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HALIFAX
REGIONAL MUNICIPALITY

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Halifax Regional Council
June 19, 2007

TO: Mayor Kelly and Members of Halifax Regional Council

SUBMITTED BY: Brad Anguish, Director of Environmental Management Services

DATE: May 1, 2007

SUBJECT: **Harbour Solutions Project - 4th Quarter Report - 2006/2007**

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 last quarterly report to Council indicated that the overall completion date of the project will be delayed by three (3) months. D&D Water Solutions Inc. (D&D) carried out another schedule review and there is no further delay expected at the time of writing this report.

Halifax

The Halifax Wastewater Collection System (WWCS) work during the 4th quarter of 2006/07 continued with the remaining mechanical and electrical work, carpentry, and miscellaneous metals work, at the various regulating structures and pumping stations. The Halifax WWCS, excluding the diversion piping that is dependent on the completion of the Halifax Wastewater Treatment Facility (WWTF), has been substantially completed.

Regarding the Halifax WWTF, during the 4th quarter of 2006/07, coating of the Densadeg tanks was completed. Hydrotesting of the various tanks and channels was initiated with hydrotesting being completed at a number of locations (e.g., Densadeg tanks, channels between UV area and the outfall connection). Installation of mechanical and electrical equipment will continue into the middle of the 1st quarter of 2007 and it is expected that the Halifax WWCS and WWTF will commence the dry and wet commissioning process in the 1st quarter of 2007.

A photo of the Halifax WWTF has been attached as Appendix B for Council's convenience.

In March 2007, HRM Council approved in principle the concept of the Community Investment Fund and staff are proceeding with the next steps with the preparation of a new service agreement with the Greater Halifax Partnership (GHP).

Dartmouth

Regarding the real estate acquisitions for Dartmouth, the CNR's legal department is reviewing the pipe license agreement. The Irving Shipyard easement agreements are not yet complete, however they are being compiled.

The Dartmouth WWTF work during the 4th quarter 2006/07 continued with the interceptor and diversion pipe installation work in a number of areas. The piping installation work has been essentially completed with the exception of Ferguson St. and Maitland St. diversion piping. Remaining reinstatement activities will resume in the 1st quarter of 2007 as the weather improves. The construction of the Lyle St. Outfall was also completed during the quarter.

Regarding the Dartmouth WWTF, during the 4th quarter of 2006/07, concrete formwork was completed. Interior masonry work was initiated and substantially completed. Equipment installation will continue and will accelerate as the roof slabs and interior masonry are expected to complete in the 1st quarter of 2007.

A photo of the Dartmouth WWTF has been attached as Appendix C for Council's convenience.

Substantial completion of the Dartmouth WWCS (excluding diversion piping that is dependent on the completion of the Dartmouth WWTF) and WWTF is expected by June 2007 and March 2008 respectively.

Herring Cove

During the 4th quarter 2006/07, design engineering work continued with the design of the Herring Cove WWTF Outfall. All other design packages were previously completed. Real estate acquisition activities were also completed during this quarter.

Construction during the 4th quarter of 2006/07 was limited to the starting of the Roaches' Pond retention tank work.

During the 1st quarter of 2007, construction will resume with work beginning at the on-shore section of the Herring Cove WWTF Outfall, the water pipe installation on the Herring Cove WWTF Access Road, and the Herring Cove Pumping Station. The work on Roaches Pond retention tank will continue.

Completion of the Herring Cove Wastewater Collection System and Wastewater Treatment Facility is expected in March and September 2008, respectively.

Biosolids Processing Facility

The Biosolids Processing Facility is substantially complete and will process biosolids from the existing HRM facilities and Aerotech lagoon during the 1st quarter of 2007.

Safety

There was one lost-time incident during the quarter. A pipe layer injured his thumb during diversion piping work performed at the Sackville Street CSO. A procedure is being established for clarity by Dexter Construction but no safety practices were in violation at the time of the incident.

There were no NSDEL inspections during the quarter.

Summary

The availability of short-notice labour to make up schedule delays continues to cause some challenges for the Design/Build contractors. The use of a task force to deal with field design changes to accommodate site conditions in the Halifax WWTF seemed to work well, and were able to stream-line the site changes in a timely manner.

The overall completion of the Project is expected to be September 2008.

BUDGET IMPLICATIONS

The Harbour Solutions Project spent $25.99 million in the 4th quarter of 2006/07, $83.97 million in fiscal year 06/07 and a total of $223.93 million to March 31, 2007. Projections to meet the capital budget of $332.7 million are still on target.

Inflation remains the most significant financial risk of the project. History of the Halifax Non-Residential Construction Index over the past twenty years shows average annual inflation of just over 2%. Staff conservatively estimated annual inflation at 2.8% for budget purposes, while fiscal years 2004/05 and 2005/06 brought inflation of 7.87% and 4.31% respectively. In fiscal year 2006/07, inflation was higher than the year before, namely 5.25%.

Staff have revised the inflation estimate to 6% per year over the life of the contract and has committed a substantial portion of the $18.2 million contingency to address this issue. There have been times when the inflation factor has reached almost 8%. The estimated inflation amount for the Harbour Solutions Project was budgeted based on an average inflation rate throughout the entire duration of the construction period. This assumes that there will be fluctuations in the inflation rates, but that they will average out to be 6% annually.

Since the actual yearly inflation from the beginning of the project to March 2007 is less than the 6% budgeted, the project can handle a higher average inflation rate between March 31, 2007 and the end of the project. This rate is 6.85% annually. This calculation has taken into account the projected delay for each plant, with no inflation being paid to the contractor after the original Date Certain for each plant respectively. This rate will decrease, should the contractor be able to make up time and complete the project either at the specified Date Certain, or at some date between the Date Certain and the newly established completion date.

If the annual inflation rate were to increase to anything higher than the 6.85%, more contingency funding would have to be set aside.

At the time of the last quarterly report (October - December, 2006), the uncommitted Contingency balance was $1.89 million. Since then, an expenditure of $1.66 million was authorized by Council to be spent on the Herring Cove Water and Sewer Project, effectively reducing the uncommitted contingency to approximately $230,000. This uncommitted contingency represents a 0.2% contingency against the remaining project work to be completed, which is extremely low.

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 - 4th Quarter Report 2006/07

Appendix B - Photo of the Halifax WWTF

Appendix C - Photo of the Dartmouth WWTF

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

Fourth Quarter Report - 2006/07

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 January 1 and March 31, 2007.

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

Work during the 4th quarter of 2006/07 continued with the remaining mechanical and electrical work, carpentry, and miscellaneous metals work at the various regulation structures, as well as continuing work on modifications to the Duffus St. Pumping Station. In addition, work started on the diversion piping installation near the Sackville St. diversion chamber and the Salter St. Outfall.

The remaining work will be focused on completion of the Salter St. Outfall in April and continuing diversion piping installations. Resumption of the diversion piping installation work at the Upper Water St. CSO, the installation of diversion piping at the Sackville St. CSO and the Maritime Museum Atlantic (MMA) CSO will be completed during the 1st quarter of 2007. The remaining Duffus St. Pumping Station modification work will also be completed. Completion of the Atlantic School of Theology (AST) diversion chamber and completion of the Balmoral diversion piping will occur after the Halifax Wastewater Treatment Facility (WWTF) has been commissioned.

Dartmouth Wastewater Collection System

Construction work continued with three crews performing interceptor and diversion pipe installation work in a number of areas. The piping installation work has been essentially completed with the exception of Ferguson St. and Maitland St. diversion piping. Remaining reinstatement activities will resume in the 1st quarter of 2007 as the weather improves. The construction of the Lyle St. Outfall was also completed during the 4th quarter of 2006/07 .

Work continued at a number of regulation structures, including the Jamieson and Melva St. Pumping Stations, Park Ave. Pumping Station, Wallace St, Ferguson St., Grove St., and Lyle St. diversion chambers. The civil work at these structures is complete with the exception of Jamieson St. and Old Ferry Rd. CSO's, and remaining reinstatement work. The mechanical and electrical work was essentially completed during the 4th quarter of 2006/07 with the exception of the Ferguson St. CSO, Old Ferry Road CSO, and Jamieson St CSO.

During the 1st quarter of 2007, remaining reinstatement work will be initiated and remaining mechanical and electrical work will be completed with the exception of Old Ferry Rd. CSO and selected elements of diversion piping (i.e., Maitland St. CSO) that are dependent on the timing of the ability of the Dartmouth WWTF to accept flows. Planning and coordination of this work continues. Deficiency lists will be prepared and remedial work initiated at most structures as well as other pre-commissioning activities.

At Jamieson St., pipe connections to the CSO and reinstatement were delayed to the fall of 2007 in order to coordinate with plans by Environmental Engineering Services to replace the existing trunk sewer and outfall.

Herring Cove Wastewater Collection System

During the 4th quarter of 2006/07, design engineering work continued with the design of the Herring Cove Wastewater Treatment Facility's (WWTF) Outfall. All other design packages were previously completed. Real estate acquisition activities were also completed during this quarter.

The N.S. Department of Environment and Labour permit approval for the on-shore portion of the Herring Cove WWTF Outfall was received. The Navigable Water Protection Act permit has yet to be received, however, receipt is anticipated shortly.

Water pipe installation on the Herring Cove WWTF Access Road was suspended previously pending HRM review and determination of water and sewer connection approach for the local residents. This review was completed by HRM during the quarter and HRM authorized the work to proceed. The work will commence during the 1st quarter of 2007 .

Construction during the 4th quarter of 2006/07 was limited to the starting of the Roaches' Pond retention tank work. The Halifax Harbour Solutions Project was informed of plans by Environmental Engineering Services to replace forcemains at Roach's Pond. This work will need to be coordinated with Harbour Solutions Project's work, however, no project delays are anticipated.

During the 1st quarter of 2007, construction will begin at the on-shore section of the Herring Cove WWTF Outfall, the water pipe installation on the Herring WWTF Access Road, and the Herring Cove Pumping Station. The work on Roach's Pond retention tank will continue. The design for the Herring Cove WWTF Outfall will reach the 65% level as well with the 100% design to follow. Work on the interceptor installation on Village Road will be coordinated with HRM's contractor, however, a time frame has not yet been set.

Section 2

Halifax Wastewater Treatment Facility

Civil, Architectural, and Structural Work

During the 4th quarter of 2006/07, coating of the Densadeg tanks was completed. Hydrotesting of the various tanks and channels was initiated with hydrotesting being completed at a number of locations (ex., Densadeg tanks, UV channels, and the outfall connection). The first phase of coating of the Grit Tank walls was completed and wet well injection is continuing. A number of pump foundation pads were also constructed.

Mechanical & Electrical Work

Mechanical and electrical work is progressing in several areas of the Halifax WWTF with piping and cabling activities well underway. Instrumentation arrived and the cabling and installation coordination work for instrumentation was started. Major equipment continues to arrive and be installed.

SCADA design continued with HRM providing input as the design progressed.

First Quarter of 2007

During the 1st quarter of 2007 most of the mechanical and electrical equipment installation work, as well as electrical cable installation, will be completed. Process ventilation installation work will be initiated and will be substantially completed. SCADA development will also be completed during this time. Remaining equipment arrivals will be completed during the quarter. Elements of the 'dry commissioning'will be initiated late in the quarter (mid-June) followed by wet commissioning and substantial completion in September 2007.

Remaining miscellaneous metals, interior masonry, and finish work will be completed pending completion of cabling and piping in administrative and laboratory areas.

Dartmouth Wastewater Treatment Facility

Civil, Architectural, and Structural Work

Concrete formwork was completed in the 4th quarter of 2006/07. Interior masonry work was initiated and substantially completed with the remaining interior walls to be completed after the equipment is installed.

Mechanical & Electrical Work

Work continued with piping and conduit installation as well as penetration installations following along with the progress of the structural work. More equipment arrived on site including a number of motor control panels.

First Quarter of 2007

In the 1st quarter of 2007 work will include the completion of the exterior masonry as well as completion of the roofing system. Tank and channel coating and hydrotesting will also be initiated. A substantial portion of the remaining site work (i.e., infilling, shaping site pipe connections, access road completion) will also occur.

Equipment installation, as well as electrical and mechanical cabling and piping will continue and accelerate as the roof slabs and interior masonry are completed.

Herring Cove Wastewater Treatment Facility

Design

Civil Guide drawings were issued at the 100% level. Detailed civil, architectural, structural, process mechanical and electrical design is underway.

Civil Work

Construction work in the 4th quarter of 2006/07 was limited to underground piping trenches being excavated.

First Quarter of 2007

Construction will begin with permanent power being installed, foundation work, and underground piping work being initiated.

Safety

There was one lost time incident during the quarter. A pipe-layer injured his thumb during diversion piping work at the Sackville CSO. A procedure is being established for clarity by Dexter Construction but no safety practices were in violation at the time of the incident.

There were no N.S. Department of Environment & Labour inspections during the 4th quarter of 2006/07.

Section 3

Biosolids Processing Facility

The dry commissioning of the Biosolids Processing Facility (BPF) is completed and will start the wet commissioning and operation of the BPF in 1st quarter of 2007.

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.

At the Regional Council meeting of July 17, 2001 (Item No. 9.1), Council approved the adoption of By-Law W-101 respecting the "Discharge of Wastewater into Public Sewers". This by-law regulates the discharge of specified substances that may comprise paints, inks, solvents and other hazardous, metal-rich and toxic products and wastes to the municipal sewer systems. The P2 program requires compliance with the Wastewater Discharge By-Law 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 have previously provided updates to Council on the status of this program. Since the last update provided to Regional Council at it's meeting of February 27, 2007, activities that P2 staff have undertaken or completed include the following:

- Staff continued with inspections of businesses within the Dartmouth WWTF sewershed for compliance with HRM's By-Law W-101. It is the intent of staff to have this phase of activities completed prior to the completion and commissioning of the Dartmouth WWTF. To date, 71% of businesses have been inspected in this sewershed.

- P2 staff responded to 19 environmental incidents or related investigations since the previous report. This includes the detection of 5 locations in which wastewater was entering into storm sewer systems. These locations have been corrected.

- Staff activities in the food preparation sector have been increased and will be a continuous area of increased attention. Reduction of the amount of fat, oil and grease (FOG) that is discharged to municipal sewer systems will correspond to a reduction in Soluble and Total BOD influent loadings to the Harbour Solution Project's WWTFs and may result in a reduction of system operation and maintenance costs.

- Staff developed and distributed over 1500 brochures entitled "Preventing Fat, Oil and Grease Discharges into Sewers: A Guide for Food Establishments in Halifax Regional Municipality".

- P2 staff have commenced a pilot study with a national fast food company that generates a significant amount of FOG which is discharged to the municipal sewer system at each location. This company has purchased and installed a unique grease trap to control the discharge of FOG. Recent data from this study indicates that 6 litres of grease from one location is being captured and removed on an average daily basis. Previously, this volume would have been discharged to the municipal sewer system. Staff have been advised that this company intends to purchase and install similar devices in 22 locations throughout HRM.

- P2 staff have produced and delivered pollution prevention television and radio advertisements to promote environmental responsibility and awareness for the general public. The Television Bureau of Canada awarded HRM's Pollution Prevention "Goldfish" television ad second place in the category of Public Service Announcements from over 300 submissions from across Canada. HRM's Pollution Prevention radio ads also received national recognition and was awarded a Canadian Crystal Award by the Radio Marketing Bureau. Additionally, HRM's radio ads received the NewCap Radio Creative Excellence Award (Runner up).

- P2 staff have completed and are now distributing the product of an intergovernmental pollution prevention project entitled "HRM Best Management Practices (BMP's) for Industry" for several industrial sectors located in HRM which has involved HRM's P2 staff, Environment Canada, Department of Environment and Labour and the Canadian Centre for Pollution Prevention. The development of these BMPs will provide businesses with the identification of wastewater characteristics and methodologies to undertake to assist them with by-law compliance. These BMPs have been completed and are currently being printed by Environment Canada. Distribution to respective business will then be undertaken.

Educational information will be continued to be provided through related media and presentation opportunities to provide for public education and enhanced stewardship of our surface water resources. P2 staff provided 6 presentations to schools and two business associations since the last report.

P2 staff have been monitoring wastewater generation throughout HRM and specific discharges from ICI sources which typically represents the most problematic and highest continuous sources of BOD in municipal wastewater sewer systems. Within HRM, businesses such as breweries, food processors, restaurants, industrial waste processors, automobile fluid servicing, chemical manufacturers, hospitals, morgues and other institutional locations discharge significant BOD concentrations. BOD is a measurement of the amount of oxygen required by aerobic (air breathing) microorganisms such as bacteria, to decompose or digest organic matter within a fixed sample volume. It is used to estimate the amount of biodegradable organic matter within water bodies or waste streams.

BOD from these types of business locations is summarized in the following table. Ranges have been obtained from direct measurements or literature. Note that HRM's Wastewater Discharge Bylaw (W-101) only allows for effluent discharges of up to 300 mg/l BOD to enter the sewer system.

Industrial Group	BOD (mg/l)
Breweries	400 - 40,000
Milk Plant	400 - 10,000
Distillery	15,000 - 20,000
Paper products	250 - 2,000
Synthetic chemical manufacturing	250 - 10,000
Textile dyes	1,000 - 2,000
Candy manufacturing	250 - 5,000
Restaurants	250 - 5,000
Food Processing (wholesale producers)	500 - 10,000
Morgues	1,000 - 30,000
Septage discharges	2,000 - 50,000

In addition to BOD, wastes from businesses or industries such as those provided above may, in addition contain metals, acids, caustics, organic chemicals, solids, grease, dyes, radio isotopes, hydrocarbons, and brines, resulting from the many procedures used in manufacture, extraction, and processing. These may be toxic or otherwise objectionable by themselves or when combined in wastewater streams from other businesses through synergistic action after point source discharge into the municipal sewer system has occurred.

Wastewater characterisation sampling indicates that the average wastewater strength of both the Halifax and Dartmouth sewersheds that will be serviced by the Harbour Solution Project's WWTFs may exceed the anticipated treatment domain of Advanced Primary Treatment facility design capabilities for resident BOD concentrations. It is currently anticipated that our aggressive source control activities will be successful in reducing influent BOD and in particular soluble organic matter to a range that is treatable to produce an effluent that meets proposed discharge regulations of 40 mg/l BOD.

Reduction of BOD and soluble BOD can only be achieved by wastewater treatment processes which involve oxidization of organic molecules. Reduction of filterable BOD may be achieved by at source improvements to solid organic matter disposal practises. Reduction of soluble BOD will not be achieved unless on site wastewater treatment facilities involving oxidization of organic molecules are designed and constructed for insitu ICI applications. No viable expectations should be expected for residential contributions.

The historical development of HRM has sited many significant businesses in locations which will not permit or does impose significant engineering challenges to the locating of on site private wastewater treatment facilities to meet wastewater discharge criteria for BOD discharge to sanitary sewers as provided by HRM BY-Law W-101.

Currently, the greatest opportunity for staff to reduce wastewater BOD concentrations will be the aggressive approach currently being undertaken with food processing and food production locations such as restaurants. The effective management of fat, oils and grease as well as other course organic matter will assist in reducing resident BOD concentrations that may be problematic to wastewater treatment efficiencies.

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.

During 2006, additional samples have been taken in Dartmouth Cove, Fairview Cove, and new sampling sites were established at Herring Cove. Additional sampling has been performed at Fairview Cove to monitor for effects of sewage diversion due to construction at the Duffus St. Pumping Station.

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 facilities is commissioned in 2007 (Halifax and Dartmouth) and 2008 (Herring Cove). The program is scheduled to continue through 2009. Water quality objectives have been established for various portions of the harbour, and the sampling program will allow assessment of progress toward those objectives as sewage discharge to the harbour becomes treated.

Fecal coliform bacteria levels are high throughout the middle and inner harbour, exceeding the swimming guidelines, particularly in winter months. Levels in the Northwest Arm and the Basin are periodically elevated. 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 not currently met except in the outer harbour, based on the various measured parameters.

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 March 2007, the Harbour Solutions Project has spent $223.93 million of its $332.7 million capital budget. Spending for the quarter just completed was $25.99 million which is largely comprised of $8.31 million for the Wastewater Collection System, $14.72 million for the Wastewater Treatment Plants, and $2.58 million for the new Biosolids Processing Facility. Contract management, the Public Involvement & Information Program, aggressive Pollution Prevention, Water Quality Monitoring, Inflation, and administration totalled $2.72 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 first $0.05 increase was implemented in October 2003. In January 2005, Council approved the schedule of remaining increases necessary to fund the Project. The second, third and fourth $0.05 increases became effective in March 2005, October 2005 and October 2006 respectively. The next and final increase of $0.09 will become effective in October 2007. The table below shows the implementation dates for the increases totalling $0.29 for the Harbour Solutions Project:

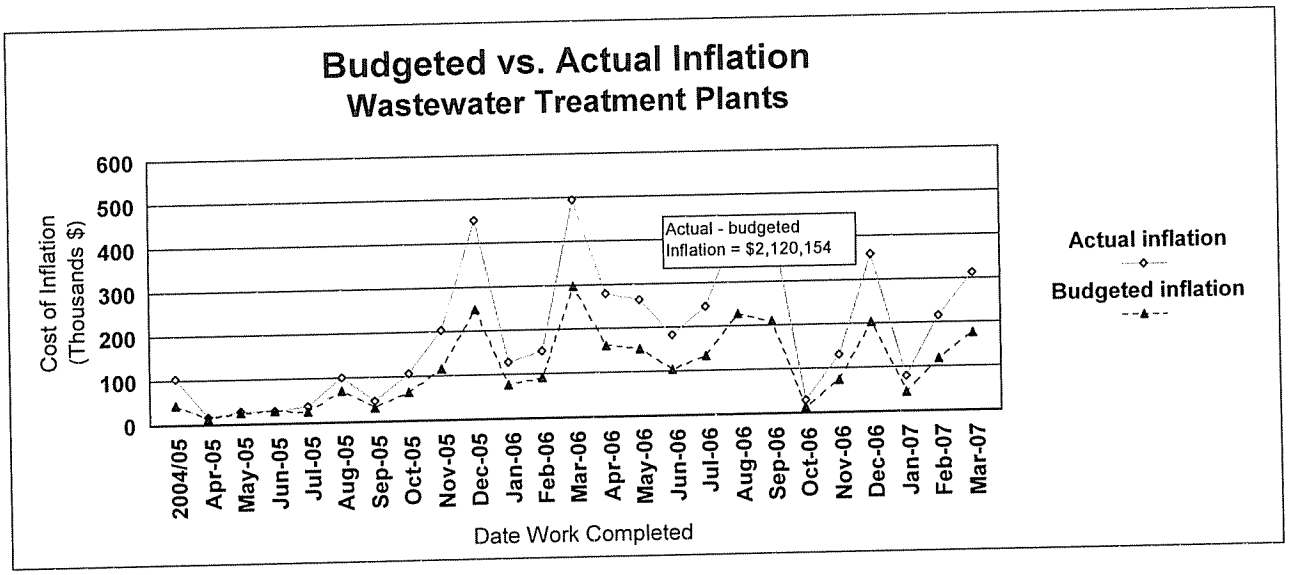
Date	Environmental Protection Charge-HSP portion	Increase
October 2003	$0.42	$0.05
March 2005	$0.47	$0.05
October 2005	$0.52	$0.05
October 2006	$0.57	$0.05
October 2007	$0.66	$0.09

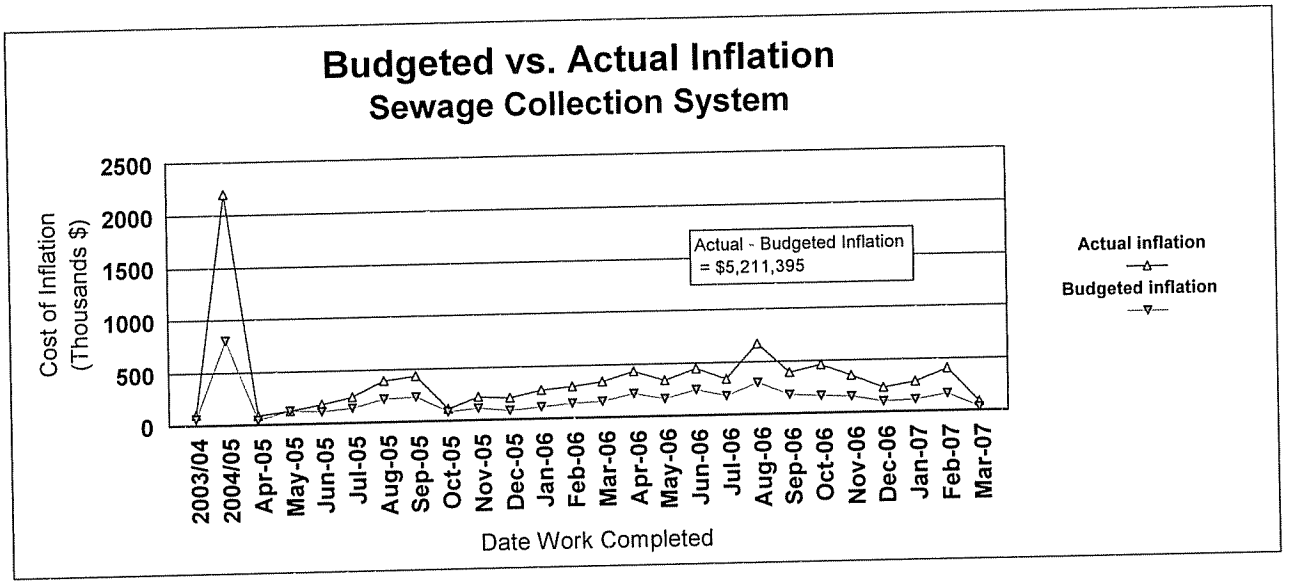
The above rates attributable to Harbour Solutions are just one portion of the Environmental Protection Charge. The charge also funds expenses associated with already existing infrastructure. All revenues collected are recorded in the Environmental Protection Reserve. Staff maintains an administrative split of reserve balances.

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). In fiscal year 2006/07, inflation rose again, to 5.25%. At this point, it would still not be prudent to revise estimates over the Project's life down from the projected 6% annual inflation.

The impact of inflation in terms of dollars is demonstrated in the two charts below for the Wastewater Collection System and the Wastewater Treatment Facilities. The difference between the actual and budgeted inflation represents the amount which must be taken from the contingency funds. As of March 2007, $7.33 million over and above budgeted inflation has been spent on these two contracts.





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 the time of the Harbour Solutions quarterly report for the period ending December 2006, the uncommitted contingency balance was $1.89 million. Since then, $1.66 million was approved by Council to be spent on Herring Cove Water & Sewer, reducing the available balance to $230,000.

Since then a potential additional $2.5 - $3 million has been identified, as a result of the delay in completion of the Wastewater Treatment Facilities in Halifax, Dartmouth and Herring Cove. This is due to the inflation adjustment not being paid to the contractor, once the completion date extends beyond the original Date Certain.

It is likely that some inflation savings will be realized as a result of the delay in the Halifax Facility. The original Date Certain was April, 2007 and, at the time of writing this report, the construction of the WWTF has not yet been completed.

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

Realized inflation in excess of budget		$7.33
Projected inflation in excess of budget		7.34
Amount Committed for amendments		1.64
Herring Cove Water & Sewer		1.66
Uncommitted		0.23
	Total	$18.2

Harbour Solutions Project **4th Quarter 2006/07** **(in millions of dollars)**

	4th Quarter	Year to Date	Project Total	Budget
Firm Price Contracts				
Sewage Collection System	8.31	30.97	105.37	112.3
Sewage Treatment Facilities	14.72	36.31	72.32	136.9
Biosolids Processing Facility	2.58	8.19	12.14	12.5
Net HST	-	-	-	9.6
Community Liaison*	-2.34	-0.31	2.36	7
Committees				
Land	-	-	4.92	4.8
Pre-Construction Contract	-	-	7.11	7.1
Total Firm Price Costs	23.27	75.15	204.21	290.2
Variable Costs				
Admin., Contract Mgmnt., Communication	0.71	1.95	6.7	12
Contingency	-	-	-	18.2
Inflation	2.01	6.87	13.02	12.3
Total Variable Costs	2.72	8.82	19.72	42.5
Harbour Solutions Project Total Cost	**25.99**	**83.97**	**223.93**	**332.7**
Funding				
EP Reserve Levies	16.12	75.32	160.2	160.2
Long-term debt:				
N.S. Municipal Finance Corporation	-	-	110	110
Federation of Canadian Municipalities	-	-	20	20
Cost Sharing:				
Province* *	2	2	8.01	10
Canada Strategic Infrastructure Fund	-	0.7	20.85	30
Potential short-term debt	-	-	-	2.5
Total Funding	**18.12**	**78.02**	**319.06**	**332.7**

* Part of the expenditures incurred for Herring Cove Water and Sewer were moved to CGU00645 - Herring Cove Water and Sewer, as they were recoverable from the Canada - Nova Scotia Infrastructure Program.

* * 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

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

Public Messaging

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 in March 2007. The next edition is scheduled for May 2007.

Corporate Communications recently completed another airtime run of the 30 second Harbour Solutions - Talking Harbour TV advertisement on ATV. The ad has been very well received and continues to make the link between HSP and P2 (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 was published in the recent "Special Harbour Edition of Naturally Green". Corporate Communications ran the water quality map recently and interior/exterior signs on Metro Transit buses. The map has also appeared in numerous local publications over the past few months.

Community Liaison Committees (CLC)

The Halifax CLC and the Herring Cove CLCs continue to meet regularly to deal with the integration of the WWTFs into their communities.

The Herring Cove CLC, working with Councillor Adams, Corporate Communications, Environmental Management Services and Halifax Regional Water Commission staff, brought the long awaited first phase of municipal services to parts of Herring Cove. The next phase is underway.

The Herring Cove CLC now has a final design concept for the WWTF exterior and is focussing on the pumping station exterior facade design. Landscaping around the Herrring Cove WWTF is also a priority for the CLC. Corporate Communications along with HRM Regional Trails staff will continue to regularly attend meetings to help this process move along.

HRM staff continue to liaise with and attend Halifax meetings when requested by the CLC's. The Halifax CLC, in association with the Greater Halifax Partnership, is in the final stages of developing their proposal for the CIF.

In Dartmouth, construction continues on the wastewater collection system(WWCS) and WWTF. The new trail system is essentially complete.

Residents continue to be kept informed of work in their specific area through notices, delivered door-to- door. Residents are also kept up to date on the overall project through publications such as Naturally Green, HSP website, radio and newspaper ads.

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 have all been made available on compact discs.

Three new Harbour Solutions display units continue to be used at public meetings, trade/home shows and other events. The new 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 three scale models of the new wastewater treatment facilities. These will prove a valuable tool in explaining the advanced primary treatment process. The Halifax WWTF model is complete.

Harbour Solutions Website

The Harbour Solutions website has been redesigned to provide a "user friendly" up to date 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, construction notices informing residents of any possible traffic impacts and a large collection of information related to the WWCS, WWTF and Biosolids processes.

Construction Communications

A PIIP staff member attends the Harbour Solutions construction meetings weekly to liaise with contractors Dexter and D&D Water Solutions, 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.

Weekly construction updates continue to be emailed 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 on 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 (3) WWTF sites.

Correspondence

As requested/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, HRM Councillors, staff and others. Letters are also drafted for the CLC's and other levels of government.

Two meetings have been held between Corporate Communications and Federal/Provincial communications officials to begin early planning for the Halifax WWTF opening. Monthly meetings are planned to continue to work on logistics.

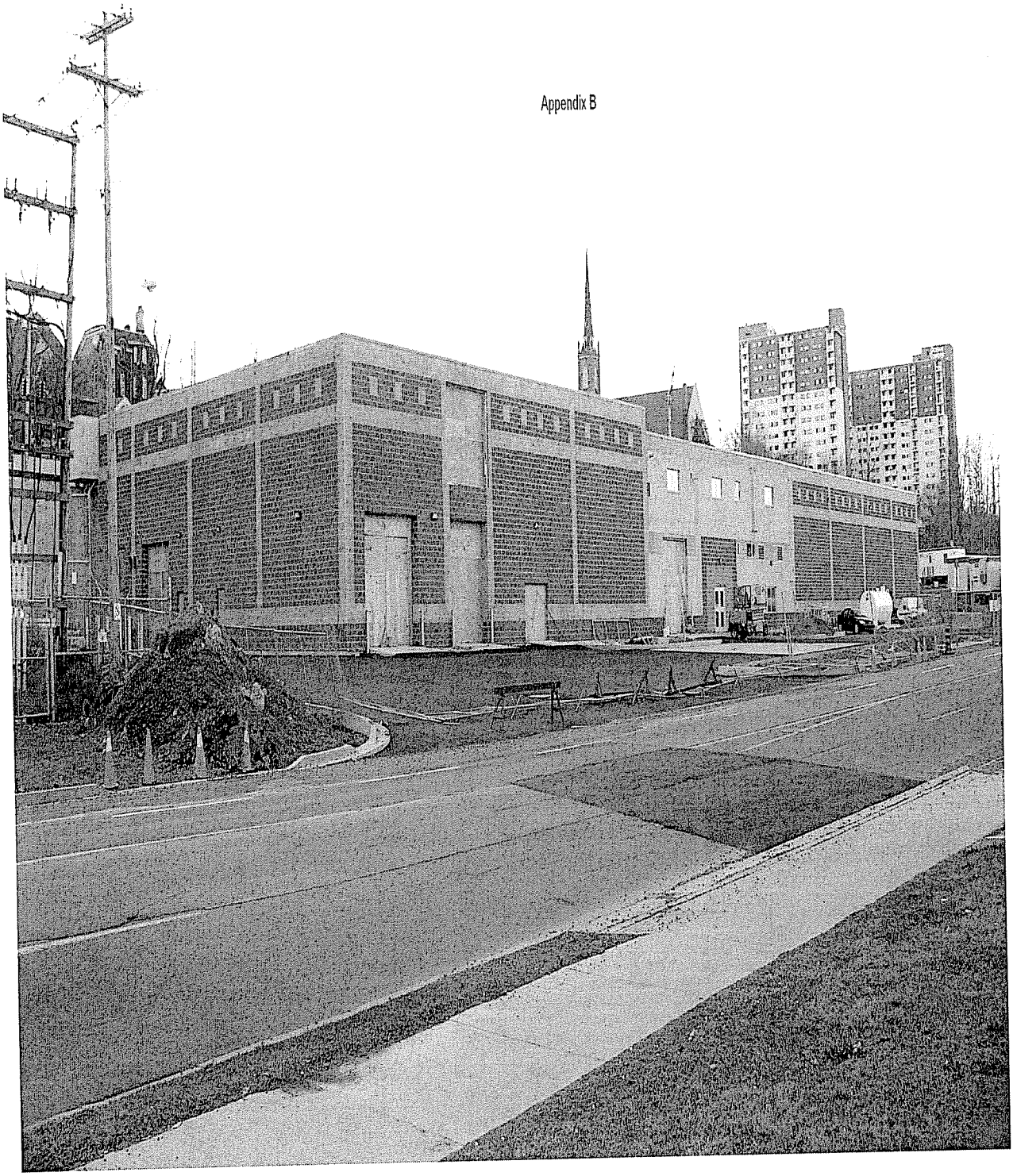
Section 8

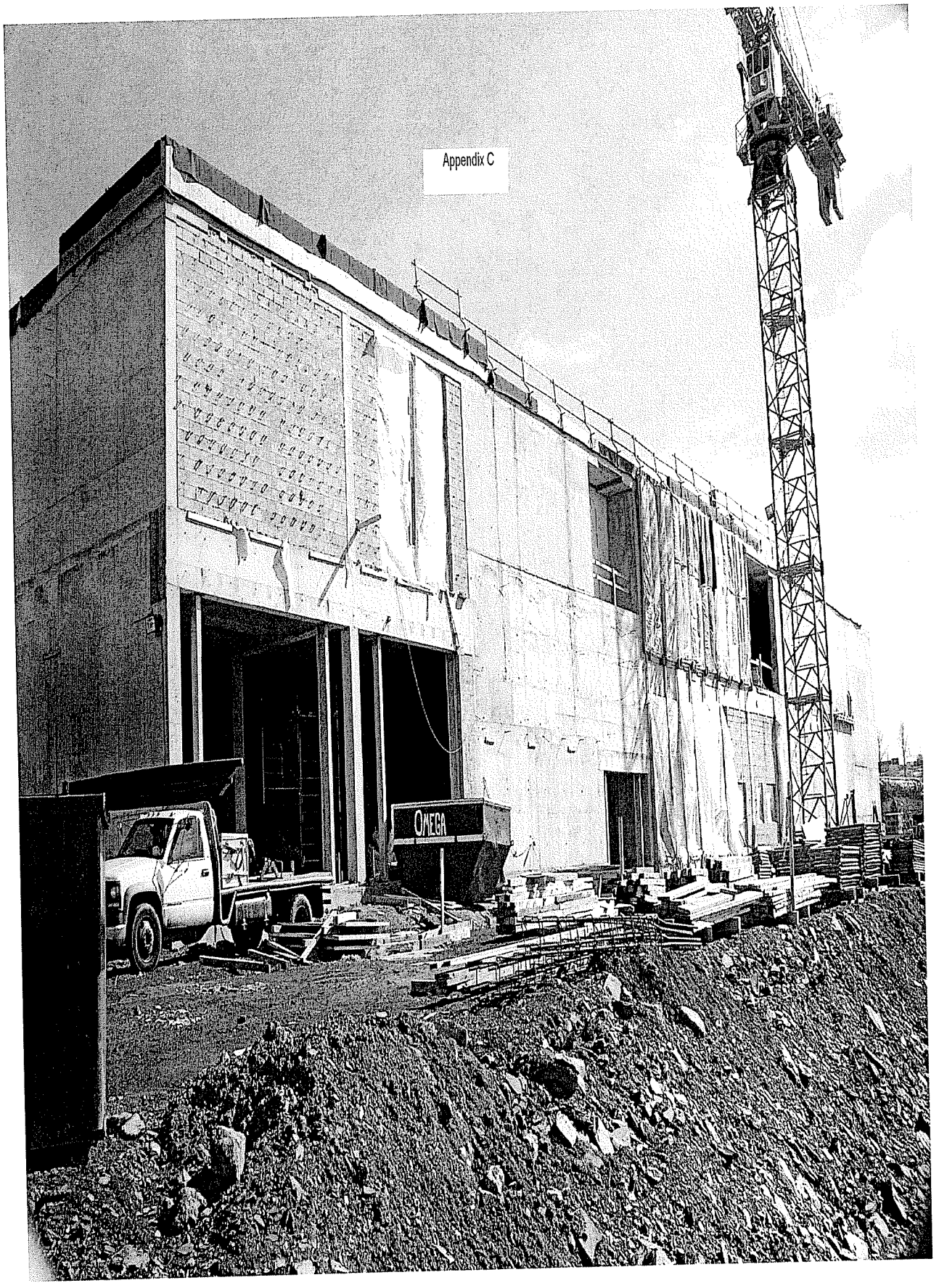
Construction Safety

There was one lost-time incident during the quarter. A pipe layer injured his thumb during diversion piping work performed at the Sackville St. CSO. A procedure is being established for clarity by Dexter Construction but no safety practices were in violation at the time of the incident.

There were no NSDEL inspections during the quarter.

Appendix B




Appendix C
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