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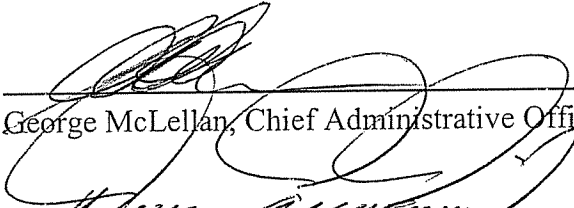


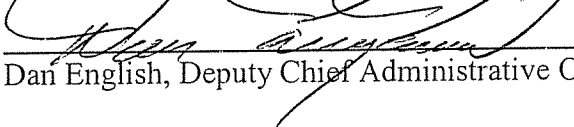
PO Box 1749
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Halifax Regional Council
December 7, 2004

TO: Mayor Kelly and Members of Halifax Regional Council

SUBMITTED BY:


George McLellan, Chief Administrative Officer


Dan English, Deputy Chief Administrative Officer

DATE: December 1, 2004

SUBJECT: Duke Street and Salter Street Drainage Area Sewer Separation

ORIGIN

Confirmation from Infrastructure Canada that the Halifax Harbour Solutions Project contribution agreement is being amended to reflect an additional \$30M contribution toward an enhanced watershed protection program.

RECOMMENDATION

It is recommended that Halifax Regional Council:

1. Approve an increase of \$4,147,500 to the 2004/05 Capital Budget, with no change to the net budget, to reflect the incremental funding from Canada Strategic Infrastructure Fund as per the Budget Implications section of this report.
2. Authorize staff to amend the Harbour Solutions Infrastructure Development Agreement with Dexter Construction Company Limited to include the addition of the Salter Street and Duke Street Drainage Area Sewer Separation Project, capital project CSE00500 to be carried out under the "Combined Sewer Overflow Prevention" allocation with funding as shown in the Budget Implications section of the report.
3. Request staff to provide full estimates of other co-located infrastructure projects in the Duke and Salter Streets drainage area and return to Council for consideration in the 2005/06 capital budget.

BACKGROUND

On March 10, 2004, Halifax Regional Council approved entering into an agreement for Phase 2 of the Harbour Solutions Project, with D&D Water Solutions Inc. to design, construct, and commission the three sewage treatment plants. One of the conditions for the approval is that HRM would receive substantial incremental funding from the Federal government.

On March 15, 2004, in a letter to the Honourable Andy Scott, Minister of State responsible for Infrastructure Canada, from Mayor Peter Kelly, it was anticipated that the substantial incremental funding would be an additional \$30 million contribution to the Halifax Harbour Solutions Project. This additional contribution would enable HRM to advance incremental and much needed wastewater projects to further protect our watersheds and ultimately achieve the water quality objectives for Halifax Harbour.

On October 19, 2004, staff received confirmation from Infrastructure Canada that the HHSP contribution agreement was being amended to reflect the additional support being provided to this project (\$30 million) and that HRM is committing \$30 million of its funds to a watershed protection program.

Appendix B attached to the March 15, 2004 letter to the Honourable Andy Scott, Infrastructure Canada ("Schedule A" attached) shows the various categories of projects to be carried out under the watershed protection program. While the Diffuser Ratio Upgrade (\$2.5 million) and Central Biosolids De-watering Facility (\$3.5 million Lagoon Phase-out) are quite specific, the other two categories of Combined Sewer Overflow (CSO) Prevention (\$15 million) and Pumping Station Upgrades/Wet Weather Flow Solutions (\$9 million) did not list the specific projects; however, staff did commit to conducting a Northwest Arm CSO Prevention project to both the Province and Infrastructure Canada. This Northwest Arm project (estimated at approximately \$10M) was already contemplated under a potentially "enhanced" scope of the Harbour Solutions Project. Staff will be issuing a Request for Proposals for a Halifax Sewershed study in January, 2005 as Phase I to completing the Norwest Arm Project.

Staff are proposing that the balance of the Infrastructure funds in the CSO Prevention category be dedicated toward separating the sewers in the Duke and Salter Street drainage areas to prevent combined sewer overflows.

DISCUSSION

Existing Condition in Salter and Duke Street Drainage Area

Currently, most of the flow from Salter Street drainage area during dry weather is being conveyed to Maritime Museum of the Atlantic CSO, however, some sanitary sewage does go into the Salter Street overflow pipe on a regular basis. Although this small amount will not prevent achieving the overall water quality objectives for Halifax Harbour, it certainly will not help the process and will continue to allow small amounts of floatables to enter the harbour and may cause odour problems near the shore.

The matter of intercepting sanitary flows from the Salter Street sewer shed area (at the intersection of Lower Water and Salter Streets) was first considered during negotiations with Halifax Regional Environmental Partnership (HREP); however, no firm deal was ever reached. After HRM terminated the agreement with HREP, HRM then negotiated with Dexter for the Design/Build contract for the Sewage Collection System. Due to time constraints, a suitable arrangement could not be negotiated with Dexter for the interception of the sewer. It was decided that this would be handled after the contract was awarded with Dexter.

Dexter subsequently undertook a detailed engineering investigation for the collection of the sanitary flows in Lower Water Street. After looking at numerous options, due to congestion of existing infrastructure within the street rights of way, it was determined that the most viable option was to move forward with sewer separation in the Salter Street sewer shed.

Salter Street and Duke Street Sewer Separation

The Salter Street catchment area is bounded generally by Barrington and Hollis Streets, Terminal Road, Lower Water and Salter Streets. New sanitary sewers would be constructed on sections of Hollis, Terminal, Morris, Bishop, Salter and Granville. These would deliver sanitary flows to the new sewer tunnel starting at the foot of Sackville Street. The storm flows would flow to the Harbour via an existing outfall at the foot of Salter Street. This outfall currently handles combined flows and is in need of replacement at an estimated cost of \$750,000. There would be no sanitary flow in this outfall in the future. Therefore, the existing outfall pipe could be eliminated and replaced with a short storm pipe with Rip Rap or a wing wall structure.

Analysis of the existing sewer system in the Duke Street area has shown that total sewer separation can be achieved by constructing short lengths of new storm sewer on Market and Grafton Streets; small sections of sanitary sewer at the corner of Brunswick and Prince Streets, at Argyle, and at Lower Water Street, plus modified storm laterals in several locations. This would permit the sewer flows in this catchment area to be separated, so that sanitary flows only would be routed to the tunnel drop-shaft at the foot of Duke Street. The storm flows would be routed to the existing Duke Street outfall.

As part of the sewer separation, it is necessary to reconnect existing laterals from buildings to the sanitary sewer. The sewer laterals will be maintained and will not be shut down for any extended period of time.

Fortunately, the combined sewer overflow screening chamber at Duke Street is presently at the design stage so there is still an opportunity to change the design and carry out a sewer separation in the area of Duke and Prince Streets. As a result of the proposed sewer separation, the proposed CSO screening chamber can be eliminated with a credit of approximately \$1.18 million from the Harbour Solutions Project.

The majority of the existing combined sewers in the Duke Street sewer shed are approximately 80 years old. Some of the existing pipes are worn down to the aggregate and have a fairly high risk of failure. The risk of failure increases when construction activities are undertaken near older pipes.

Therefore, the sewer is in need of replacement to avoid a likely failure in the future. The Duke and Salter Street sewer separation project will include these sewer replacements.

The following is a list of the streets where sewer replacement is being proposed:

- Market Street
- Grafton Street
- Argyle Street
- Granville Street
- Lower Water Street
- Barrington
- Salter Street
- Terminal Road

The net cost of the proposed sewer separation project in Salter and Duke Streets area is approximately \$4.1 million including HST and includes a credit for the elimination of the Duke Street CSO chamber of approximately \$1.18 million.

The work schedule of this proposed project will not have any negative impact on the implementation of the sewage collection system Infrastructure Development Agreement for HHSP. The work will be conducted mostly in 2005 and the work schedule will minimize interference with major events in the downtown area.

This significant construction project presents excellent co-location opportunities. The Halifax Harbour Solutions office has requested various HRM business units and outside utilities to review their capital programs and identify the upcoming projects in the area so that the work can be carried out at the same time. This review resulted in a number of projects and opportunities, which will be formally investigated and reported to Council for consideration. These opportunities and other projects are as follows:

Road and Streets

Design & Construction have reviewed the Surface Distress Index (SDI) of the streets that the sewer separation project will disrupt. The SDI is an evaluation system used by HRM to evaluate the condition of a street. There are a total of four (4) streets that would require full resurfacing at an estimated cost of \$221,000.

They are:

- Duke Street
- Bishop Street
- Granville Street, and
- Terminal Road

There are a total of eight (8) streets that would require surface sealing at an estimated cost of \$87,000.

They are:

- Barrington Street
- Bishop Street
- Carmichael Street
- Grafton Street
- Granville Street
- Market Street
- Morris Street, and
- Salter Street

Total full resurfacing and surface sealing project costs are \$308,000, and based on the SDI index, these resurfaces and surface seals have to be carried out in the near future regardless of the proposed sewer separation project. Under the current proposed sewer separation project, these streets will be reinstated from curb to curb and therefore would eliminate the need of additional expenditures of resurfacing in the near future.

Water Mains

The Halifax Regional Water Commission (HRWC) also reviewed the condition of the water mains in the area.

The HRWC Board has approved in principle the replacement of five (5) water mains within the Duke and Salter Streets sewer sheds for an estimated total project cost (including engineering, construction, and taxes) of \$590,000 from the HRWC 2005/06 Capital Budget. Pending UARB approval, water mains will be replaced at:

- Market Street (Prince Street to Carmichael Street)
- Grafton Street (Prince Street to Carmichael Street)
- Argyle Street (Prince Street to Carmichael Street)
- Granville Street (George Street to Duke Street)
- Granville Street (Salter Street to Blowers Street)

Other key opportunities identified are as follows:

<p>HRM Pole-Free Zone</p>	<ul style="list-style-type: none"> • Need to complete Hollis Street (Terminal Road. - Morris Street) (Morris Street to Bishop Street). Estimated cost \$800k. We will request funding for this project, through the 2005/06 budget.
<p>HRM Capital District Urban Design - Streetscape Improvements</p> <p>(Sidewalk replacements & access ramps)</p> <p>*Projects proposed by Capital District in 05/06 that will either abut or be undertaken in conjunction with HSP work.</p>	<ul style="list-style-type: none"> • Sidewalk and universal access improvements, Sackville Street (Hollis & Lower Water Streets) south side sidewalk with access improvements on all four corners. • Barrington Street (Prince to Sackville Streets) mid-block pedestrian amenity on west side, between Prince and Sackville Streets. • Barrington Street (Duke to Cogswell Streets) reconstruction of the Scotia Square BRT Transit Terminal, the northbound stop opposite Scotia Square, upgraded light standards, and sidewalk improvements on the west side to Duke Street. • Sidewalk and universal access improvements Duke Street (Hollis & Lower Water Streets) north & south sides.
<p>Natural Gas</p>	<ul style="list-style-type: none"> • Could lay gas carrier pipe or conduit in the affected streets, or install a larger capacity line that could eventually feed a Community Energy system. The estimated cost to lay conduit is \$175 - \$200 K. • Heritage shareholders may not want to make this investment as this is not in the next two-year development plan, unless a major anchor load is found on the peninsula.
<p>Nova Scotia Power & Telecom Service Utilities</p>	<ul style="list-style-type: none"> • We will formally advise Nova Scotia Power, and all telecom service providers, of the opportunity this project presents. We will request that work regarding an underground infrastructure in the next five years be incorporated with this larger initiative.
<p>Verification of Under Ground Civil Infrastructure</p>	<ul style="list-style-type: none"> • Currently we do not have accurate or complete records. This project will provide an opportunity to compile accurate data.

This proposed project, led by Halifax Harbour Solutions Project staff, will provide an unprecedented opportunity for large scale construction synergies that in the long run will provide the following benefits:

- Overall financial savings to HRM through sharing of common areas costs;
- Minimization of future disruption to business and residents by coordinating as much work in this affected area as possible;
- Replacing aging and risky sewers;
- Replacing aging water mains;
- Creating additional capacity in HRM capital paving budget;
- Aesthetic, environmental and operational benefits;
- Diverting storm flows away from the Halifax Sewage Treatment Plant (STP), creating some capacity;
- Concentrating sewage flow thereby improving STP performance;
- Further completion of the pole-free zone (with some HRM investment), and
- Potential utility and Capital District improvement opportunities.

BUDGET IMPLICATIONS

Combined Sewer Overflow Prevention

Gross estimated project costs for Salter Street and Duke Street Drainage Area Combined Sewer Overflow Prevention are \$6.11 million, including net HST. Funding is currently in place to address the Salter Street work from capital project CSE00399, formerly CGU00574. Funding is also available through savings afforded by the elimination of the requirement for an outfall screening chamber in capital project CSE00399, HSP-Halifax Sewage collection System. The incremental cost of this proposed separation work is anticipated to be \$4.15 million, including net HST, and the budget breaks down as follows:

Budget Summary: Salter Street & Duke Street Drainage Area Combined Sewer Overflow Prevention, capital project CSE00500

Gross project cost	\$ 5,903,600
Net HST	<u>202,400</u>
Project budget required	\$ 6,106,000

Less:

Previously approved budget-Salter Street	(\$776,000)
Estimated credit-screening chamber	<u>(\$1,182,500)</u>
Incremental project cost	<u>\$ 4,147,500</u>

Funding is available in the amount of \$15 million from the Canada Strategic Infrastructure Fund, per Attachment #1 for Combined Sewer Overflow Prevention. As these projects primarily involve replacement of existing infrastructure there will be no increase in current operating costs. HRM may realize minor operating efficiencies with the elimination of the outfall screening chamber on Duke and Lower Water Streets.

FINANCIAL MANAGEMENT POLICIES/BUSINESS PLAN

This report complies with the Municipality's Multi-Year Financial Strategy, policies and procedures regarding withdrawals from the utilization of Capital and Operating reserve, as well as any relevant legislation. This report will increase the 2004/05 Capital budget and Reserve budget withdrawals.

ALTERNATIVES

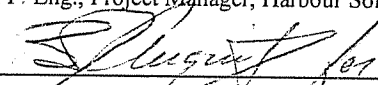
Council could direct staff to identify other Combined Sewer Overflow Prevention projects toward which the Canada Strategic Infrastructure Fund would be applied. This approach is not recommended. Staff has identified Salter and Duke Streets as sites that will provide significant environmental improvements in the most cost-effective manner. Salter Street and Duke Street Sewer Separation have been identified as priority replacement work due to the age and condition of the infrastructure. Staff has identified an immediate opportunity to avoid costs of \$1.18 million by undertaking sanitary and storm sewer separation now and removing the CSO outfall screening chamber from the Harbour Solutions Project design. To defer this project will require construction of the chamber in order to keep construction of the Halifax sewage collection system and sewage treatment plant on schedule. If future environmental regulations regarding discharge of sewage into the harbour become more stringent, sewer separation will be required, despite the construction of the chamber.

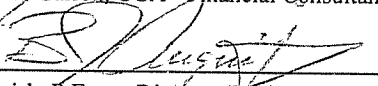
ATTACHMENTS

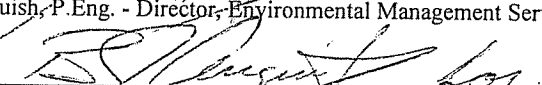
Attachment #1: Schedule A - Appendix B (attached to Mayor Peter Kelly's March 15, 2004 letter to the Honourable Andy Scott, Infrastructure Canada)

Additional copies of this report, and information on its status, can be obtained by contacting the Office of the Municipal Clerk at 490-4210, or Fax 490-4208.

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Schedule A

(Appendix B attached to Mayor Peter Kelly's March 15, 2004 letter
to the Honourable Andy Scott, Infrastructure Canada)

Projects that will be carried out with additional Federal Strategic Infrastructure Funding:

Brief Description of Additional Projects	2004-05	2005-06	2006-07	2007-08	Total
Diffusers Ratio Upgrade	\$1,400,000	\$1,100,000			\$2,500,00
Combined Sewer Overflow Prevention	\$500,000	\$4,500,000	\$5,000,000	\$5,000,000	\$15,000,000
Pumping Stations Upgrades/Wet Weather Flow Solutions	\$500,000	\$3,000,000	\$3,500,000	\$2,000,000	\$9,000,000
Central Biosolids Dewatering Facility (Lagoon Phase-out)	\$1,000,000	\$2,500,000			\$3,500,000
Total	\$3,400,000	\$11,100,000	\$8,500,000	\$7,000,000	\$30,000,000