 - Final Recovery**

- The wastewater pumps will be ordered shortly, some technical information was late arriving
- Most of the other pumps in the basement have been assessed; repair/refurbish planning is underway
- MCC 265 is being reviewed for potential changes as this report is being written
- The basement was cleaned and disinfected for access in February
- A significant effort has been planned for this phase once the pumping through the plant is commissioned

***Dartmouth Wastewater Treatment Facility***

The Dartmouth WWTF continues to treat all wastewater from Dartmouth, and commissioning tests are ongoing. The Dartmouth WWTF work during the 1st quarter of 2009/10 continued to focus on addressing system deficiencies.

During this quarter, various tests and modifications to improve the performance of suspended solids, BOD and fecal coliform in treated effluent, as well as the odour control system were being initiated.

***Herring Cove Wastewater Treatment Facility***

During the 1st quarter of 2009/10 construction work was completed at the Roaches Pond retention tank and the Herring Cove Pump Station, excluding commissioning.

The Herring Cove WWTF work during the 1st quarter of 2009/10 concentrated on "dry"testing of individual components. Hydro testing of various tanks using clean water is ongoing. Deficiencies which were noted are being rectified by the Contractor. Chemicals are being ordered and the odour control unit will be tested with chemicals prior to the introduction of wastewater.

## Section 3

***Biosolids Processing Facility***

During the 1st quarter of 2009/10, the Biosolids Processing Facility (BPF) continued to process biosolids from the Aerotech Dewatering Facility, and from the Dartmouth WWTF.

The finished product continues to meet or exceed the class "A" biosolids standard for the Province of Nova Scotia. Consumer demand for the finished product remains high. Rectification of identified defects continued throughout the quarter.

## Section 4

***Pollution Prevention Program***

In support of the Harbour Solutions Project and as a requirement of Provincial legislation, HRM initiated a Source Control Strategy, now referred to as the Pollution Prevention (P2) Program. 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, continued with inspections of businesses within the Dartmouth WWTF sewershed for compliance with Halifax Water's Rules and Regulations. Inspections within this sewershed are nearly complete.

- Particular emphasis has been directed to identify the source of observed elevated pH values and conductivity levels of the influent wastewater at the Dartmouth WWTF. A systematic approach was developed that started at the Dartmouth WWTF and tracked conductivity and chloride concentrations through the Dartmouth collection system to identify possible sources. Field measurements of conductivity were performed to use as a surrogate measurement of chloride concentrations in the raw wastewater. Chlorides were also measured by taking grab samples at representative locations and used in establishing a correlation with conductivity measurements.

- Sampling has been performed several times during the past six months at night, between midnight and 6 am when domestic flow from residential sources would be at a minimum and during periods of high tide. Sampling has also been conducted during the day to identify any possible industrial or commercial source of elevated chlorides. Observed sources of sea

water intrusion were identified and provided by P2 staff to the Contractor and repairs were reported to be completed. These activities are currently believed to have corrected the frequent measurement of elevated chloride and conductivity. As previously reported, one event occurred during the month of March in which suspected sea water inflow may have occurred during high tide and during a period where wave height and wind direction over the Halifax Harbour may have contributed to an inflow event. Since the previous report, three events of high conductivity had been reported and in all cases temporary work at two CSO locations were identified to be the source of sea water intrusion. No recent events have been observed.

- The inflow of sea water to the collection system adds to the total volume of wastewater entering into the wastewater collection system, adds to the total volume required to be pumped by pumping stations and adds to the total volume of wastewater entering into the WWTF for treatment. Additionally, seawater intrusion may increase corrosion and affect wastewater treatment efficiencies. Ongoing monitoring will be maintained for the foreseeable future to locate and identify the source of any seawater intrusion.

- Elevated pH levels in raw wastewater have been frequently reported by staff at the Dartmouth WWTF and have gone through periods of reduced and increased frequencies. P2 staff continue to monitor various manhole and pumping station wet wells in the Dartmouth collection system and have deployed continuous recording pH meters to assist in locating any industrial source of pH. To date, three businesses have been identified that have had periodic elevated pH discharges. As previously reported, two have altered their process and one has installed permanent pH neutralization equipment to meet Halifax Water's Rules and Regulations. No additional locations have been detected and at the time of this report. Sources of elevated pH may come from floor and surface cleaning activities as well as private lateral maintenance in which caustic cleaners may have been employed. Staff will continue to monitor to identify and correct any new or recurring sources of elevated pH discharges as they are located.

- Elevated chloride and conductivity levels believed to be a result of seawater inflow has also been observed in the Halifax WWTF sewershed. Staff have inspected and confirmed that components of the Harbour Solutions project such as the Halifax based CSO locations are not significant sources of sea water inflow. Currently, staff suspect as yet, unidentified direct connections such as old outfalls connected to the sanitary system, private property foundation or sump discharges to the sanitary system or sections of our existing collection system to be subject to tidal influence. Investigation to identify possible sources of salt water intrusion to the Halifax WWTF collection system is ongoing.

## Section 5

### Harbour Water Quality Monitoring

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 wastewater 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. Based upon oceanographic modelling of the harbour, it was predicted that the water quality objectives set by HRM, adapted from the Halifax Harbour Task Force, would be met through the advanced primary wastewater 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 would be met. With full commissioning of the Halifax plant in 2008, conditions in the Northwest Arm and Point Pleasant Park areas rapidly improved. Beaches were opened at Black Rock and the Dingle for the month of August 2008. 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.

With the January 2009 shutdown of the Halifax treatment plant, bacteria levels again now exceed the swimming guidelines for many areas of the harbour. In the days immediately following the shutdown, bacteria levels rose above guidelines in the inner harbour, at Black Rock beach, and near McNab's Island. In the subsequent weeks and months, bacteria levels were variable, but often above guidelines in the inner harbour, Bedford Basin, at Black Rock beach and in the NW Arm. It will not be possible to re-open the harbour beaches until the Halifax plant is re-commissioned.

The present 5-year contract with AMEC for monitoring the harbour ended in June 2009. No new information is likely to be gained by further sampling with the Halifax plant not operating. For this reason, it has been decided to suspend the sampling program until such time as the Halifax plant resumes operation, targeted for spring of 2010. At that time, the Herring Cove plant should also be operating. Further sampling beginning in spring 2010 can confirm whether the water quality targets are met on a consistent basis, as required under the federal CEAA approval.

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 June 2009, the Harbour Solutions Project has spent $307.25 million of its $332.7 million capital budget. Spending for the 1st quarter of 2009/10 just completed was $0.23 million, of which $0.05 million was spent on the Halifax SCS. Contract management, the Public Involvement & Information Program, pollution prevention, water quality monitoring, community liaison committees and administration totalled $0.18 million.

### Inflation

Contract progress payments are subject to inflation adjustments over the life of the WWCS and WWTF contracts provided that the work is completed by the Contractors before the specified "Date Certain" for each project component. Payment for all work completed after the respective "Date Certain" receives no inflation adjustment.

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, the final "Date Certain", $11.82 million over and above budgeted inflation of $12.3 million has been spent on the wastewater collection system and the wastewater 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. At this point, the contingency balance needs to be allocated to cover costs associated with the cleanup and repair and restoration of the Halifax WWTF - at the very least until these costs can be recovered through insurance or contractual obligations.
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) |
| Project amendment | 0 .91 |
| HST on amendments | 0.12 |
| Herring Cove Water & Sewer | 1.66 |
| Commitments | 0.25 |
| Uncommitted | 3.44 |
| Total | $18.20 |

| | 1st Quarter | Year to Date | Project Total | Budget | Budget Adjustments | | Revised Budget |
|---|---|---|---|---|---|---|---|
| | | | | | Net HST | Contingency | |
| **Firm Price Contracts** | | | | | | | |
| Wastewater Collection System | 0.05 | 0.05 | 118.32 | 112.3 | 3.9 | 1.16 | 117.8 |
| Wastewater Treatment Facilities | 0.00 | 0.00 | 124.36 | 136.9 | 4.7 | | 141.6 |
| Biosolids Processing Facility | - | - | 12.58 | 12.5 | 0.5 | | 13.0 |
| Net HST | - | - | - | 9.6 | -9.6 | | - |
| Community Liaison Committees | - | - | 6.75 | 7.0 | | 1.66 | 8.7 |
| Land | - | - | 4.92 | 4.8 | | | 4.8 |
| Pre-Construction Contract | - | - | 7.11 | 7.1 | | | 7.1 |
| **Total Firm Price Costs** | 0.05 | 0.05 | 274.03 | 290.2 | -0.5 | 2.82 | 293.52 |
| **Variable Costs** | | | | | | | |
| Admin., Contract Mgmt.,Communications | 0.18 | 0.18 | 10.48 | 12.0 | | | 12.0 |
| Contingency | - | - | - | 18.2 | | -14.64 | 3.6 |
| Inflation | - | - | 22.74 | 12.3 | 0.5 | 11.82 | 24.6 |
| **Total Variable Costs** | 0.18 | 0.18 | 33.22 | 42.5 | 0.5 | -2.82 | 40.2 |
| **Harbour Solutions Project Total Cost** | **0.23** | **0.23** | **307.25** | **332.7** | | | **332.7** |
| **Funding** | | | | | | | |
| EP Reserve Levies | - | - | 160.2 | 160.2 | | | 160.2 |
| Long Term Debt | | | | | | | |
| N.S. Municipal Finance Corp. | - | - | 110.00 | 110.00 | | | 110.00 |
| Federation of Canadian Municipalities | - | - | 20.0 | 20.0 | | | 20.0 |
| Cost Sharing: | | | | | | | |
| Province* | - | - | 10.01 | 10.0 | | | 10.0 |
| Canada Strategic Infrastructure Fund | - | - | 20.85 | 30.0 | | | 30.0 |
| Potential short-term debt | - | - | - | 2.5 | | | 2.5 |
| **Total Funding** | **-** | **-** | **321.06** | **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

## Section 7

**Public Information and Involvement Program (PIIP)**

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. With the transfer of assets to Halifax Water on June 1st, communications staff at Halifax Water have taken over the daily operation/implementation of the PIIP.

***Public Messaging***

Since the January 14th malfunction at the Halifax WWTF there has been a significant effort made toward attempting to keep residents and businesses informed of progress.

As was expected, few details were available in the weeks following the incident as much investigating was required to determine the cause and extent of damage. The first extensive communication came on April 14th with a presentation by HRM and HW staff to Regional Council along with a media technical briefing. Regional Council and the media were provided all known details of the events surrounding the WWTF malfunction. Included in the presentation were numerous photos of the flood damage (all of which can be found at www.halifax.ca), a list of frequently asked questions, clarity on some misconceptions about the Harbour Solutions Project, as well as information on the Dartmouth and Herring Cove plants. This presentation was then followed up with a comprehensive "question and answer" session.

This initial public engagement has been followed up with frequent website updates, direct-to-stakeholder communication newsletters, a new radio and TV ad, tours of the Halifax WWTF, and numerous print/radio/TV media interviews over the last few months.

New pollution prevention radio and TV ads were created to add to the existing series that had been airing over the last couple of years on proper disposal practices. The current campaign began airing in late June and focuses on educating the public on what not to flush. The full script can be found on the Harbour Solutions website at http://www.halifax.ca/HWWTF/HWWTFFAQs.html. Previous ad campaigns have been award-winning and it is hoped this latest campaign will be equally successful. The ads will continue to make the link between the Harbour Solutions Project and the Pollution Prevention Program.

Five direct-to-stakeholder Project updates have been created for the purpose of communicating frequent, timely, and relevant information on the status of each of the plants. These communications pieces have been well-received and the communications team will continue to produce them. Stakeholders have included the Restaurant Association of Nova Scotia, Downtown Halifax Business Commission, Downtown Dartmouth Business Commission, Destination Halifax, Casino Nova Scotia, Murphy's On The Water, Canadian Forces Base Halifax to name just a few. A direct link to these updates can be found online at http://www.halifax.ca/HWWTF/StakeholderUpdates.html.

HRM and Halifax Water staff have recently hosted tours of the Halifax plant for Mayor Kelly, members of Regional Council and the media in order to provide an up-close look at the flood damage.

Halifax Water staff also participated in a Special Tall Ships publication by the Chronicle Herald. The article highlighted efforts to mitigate odours and restore the Halifax WWTF. HW staff were also on site during the Tall Ships Festival to answer questions and provide information materials.

Halifax Water staff were also present on the waterfront for Ocean's Day festivities on June 5th to answer all HSP/water/wastewater related questions.

On Tuesday, August 11th HRM and Halifax Water released progress information, via a media release, on the recovery of the Halifax Wastewater Treatment Facility (WWTF) and efforts to mitigate odour.

In October, an ad will be featured in Saltscapes "Living Healthy" publication. The messaging for this ad will be consistent with pollution prevention's current radio ad on proper disposal methods, as mentioned above. This online and print magazine is a partnership with the QE II Health Sciences Foundation that communicates with Atlantic Canadians about regional health issues. It has an exclusive, direct distribution to hospitals and health care partners in Atlantic Canada.

Extensive communication planning continues and staff are making every effort to improve communications to impacted residents and businesses.

The Harbour Solutions website (http://www.halifax.ca/HWWTF/index.html) is updated on a regular basis when new information becomes available and remains an excellent source for Project information.

## Section 8

**Construction Safety**

There were no lost time incidents during the 1st quarter of 2009/10.