

CITY OF HAMILTON

PUBLIC WORKS DEPARTMENT
Environment & Sustainable Infrastructure

TO: Chair and Members Public Works Committee	WARD(S) AFFECTED: WARDS 2, 3 & 4
COMMITTEE DATE: April 18, 2011	
SUBJECT/REPORT NO: Class Environmental Assessment for Site Selection of New and Upgraded Real Time Control Flow Control Structures - (PW11031) - (Wards 2, 3 & 4)	
SUBMITTED BY: Gerry Davis, CMA General Manager Public Works Department	PREPARED BY: Chris Gainham (905) 546-2424, Extension 3421 Udo Ehrenberg (905) 546-2424, Extension 2499
SIGNATURE:	

RECOMMENDATION

- (a) That the General Manager, Public Works be authorized and directed to file the Notice of Completion and issue the Project File Report for the Class Environmental Assessment for site selection of new and upgraded Real Time Control flow control structures for the mandatory 30-day public review period;
- (b) That upon completion of the 30-day public review period, the General Manager, Public Works be authorized and directed to proceed with land acquisition for the new and upgraded flow control structures, provided that no Part 2 Orders by the Minister of the Environment are received.

EXECUTIVE SUMMARY

The City of Hamilton has initiated this Class Environmental Assessment (EA) to identify alternative locations for constructing the specific components of Hamilton's Real Time Control (RTC) operating strategy for the wastewater collection system. The concept of implementing Real Time Control for the operation of the sewer system was previously identified as the preferred strategy for reducing combined sewer overflows (CSO) to Hamilton Harbour and its sensitive areas (i.e. Cootes Paradise) as part of the Schedule "C" Class EA for Wastewater Treatment and CSO Control in the Woodward Avenue Wastewater Treatment Plant (WWTP) Service Area (March, 2008). The current EA deals with the site selection of the specific components of the approved RTC concept.

SUBJECT: Class Environmental Assessment for Site Selection of New and Upgraded Real Time Control Flow Control Structures (PW11031) - (Wards 2, 3 & 4) - Page 2 of 9

This consists of using a “triple bottom line” approach to selecting the preferred alternative location in the vicinity of one of the four corners of the intersections listed in **Table 1** of the Analysis/Rationale Section.

During moderate to larger storm events, 21 combined sewer overflow outfalls are active across the City, discharging untreated combined sewage to receiving waters to avert sewer system surcharging, basement flooding, and to avoid over capacitating the Woodward Avenue Wastewater Treatment Plant. During a year with average rainfall (from the months of April to November) these overflow volumes exceed 1.5 million cubic metres with a spill frequency of up to 44 times per year. The current capture rate for wet weather flow is 79.5 %, falling short of the Ministry of the Environment procedure F-5-5 requirement of 90% control of wet weather flows.

Protecting the environment and supporting the recovery of Hamilton Harbour remains a key objective of this project. Real Time Control is a strategy that capitalizes on existing capacity and infrastructure within the collection and treatment system to reduce unnecessary overflow to the natural environment. The use of infrastructure such as flow control gates, chambers, pump stations, and sensors all provide improved monitoring and control at strategic locations throughout the vast wastewater collection system and will optimize retention and conveyance within the sewer system. By maximizing conveyance and treatment capacity this strategy minimizes untreated overflows to Hamilton Harbour.

New and automated flow control structures, operating in real-time, are required at multiple locations within the sewer system. The RTC system will maximize the use of existing sewer pipes and tanks as well as optimize flows reaching the WWTP and thereby reduce overflows during wet weather conditions. Land acquisition is required for many of the sites, and the majority of these sites are located along the Burlington St. corridor. Property talks are being led by the City’s Economic Development and Real Estate division (Real Estate Section) and the City is promoting acquisition on a “willing seller” basis with negotiations to date proceeding smoothly. Expropriation would result in delays that negatively impact a tight project schedule, increase cost and are therefore being avoided.

Implementation of RTC, in conjunction with the Woodward WWTP upgrades, including the current primary clarifier expansion, is part of the City’s ongoing commitment to delisting the Harbour as an International Joint Commission Area of Concern, and will help the City realize the broad social, economic and environmental benefits that a cleaner harbour brings. Ultimately, RTC will meet both volumetric and chemical loadings targets for the collection system as set out by the Ministry of the Environment procedure F-5-5 and the Hamilton Harbour Remedial Action Plan (RAP).

Upon completion of the mandatory 30-day review period of the Class EA, a detailed design of the preferred alternative will be initiated with construction commencing in summer 2011.

Alternatives for Consideration - See Page 7

FINANCIAL / STAFFING / LEGAL IMPLICATIONS

Financial: Funding for land acquisition in the amount of \$900,000 has been approved in the 2011 Capital Budget by Council on January 26, 2011; Wastewater System Project ID 5161150100 in the amount of \$450,000, and Stormwater Management Project ID 5181150100 in the amount of \$450,000.

Funding for the first phase of capital works is being reimbursed by a \$20M grant from the Canadian Strategic Infrastructure Fund that is currently allocated to constructing Real Time Control facilities and structures and contingent upon a September 2012 completion date.

Staffing: The implementation of the preferred alternative for RTC site acquisition considered in this report has no staffing implications.

Legal: N/A

HISTORICAL BACKGROUND

The recommendations contained within this Report have implications for Wards 2, 3 and 4.

The concept of implementing Real Time Control for the operation of the sewer system was previously identified as the preferred strategy for reducing combined sewer overflows (CSO) to Hamilton Harbour and its sensitive areas as part of the Schedule "C" Class EA for Wastewater Treatment and CSO Control in the Woodward Avenue Wastewater Treatment Plant (WWTP) Service Area (March, 2008). The Class EA study that is the focus of this report was planned as a Schedule "B" project under the Municipal Class EA process. Upgrades at existing sites that do not require land acquisition are being planned as a Schedule "A+" project under the Municipal Class Environmental Assessment process and as such, the project is pre-approved.

The Class EA for this project included public and Review Agency consultation, evaluation of alternatives, assessment of the impacts of the proposed works, and identification of measures to mitigate any adverse impacts. Upon completion of the study, a Project File Report documenting the planning and decision-making process and preferred alternative will be completed for Public Review. Pending approval of this recommendation, a separate advertisement will be issued to advise the public and stakeholders of the Notice of Completion of the Class EA. Upon completion of the 30-day public review period we will proceed with detailed design and implementation of the preferred solution of the Class Environmental Assessment for Implementation of Hamilton's Real Time Control Preferred Strategy, provided that no Part 2 Order by the Minister of the Environment is received.

POLICY IMPLICATIONS

Public Works Business Plan - Innovate Now

The recommendations from this Report will assist in meeting Public Works' key goal, *to be recognized as the centre of environmental and innovative excellence in Canada*. The recommendations are integral for the Real Time Control program which is a highly innovative strategy that makes best use of available capacity of our existing infrastructure and computerized process control systems. In addition, implementing the recommendations will also assist Public Works in building on our Strategic Vision Drivers as follows:

- **Communities (Services our communities connect with and trust)**

Implementing RTC will improve our local environment by reducing the volume and frequency of combined sewer overflows and chemical loadings to our receiving waters and sensitive areas. This is a major step forward in delisting the Harbour as an Area of Concern. The transparent and consultative nature of the Class Environmental Assessment process builds trust within the community and Review Agencies demonstrating Hamilton's and Public Works' commitment to Service Excellence.

- **People (Skilled teams ready for any situation)**

This program demonstrates the ability of our City staff to develop innovative and cost effective strategies to upgrade and modernize our large, ageing and complex wastewater collection system to address pollution control targets and system capacity issues/constraints. Implementing RTC requires the interdisciplinary knowledge and skill of many staff that work with the system on a daily basis. Through an extensive consultation process, stakeholders, including many employees, were invited to provide their input and contribute throughout the process of decision making. The proposed solution represents forward thinking and contemporary state of the art practice. Projects such as this have the ability to contribute to the positive image that Hamilton seeks to maintain and will promote a sense of pride in staff.

- **Process (Smart processes to match our needs)**

Throughout the process, plans have been formulated to ensure that all aspects of the City's "Triple Bottom Line" approach to problem solving were considered. Social, Environmental, and Economic impacts were all assessed to provide a balanced approach to the recommended preferred alternative. A detailed scoring and evaluation process was employed in order to effectively arrive at the optimal solution that meets Hamilton-specific goals and objectives. The result is a sustainable long-term approach that addresses all aspects of the "Triple Bottom Line".

- **Finances (Sound financial management for the long haul)**

Government policy and legislation have been considered in the development of the recommended preferred alternative. The economic impact to the City was a significant

SUBJECT: Class Environmental Assessment for Site Selection of New and Upgraded Real Time Control Flow Control Structures (PW11031) - (Wards 2, 3 & 4) - Page 5 of 9

factor in the decision-making process. The RTC project has also undergone a strict Value Planning assessment led by a Certified Value Specialist and an independent team of experts in wastewater collection and treatment. The Value Planning assessment determined that RTC represented the best value strategy to meet our goals and is nearly \$100M cheaper than an alternative, infrastructure intensive option, over a 30 year life cycle.

RELEVANT CONSULTATION

Public and Review Agency consultation is an integral and legislated component of any Municipal Class Environmental Assessment study. Stakeholders were initially notified of the study with a formal Notice of Commencement advertised in the local newspapers. Review Agencies were notified directly by mail. Project Stakeholder and Review Agency lists are developed at the onset of the study and maintained throughout, thus ensuring all interested parties are kept informed. All Stakeholders are invited and encouraged to comment on the project at any time during the study.

Categorically, the Agency and Stakeholder Contact Lists included the following groups:

- Provincial Ministries and Agencies
- Federal Agencies
- First Nations
- Property owners adjacent to existing and proposed Schedule “B” sites included in the RTC program
- North End Neighbourhood Association and the current Ward 2 Councillor
- Hamilton Port Authority
- Internal City of Hamilton departments including; Real Estate, Public Works (Water and Wastewater Operations, Engineering Services, Landscape Architectural Services, Traffic Engineering)

Following notices in the Hamilton Spectator and community newspapers on November 12th and 19th, a Public Information Centre (PIC) was held on Wednesday December 1st, 2010, from 6:00 pm. to 9:00 p.m., at the Leander Boat Club located at 50 Leander Drive in Hamilton. The PIC presented the environmental planning and evaluation process, and solicited input on the resulting preferred site selections. Feedback from attendees focused on mitigating common construction nuisance such as dirt, vibration, noise, traffic disruptions etc., and there was great interest in ensuring that the design of any above ground structures and control buildings would take into consideration the character of the neighbourhoods they were constructed in.

There was further communication with the North End Neighbourhood Association and individual residents following the PIC on December 1st regarding high level project details as well as site specific questions and concerns. Consistent with the Municipal Class EA process, it was decided that an Information Collection/Exchange small group meeting with the North End Neighbourhood Association was an appropriate venue to

SUBJECT: Class Environmental Assessment for Site Selection of New and Upgraded Real Time Control Flow Control Structures (PW11031) - (Wards 2, 3 & 4) - Page 6 of 9

learn more about Real Time Control and address any outstanding concerns. This meeting was held on January 20th, 2011 from 6:30 p.m. – 9:00 p.m. at the Bennetto Recreation Centre. The meeting was attended by residents and the Ward 2 Councillor. Staff began the meeting with a presentation on Real Time Control and an overview of the City's wastewater collection system, with the remainder of the presentation addressing the individual projects in the vicinity of the North End Neighbourhood. The remainder of the meeting was used to discuss mitigating common construction nuisance such as dirt, vibration, noise, traffic disruptions etc., and ensuring that the design of the above ground structures, control buildings and landscaping would take into consideration the character of the area so as not to adversely impact property values. Any redevelopment of a property is subject to the City's Site Plan Approval Process. Staff indicated that during the detailed design phase there would be opportunity to address these issues and that all of the comments, suggestions and commitments would be chronicled in the project file as part of the notice of completion.

Interested parties will have the opportunity to provide comments and if no objections or criticisms are expressed by the end of the 30-day review period, the project will proceed to implementation as presented. The project team will receive and attempt to mitigate any Stakeholder concerns or request for Part II Order that is initiated within the mandatory 30-day review period.

ANALYSIS/RATIONALE FOR RECOMMENDATION

By applying the Municipal Class EA process, the project followed the legislated multi-phased analysis rationale. Only Phases 1 and 2 of the Municipal Class EA apply for this project. The Class EA Problem/Opportunity Statement was established at the onset of the study as follows:

The Problem

The City of Hamilton is implementing a Real Time Control (RTC) operating strategy for the wastewater collection system that includes the construction of new and upgraded flow control structures. Alternatives need to be considered for control buildings and possibly underground structures which will house the equipment to operate the RTC components (e.g. gates, weir/dams, and monitoring devices). The Class EA process will evaluate siting alternatives at the locations listed in the following table.

The alternatives that meet the requirements of the problem statement relate to site selection for the Schedule B locations, and selecting the preferred alternative location in the vicinity of one of the four corners of each of the intersections listed in **Table 1**.

SUBJECT: Class Environmental Assessment for Site Selection of New and Upgraded Real Time Control Flow Control Structures (PW11031) - (Wards 2, 3 & 4) - Page 7 of 9

Table 1 - Schedule B: RTC Sites

Wellington/Burlington	Kenilworth/Burlington	Parkdale/Glow
Hillyard/Burlington	Burlington/Wentworth	Mary/Ferrie
Ottawa/Burlington	Gage/Burlington	Ferguson/Ferrie
Ferguson/Burlington	Strathearne/Brampton	Princess/Sherman

Evaluation criteria were applied to each alternative site per intersection based on the following three categories:

Socio-Cultural Environment

- Consistency with Current Land Use**
 - Impact of land use on existing property
- Presence of Heritage Building**
 - Is there a heritage building currently located on the property
- Community Impact During Construction**
 - Pedestrian / vehicular mobility
 - Residential / Retail Access
 - Transit / Traffic Delays
 - Noise / Dust

Natural Environment

- Impact on Significant Features**
 - Disturbance to Natural Features
 - Trees
 - Vegetation / Greenspace
- Potential for Contaminated Soils**
 - Risk of Presence of Contaminated Soils
 - Based on Current / Previous Land Use
- Proximity to Residential Areas**
 - Potential for Noise Pollution and / or Air Quality Impacts

Technical Environment

- Presence of Existing Buildings**
 - Building Demolition Requirement
 - Size of Existing Building
- Operations and Maintenance**
 - Difficulty for Municipality to Perform Regular Maintenance Activities
- Proximity to Existing Infrastructure / Utilities**
 - Ease and Efficiency of Required Construction to Infrastructure
 - Underground Pipes
 - Electrical Cables
- Land Acquisition Requirement**
 - Property Ownership
 - Municipal vs. Private
- Railway Crossings**
 - Requirement for Railway Line to be Crossed During Construction

An assessment of each site per-intersection was evaluated and ranked from Greatest to Least Impact. Where construction-related impacts cannot be avoided, mitigation & monitoring measures will be implemented.

Property talks are being led by the City's Real Estate division and the City is promoting acquisition on a willing seller basis with negotiations to date proceeding smoothly. Expropriation would likely result in delays that negatively impact a tight project schedule and increase cost.

The above analysis rationale is a prescribed process under the Municipal Class EA. The project is being completed under full compliance.

The project scope and schedule has been defined in Appendix "B".

ALTERNATIVES FOR CONSIDERATION

There is one alternative for Council to consider with respect to the recommendations of this report:

SUBJECT: Class Environmental Assessment for Site Selection of New and Upgraded Real Time Control Flow Control Structures (PW11031) - (Wards 2, 3 & 4) - Page 8 of 9

To not file the Class Environmental Assessment for Site Selection of New and Upgraded Real Time Control Flow Control Structures with the City Clerk for a minimum 30-day public review period and, as a consequence, not proceed with implementation.

Should Council decline to approve the filing of the Project File Report, the Municipal Class EA process will be considered by the provincial government as incomplete and the City will not have approval under provincial environmental legislation to continue with implementation of the Schedule B sites required for a Real Time Control Program to Manage Wet Weather Flows. The outcome of this decision would be that the City does not meet both volumetric and chemical loadings targets for the collection system as set out by the Ministry of the Environment procedure F-5-5 and the Hamilton Harbour Remedial Action Plan (RAP), the health of the Harbour is not improved from a CSO perspective, and collection system capacity is not optimized in advance of Woodward Avenue Upgrades. The City would also have to reallocate \$20M in reimbursement costs from the Canadian Strategic Infrastructure Fund that are currently allocated to constructing RTC and contingent upon a September 2012 completion date. Eventually the City would have to repeat the EA process, which would potentially result in the same recommendation. The option to not file the Class EA is not recommended.

Legal Implications

Construction of Real Time Control flow control structures will require land acquisition at preferred sites as well as permits from various regulatory agencies such as the Ministry of the Environment, Ministry of Transportation as well as the approval of the Hamilton Port Authority. Exact permit requirements are currently being confirmed.

CORPORATE STRATEGIC PLAN

Focus Areas: 1. Skilled, Innovative and Respectful Organization, 2. Financial Sustainability, 3. Intergovernmental Relationships, 4. Growing Our Economy, 5. Social Development, 6. Environmental Stewardship, 7. Healthy Community

Social Development

- ◆ Everyone has a home they can afford that is well maintained and safe

Environmental Stewardship

- ◆ Natural resources are protected and enhanced
- ◆ Reduced impact of City activities on the environment
- ◆ Remove Hamilton Harbour from Great Lakes area of concern list by 2015
- ◆ Reduce the impact of Hamilton's industrial, commercial Private and Public operations on the environment
- ◆ Aspiring to the highest environmental standards

Healthy Community

- ◆ Plan and manage the built environment
- ◆ An engaged Citizenry
- ◆ Adequate access to food, water, shelter and income, safety, work, recreation and support for all (Human Services)

SUBJECT: Class Environmental Assessment for Site Selection of New and Upgraded Real Time Control Flow Control Structures (PW11031) - (Wards 2, 3 & 4) - Page 9 of 9

APPENDICES / SCHEDULES

Appendix "A" - RTC Project Schedule

Appendix "B" - Implementation of Hamilton's RTC Preferred Strategy, Location Plan

Project Scope and Schedule



