Halton Region Conservation Authority (HRCA) Bridges Master Plan Class Environmental Assessment

Public Information Centre
June 7, 2007

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

PUBLIC WORKS DEPARTMENT
Capital Planning & Implementation Division
Strategic and Environmental Planning

URBAN & ENVIRONMENTAL MANAGEMENT INC.
PROFESSIONAL CONSULTING SERVICES

Purpose of the Project

- Ongoing program to assess the condition of the City's bridge structures

- Initial assessment identified the potential need to reconstruct, rehabilitate, and/or alter the bridges

- Municipalities required to undertake a Schedule B or Schedule C Class EA when considering construction, reconstruction or alteration of a structure when the structure is over 40 years old.

- **This Study is undertaken as a Schedule B Master Plan Municipal Class Environmental Assessment.**

Problem Statement

- *Municipal infrastructure such as bridges require regular review and assessment. The Municipal Class EA Process is an effective means of assessing the structural aspects, safety, traffic capacity, historical context and hydraulic capacity of bridges. The City of Hamilton has undertaken a preliminary review of all of its bridges. Based on the preliminary review, the City has identified four bridges in relative close proximity to one another that are in need of further, detailed assessment.*

Municipal Class EA Process

- The Class EA process is a decision making process used to ensure that municipal infrastructure decisions consider the potential for effects on the natural, socio-cultural, economic and technical environments.

- A Class EA Master Plan is a comprehensive plan for infrastructure projects which have common elements such as location.

- Considers site-specific sensitivities, opportunities and constraints for each structure within the context of a comprehensive long-term plan for all structures.

The Purpose of this Public Information Centre is to present the information for your review and comment

Municipal Class EA Process
Schedule B Master Class EA

Phase 1
Problem Identification

Phase 2
Alternative Solutions

- Identify reasonable alternatives to address problems/enhance opportunities
- Evaluate the alternative based on net environmental effects
- Identify a recommended solution to the problem (i.e. a preferred alternative)

Presentation of Alternatives and Proposed Preferred Solutions

Public Information Centre
(June 7, 2007)

Next Steps

- Document the results of the study in a project file report and obtain council approval to file the document on public record
- Notify the public and review agencies of completion of project file and of the Part II order provision in the EA Act
- Place on public record for 30 calendar days for review.
- Detailed design and implementation

Overview of
Alternative Solutions

"***Do Nothing***" represents the potential impacts of maintaining the status quo. This alternative is the baseline against which other alternatives are comparatively evaluated.

"***Consolidate/Eliminate Structures***" represents the removal of the structure and redirection of traffic to other crossings either within the scope of this study or outside the study area.

"***Establish Pedestrian Only Bridge"*** involves prohibiting vehicular traffic on the structure and repairing the structures as necessary to provide pedestrian access only.

"***Repair Structure***" repair and/or replacement of bridge components identified as deteriorating.

"***Replace Structure to Current Standards"*** involves replacing the entire structure. Allows for the widening of the bridge as necessary to accommodate sidewalk, bike lane and vehicular lane widths. Alternative culvert designs are also considered.

Structure 65 – Mountsberg Road

- On Bronte Creek, 250 m east of Hwy 6
- Constructed in 1950
- Design:
  - Single-span, two-lane cast in place, open footing concrete culvert
  - 12.2 m long and 7.1 m wide
  - 6.1 m roadway width
  - Culvert opening is 6.1 m by 1.2 m
- Speed limit 60 km/hr
- Low Heritage Value
- Study Area does not exhibit archeological potential
- Cold water stream
- Meets hydraulic design criteria

Structure 65 – Mountsberg Road

Identified Deficiencies

- 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
- Substandard frost protection

Structure 65 – Mountsberg Road

Existing Conditions

Structure 65 – Mountsberg Road

Alternative Solutions

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

Preferred Alternative

- Alternative 4 – Repair Structure

Structure 65 – Mountsberg Road

Preferred Alternative

- Alternative 4 – Repair Structure
- Details:

  - 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

Structure 70 – Concession 10 East

- On Bronte Creek, 675 m east of Centre Road
- Constructed in 1945
- Design:
  - Single span, two lane, cast-in-place concrete deck on steel girder bridge
  - 8.5 m in length by 7.3 m in width
  - 6.6 m roadway width
  - Culvert opening is 7.32 m by 1.22 m
  - Rigid frame
- 30 tonne load limit
- Speed limit 70 km/hr
- Heritage Value Low
- Immediate area shows no archaeological potential, adjacent agricultural field would require further study if impacted
- Cold water stream
- Meets hydraulic design criteria

Structure 70 – Concession 10 East

Identified Deficiencies

- 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
- Severe corrosion on girder flanges, light to medium corrosion on girder webs

Structure 70 – Concession 10 East

Existing Conditions

Structure 70 – Concession 10 East

Alternative Solutions

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

Preferred Alternative

- Alternative 5 – Replace Structure

Structure 70 – Concession 10 East

Preferred Alternative

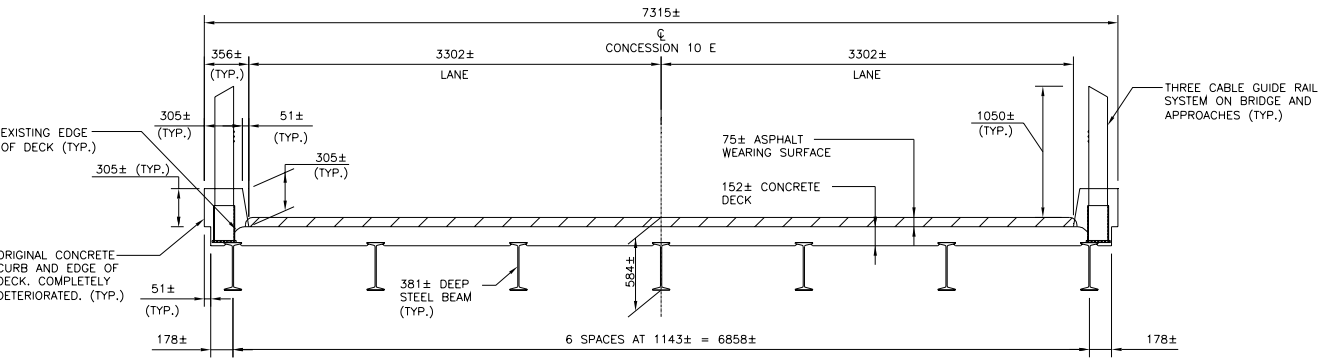
- Alternative 5 - Replace Structure

- Details:
  - Minimum 7.4 m by 1.2 m hydraulic opening
  - Bridge type alternatives:
    - Cast-in-place or precast concrete open footing culvert
    - Cast-in-place or precast concrete slab on steel girder (integral or semi-integral abutments)
    - Side-by-side precast, prestressed slabs with cast-in-place concrete topping (integral or semi-integral abutments)

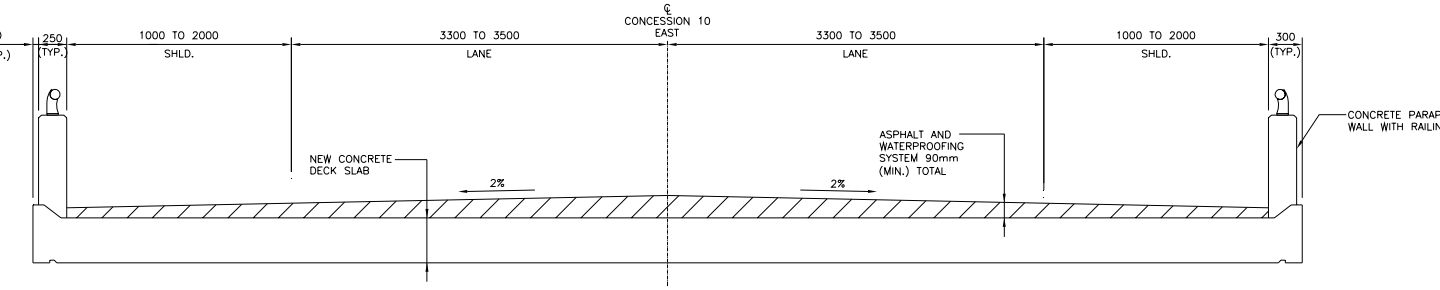
Structure 70 – Concession 10 East

Preferred Alternative

- Alternative 5 - Replace Structure



EXISTING CONDITION



NEW CONDITION

Structure 72 – Progreston Road

- On Bronte Creek, 35 m west of Green Spring Road
- Constructed in 1963
- Design:
  - Single span, simply supported, side-by-side prestressed, pre-cast, T-beam bridge
  - 12.2 m in length by 10.1 m wide
  - 8.5 m roadway width with 0.8 m siderails
  - Bridge opening is 12.0 m by 3.5 m
  - Steel utility conduit suspended from bridge deck
- Speed limit 50 km/hr
- Bike route
- High archaeological potential in vicinity of bridge
- Low Heritage Value
- Cold water stream
- Meets hydraulic design criteria

Structure 72 – Progreston Road

Identified Deficiencies

- No severe defects
- Coating on railings is starting to fail
- Light corrosion on railings

Structure 72 – Progreston Road

Existing Conditions

Structure 72 – Progreston Road

Alternative Solutions

- Alternative 1 – Do nothing
- Alternative 2 – Establish pedestrian Only Bridge
- Alternative 3 – Consolidate/Eliminate Structure
- Alternative 4 – Repair Structure
- Alternative 5 – Replace Structure

Preferred Alternative

- Alternative 4 – Repair Structure
  - Repair railings only

Structure 72 – Progreston Road

Preferred Alternative

- Alternative 4 – Repair Structure
- Details:
  - Paint bridge railings

Structure 349 – Centre Road

- On Bronte Creek, 490 m south of Concession 10 East
- Constructed around 1935
- Design:
  - Single span, two-lane, cast-in-place, deck on steel
  - 8.5 m in length by 7.9 m wide
  - 7.3 m roadway width
  - Ridge opening is 7.3 m by 1.8 m
- Bike route
- Low archaeological potential
- Property at the northwest quadrant of Bridge/Bronte Creek intersection requires further archaeological investigation if impacted.
- Low Heritage Value
- Cold water stream
- Meets hydraulic design criteria

Structure 349 – Centre Road

Identified Deficiencies

- 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
- Bridge railings are sub-standard and are in poor condition

Structure 349 – Centre Road

Existing Conditions

Structure 349 – Centre Road

Alternative Solutions

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

Preferred Alternative

- Alternative 5 – Replace Structure

  -Include bike lanes on both sides and sidewalk on east side

Structure 349 – Centre Road

Preferred Alternative

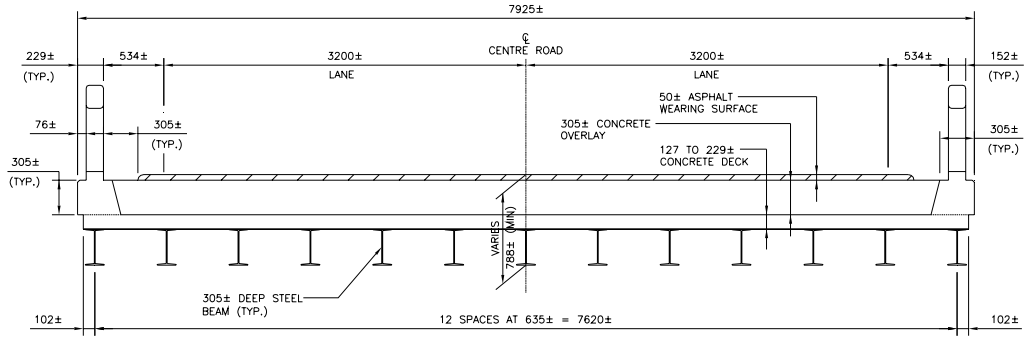
- Alternative 5 – Replace Structure

- Details:
  - Minimum 7.4 m by 1.8 m hydraulic opening
  - Bridge type alternatives:
    - Cast-in-place or precast concrete open footing culvert
    - Cast-in-place or precast concrete slab on steel girder (integral or semi-integral abutments)
    - Side-by-side precast, prestressed slabs with cast-in-place concrete topping (integral or semi-integral abutments)

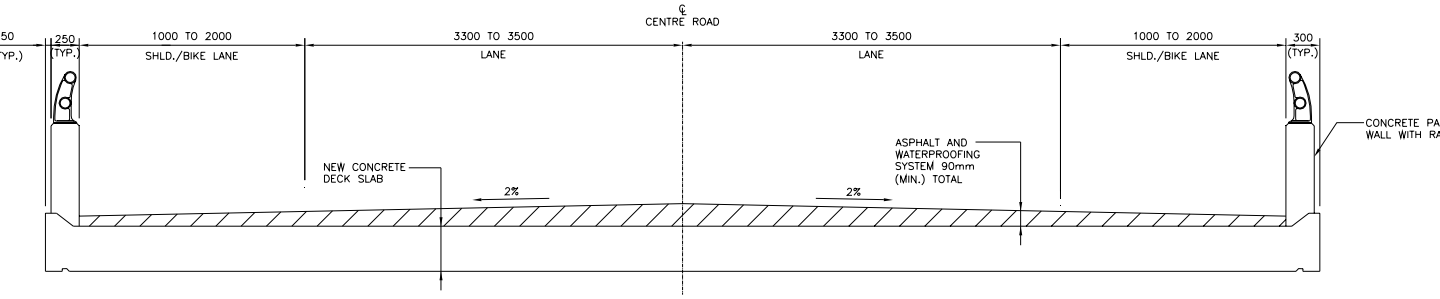
Structure 349 – Centre Road

Preferred Alternative

- Alternative 5 – Replace Structure



EXISTING CONDITION



NEW CONDITION – Note sidewalk to be added to east side of structure

Next Steps…

- Consider input from PIC
- Finalize preferred alternatives
- Complete Master Plan Project File Report
- Obtain council approval to file Project File Report
- Publish and distribute notice of project completion to agencies and public
- 30 – day public review period
- Address comments received during review period
- Address any Part II Order (“bump-up”) requests
- Proceed with detailed design and implementation

Estimated Schedule

- Consider input from PIC – June 2007
- Finalize preferred alternatives – June 2007
- Complete Project File Report – July 2007
- Council Approval – September 2007
- 30-day review period – October 2007
- Detailed Design – 2007/2008
- Planned Construction – beginning in 2008