

Notice of Study Commencement Vaughan Bowstring Arch Bridges Class Environmental Assessment Studies

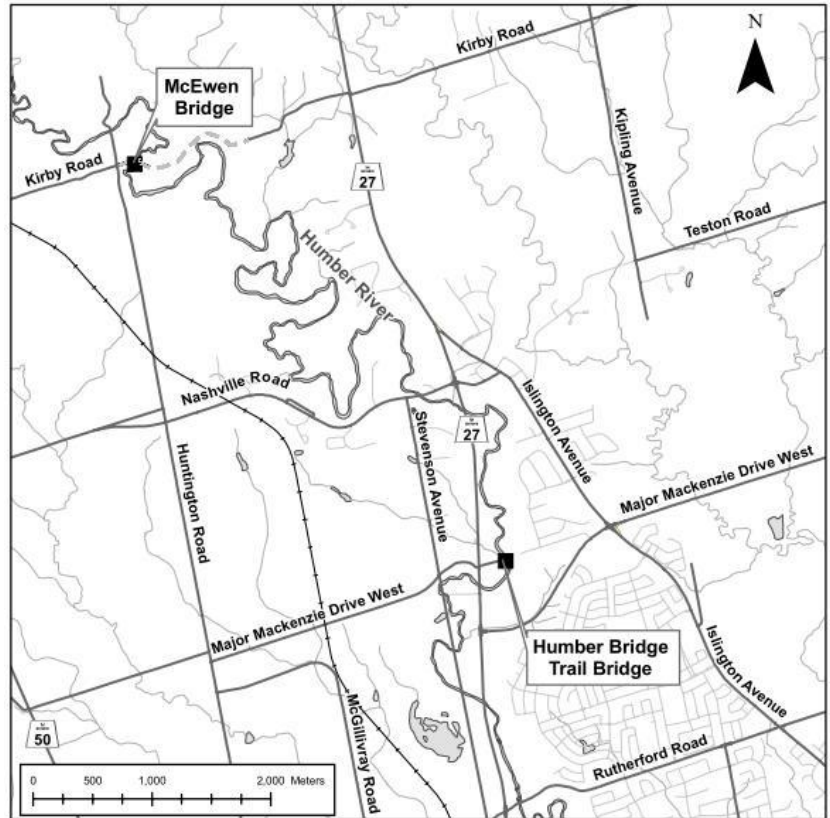
The City of Vaughan is undertaking a pair of separate, but simultaneous Class Environmental Assessment (EA) Studies for the proposed rehabilitation of two bowstring arch bridges over the Humber River. The purpose of this notice is to inform you of these Studies and invite your participation and input throughout the EA process.

Both bowstring arch bridges are more than 90 years old and in similar states of advanced disrepair. The first bridge is located on Humber Bridge Trail, east of Highway 27, and provides vehicular access to one residential property. The McEwen Bridge, the second bridge in this study, is located just east of Huntington Road on the Kirby Road right-of-way, and is not currently open to vehicular traffic, serving instead as part of the Humber Valley Heritage Trail system.

The City of Vaughan has initiated this study to determine how to best address the potential access issues created by the deterioration of these two bridges, and identify appropriate courses of action to improve the structural integrity of the bridges.

Both proposed bridge projects will commence as Schedule "B" studies under the Municipal Engineers Association's (MEA) Municipal Class EA (October 2000, as amended in 2007). Through the Class EA process, the City will assess the problems and opportunities for addressing the issues related to bridge access, and develop and evaluate a range of alternative solutions and design concepts to improve the integrity of both bowstring arch bridges.

Public and external agency consultation will be key components of both studies. Consultation will take place for both projects in a manner that is appropriate for each individual project. This may include a Public Information Forum (PIF), Information Package or other such consultation methods. Details regarding the upcoming consultation events will be provided via an additional newspaper ad in the near future.



Upon completion of the Studies, two separate Environmental Study Reports (ESRs) documenting the Preferred Solutions and Preliminary Designs will be prepared for public/agency review and comment. All project information will also be available on the project website: www.vaughan.ca/bab.

We are interested in receiving any comments that you may have about either Study. Should you have any questions or comments, or wish to receive additional information regarding one or both of these projects, please contact either of the following Project Team members:

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JACK GRAZIOSI, P. Eng., M. Eng., Director of Engineering Services

Please note that information related to this Study will be collected in accordance with the Freedom of Information and Protection of Privacy Act. With the exception of personal information, all comments received will become part of the public record and may be included in Study documentation prepared for public review.

This Notice dated: September 1, 2010

Linda D. Jackson
Mayor
Ext. 8836

Joyce Frustaglio
Regional Councillor
Ext. 8341

Mario Ferri
Regional Councillor
Ext. 8350

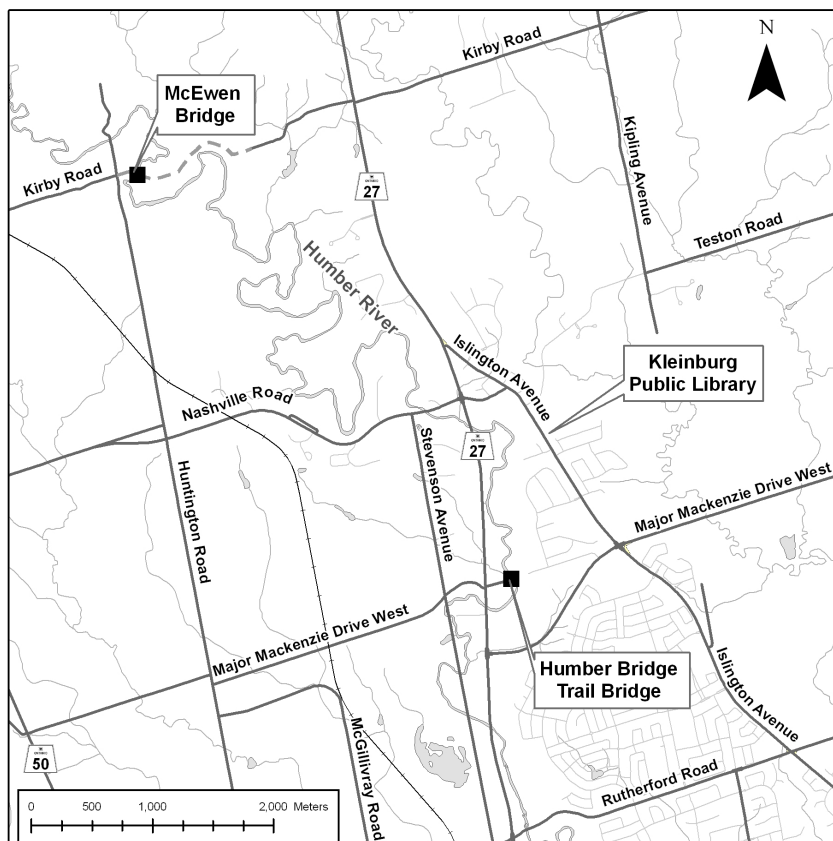
Gino Rosati
Regional Councillor
Ext. 8441

Peter Meffe
Local Councillor
Ext. 8344

NOTICE OF PUBLIC INFORMATION CENTRE

Vaughan Bowstring Arch Bridges Class Environmental Assessment Studies

The City of Vaughan is undertaking a pair of separate, but simultaneous Class Environmental Assessment (EA) Studies for the proposed rehabilitation of two bowstring arch bridges over the Humber River. The purpose of this notice is to inform you of the upcoming **Public Information Centre** for these two bridges.



Background

Both bowstring arch bridges are more than 90 years old and in similar states of advanced disrepair. The first bridge is located on Humber Bridge Trail, east of Highway 27, and provides vehicular access to one residential property. The McEwen Bridge, the second bridge in this study, is located just east of Huntingdon Road on the Kirby Road right-of-way, and is not currently open to vehicular traffic, serving instead as part of the Humber Valley Heritage Trail system.

The Environmental Assessment Process

The City of Vaughan is undertaking this study to determine how to best address the potential access issues created by the deterioration of these two bridges, and identify appropriate courses of action to improve the structural integrity of the bridges.

Both proposed bridge projects are undergoing Schedule "B" studies under the Municipal Engineers Association's (MEA) Municipal Class EA (October 2000, as amended in 2007).

Get Involved

Public and external agency consultation is a key component of both bowstring arch bridge studies. At this Public Information Centre, the information presented will include the existing environmental conditions, the results of the comparative evaluation of the alternative solutions, and the recommended alternative solution for each bridge.

THURSDAY, JULY 21, 2011

6 p.m. - 9 p.m.

Presentation at 7 p.m.

**Kleinburg Public Library, Basement Meeting Room
10341 Islington Avenue (see map)**

All project information will also be available on the project website at www.vaughan.ca/bab.

We are interested in receiving any comments that you may have about either study. Should you have any questions or comments, or wish to receive additional information regarding one or both of these projects, please contact either of the following project team members:

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JACK GRAZIOSI, P. Eng., M. Eng., Director of Engineering Services

Please note that information related to this study will be collected in accordance with the *Freedom of Information and Protection of Privacy Act*. With the exception of personal information, all comments received will become part of the public record and may be included in the study documentation prepared for public review.

This Notice dated June 29, 2011

Vaughan Bowstring Arch Bridges Class Environmental Assessment Studies

McEwen Bridge & Humber Bridge Trail Bridge



**6 - 9 p.m.
July 21, 2011
Kleinburg Public Library**

Vaughan Bowstring Arch Bridges Class Environmental Assessment Overview

- The City of Vaughan is undertaking a pair of separate, but simultaneous Class Environmental Assessments (EAs) to identify a proposed rehabilitation solution for two bowstring arch bridges over the Humber River
- A third Bowstring Arch Bridge, the Langstaff Road Bridge, is also located within Vaughan, but is not part of this study
- Both bowstring arch bridges are over 90 years old and in similar states of advanced disrepair:
 - McEwen Bridge, east of Huntington Road on Kirby Road Right-Of-Way
 - Humber Bridge Trail, east of Highway 27

Environmental Assessment Overview

- In Ontario, the Environmental Assessment Act (EA Act) governs the requirements of the EA process
- The purpose of the EA Act is to promote good environmental planning through the:
 - Protection;
 - Conservation; and,
 - Wise Management of Ontario's environment.
- The intent is to predict the environmental effects of proposed undertakings before they are carried out

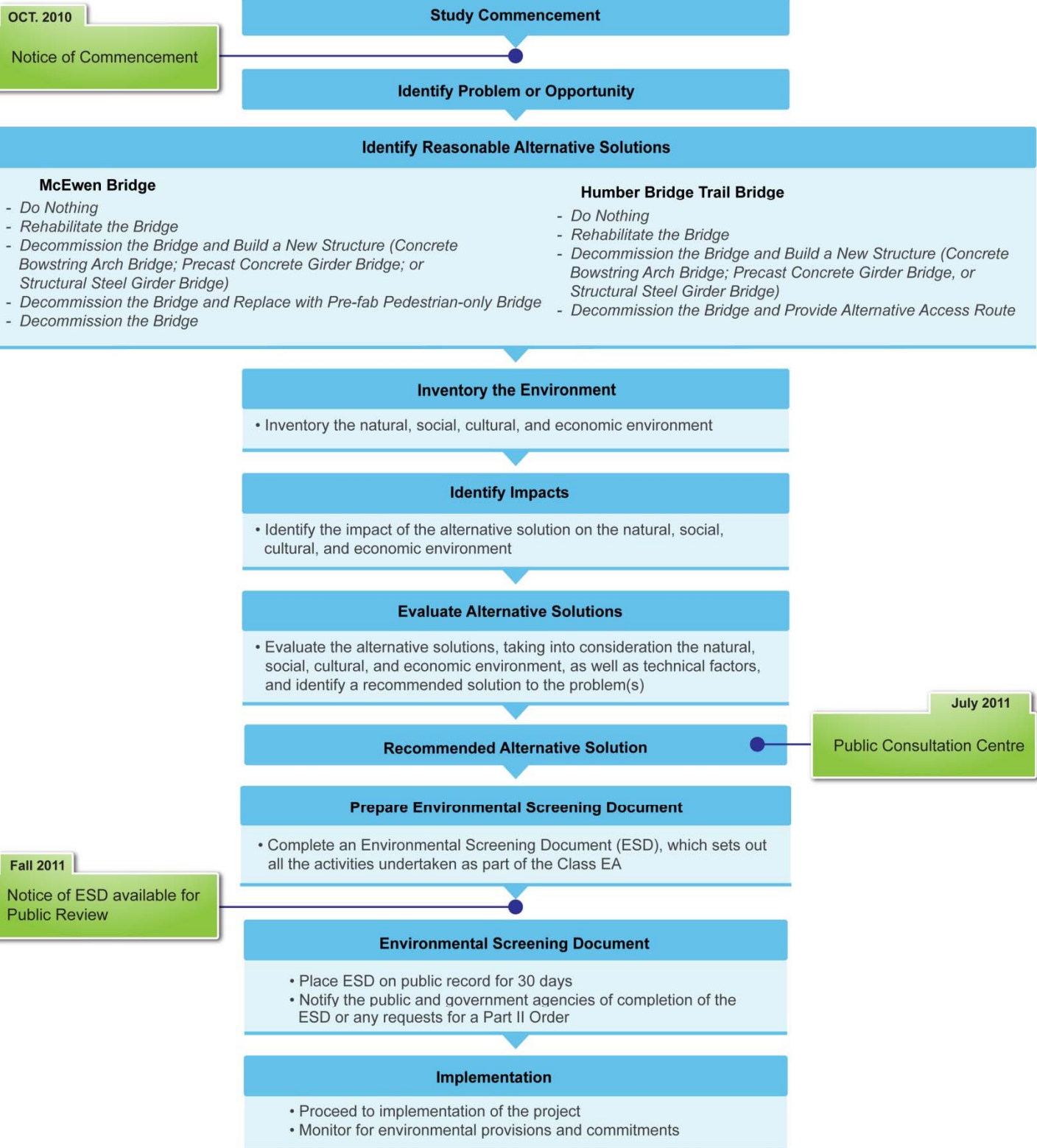
Environmental Assessment Overview

- The EA process serves several important purposes by:
 - Allowing for consultation from a variety of sources including three levels of government, stakeholders and the public;
 - Identifying potential issues and how to mitigate them prior to implementation (i.e. construction);
 - Promoting good environmental planning practices;
 - Improving community acceptance; and,
 - Allowing for transparency in the decision-making process.

Class Environmental Assessment Process

- Class EA's are a method of dealing with projects that are routine undertakings, limited in scale, have a predictable range of environmental effects and are able to implement appropriate mitigation measures
- The Vaughan Bowstring Arch Bridges Class EA is following the Municipal Engineers Association (MEA) Class EA process as a Schedule B projects
- Consultation for the Projects include:
 - Notification through newspaper advertisements, direct mailing and Posting on-site at McEwen Bridge
 - Public Information Centre (PIC)
 - Accessible website

Class EA Process



McEwen Bridge

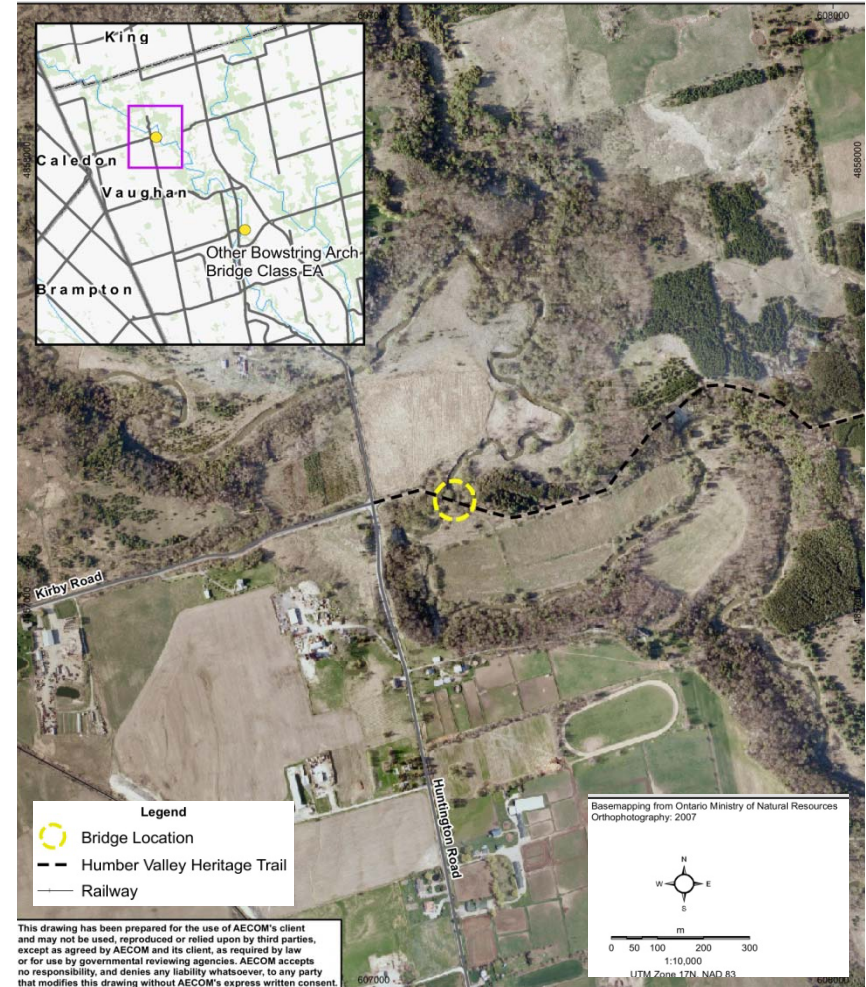
- **Purpose of Study:**
Identified in the City of Vaughan Biannual Bridge Inspection, the purpose of this study is to identify an appropriate solution to address the structural integrity, as well as access issues associated with the McEwen Bowstring Arch Bridge on the Kirby Road right-of-way.



McEwen Bridge

- **Background**

- Built in 1923 to carry Kirby Road over the Humber River
- The structure is a concrete bowstring arch bridge which is owned by the City of Vaughan
- Bridge is over 85 years old and has not been maintained, so it is in an advanced state of disrepair
- Bridge is not open to vehicular traffic, but does serve hikers and cyclists as part of the Humber Valley Heritage Trail system



Phase 1 - Identify the Problem / Opportunity

- Structural and Safety
 - Span of 19 m and a roadway width of 4 m (i.e. one lane/car-width)
 - Overall in poor condition, with a Bridge Condition Index (BCI) of 45.1 (a BCI of below 60 is considered poor based on the Ministry of Transportation (MTO) methodology)
 - Due to the advanced state of disrepair, there is a significant risk to users (pedestrians/cyclists)
 - This project provides an opportunity to improve the structural integrity and safety of the McEwen Bridge as well as maintain and improve the connection along the Kirby Road Right-Of-Way

Phase 1 - Identify the Problem / Opportunity

- Heritage
 - Built in 1923, has not undergone any major rehabilitation or repair work
 - McEwen Bridge can be considered an in-tact example of a concrete bowstring arch bridge, commonly constructed across Ontario in the early 20th Century
 - This project provides an opportunity to preserve the heritage features of the McEwen Bridge

Phase 1 - Problem / Opportunity Statement

- Problem/Opportunity Statement
 - *“The McEwen Bowstring Arch Bridge is deteriorating in terms of its structural integrity, resulting in increased concern for the safety of bridge users and preserving the heritage aspects of the bridge. This project provides an opportunity to maintain and improve the connection along the Kirby Road Right-Of-Way, east of Huntington Road, as well as preserve a local heritage resource, by addressing the Bridge’s advanced state of disrepair.”*

Phase 2 - Description of Alternative Solutions

1. **Do Nothing**

- No actions would be taken to improve the structural integrity of the bridge

2. **Rehabilitate the Bridge**

- Maintain the existing structure, rehabilitation would include replacement of the deck and handrails and the repair or reinforcement of other bridge components. Preservation is paramount and restoration would be sympathetic to the existing bridge design

3. **Decommission the Bridge and Build a New Concrete Bowstring Arch Bridge**

- Removing the existing structure and erecting a new concrete bowstring arch bridge in the vicinity of the current bridge

4. **Decommission the Bridge and Build a New Precast Concrete Girder Bridge**

- Remove the existing structure and erect a new precast concrete girder bridge in the vicinity of the current bridge

Phase 2 - Description of Alternative Solutions

- 5. Decommission the Bridge and Build a New Steel Girder Bridge**
 - Remove the existing structure and erect a new structural steel girder bridge in the vicinity of the current bridge
- 6. Decommission the Bridge and Replace with a Prefabricated Pedestrian-Only Bridge**
 - Remove the existing structure and replace with a prefabricated steel bridge to allow for pedestrian use only
- 7. Decommission the Bridge**
 - Remove the structure completely, thereby also removing the connection along the Kirby Road right-of-way over the Humber River

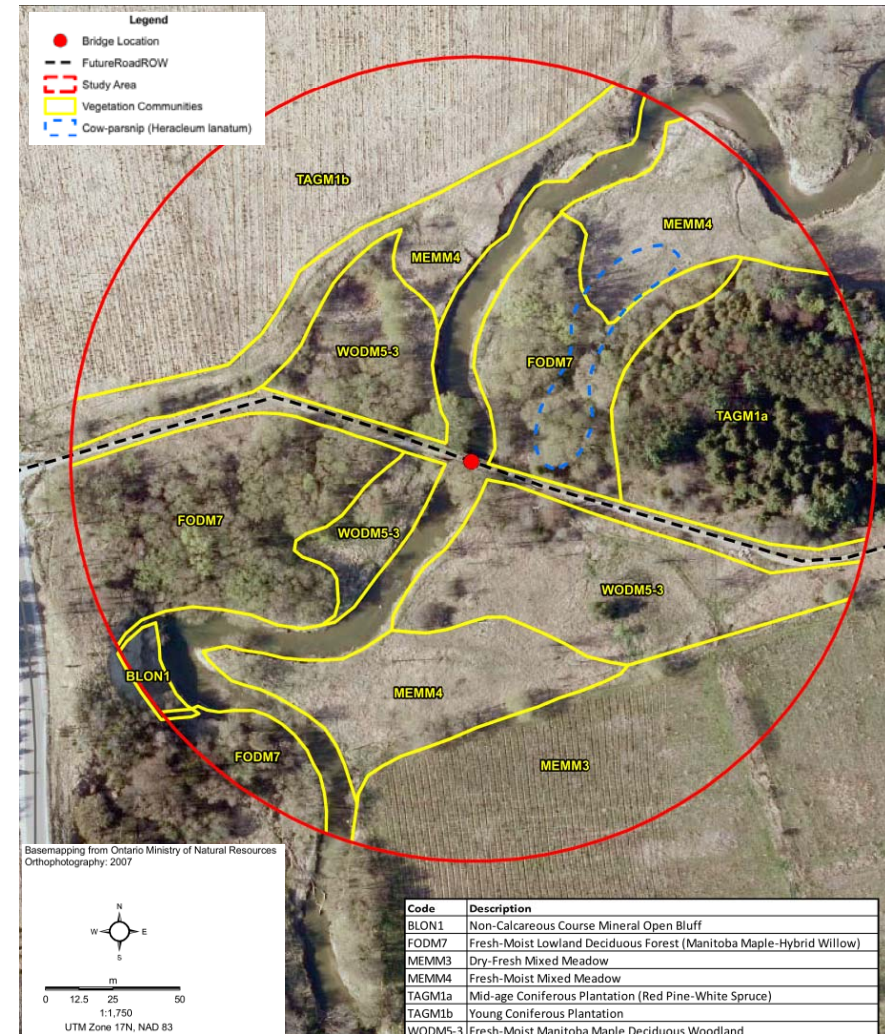
Existing Conditions – Structural

- Numerous key structural components are deteriorating or deteriorated (i.e. deck, vertical arch hangers, bottom arch chord, floor beams and handrails)
- Other components in somewhat better condition, but have also experienced decay
- Steel plates have been installed in the wheel tracks over the deck to reduce the risk of failure
- 5 tonne load limit, which would support most vehicles, but **not** larger emergency vehicles
- Significant risk to users (pedestrians) of this bridge, particularly in relation to the bridge's damaged and in some cases obsolete guiderail
- Portions are showing a significant amount of spalling (concrete essentially breaks off from the main structure in small pieces)



Existing Conditions – Terrestrial Environment

- Vegetation is mixed, including forest and meadows
- No Environmentally Significant Areas (ESAs), provincially/locally significant wetlands (PSWs/LSWs), or Areas of Natural and Scientific Interest (ANSIs) within the study area



Existing Conditions – Terrestrial Environment

- **Rare/Significant Species recorded within 1 km of the McEwen Bridge include:**
 - **Federal :** Rapids Clubtail (Endangered); Cerulean Warbler (Special Concern); Eastern Ribbon Snake (Special Concern)
 - **Provincial - Species at Risk:** Rapids Clubtail (Endangered); Cerulean Warbler (Special Concern); Eastern Ribbon Snake (Special Concern)
 - **Provincially :** Rapids Clubtail; Cerulean Warbler; Eastern Ribbon Snake; A Moss ; Scarlet Beebalm; Jefferson X Blue-spotted Salamander
- **Locally Significant species within 150 m of the bridge include:**
 - Red Pine; White Spruce; Western Chorus Frog; Bobolink
- **Ontario Ministry of Natural Resources (MNR) believes that Butternut – federally and provincially Endangered tree species protected under the Endangered Species Act (2007) – may occur at this location.**
 - Field investigations could not confirm its presence within a 150 m radius of the bridge, nor along the access route from Huntington Road.

Existing Conditions – Aquatic Environment

- Humber River was designated as a Canadian Heritage River in 1999
- Located within the main Humber subwatershed
- Index of Biotic Integrity (IBI) indicates the general health of the aquatic ecosystem in the study area is “fair” or intermediate
- 24 species, predominantly intermediately tolerant, coolwater fish, have been recorded within the study area, including the Provincially Endangered Redside Dace (c. 1972)
 - Confirmation from MNR was received stating that this site is not located within known occupied Redside Dace habitat.

Existing Conditions - Hydrogeological Environment

- Regional groundwater flows southwards towards Lake Ontario, while local shallow groundwater flows towards the Main Humber River.
- In the vicinity of the bridge, the groundwater table is anticipated to be at a similar elevation to the Humber River
- The presence of the Halton Till within the study area inhibits local groundwater recharge, reduces the exposure of underlying aquifers to contamination, and also provides little groundwater discharge to the Humber River.
- One water well assumed to be actively in use is located 450 m to the southwest of the bridge.

Existing Conditions – Social/Land Use Environment

- ‘Protected Countryside’ designation under *Ontario Greenbelt Plan* (2005)
- ‘Regional Greenlands System’ under *York Region Official Plan* (2010) – intended to maintain areas with unique functions, attributes and linkages
- Surroundings designated ‘Natural Area and Countryside’ under *Vaughan Tomorrow* (2010) - City of Vaughan’s Official Plan
 - Within the northern reaches of the urban boundary
- *Vaughan Pedestrian and Bicycle Master Plan* (2007) - designated as a ‘Community Multi-use Recreational Pathway,’ representing part of the City’s signed bicycle network, improving access and connectivity for pedestrians, hikers, and cyclists in and around Vaughan
- This stretch of the Kirby Road right-of-way is identified in both *Vaughan Tomorrow* and the *Vaughan Transportation Master Plan* as an ‘Unopened Road Allowance’

Existing Conditions – Cultural Environment

- Built in 1923 and no major rehabilitation/repair work undertaken to-date
- 1 of only 4 concrete bowstring arch bridges spanning the Humber River
- Originally served as a major river crossing until the road was closed to vehicular traffic in the late 1970s
- Ontario Heritage Bridge Program (OHBP) used to evaluate the heritage value. Any bridge scoring higher than 60 points on this evaluation will automatically be considered for listing on the OHBP. The McEwen Bridge scored a 64
- The overall score indicates that the McEwen Bridge has high heritage significance and thus grounds for inclusion on the OHBP list

Existing Conditions – Cultural Environment

- No archaeological sites have been registered immediately adjacent to the McEwen Bowstring Arch Bridge; however, four sites exist within 1 km of the bridge
- Based on the findings of a Stage 1 Archaeological Assessment, the existing footprint of the McEwen Bridge does not retain archaeological site potential due to previous ground disturbances

Phase 2 - Assessment of Alternative Solutions

- Existing environment considered and Alternative Solutions comparatively evaluated using a descriptive or qualitative assessment based on criteria developed within the following categories (representing the broad definition of the environment as described in the EA Act):
 - Technical (Structural)
 - Cultural Heritage
 - Natural Environment
 - Socio-economic
 - Financial
- Criteria were put forward based on their ability to identify the potential environmental effects of each alternative and distinguish the advantages and disadvantages between them
- Evaluation criteria were applied to each alternative solution to determine the resulting effects. A comparative evaluation of the alternative solutions was then undertaken to arrive at a preferred alternative

Evaluation Results – McEwen Bridge

Alternative		Pros	Cons	Rank
1	Do Nothing	–low immediate cost	–does not address problem/opportunity statement –conflicts with City's Pedestrian and Cycling Master Plan –liability issues continue to exist	7 th
2	Rehabilitate the Bridge	– preserves cultural heritage – improves safety – best protects environment – moderately high cost	– provides only 1-lane vehicular access	1 st
3	Remove Existing Bridge and Build a New Concrete Bowstring Arch Bridge	–preserves cultural heritage –improves safety –provides 2-lane bridge	–highest cost	2 nd
4	Remove Existing Bridge and Build a New Precast Concrete Box Girder Bridge	–improves safety –provides 2-lane bridge	–high cost –loss of cultural heritage	4 th
5	Remove Existing Bridge and Build a New Structural Steel Girder Bridge	–improves safety –provides 2-lane bridge	–high cost –loss of cultural heritage	5 th
6	Remove Existing Bridge and Replace with a Prefabricated Steel Pedestrian-Only Bridge	–improves safety –moderately high cost	–does not allow vehicular access –loss of cultural heritage	3 rd
7	Remove the Bridge	–improves safety –low cost	–loss of cultural heritage –loss of recreational use –loss of potential vehicular connectivity	6 th

Preferred Alternative McEwen Bridge

Alternative #2 - Rehabilitate the Bridge

- In considering each of the key factor areas (i.e. heritage, structural, financial, natural environment) and weighing the potential tradeoffs, Full Rehabilitation of McEwen Bridge is the only means of preserving its heritage potential, as well as improving its structural integrity and minimizing impacts on the surrounding environment

Mitigation Measures

- These may include:
 - avoidance (prevent the occurrence of negative effects – best protects the environment)
 - mitigation (where prevention is not possible, application of appropriate measures to remove or alleviate negative effects, to some degree)
 - compensation (where mitigation is not possible or cannot eliminate all effects, replacement in kind, or provision of a substitute or reimbursement)
 - enhancement (positive environmental effects) measures to minimize potential impacts on the environment
- Measures applied during construction will be largely based on Best Management Practices (BMP's), such as, temporary construction related nuisance effects (i.e., Noise, Vibration, Dust, Odours and Fumes, etc)
- The Environmental Screening Document (ESD) will document the mitigation measures for the evaluation criteria as appropriate

Monitoring & Additional Permitting Requirements

- As part of implementing this project, monitoring and maintenance will be conducted during construction to ensure that:
 - individual mitigating measures are providing the expected control and/or protection;
 - the mitigating measures are adequate to minimize or eliminate adverse effects;
 - additional mitigating measures are provided, if required, to address any unanticipated environmental adverse effects which arise: and
 - adequate information is available for the assessment of the mitigative measures
- Environmental monitoring is to include periodic site visits and inspections throughout the course of the work by the Certified Environmental Inspector (CEI) and City of Vaughan representative
- TRCA Approvals - Redside Dace
- MOE - Permit To Take Water (PTTW)

Questions?

Humber Bridge Trail Bridge

- **Purpose of Study:**
Identified in the City of Vaughan Biannual Bridge Inspection, the purpose of this study is to identify an appropriate solution to address the structural integrity, as well as access issues associated with the Bowstring Arch Bridge on Humber Bridge Trail.



Humber Bridge Trail Bridge

• Background

- Built in 1918 to carry the original alignment of Major Mackenzie Drive over the Humber River
- The structure is a concrete bowstring arch bridge which is owned by the City of Vaughan
- Bridge is over 90 years old and has not been maintained, so it is in an advanced state of disrepair
- Bridge provides vehicular access to one residential property on Humber Bridge Trail, on the east bank of the Humber River



Phase 1 - Identify the Problem / Opportunity

- Structural and Safety
 - Span of 19.5 m and a roadway width of 3.4 m (i.e. one lane/car-width)
 - Overall in poor condition, with a Bridge Condition Index (BCI) of 49.0 (a BCI of below 60 is considered poor based on the Ministry of Transportation (MTO) methodology)
 - Due to the advanced state of disrepair, there is a significant risk to users of this bridge
 - This project provides an opportunity to improve the structural integrity and safety of the bridge as well as maintain and improve the connection along Humber Bridge Trail

Phase 1 - Identify the Problem / Opportunity

- Heritage
 - Built in 1918, has not undergone any major rehabilitation or repair work
 - Humber Bridge Trail (HBT) Bridge can be considered an in-tact example of a concrete bowstring arch bridge, commonly constructed across Ontario in the early 20th Century
 - This project provides an opportunity to preserve the heritage features of the HBT Bridge

Phase 1 - Identify the Problem / Opportunity

- Problem/Opportunity Statement
 - *“The bridge on Humber Bridge Trail is deteriorating in terms of its structural integrity, resulting in increased concern for the safety of bridge users and preserving the heritage aspects of the bridge. This project provides an opportunity to maintain and improve the connection along Humber Bridge Trail, east of Highway 27, as well as preserve a local heritage resource, by addressing the Bridge’s advanced state of disrepair.”*

Phase 2 - Description of Alternative Solutions

1. **Do Nothing**

- No actions would be taken to improve the structural integrity of the bridge

2. **Rehabilitate the Bridge**

- Maintain the existing structure, rehabilitation would include replacement of the deck and handrails and the repair or reinforcement of other bridge components. Preservation is paramount and restoration would be sympathetic to the existing bridge design

3. **Decommission the Bridge and Build a New Concrete Bowstring Arch Bridge**

- Removing the existing structure and erecting a new concrete bowstring arch bridge in the vicinity of the current bridge

Phase 2 - Description of Alternative Solutions

- 4. Decommission the Bridge and Build a New Precast Concrete Girder Bridge**
 - Remove the existing structure and erect a new precast concrete girder bridge in the vicinity of the current bridge
- 5. Decommission the Bridge and Build a New Steel Girder Bridge**
 - Remove the existing structure and erect a new structural steel girder bridge in the vicinity of the current bridge
- 6. Decommission the Bridge**
 - Remove the structure completely, thereby also removing the connection along the Kirby Road right-of-way over the Humber River

Existing Conditions – Structural

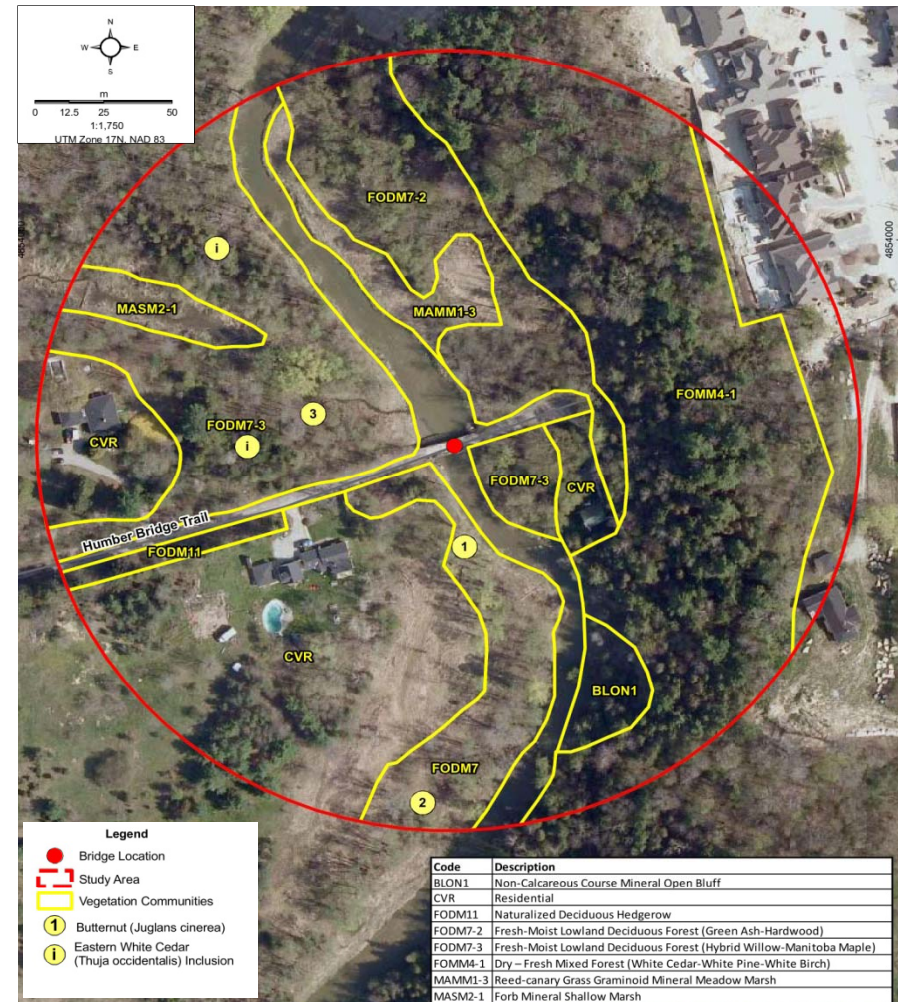
- Numerous key structural components are deteriorating or deteriorated (i.e. deck, vertical arch hangers, bottom arch chord and handrails)
- Other components in somewhat better condition, but have also experienced decay



- The bridge has a 5 tonne load limit, which would support most vehicles, but **not** larger emergency vehicles
- Significant risk to users, particularly in relation to the bridges damaged and in some cases obsolete guiderail
- Portions are showing a significant amount of spalling (concrete essentially breaks off from the main structure in small pieces)

Existing Conditions – Terrestrial Environment

- Vegetation is mixed, including forest and meadows
- No Environmentally Significant Areas (ESAs), provincially/locally significant wetlands (PSWs/LSWs), or Areas of Natural and Scientific Interest (ANSIs) within the study area
- The Humber River Valley Life Science ANSI and Glassco ESA are located approximately 1.15 km northeast of the bridge



Existing Conditions – Terrestrial Environment

- **Rare/Significant Species recorded within 1 km of the bridge on Humber Bridge Trail include:**
 - **Federal & Provincial - Species at Risk:** Rapids Clubtail (Endangered); Redside Dace (Endangered); Cerulean Warbler (Special Concern); Eastern Ribbon Snake (Special Concern); Blanding's Turtle (Threatened)
 - **Provincially Rare :** Rapids Clubtail (S1- Critically Imperilled); Cerulean Warbler (S3B - Vulnerable); Eastern Ribbon Snake (S3 - Vulnerable); Redside Dace (S2 - Imperilled); Scarlet Beebalm (S3 - Vulnerable); Jefferson X Blue-spotted Salamander (S2 - Imperilled); Blanding's Turtle (S3 – Vulnerable)
- **Locally Significant species within 150 m of the bridge:** Beech Fern
- **Butternut** - federally and provincially Endangered tree species, protected under Endangered Species Act (2007) - confirmed within 150 m of the bridge
 - As this species receives protection under the Endangered Species Act (2007), a permit may therefore be required should the proposed undertaking pose a threat to this species

Existing Conditions – Aquatic Environment

- Humber River was designated as a Canadian Heritage River in 1999
- Within the main Humber subwatershed
- Index of Biotic Integrity (IBI) indicates the general health of the aquatic ecosystem in this area is “fair” or intermediate
- 28 species, predominantly intermediately tolerant, coolwater fish, have been recorded within the study area, including the Provincially Endangered Redside Dace (c. 1999)
 - Confirmation from MNR was received stating that this site is not located within known occupied Redside Dace habitat.

Existing Conditions – Hydrogeological Environment

- Regional groundwater flows southwards towards Lake Ontario, while local shallow groundwater flows towards the Main Humber River
- In the vicinity of the bridge, the groundwater table is anticipated to be at a similar elevation to the Humber River
- The presence of the Halton Till within the study area inhibits local groundwater recharge, reduces the exposure of underlying aquifers to contamination, and also provides little groundwater discharge to the Humber River
- 16 water wells are recorded to be within 500 m of the bridge, seven of which are expected to be no longer in use
- A road-side well survey was conducted along Humber Bridge Trail and identified three active water wells

Existing Conditions – Social/Land Use Environment

- Three residential properties are located on Humber Bridge Trail, one of which can only be access via the HBT Bridge
- ‘Settlement Area Outside the Greenbelt’ designation under *Ontario Greenbelt Plan* (2005), linked to the ‘Protected Countryside’ to the north as part of the ‘River Valley Connection’
- ‘Regional Greenlands System’ under the *York Region Official Plan* (2010) – intended to maintain areas with unique functions, attributes and linkages
- Surroundings designated ‘Natural Area and Countryside’ under *Vaughan Tomorrow* (2010) - City of Vaughan’s Official Plan
 - Within the urban boundary
- *Vaughan Pedestrian and Bicycle Master Plan* (2007) - Humber Bridge Trail right-of-way, extended easterly to St. Padre Pio Gardens, designated a ‘Neighbourhood Signed Bike Route’

Existing Conditions – Cultural Environment

- Built in 1918, no major rehabilitation/repair work undertaken to-date
- 1 of 4 concrete bowstring arch bridges spanning the Humber River
- Originally served as a major river crossing until the Major Mackenzie Road alignment was moved to its present position in the late 20th century
- HBT Bridge scored 70 on the OHBP evaluation
- The overall score indicates that the HBT Bridge has high heritage significance and thus grounds for inclusion on the OHBP list

Existing Conditions – Cultural Environment

- No archaeological sites have been registered immediately adjacent to the bridge on Humber Bridge Trail; however, 14 sites have been registered within 1 km of the bridge
- Based on the findings of a Stage 1 Archaeological Assessment, the existing footprint of the HBTB does not retain archaeological site potential due to previous ground disturbances

Evaluation Results – Humber Bridge Trail Bridge

Alternative		Pros	Cons	Rank
1	Do Nothing	–low immediate cost	–does not address problem/opportunity statement –conflicts with City’s Pedestrian and Cycling Master Plan –liability issues continue to exist	6 th
2	Rehabilitate the Bridge	– preserves cultural heritage – improves safety – best protects environment – moderately high cost	– provides only 1-lane vehicular access	1 st
3	Remove Existing Bridge and Build a New Concrete Bowstring Arch Bridge	–preserves cultural heritage –improves safety –provides 2-lane bridge	–high cost	2 nd
4	Remove Existing Bridge and Build a New Precast Concrete Box Girder Bridge	–improves safety –provides 2-lane bridge	–high cost –loss of cultural heritage	4 th
5	Remove Existing Bridge and Build a New Structural Steel Girder Bridge	–improves safety –provides 2-lane bridge	–high cost –loss of cultural heritage	3 rd
6	Remove Bridge and Provide Alternative Access Road to house #5789	–improves safety	–loss of cultural heritage –loss of recreational use –highest cost –high disruption to environment due to vegetation removal along new access route	5 th

Preferred Alternative

Humber Bridge Trail Bridge

Alternative #2 - Rehabilitate the Bridge

- In considering each of the key factor areas (i.e. heritage, structural, financial, natural environment) and weighing the potential tradeoffs, Full Rehabilitation of the bridge on Humber Bridge Trail is the only means of preserving its heritage potential, as well as improving its structural integrity and minimizing impacts on the surrounding environment

Next Steps

- Respond to comments/suggestions from the Public and Agencies – August 2011
- Undertake Phase 4: Summarize the planning and decision-making processes undertaken through Phases 1 and 2 and document this in two separate Environmental Screening Documents (ESD) – August/September 2011
- Submission of Recommended Solutions and Summary of ESD to City of Vaughan Council – Fall 2011
- Post Notice of Completion and ESD on Public Record for 30 Calendar Day Review – Late Fall 2011



Humber Bridge Trail

Thank You!

If you have any questions or comments, please do not hesitate to contact the following individuals:

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**Table 2 - Comparative Evaluation Summary Alternative Solutions
for the McEwen Bowstring Arch Bridge Class Environmental Assessment**

Areas of Consideration/ Criteria	Alternative No. 1 Do Nothing	Alternative No. 2 Rehabilitate the Bridge	Alternative No. 3 Remove Existing Bridge and Build a New Concrete Bowstring Arch Bridge	Alternative No. 4 Remove Existing Bridge and Build a New Precast Concrete Box Girder Bridge	Alternative No. 5 Remove Existing Bridge and Build a New Structural Steel Girder Bridge	Alternative No. 6 Remove Existing Bridge and Replace with a Prefabricated Pedestrian-Only Bridge	Alternative No. 7 Remove the Bridge
Description of Alternative	Bridge is left as is. Note: Transferring the bridge to TRCA ownership is a variation of this alternative, but its implications are not explored in this analysis.	The existing McEwen Bridge structure would be maintained, while reinforcing and/or restoring the deteriorating sections to improve the overall structural integrity of the bridge to allow full vehicular use.	Complete removal of the existing McEwen Bridge structure and the construction of a new 2-lane concrete bowstring arch bridge in the same vicinity.	Complete removal of the existing McEwen Bridge structure and the construction of a new 2-lane precast concrete box girder bridge in the same vicinity.	Complete removal of the existing McEwen Bridge structure and the construction of a new 2-lane structural steel girder bridge in the same vicinity.	Complete removal of the existing McEwen Bridge structure and replacement with a prefabricated steel bridge to allow for pedestrian use only.	Complete removal of the existing McEwen Bridge and no new structure built in its place.
1. Technical							
1.1 Potential to improve safety for bridge users.	None	High (positive effect)	High (positive effect)	High (positive effect)	High (positive effect)	High (positive effect)	Moderate
1.2 Constructability of proposed infrastructure.	None	Low constructability	High constructability	High constructability	High constructability	High constructability	High constructability
1.3 Potential for future maintenance requirements.	High	Moderate	Moderate	Moderate	Moderate	Moderate	None
2. Natural Environment							
2.1 Potential for short-term construction related effects on the aquatic environment.	None	High	High	High	High	High	High
2.2 Potential for short-term construction related effects on the terrestrial environment.	None	High	High	High	High	High	High
2.3 Potential for short-term construction related effects on baseflow and/or groundwater.	None	Low	Moderate	Moderate	Moderate	Moderate	Low
2.4 Potential for long-term effects on the aquatic environment.	None	Low	High	High	High	High	Low
2.5 Potential for long-term effects on the terrestrial environment.	None	Low	Low	Low	Low	Low	Low
2.6 Potential for long-term effects on baseflow and/or groundwater.	None	Low	Low	Low	Low	Low	Low
3. Social Environment							
3.1 Potential for disturbing existing residences, community, and recreation facilities through temporary and/or permanent effects (i.e. construction noise, dust, property access disruption, etc).	None	Moderate	Moderate	Moderate	Moderate	Moderate	High
3.2 Potential to maintain and improve access to the Humber Valley Heritage Trail for cycling and walking.	Moderate/None	High (positive effect)	High (positive effect)	High (positive effect)	High (positive effect)	High (positive effect)	None

**Table 2 - Comparative Evaluation Summary Alternative Solutions
for the McEwen Bowstring Arch Bridge Class Environmental Assessment**

Areas of Consideration/ Criteria	Alternative No. 1 Do Nothing	Alternative No. 2 Rehabilitate the Bridge	Alternative No. 3 Remove Existing Bridge and Build a New Concrete Bowstring Arch Bridge	Alternative No. 4 Remove Existing Bridge and Build a New Precast Concrete Box Girder Bridge	Alternative No. 5 Remove Existing Bridge and Build a New Structural Steel Girder Bridge	Alternative No. 6 Remove Existing Bridge and Replace with a Prefabricated Pedestrian-Only Bridge	Alternative No. 7 Remove the Bridge
3.3 Potential for requiring the acquisition of private property.	None	Moderate	High	High	High	High	None
3.4 Degree of compatibility with Regional and Local Official Plans (OP), Pedestrian and Bicycle Plans, and other relevant policies and plans.	High compatibility	High compatibility	Moderate compatibility	Moderate compatibility	Moderate compatibility	Moderate compatibility	Low compatibility
3.5 Potential for creating a visually appealing structure.	Moderate	High	High	High	High	High	None
4. Cultural Environment							
4.1 Potential for negative effects on archaeological resources.	None	Low	Low/Moderate	Low/Moderate	Low/Moderate	Low/Moderate	Low
4.2 Potential for negative effects on built heritage resources.	None	Low/Moderate	Moderate/High	High	High	High	High
5. Financial							
5.1 Potential cost for acquiring property.	None	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
5.2 Potential Capital costs to the City of Vaughan for implementation.	None	Approximately \$793,000.	Approximately \$1,695,000.	Approximately \$1,345,000.	Approximately \$1,280,000.	Approximately \$780,000.	Approximately \$284,000.
5.3 Potential future maintenance costs.	High	Moderate	Moderate	Moderate	Moderate	Moderate	None
Ranking of Alternative Solutions	Pros - low immediate cost Cons - Does not address problem/opportunity statement - Conflicts with City's Pedestrian and Cycling Master Plan - Liability issues continue to exist	Pros - preserves cultural heritage - improves safety - best protects environment - moderately high cost Cons - provides only 1-lane vehicular access	Pros - preserves cultural heritage - improves safety - provides 2-lane bridge Cons - highest cost	Pros - improves safety - provides 2-lane bridge Cons - high cost - loss of cultural heritage	Pros - improves safety - provides 2-lane bridge Cons - high cost - loss of cultural heritage	Pros - improves safety - moderately high cost Cons - does not allow vehicular access - loss of cultural heritage	Pros - improves safety - low cost Cons - loss of cultural heritage - loss of recreational use - loss of potential vehicular connectivity
	7 th	1 st	2 nd	4 th	5 th	3 rd	6 th

Note:  Recommended Solution

WELCOME

Vaughan Bowstring Arch Bridges Class Environmental Assessment Studies



McEwen Bridge &
Humber Bridge Trail
Bridge

6 - 9 p.m.
July 21, 2011
Kleinburg Public Library

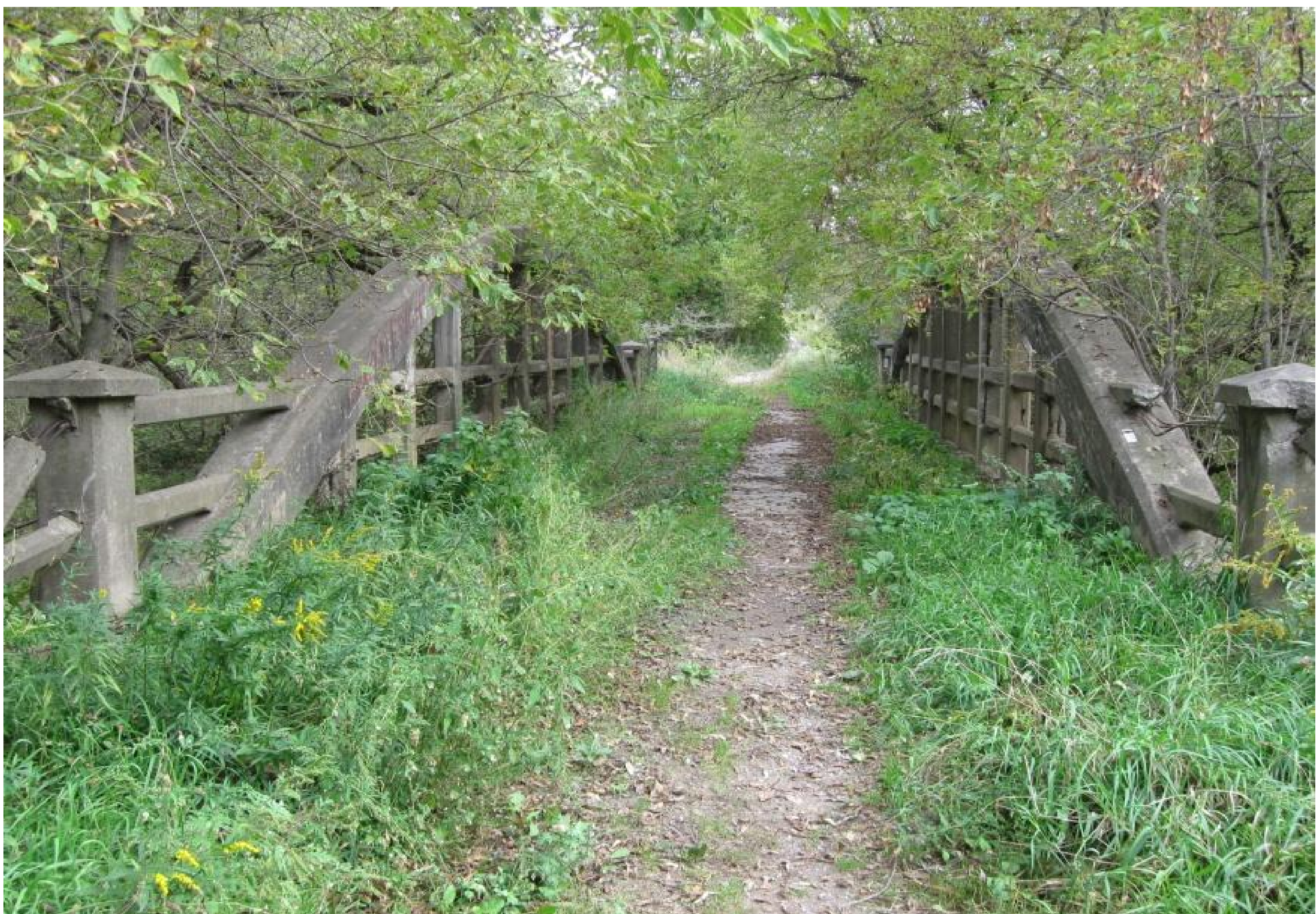
Vaughan Bowstring Arch Bridges Class Environmental Assessment Overview

- The City of Vaughan is undertaking a pair of separate, but simultaneous Class Environmental Assessments (EAs) to identify a proposed rehabilitation solution for two bowstring arch bridges over the Humber River
- Both bowstring arch bridges are over 90 years old and in similar states of advanced disrepair:
 - McEwen Bridge, east of Huntington Road on Kirby Road Right-Of-Way
 - Humber Bridge Trail, east of Highway 27
- In Ontario, the EA Act governs the requirements of the EA process
- The purpose of the EA Act is to promote good environmental planning through the:
 - Protection;
 - Conservation; and,
 - Wise Management of Ontario's environment
- The intent is to predict the environmental effects of proposed undertakings before they are carried out

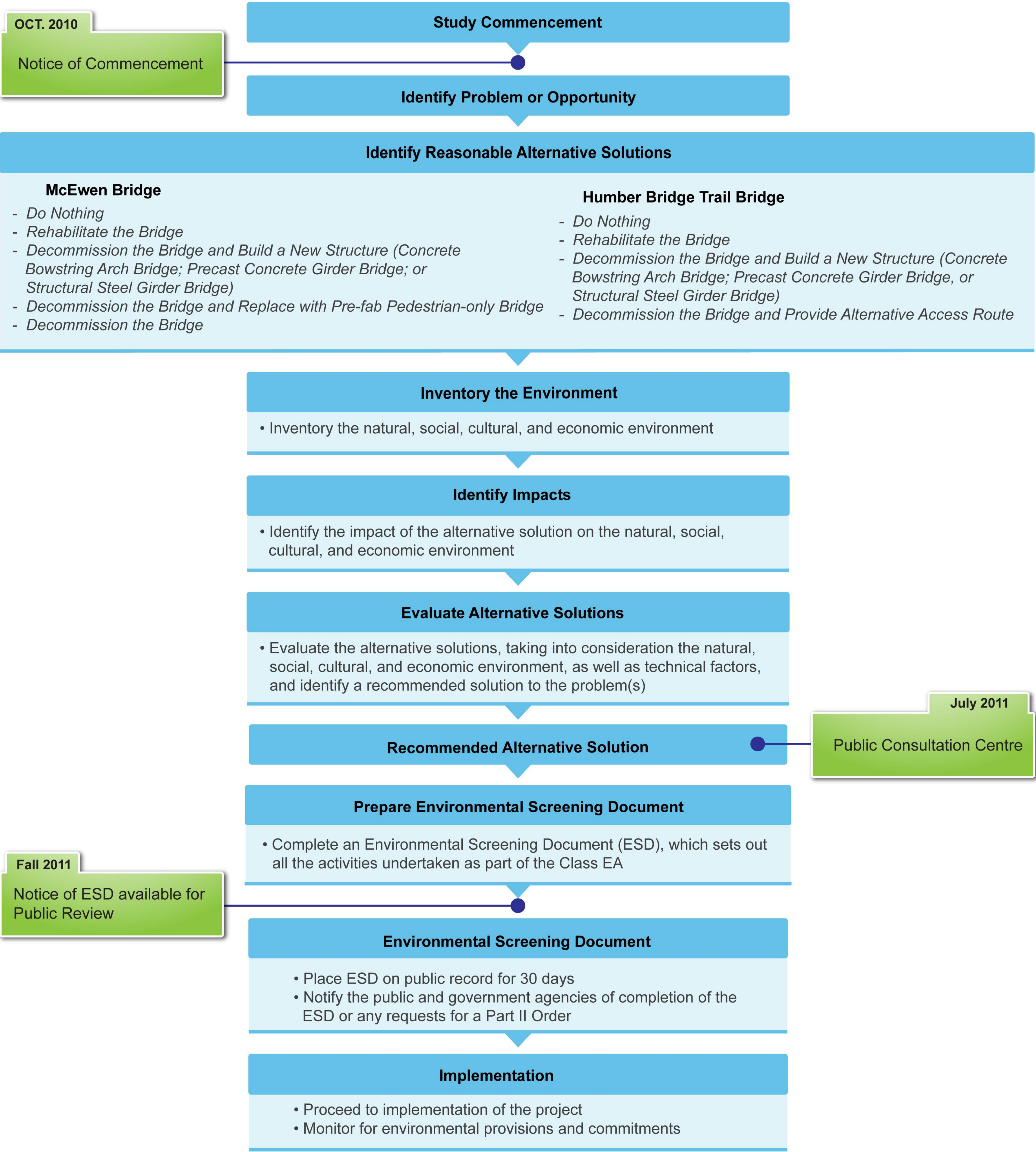


Class Environmental Assessment Overview

- Class EA's are a method of dealing with projects that are routine undertakings, limited in scale, have a predictable range of environmental effects and are able to implement appropriate mitigation measures
- The Vaughan Bowstring Arch Bridges Class EA is following the Municipal Engineers Association (MEA) Class EA process as a Schedule B projects
- The EA process serves several important purposes by:
 - Allowing for consultation from a variety of sources including three levels of government, stakeholders and the public;
 - Identifying potential issues and how to mitigate them prior to implementation (i.e. construction);
 - Promoting good environmental planning practices;
 - Improving community acceptance; and,
 - Allowing for transparency in the decision-making process.
- Consultation for the Projects include:
 - Notification through newspaper advertisements, direct mailing and Posting on-site at McEwen Bridge
 - Public Information Centre (PIC)
 - Accessible website (www.vaughan.ca/bab)



Class EA Process



Problem/Opportunity Statements

McEwen Bridge

"The McEwen Bowstring Arch bridge is deteriorating in terms of its structural integrity, resulting in increased concern for the safety of bridge users and preserving the heritage aspects of the bridge. This project provides an opportunity to maintain and improve the connection along the Kirby Road Right-Of-Way, east of Huntington Road, as well as preserve a local heritage resource, by addressing the bridge's advanced state of disrepair."

Humber Bridge Trail (HBT) Bridge

"The bridge on Humber Bridge Trail is deteriorating in terms of its structural integrity, resulting in increased concern for the safety of bridge users and preserving the heritage aspects of the bridge. This project provides an opportunity to maintain and improve the connection along Humber Bridge Trail, east of Highway 27, as well as preserve a local heritage resource, by addressing the bridge's advanced state of disrepair."

McEwen Bridge Existing Conditions Overview

Structural

- Key structural components deteriorating/deteriorated (i.e. deck, vertical arch hangers, bottom arch chord, floor beams & handrails)
- Steel plates installed in wheel tracks over deck to reduce the risk of failure
- 5 tonne load limit, which would support most vehicles, but not larger emergency vehicles
- Significant risk to users (pedestrians), particularly due to the bridge's damaged/obsolete (in some cases) guiderail
- Portions showing significant amount of spalling (concrete breaking off from the main structure in small pieces)

Cultural

- Built in 1923 and no major rehabilitation or repair work has been undertaken to-date
- 1 of only 4 concrete bowstring arch bridges spanning the Humber River
- Heritage value evaluated by Ontario Heritage Bridge Program (OHBP). Automatic consideration for OHBP listing with score above 60 points. McEwen Bridge scored a 64
- Overall score indicates that McEwen Bridge has high heritage significance and thus grounds for inclusion on the OHBP list
- No archaeological sites registered adjacent to the bridge - 4 sites located within 1 km
- Stage 1 Archaeological Assessment determined that the bridge footprint retains no archaeological site potential due to previous ground disturbances



Natural Environment

- No Environmentally Significant Areas, provincially/locally significant wetlands, or Areas of Natural and Scientific Interest within study area
- Rare/Significant Species (1 km):
 - Rapids Clubtail; Cerulean Warbler; Eastern Ribbon Snake; A Moss ; Scarlet Beebalm; Jefferson X Blue-spotted Salamander
- Locally Significant Species (150 m):
 - Red Pine; White Spruce; Western Chorus Frog; Bobolink
- 24 species recorded within study area, including Provincially Endangered Redside Dace (c. 1972), although its current presence is unlikely
- One water well located 450 m southwest

Social/Land Use

- Designated a 'Community Multi-use Recreational Pathway' - part of Vaughan's signed bicycle network, improving access and connectivity for pedestrians, hikers, and cyclists (*Vaughan Pedestrian & Bicycle Master Plan, 2007*)
- Kirby Road right-of-way identified in *Vaughan Tomorrow* and the *Vaughan Transportation Master Plan* as an 'Unopened Road Allowance'

HBT Bridge Existing Conditions Overview



Structural

- Key structural components deteriorating/deteriorated (i.e. deck, vertical arch hangers, bottom arch chord & handrails)
- 5 tonne load limit, which would support most vehicles, but not larger emergency vehicles
- Significant risk to users (pedestrians), particularly due to the bridge's damaged/obsolete (in some cases) guiderail
- Portions showing significant amount of spalling (concrete breaking off from the main structure in small pieces)

Cultural

- Built in 1918 and no major rehabilitation or repair work has been undertaken to-date
- 1 of only 4 concrete bowstring arch bridges spanning the Humber River
- Heritage value evaluated by Ontario Heritage Bridge Program (OHBP). Automatic consideration for OHBP listing with score above 60 points. HBT Bridge scored a 70
- Overall score indicates that HBT Bridge has high heritage significance and thus grounds for inclusion on the OHBP list
- No archaeological sites registered adjacent to the bridge - 14 sites located within 1 km
- Stage 1 Archaeological Assessment determined that the bridge footprint retains no archaeological site potential due to previous ground disturbances

Natural Environment

- No Environmentally Significant Areas, (ESA) provincially/locally significant wetlands, or Areas of Natural and Scientific Interest (ANSI) within study area
- Humber River Valley Life Science ANSI and Glassco ESA approx. 1.15 km to the northeast
- Rare/Significant Species (1 km):
 - Rapids Clubtail; Cerulean Warbler; Eastern Ribbon Snake; Scarlet Beebalm; Jefferson X Blue-spotted Salamander; Blanding's Turtle, Redside Dace
- Locally Significant Species (150m): Beech Fern
- Federally & Provincially Endangered Butternut tree (protected under *Endangered Species Act*, 2007) confirmed within 150 m
 - Permit may be required if proposed undertaking poses threat to species
- 28 species recorded within study area, including Provincially Endangered Redside Dace (c. 1999)
- 16 water wells within 500 m; 7 expected to be no longer in use, 3 active wells along HBT

Social/Land Use

- HBT through to St. Padre Pio Gardens designated a 'Neighbourhood Signed Bike Route' - part of Vaughan's signed bicycle network, improving access and connectivity for pedestrians, hikers, and cyclists (*Vaughan Pedestrian & Bicycle Master Plan*, 2007)
- 3 residential properties on HBT



McEwen Bridge Comparative Evaluation

Areas of Consideration/ Criteria	Alternative No. 1 Do Nothing	Alternative No. 2 Rehabilitate the Bridge	Alternative No. 3 Remove Existing Bridge and Build a New Concrete Bowstring Arch Bridge	Alternative No. 4 Remove Existing Bridge and Build a New Precast Concrete Box Girder Bridge	Alternative No. 5 Remove Existing Bridge and Build a New Structural Steel Girder Bridge	Alternative No. 6 Remove Existing Bridge and Replace with Prefabricated Pedestrian- Only Bridge	Alternative No. 7 Remove the Bridge
Description of Alternative	Bridge is left as is. Note: Transferring the bridge to TRCA ownership is a variation of this alternative, but its implications are not explored in this analysis.	The existing McEwen Bridge structure would be maintained, while reinforcing and/or restoring the deteriorating sections to improve the overall structural integrity of the bridge to allow full vehicular use.	Complete removal of the existing McEwen Bridge structure and the construction of a new 2-lane concrete bowstring arch bridge in the same vicinity.	Complete removal of the existing McEwen Bridge structure and the construction of a new 2-lane precast concrete box girder bridge in the same vicinity.	Complete removal of the existing McEwen Bridge structure and the construction of a new 2-lane structural steel girder bridge in the same vicinity.	Complete removal of the existing McEwen Bridge structure and replacement with a prefabricated steel bridge to allow for pedestrian use only.	Complete removal of the existing McEwen Bridge and no new structure built in its place.
Technical							
Potential to improve safety for bridge users.	None	High (positive effect)	High (positive effect)	High (positive effect)	High (positive effect)	High (positive effect)	Moderate
Constructability of proposed infrastructure.	None	Low constructability	High constructability	High constructability	High constructability	High constructability	High constructability
Potential for future maintenance requirements.	High	Moderate	Moderate	Moderate	Moderate	Moderate	None
Natural Environment							
Potential for short-term construction related effects on the aquatic environment.	None	High	High	High	High	High	High
Potential for short-term construction related effects on the terrestrial environment.	None	High	High	High	High	High	High
Potential for short-term construction related effects on baseflow and/or groundwater.	None	Low	Moderate	Moderate	Moderate	Moderate	Low
Potential for long-term effects on the aquatic environment.	None	Low	High	High	High	High	Low
Potential for long-term effects on the terrestrial environment.	None	Low	Low	Low	Low	Low	Low
Potential for long-term effects on baseflow and/or groundwater.	None	Low	Low	Low	Low	Low	Low

McEwen Bridge Comparative Evaluation (ctd.)

Areas of Consideration/Criteria		No. 1 - Do Nothing	No. 2 - Rehabilitate the Bridge	No. 3 - Remove Existing Bridge and Build a New Concrete Bowstring Arch Bridge	No. 4 - Remove Existing Bridge and Build a New Precast Concrete Box Girder Bridge	No. 5 - Remove Existing Bridge and Build a New Structural Steel Girder Bridge	No. 6 - Remove Existing Bridge and Replace with Prefabricated Pedestrian-Only Bridge	No. 7 - Remove the Bridge
Social Environment								
Potential for disturbing existing residences, community, and recreation facilities through temporary and/or permanent effects (i.e. construction noise, dust, property access disruption, etc).		None	Moderate	Moderate	Moderate	Moderate	Moderate	High
Potential to maintain and improve access to the Humber Valley Heritage Trail for cycling and walking.		Moderate/None	High (positive effect)	High (positive effect)	High (positive effect)	High (positive effect)	High (positive effect)	None
Potential for requiring the acquisition of private property.		None	Moderate	High	High	High	High	None
Degree of compatibility with Regional and Local Official Plans (OP), Pedestrian and Bicycle Plans, and other relevant policies and plans.		High compatibility	High compatibility	Moderate compatibility	Moderate compatibility	Moderate compatibility	Moderate compatibility	Low compatibility
Potential for creating a visually appealing structure.		Moderate	High	High	High	High	High	None
Cultural Environment								
Potential for negative effects on archaeological resources.		None	Low	Low/Moderate	Low/Moderate	Low/Moderate	Low/Moderate	Low
Potential for negative effects on built heritage resources.		None	Low/Moderate	Moderate/High	High	High	High	High
Financial								
Potential cost for acquiring property.		None	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
Potential Capital costs to the City of Vaughan for implementation.		None	Approximately \$793,000	Approximately \$1,695,000	Approximately \$1,345,000	Approximately \$1,280,000	Approximately \$780,000	Approximately \$284,000
Potential future maintenance costs.		High	Moderate	Moderate	Moderate	Moderate	Moderate	None
Ranking of Alternative Solutions	PROS	• low immediate cost	• preserves cultural heritage • improves safety • best protects environment • moderately high cost	• preserves cultural heritage • improves safety • provides 2-lane bridge	• improves safety • provides 2-lane bridge	• improves safety • provides 2-lane bridge	• improves safety • moderately high cost	• improves safety • low cost
	CONS	• does not address problem/opportunity statement • conflicts with City's Pedestrian and Cycling Master Plan • liability issues continue to exist	• provides only 1-lane vehicular access	• highest cost	• high cost • loss of cultural heritage	• high cost • loss of cultural heritage	• does not allow vehicular access • loss of cultural heritage	• loss of cultural heritage • loss of recreational use • loss of potential vehicular connectivity
	RANKING	7th	1st	2nd	4th	5th	3rd	6th

Humber Bridge Trail Bridge Comparative Evaluation

Areas of Consideration/ Criteria	Alternative No. 1 Do Nothing	Alternative No. 2 Rehabilitate the Bridge	Alternative No. 3 Remove Existing Bridge and Build a New Concrete Bowstring Arch Bridge	Alternative No. 4 Remove Existing Bridge and Build a New Precast Concrete Box Girder Bridge	Alternative No. 5 Remove Existing Bridge and Build a New Structural Steel Girder Bridge	Alternative No. 6 Remove Bridge and Provide Alternative Access Road to house #5789
Description of Alternative	<p>Bridge is left as is.</p> <p>Note: Transferring the bridge to TRCA/Private ownership, or buying out the property owner at house #5789 are variations of this alternative, but their implications are not explored in this analysis.</p>	<p>The existing bridge structure on Humber Bridge Trail would be maintained, while reinforcing and/or restoring the deteriorating sections to improve the overall structural integrity of the bridge.</p>	<p>Complete removal of the existing bridge structure on Humber Bridge Trail and construction of a new 2-lane concrete bowstring arch bridge in the same vicinity.</p>	<p>Complete removal of the existing bridge structure on Humber Bridge Trail and construction of a new 2-lane precast concrete box girder bridge in the same vicinity.</p>	<p>Complete removal of the existing bridge structure on Humber Bridge Trail and construction of a new 2-lane structural steel girder bridge in the same vicinity.</p>	<p>Removal of the existing Humber Bridge Trail Bridge and construction of an alternative access road to Padre Pio Gardens to the east to service house #5789.</p>
Technical						
Potential to improve safety for bridge users.	None	High	High	High	High	High
Constructability of proposed infrastructure.	None	Low/Moderate constructability	High constructability	High constructability	High constructability	High constructability
Potential for future maintenance requirements.	High	Moderate	Moderate	Moderate	Moderate	Moderate
Natural Environment						
Potential for short-term construction related effects on the aquatic environment.	None	High	High	High	High	High
Potential for short-term construction related effects on the terrestrial environment.	None	High	High	High	High	High
Potential for short-term construction related effects on baseflow and/or groundwater.	None	Low	Moderate	Moderate	Moderate	Low
Potential for long-term effects on the aquatic environment.	None	Low	High	High	High	Low
Potential for long-term effects on the terrestrial environment.	None	Low	Low	Low	Low	High
Potential for long-term effects on baseflow and/or groundwater.	None	Low	Low	Low	Low	Low

Humber Bridge Trail Bridge Comparative Evaluation (ctd.)

Areas of Consideration/Criteria		No. 1 - Do Nothing	No. 2 - Rehabilitate the Bridge	No. 3 - Remove Existing Bridge and Build a New Concrete Bowstring Arch Bridge	No. 4 - Remove Existing Bridge and Build a New Precast Concrete Box Girder Bridge	No. 5 - Remove Existing Bridge and Build a New Structural Steel Girder Bridge	No. 6 - Remove the Bridge
Social Environment							
Potential for disturbing existing residences, community, and recreation facilities through temporary and/or permanent effects (i.e. construction noise, dust, property access disruption, etc).		None	Moderate	Moderate	Moderate	Moderate	Moderate
Potential to maintain and improve access to the Humber Valley Heritage Trail for cycling and walking.		Moderate/None	High (positive effect)	High (positive effect)	High (positive effect)	High (positive effect)	High (positive effect)
Potential for requiring the acquisition of private property.		None	Moderate	High	High	High	High
Degree of compatibility with Regional and Local Official Plans (OP), Pedestrian and Bicycle Plans, and other relevant policies and plans.		High compatibility	High compatibility	High compatibility	High compatibility	High compatibility	Low compatibility
Potential for creating a visually appealing structure.		Low	High (positive effect)	Moderate	Moderate	Moderate	None
Cultural Environment							
Potential for negative effects on archaeological resources.		None	Low	Moderate	Moderate	Moderate	High
Potential for negative effects on built heritage resources.		None	Low	Moderate	High	High	High
Financial							
Potential cost for acquiring property.		None	Moderate	Moderate	Moderate	Moderate	High
Potential Capital costs to the City of Vaughan for implementation.		None	Approximately \$793,000	Approximately \$1,696,000	Approximately \$1,345,000	Approximately \$1,280,000	Approx. \$284,000 to decommission; \$700,000 to \$1,000,000 for new access /structure.
Potential future maintenance costs.		High	Moderate	Moderate	Moderate	Moderate	Moderate
Ranking of Alternative Solutions	PROS	• low immediate cost	• preserves cultural heritage • improves safety • best protects environment • moderately high cost	• preserves cultural heritage • improves safety • provides 2-lane bridge	• improves safety • provides 2-lane bridge	• improves safety • provides 2-lane bridge	• improves safety
	CONS	• does not address problem/opportunity statement • conflicts with City's Pedestrian and Cycling Master Plan • liability issues continue	• provides only 1-lane vehicular access	• high cost	• high cost • loss of cultural heritage	• high cost • loss of cultural heritage	• loss of cultural heritage • loss of recreational use • highest cost • high disruption to environment due to vegetation removal along new access
	RANKING	6th	1st	2nd	4th	3rd	5th

COMMITTEE OF THE WHOLE - APRIL 20, 2010

AWARD OF PROPOSAL – RFP10-046 SELECTION OF CONSULTANT CLASS ENVIRONMENTAL ASSESSMENT FOR BOWSTRING ARCH BRIDGES ON HUMBER BRIDGE TRAIL AND MCEWEN BRIDGE ON KIRBY ROAD WARD 1

Recommendation

The Commissioner of Engineering and Public Works in consultation with the Director of Reserves and Investments and the Director of Purchasing Services recommends:

1. That the engineering consulting firm of Aecom Canada Ltd. be retained to provide engineering services for the Class Environmental Assessment for the bowstring arch bridges on Humber Bridge Trail and the McEwen bridge on Kirby Road at an estimated cost of \$96,726.00, excluding G.S.T.;
2. That a contingency allowance in the amount of \$10,000.00, excluding G.S.T. be approved within which the Commissioner of Engineering and Public Works or his designate is authorized to approve amendments to the Contract;
3. That the budget of Capital Project EN-1719-08 be increased by \$68,800.00 and funded from Roads Infrastructure Reserve;
4. That inclusion of the matter on a Public Committee or Council Agenda for additional funding request for Class Environmental Assessment for Bowstring Arch Bridges on Humber Bridge Trail and McEwen Bridge on Kirby Road is deemed sufficient notice pursuant to Section 2(1)(c) of By-Law 394-2002; and
5. That the Mayor and Clerk be authorized to sign an Engineering Agreement with Aecom Canada Ltd.

Contribution to Sustainability

The Class Environmental Assessment (Class EA) to be conducted on the two bridges will consider the environmental implications of all the possible alternatives. The environmental considerations of the EA process will play a significant role in determining the long term solution the City will implement.

Economic Impact

The total cost for the Class EA is approximately \$110,000.00. The 2008 Capital Budget (Project No. EN-1719-08) for the Class Environmental Assessment for Bowstring Arch Bridges on Humber Bridge Trail and McEwen Bridge on Kirby Road includes \$41,200.00 funded from Roads Infrastructure Reserve.

The additional cost for this project in the estimated amount of \$68,800.00 is also to be funded from Roads Infrastructure Reserve.

Communications Plan

Once this consultant assignment is awarded, the consultant will coordinate with staff and determine the exact level of public participation required by the Environmental Assessment Act. It is anticipated that both bridges included in the project will require a "Schedule B" Class EA, which will require the City to notify all stakeholders of the study's commencement by direct mailing. Newspaper ads and notices on City Page Online will also be created to inform the public of the study's commencement. Interested stakeholders and the general public will have the opportunity to provide input during a Public Information Centre (PIC) or by directly contacting the City or its Consulting Engineer. As required by the Class EA Act, the public will have 30 days to review the completed Environmental Screening Document (ESD) before the report is filed.

Purpose

The basic purpose of a Class EA is to inform the public of the intended action the proponent wishes to undertake, and provide an opportunity for public input. Nearly all road and bridge rehabilitation capital projects are pre-approved, and categorized as "Schedule A or A+" by the EA Act. Pre-approved Class EAs only require public notification of the proponent's intentions, and allowance for public input, such as the notices and Public Information Centres that the Engineering Services Department conducts routinely.

In the case of the two bowstring arch bridges, the Class EA procedure requires that a "Schedule B" Class EA be conducted, since the age of the bridges exceeds 40 years. A "Schedule B" Class EA requires more research into the relevant stakeholders, and a complete review of all possible options to the proponent's preferred alternative. For the purpose of this study, several alternatives were suggested, and the EA process will determine the environmental, cultural, and economic impacts of each alternative. Following the analysis of all the alternatives, the City will have the information needed to make a well-informed decision on the long-term solutions for the two bridges.

Background - Analysis and Options

The bridge on Humber Bridge Trail was constructed in 1914. It is currently in service with a 5-ton load limit, and is used by a single homeowner who uses it to access the property. The Class EA study will investigate the possibility of rehabilitating the bridge, as well as the options of replacing the bridge, or purchasing the property on the east bank of the Humber River, thus eliminating the need to keep the bridge in service.

The McEwen Bridge on Kirby Road was constructed in 1923. It is not currently in service for vehicular use, but is used for recreational purposes, as part of the Humber Valley Heritage Trail. The Class EA study will investigate the possibility of rehabilitating the bridge to allow it to continue in its current recreational-use role. The option of rehabilitating or reconstructing the bridge to allow full traffic loading may not be a preferred option, due to the fact that the bridge is only one lane in width. Should this section of Kirby Road be required as traffic link in the future, an entirely new bridge would be required, whether in the same location, or nearby. The Class EA process will fully evaluate all of the possible alternatives.

Although the bridges are not currently designated as Heritage Sites under the Ontario Heritage Act, they are listed on the Vaughan Heritage Inventory (VHI) as structures with potential cultural heritage value.

In January 2010, the Purchasing Services Department issued Request for Proposal RFP10-046 to retain a consulting firm to provide professional engineering services for the Class EA on the two bridges. In accordance with the City's Purchasing Policy for projects of this value, four consultants were invited to submit proposals. The invited consultants were selected for their

familiarity with the Class EA process on bridges, and for their experience with bridges of this uncommon type and age.

In response to the invitations, three proposal submissions were received on February 16, 2010 from Aecom Canada Ltd., R.V. Anderson Associates Limited, and Planmac Limited for engineering services in connection with this project. The professional engineering fees include conducting a "Schedule B" Class EA on the two bridges.

At the time the original budget for the Class EA study was requested, it was assumed that the two bridges could fall under one Class EA project. Upon review of the proposals received by the City, it was apparent that although the issues concerning the two bridges were similar, the project must be conducted as two separate Class EAs, since they are a considerable distance from one another. This is the primary reason for the budget overage. Nevertheless, conducting Class EAs on the two bridges concurrently will allow the City to improve efficiency significantly, rather than awarding two separate Class EA projects to different consultants at different times. For example, stakeholders such as the Toronto Region Conservation Authority (TRCA) will have similar interests for both bridges. A single EA process will allow their comments for the two bridges to be received once, then address them concurrently. Most importantly, a single consultant's work plan for the two EAs can follow the same template and background information, avoiding the redundancy that would occur if two separate consultants were assigned a single Class EA project.

The evaluation committee reviewed and evaluated the proposals submitted based on the following:

- Project Understanding and Approach – 20%
- Work Plan and Project Management – 25%
- Firm Qualifications and Staff experience – 35%
- Engineering Fees – 20%

Aecom Canada Ltd. scored the highest number of points during evaluation. Based on staff's evaluation of the proposals, it is recommended that the proposal from Aecom Canada Ltd. be accepted for the completion of the Class EA and that an Engineering Agreement be executed.

The total estimated cost for the project which completion of the "Schedule B" Class EA and all applicable taxes (G.S.T. is 100% recoverable) is \$110,000.00 and is calculated as follows:

Aecom Canada Ltd. (excluding G.S.T.)	\$ 96,726.00
Contingency Allowance (10%)	<u>\$ 10,000.00</u>
Sub-Total	\$106,726.00
G.S.T. (5% amount is 100% recoverable)	\$ 5,336.30
Treasury Administration (3%)	<u>\$ 3,201.78</u>
Total	\$115,264.08
Less G.S.T. Recoverable	<u>\$(5,336.30)</u>
Total Cost	\$109,927.78
	ROUNDED \$110,000.00
Approved Budget	<u>(\$ 41,200.00)</u>
Additional Funds Required	\$ 68,800.00

Relationship to Vaughan Vision 2020/Strategic Plan

In consideration of the strategic priorities related to Vaughan Vision 2020, the recommendations of this report will assist in:

- Pursue Excellence in Service Delivery;
- Enhance and Ensure Community Safety, Health & Wellness;
- Lead and Promote Environmental Sustainability; and
- Preserve our Heritage and Support Diversity, Arts & Culture

This report is consistent with the priorities previously set by Council.

Regional Implications

Not applicable.

Conclusion

Staff have reviewed the proposal from Aecom Canada Ltd., and have determined that the costs are reasonable, and the specified scope of work is necessary to comply with the requirements of the Environmental Assessment Act. Therefore, staff recommend that this contract be awarded to Aecom Canada Ltd., in the amount of \$96,726.00, plus G.S.T.

Should Council concur with the additional funding request, this action would be considered as an amendment to the Capital Budget. Pursuant to the Municipal Act, before amending a budget, a municipality shall give notice of its intention to amend the budget at a Council meeting. Where a capital project has been subject to a public meeting during the adoption of the approved capital budget and where additional funding is required to complete the approved works, inclusion of the matter in a staff report requesting additional funding on a Public Committee or Council Agenda is deemed sufficient notice pursuant to Section 2(1)(c) of By-Law 394-2002.

Attachments

1. Location Map

Report prepared by:

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Respectfully submitted,

Bill Robinson, P. Eng.
Commissioner of Engineering and Public Works

Jack Graziosi, P. Eng., M. Eng.
Director of Engineering Services

CC:mc

LOCATION MAP

