SUBJECT: Halton Region Conservation Authority Watershed (HRCA) Bridges Master Plan Municipal Class Environmental Assessment (PW07130) - (Ward 15)

RECOMMENDATION:

(a) That the General Manager, Public Works, be authorized and directed to file the Halton Region Conservation Authority Watershed (HRCA) Bridges Master Plan Municipal Class Environmental Assessment Project File Report with the Municipal Clerk for a minimum thirty day public review period;

(b) That upon final approval of the Environmental Assessment for Bridge 65 - Mountsberg Road, Bridge 72 - Progreston Road and Bridge 349 - Centre Road that funding for these structures be subject to the 2009 Capital Budget process;

(c) That upon final approval of the Capital Budget, the General Manager, Public Works Department, be authorized to proceed with the implementation of the preferred alternative for each structure.

Scott Stewart, C.E.T.
General Manager
Public Works

EXECUTIVE SUMMARY:

The Municipal Engineers Association (MEA) Class Environmental Assessment (EA) process applies to the construction, reconstruction or alteration of a structure over forty years old (June 2000). The City of Hamilton recognized the need to develop a Bridges Master Plan that would outline a planning framework for the re-construction or alteration of four bridges over forty years old, and in urgent need of repair. The four bridges are
located within the Halton Region Conservation Authorities Watershed Area. The bridges are:

- Structure 65 - Mountsberg Road (250 m east of Hwy 6), Flamborough
- Structure 70 - Concession 10 East (675 m east of Centre Road), Flamborough
- Structure 72 - Progreston Road (35 m west of Green Spring Road), Flamborough
- Structure 349 - Centre Road (490 m south of Concession 10 East), Flamborough

The bridge locations are shown on the attached Appendix A.

In November of 2006 a Schedule B Municipal Class EA Master Plan was initiated to address the bridges' structural deficiencies. The identified deficiencies are as follows (See Appendix B for images):

Mountsberg Road
- severe wearing of asphalt deck surface;
- severe scaling of the exposed portions (ends) of the concrete culvert top slab;
- ends of the concrete culvert top slab disintegrated up to 600 mm from ends;
- severe cracking and delaminations on the soffit of the concrete culvert top slab;
- no guardrails or approach guard rails; and,
- sub-standard frost protection.

Concession 10 East
- asphalt wearing surface in fair condition,
- coating on girders has failed and is no longer providing corrosion protection,
- original concrete curbs on deck have completely disintegrated;
- edge of concrete deck disintegrated up to 150 mm;
- substandard frost protection;
- bridge guard rails are sub-standard;
- approach guardrail in poor condition; and
- severe corrosion on girder flanges, light to medium corrosion on girder webs.

Progreston Road
- no severe defects;
- coating on railings is starting to fail; and,
- light corrosion on railings.

Centre Road
- cracking, delamination and spalls on concrete deck soffit;
- abutments are in fair condition with areas of delamination and spalls;
- coating on steel girders has failed and is no longer providing corrosion protection;
- medium to severe corrosion on steel girders;
- sub-standard frost protection; and,
- bridge railings are sub-standard and are in poor condition.

The Class EA study follows the planning and design process of the June 2000 MEA Municipal Class EA document for roads, water and wastewater projects. The preferred solution of the Class EA study is considered to be approved under the Environmental Assessment Act subject to a systematic evaluation and public screening process,
including the public review period. The following alternative solutions were considered to address the structural deficiencies of the bridges:

- Do Nothing
- Establish Pedestrian-Only Bridge
- Consolidate/Eliminate Structure
- Repair Structure
- Replace Structure

An evaluation of the alternative solutions was undertaken based on natural, social, economic and technical criteria. Based on the evaluation, the preferred alternatives are as follows:

Mountsberg Road - Repair Structure
- Replace culvert top slab.
- Repair existing culvert walls.
- Consider constructing retaining walls to facilitate widening roadway and shoulders to match approaches.
- Construct guardrails and approach guiderails.

Concession 10 East - Replace Structure
- Minimum 7.4 m by 1.2 m hydraulic opening.

Progresston Road - Repair Structure
- Paint bridge railings.

Centre Road - Replace Structure
- Minimum 7.4 m by 1.8 m hydraulic opening.
- Include bike lanes on both sides and sidewalk on east side.

As part of the Municipal Class EA process, the City is required to place the Project File Report on the public record for a minimum thirty day review period. Subject to comments received during the review period, and approval of funding as part of the Capital Budget, the City may proceed with overall bridge designs for the Concession 10 East and Centre Road locations. In addition, the City may proceed with repairs to the Mountsberg Road and Progresston Road locations.

**BACKGROUND:**

The City of Hamilton, through the Asset Management Section, have identified the need to reconstruct, rehabilitate or otherwise alter a number of bridges within the City’s jurisdiction due to deteriorating conditions that have affected the structures’ integrity.

This study addresses the needs of four bridges within the Halton Region Conservation Authority watershed jurisdiction. Those bridges are the Mountsberg Road Bridge - Structure 65 (250 metres east of Highway 6), Concession 10 East Bridge - Structure 70 (675 metres east of Centre Road), Progresston Road Bridge - Structure 72 (35 metres west of Green Spring Road and Centre Road Bridge - Structure 349 (490 metres south of Concession 10 East. All four of these structures are located in Ward 15, Flamborough.
Bridge inspections conducted by the City in 2001 for structures 70, 72 and 349, and in 2003 for structure 65, identify structure deficiencies and recommend structure rehabilitation or replacement needs.

This Project File Report documents the process followed to determine the recommended undertaking and the environmentally significant aspects of the improvements to the four bridges.

**Municipal Class Environmental Assessment**

The Schedule B planning process was followed for this project which requires Phases 1 and 2 of the Class EA Planning process to be completed:

- Phase 1 Problem Definition
- Phase 2 Identification and Evaluation of Alternative Solutions to determine a preferred solution

Public consultation is a key component of the Class EA process. The public were invited to provide comments for the proposed improvements to the four bridges in the Notice of Study Commencement and Public Information Centre (PIC) advertised in two separate issues of the Hamilton Spectator (At Your Service Section) and the Flamborough Review on May 25 and June 1, 2007. Residents within the study area as well as required agencies, and City staff were also mailed the Notice of Study Commencement and PIC Notice.

Four members of the public attended the PIC. One comment sheet was submitted and advised of groundwater monitoring wells drilled near the Concession 10 East Bridge (Structure 70).

**ANALYSIS/RATIONALE:**

The Class EA study follows the planning and design process of the June 2000 MEA Municipal Class EA document for roads, water and wastewater projects. The City is completing the Municipal Class EA planning process applicable to Schedule ‘B’ Master Plan projects. Schedule ‘B’ projects include improvements to existing facilities and other undertakings that are considered to have a potential for some adverse environmental effects. These projects are approved under the Environmental Assessment Act (EA Act) once the required two phase process is complete and subject to the public review period.

**Alternative Solutions**

The Class EA study identified the following alternative solutions to address the structural deficiencies of the four bridges:

1. Do Nothing
2. Establish Pedestrian Only Bridge
3. Consolidate/Eliminate Structure
4. Repair Structure
5. Replace Structure

**Preferred Alternative Solution**

Based on the evaluation, the preferred alternatives are as follows:
Mountsberg Road - Repair Structure
- Replace culvert top slab.
- Repair existing culvert walls.
- Consider constructing retaining walls to facilitate widening roadway and shoulders to match approaches.
- Construct guardrails and approach guiderails.

Concession 10 East - Replace Structure
- Minimum 7.4 m by 1.2 m hydraulic opening.

Progresston Road - Repair Structure
- Paint bridge railings.

Centre Road - Replace Structure
- Minimum 7.4 m by 1.8 m hydraulic opening.
- Include bike lanes on both sides and sidewalk on east side.

These solutions address the bridges’ structural deficiencies and provide required road design upgrades at a reasonable cost and they also have limited, temporary net environmental impacts. Additionally, as each of these structures was assessed to have little or no heritage value then their alteration or replacement would not be a significant loss.

Community well being will be enhanced as the rehabilitated bridges will provide opportunities for physical activity and a safe community through widening (Centre Road) and rehabilitation of deteriorated components. The environmental well being is enhanced through minimal disruption of the natural environment. Lastly, the economic well-being is enhanced as the preferred alternative minimizes economic cost while investing in Hamilton’s infrastructure.

ALTERNATIVES FOR CONSIDERATION:

The preferred alternative solutions have been identified using an evaluation and screening process that fulfils the requirements of the MEA Municipal Class EA document for Schedule ‘B’ projects. Municipal projects of this category are considered to be approved under the EA Act provided that the project follows the Schedule ‘B’ planning and design process outlined in the MEA Municipal Class EA document.

The MEA Municipal Class EA document was approved under the EA Act. If the City does not follow the process outlined in the Municipal Class EA document, the City would be in violation of the document and as a result would have contravened the EA Act. The Ministry of Environment (MOE) could revisit the approval of a project or take away the City’s right to use the Municipal Class EA document.

The preferred alternative solution is not normally reconsidered at the end of the process unless there is an issue that is proven to affect the outcome of the evaluation process. There are two alternatives for Council to consider with respect to the recommendations of this report:

(1) To file the Halton Region Conservation Authority Watershed (HRCA) Municipal Class EA Project File Report with the City Clerk for a minimum thirty day public
review period and proceed with implementation, subject to comments received, funding approval and feasibility.

(2) To not file the Hamilton Conservation Authority Watershed (HCA 2) Municipal Class EA Project File Report with the City Clerk for a minimum thirty day public review period and, as a consequence, not proceed with implementation.

Should Council not wish 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 implement the improvements required to rehabilitate the bridges. The outcome would be equivalent to the do nothing alternative, which would not address the structural problems of the bridges. Eventually the City would have to repeat the Class EA process, which would likely result in the same recommendations.

**FINANCIAL/STAFFING/LEGAL IMPLICATIONS:**

**Financial**

Funding for the Municipal Class EA process was approved in the 2006 Capital Budget, Project ID# 4030655610. Funding for the reconstruction of Bridge 70 - Concession 10 E Bridge was approved through the 2007 Capital Budget Process.

With the exception of Structure 70 funding for implementation of the preferred design has not yet been approved and will be determined through the Capital Budget process for Public Works. Construction estimates are as follows:

- **Structure 65 (Mountsberg Road) - Repair Structure ($175,000-$225,000)**
- **Structure 70 (Concession 10 East) - Replace Structure ($350,000-$500,000)**
- **Structure 72 (Progresston Road) - Repair Structure ($30,000-$40,000)**
- **Structure 349 (Centre Road) - Replace Structure ($350,000-$500,000)**

**Staffing**

There are no staffing implications.

**Legal**

Municipal undertakings such as road improvements, water and wastewater projects are subject to Ontario’s *EA Act*. The *EA Act* allows for the approval of Class EA’s and the municipality has the option of following the planning process set out in the MEA Class EA Document (June 2000). This study has followed the Schedule B Planning and Design Process and will fulfill Phase 1 and 2 of the Class EA process. The City is required to file the Project File Report on the public record for a minimum thirty day review period.

**POLICIES AFFECTING PROPOSAL:**

The recommendations of this report will not bind the Corporation or alter or contravene any established City Policy.
The Municipal Class Environmental Assessment process aligns and conforms with the four top priorities outlined in the 2007 Public Works Strategic Plan, “A Compass for Public Works to 2017”.

**RELEVANT CONSULTATION:**

**Agency Consultation**

The following departments were contacted for this project:

- Hamilton Emergency Services
- Planning and Economic Development (Community Planning and Design, Planning and Economic Development)
- Public Health and Community Services (Communications)
- Hamilton Police Services Board
- Corporate Services

The following agencies were contacted for this project:

- Hamilton Conservation Authority
- Ministry of Environment
- Ministry of Culture
- Ontario Native Affairs Secretariat for Aboriginal Affairs
- Remedial Action Plan
- Canada Post
- Hamilton Executive Directors’ Aboriginal Coalition
- Six Nations Lands and Resources
- The Chiefs of Ontario
- The Metis Nation of Ontario
- Ontario Federation of Indian Friendship
- Mississaugas of New Credit First Nation
- Department of Indian and Northern Affairs
- Ministry of the Attorney General
- Bell Canada
- Union Gas
- Enbridge Pipelines Inc.
- Cogeco Cable Inc.
- Hydro One
- South Mount Cable Ltd
- Mountain Cablevision
- Hamilton District Catholic School Board
- Hamilton Wentworth School Board

The following City Departments and agencies provided comments or additional information for the project:

- Halton Region Conservation Authority
CITY STRATEGIC COMMITMENT:

By evaluating the “Triple Bottom Line”, (community, environment, economic implications) we can make choices that create value across all three bottom lines, moving us closer to our vision for a sustainable community, and Provincial interests.

Community Well-Being is enhanced. ☑ Yes ☐ No
Opportunities for physical activity are supported and enhanced.
The bridge improvements provide for a safe community.

Environmental Well-Being is enhanced. ☑ Yes ☐ No
A sustainable transportation network provides many options for people and goods movement.
The preferred alternatives will allow for minimal disruption to the environmental features in the area.

Economic Well-Being is enhanced. ☑ Yes ☐ No
Investment in Hamilton is enhanced and supported.
Hamilton's infrastructure is being improved thus promoting an environment that is desirable to live and work in.

Does the option you are recommending create value across all three bottom lines?
☑ Yes ☐ No
The preferred alternatives address the bridges present deficiencies and minimize the impact on all three bottom lines. They address structural deficiencies of the bridges in a cost effective manner with little disruption to residents and the environmental area.

Do the options you are recommending make Hamilton a City of choice for high performance public servants?
☑ Yes ☐ No
The recommendations of this report have no impact on the desired results for this commitment. (e.g. life long learning, supportive workplace).
Appendix B

Structure 65 - Mountsberg Road

Structure 65 - Severe cracking and delaminations on the culvert top slab
Structure 70 - Concession 10 East

Structure 70 - Edge of concrete deck disintegrated.
Structure 72 - Progreston Road

Structure 72 - Railings require repainting
Structure 349 - Medium to severe corrosion on steel girders