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TO:	CHAIR AND MEMBERS CIVIC WORKS COMMITTEE DECEMBER 3, 2012
FROM:	EDWARD SOLDI, P. ENG. DIRECTOR, ROADS AND TRANSPORTATION
	MEADOWLILY FOOTBRIDGE REHABILITATION MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT

RECOMMENDATION

That, on the recommendation of the Director, Roads and Transportation, the following actions **BE TAKEN** in respect to the Meadowlily Footbridge Rehabilitation:

- (a) The Meadowlily Footbridge Rehabilitation Municipal Class Environmental Assessment Schedule 'B' Screening Report **BE ACCEPTED**;
- (b) A Notice of Completion of the Meadowlily Footbridge Rehabilitation Municipal Class Environmental Assessment Screening Report be advertised and filed with the Municipal Clerk; and
- (c) The Meadowlily Footbridge Rehabilitation Municipal Class Environmental Assessment Screening Report be placed on public record for a 30 day review period.

PREVIOUS REPORTS PERTINENT TO THIS MATTER
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- September 14, 2009 - ETC, Item 15 - Meadowlily Bridge Environmental Assessment;
- February 8, 2010 - ETC, Item 4 - Appointment of Consulting Engineers. Bridge Rehabilitation Program and Traffic Studies. Meadowlily Bridge Evaluation and Blackfriar's Bridge Risk Assessment;
- March 5, 2012 - CWC, Item 9 - Meadowlily Bridge Restoration and Cultural Heritage Evaluation Study Report; and
- July 17, 2012 - CWC, Item 4 - Meadowlily Bridge (4-RB-02) Rehabilitation Schedule 'B' Environmental Assessment & Detailed Design and Gore Road Bridge (4-BR-15) Replacement Schedule 'B' Environmental Assessment.

BACKGROUND

Purpose:

This report provides Committee and Council with a summary of the recommendations of the Meadowlily Footbridge Rehabilitation Municipal Class Environmental Assessment. The attached Schedule 'B' Screening Report (Appendix A), documents the EA process undertaken for the rehabilitation of the Meadowlily Footbridge, which spans the south branch of the Thames River east of Highbury Avenue.

Context:

Meadowlily Footbridge was erected in 1910 by Isaac Crouse and the Hamilton Bridge Company. The multi-span steel structure consists of three spans over the south branch of the Thames River. Originally for vehicular traffic, the bridge has been reduced to pedestrian only traffic and travel is confined to the centre of the bridge by fencing. Regular bridge inspections have reported the superstructure is in "fair" to "poor" condition with large sectional corrosion loss on many truss components. In recent history, the bridge has undergone emergency measures to support the structure.

The bridge has recently been designated under Part IV of the Ontario Heritage Act by the City of London (By-law, July 24, 2012), and it is eligible for listing in the Ontario Heritage Bridge List by the Ministry of Transportation (MTO) and the Ministry of Tourism, Culture & Sport. The Meadowlily Bridge Restoration and Cultural Heritage Evaluation Study Report (CWC Report,

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March 5, 2012) identified a number of previous directions from the Municipal Council on the Meadowlily Footbridge, and it laid out a plan for rehabilitation so the bridge can continue to serve as a community asset. The recommended approach was to strengthen and repair the bridge in a heritage sympathetic fashion, thereby bringing it up to present bridge code requirements while maintaining its visual character.

Background:

The July 17, 2012 CWC Report recommended the award of the engineering assignment in order to complete the EA, Preliminary Design and Detailed Design within a timeline to allow for the rehabilitation construction to proceed in 2013.

The March 5, 2012 CWC Report provided the Meadowlily Footbridge Restoration and Cultural Heritage Evaluation Study, and it identified the next steps for the rehabilitation of the Meadowlily Footbridge as follows:

- Setting a scope for adjacent drainage, erosion and access work;
- Engaging an engineering consultant to complete the detailed design;
- Tender a rehabilitation contract (in 2013).

Discussion:

The Meadowlily Footbridge Restoration and Cultural Heritage Evaluation Study Report addressed most of the technical EA requirements. This information was used as a basis for the development and evaluation of alternatives as well as the public and stakeholder involvement undertaken as part of the EA process that was initiated in the summer of 2012.

The EA was carried out in accordance with the Municipal Engineer's Association Municipal Class Assessment Document, in accordance with Schedule "B".

Evaluation

The EA evaluated the following alternatives:

- Do Nothing;
- Rehabilitate (Historic or Contemporary);
- Partial Restoration & Replacement;
- Replace the Existing Bridge.

The evaluation of the alternatives was based on the criteria of Social/Cultural (Public Health & Safety, Cultural Heritage Resources, Aesthetics, and Aboriginal Issues), Natural Heritage (Terrestrial, Wildlife/Vegetation, and Aquatic Life/Vegetation), Technical (Design, Construction, Operation, Maintenance, and Applicable Policies) and Economic implications (Initial Capital Costs, Long Term Operating/Maintenance Costs).

Preferred Alternative

The preferred alternative recommended through the EA is to complete the rehabilitation of the existing bridge using contemporary materials and techniques (i.e. use of round head bolts in lieu of rivets). The culturally significant structure will be retained, with the overall aesthetics being preserved. The existing chain link fence channelling will be removed, and the bridge deck restored to full width. Contemporary materials will be used, but the historic appearance will be maintained while bringing the structure into compliance with the current bridge code design requirements. Measures will be put in place at both approaches to stop access of full size vehicles while allowing full access for pedestrians and cyclist.

With the exception of the removal of three trees (crack willows) which are currently growing through the trusses, most of the work will be confined to the bridge structure. No 'in water' works are planned, so there will not be any loss of aquatic Species at Risk habitat.

Approach Works

With connections to the Thames Valley Parkway (north side of River), Meadowlily Woods walking trail (south side) and the termination of the roadway (both sides), discussions have been held with the Parks Planning Division and Roadside Operations Division to identify the scope of adjacent drainage, erosion and access work to be addressed as part of the project, and preliminary plans have been discussed. Some defined parking spots will be provided on both the north and south sides to improve the roadside parking which currently exists. Lighting

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levels on and near the bridge will be reviewed and adjusted as necessary. Two trees would need to be removed on the south side, and some brush trimmed back on the north side.

Full Bridge Closure During Construction

A full closure will be required for the duration of the work on this bridge because there is insufficient room to keep the existing corridor open while working on the outer edges of the structure. The work will include the removal of the current deck, 'sandblasting' the existing steel structure to remove any corrosion and repaint the entire structure to protect the rehabilitated steel. In order to prevent any material from falling into the Thames River or being released into the atmosphere, the entire structure will be enclosed with a negative air pressure environment to contain the materials.

Unfortunately, there is no reasonable detour available for pedestrians/cyclists during the closure. The use of Highbury Avenue to access the Commissioners Road shopping area is not recommended due to the lack of pedestrian/cycling facilities. A pedestrian detour westerly to Egerton Street/Pond Mills Road or easterly to Hamilton/Commissioners Road are the only viable routes to cross the Thames River, resulting in approximately a 6.0 km or 9.0 km detour, respectively.

Given the length of the pedestrian and cycling detour, investigations were made into the feasibility of providing a temporary river crossing. Two options considered were to either attach a pathway on the side of the existing bridge or a separate temporary structure. Attaching a pathway to the side of the existing bridge is not feasible due to the nature of the work required, nor is the existing bridge structurally sound enough to support the extra loading of a temporary structure prior to starting the rehabilitation work. Providing a temporary crossing east or west of the existing bridge would involve the installation of temporary abutments, pathway work through the floodplain and ESA lands, cost in the order of \$ 700,000.00, and a significant delay the rehabilitation of the existing structure (at least another year) in order to obtain the necessary approvals to create this temporary crossing. Taking into consideration the significant impacts / delays associated with both options, no further consideration was explored.

Public Consultation

The EA process included a public consultation process with input from relevant agencies, affected landowners, First Nations communities and members of the public. A Notice of Study Commencement was mailed out to the relevant agencies and study area property owners/residents within the City of London on August 30, 2012, and an advertisement was placed in the 'London Free Press' on September 1, 2012 and September 8, 2012. Direct correspondence and some meetings were held with MOE, MNR, UTRCA and the First Nation communities.

In accordance with the EA process, a Public Information Centre (PIC) was held on November 1, 2012. This PIC presented the preferred design for the Meadowlily Footbridge Rehabilitation project including identifying approach works for input and comment. Following the PIC, the preferred design and Environmental Study Report (ESR) were finalized.

A copy of the executive summary for the ESR is contained in Appendix A. The public have been informed of the date for this CWC Public Participation Meeting through a mail out on November 14, 2012, an advertisement in 'The Londoner' on November 15, 2012, and November 22, 2012, as well as the posting of the Notice on the City's website.

Financial Impact:

The preliminary construction cost estimate for the Meadowlily Footbridge Rehabilitation is \$1.9 million. Funding for this project is included in the 2012 budget under TS1213.

Summary:

A Municipal Class Environmental Assessment (Schedule B) has been undertaken to consider rehabilitation options for the Meadowlily Footbridge which spans the south branch of the Thames River, east of Highbury Avenue.




It is recommended that the Preferred Alternative of the Environmental Assessment be accepted. Pending Council approval, a Notice of Completion of the project will be filed, and the Municipal

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Class Environmental Assessment Schedule "B" Screening Report will be placed on public record for a 30 day comment period. If no Part II Orders are received, staff intends to proceed to final design, with construction to follow.

Acknowledgements:

This report was prepared with assistance from Jane Fullick, C.E.T., Technologist II of the Transportation Planning and Design Division.

PREPARED BY:	REVIEWED & CONCURRED BY:
	
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RECOMMENDED BY:	
	
JOHN BRAAM, P. ENG. MANAGING DIRECTOR, ENVIRONMENTAL & ENGINEERING SERVICES & CITY ENGINEER	

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Attach:

- Appendix "A" - Meadowlily Footbridge Rehabilitation – Municipal Class Environmental Assessment – Schedule 'B' Screening Report - Executive Summary (11pages)

cc. J. Braam
E. Soldo
I. Blevins, AECOM Canada

Agenda Item # Page #

Appendix "A"

**Meadowlily Footbridge Rehabilitation
Municipal Class Environmental Assessment
Schedule 'B' Screening Report
Executive Summary**

1. Executive Summary

1.1 Background

The Meadowlily Bridge spans the south branch of the Thames River linking Meadowlily Road on both the north and south sides of the river. Refer to figure EX. 1 - Bridge Location. The structure was built in 1910 by the Hamilton Bridge company and is one of the few surviving truss bridges, once common in the London area. Originally the bridge was a vehicle traffic bridge but has been reduced to pedestrian and bicycle traffic only. Regular bridge inspections have reported that the bridge is in fair to poor condition.

City of London Council directives state, Meadowlily Bridge is to be recognized as an important cultural heritage resource that should be protected; and that Meadowlily Bridge be recognized, in perpetuity as a footbridge. In addition to the regular inspection reports, these directives lead to the completion of a Restoration and Cultural Heritage Evaluation, completed by AECOM in 2011.

The work completed as part of that study included:

- Encouraging public participation with the on-going Meadowlily Area Plan, by engaging bridge enthusiasts, and local environmental groups as well as other stakeholders.
- Cataloguing the Meadowlily Bridge historical significance through completion of a Cultural Heritage Evaluation Report (CHER), and ranking using the Ontario Ministry of Transportation (MTO) Heritage Bridge Evaluation and Rating System.
- Preparing rehabilitation/restoration rationales to restore the bridge's full cross-sectional width.
- Performing an in-depth structural inspection of all load carrying members.
- Reviewing all pertinent standards, codes and design details in order to recommend necessary upgrades to allow the site to continue usage as a pedestrian bridge.
- Identifying the economic feasibility of several bridge rehabilitation alternatives.

That work documented:

- The bridge is of significant heritage value and is eligible to be designated under Part IV of the Ontario Heritage Act.
- The bridge is eligible for listing in the Ontario Bridge List.
- The Heritage Bridge Evaluation Criteria (MTO system) is significant, scoring 74, (a bridge rating over 60 is considered provincially significant therefore the Meadowlily site is considered a significant heritage asset).
- The site can be readily rehabilitated using contemporary restoration techniques and materials.
- The bridge is currently not being used to its full potential as the deck width is bisected by a chain link fence.
- Local concerns have been raised regarding illegal activities at the site. Rehabilitation, including improved lighting and access could be implemented while still restricting the use of the bridge to pedestrian and bicycle usage.
- To bring the bridge up to current code requirements, minor sympathetic design alterations will be required to existing structural elements resulting in minor variances to the bridge.
- Significant structural alterations are required to increase the usability of the bridge, decrease dead load, and increase the reliability of the structure.

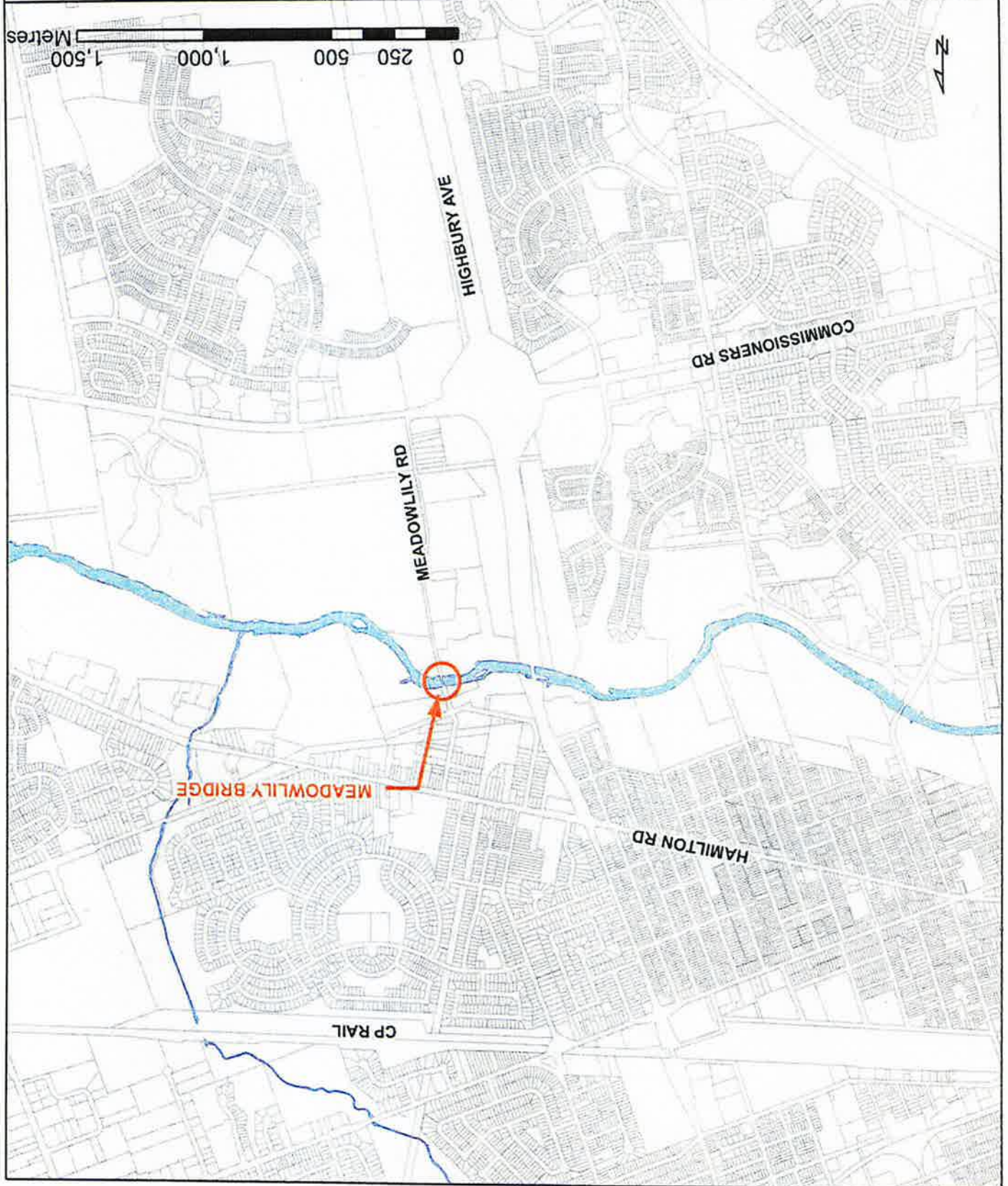
As a result, The City of London has retained AECOM to undertake a Schedule 'B' Municipal Class Environmental Assessment (Class EA) to address MEA requirements for alterations to a structure found to have cultural heritage value.



MEADOWLILY FOOTBRIDGE REHABILITATION MUNICIPAL CLASS EA

FIGURE EX1:
BRIDGE LOCATION

PN: 60150277
DATE: NOVEMBER 2012
SCALE: AS SHOWN



1.2 Class EA Process

Municipalities in Ontario, including the City of London, are subject to provisions of the Environmental Assessment (EA) Act and the requirement to prepare an Environmental Assessment for most public works projects. Based on the Class EA process, projects are classified as Schedule "A", "A+" "B" or "C". The complexity of each project is based on the level of investigation, environmental effects, technical considerations and public/agency input, which may affect the selection of the project schedule. It is up to the proponent to determine and/or customize the planning process to meet the projects consultation and technical needs based on the complexity of issues.

The MEA Class EA document identifies work undertaken to ***'reconstruct or alter a structure or grading adjacent to it when the structure is over 40 years old, which after appropriate evaluation is found to have significant cultural heritage value'***, as a Schedule "B" project. To adequately address the technical and environmental needs associated with the Meadowlily Footbridge, AECOM has undertaken this study in accordance with Class EA Schedule B requirements (as amended in 2007 & 2011). This study was subject to Phases 1 and 2 of the Class EA process which included identifying the problem (deficiency) or the opportunity, identifying alternative solutions to address the problem/opportunity taking into consideration the existing environment, establishing a preferred solution, and taking into account review agency and stakeholder input.

The scope of work completed, included the following:

- A review of all work previously completed for the Meadowlily Footbridge.
- A comparative evaluation of a series of rehabilitation methodologies that lie between 'do nothing' and replacement of the bridge.
- Identification of the preferred solution.
- Confirmation of minor ditch erosion issues associated with Meadowlily Road within the study area. Details will be further developed during detailed design.
- Identification of new pathway approaches in the immediate vicinity of the bridge, including turn-around geometry and restrictions to the bridge, river and flood plain. Details will be addressed as part of detailed design.
- Completion of a Screening Report, documenting a summary of the rationale, planning, design and consultation process undertaken to establish the preferred solution. This report will be placed on public record for the mandatory thirty (30) day review period for public and agency comment.

The following issues have been considered during this study.

- There is no significant need or benefit in opening the bridge to vehicle traffic. The network surrounding the bridge location already includes several multi lane arterial roads and local street patterns that are utilized efficiently to move large amounts of vehicle traffic.
- The bridge site does not need to be designed to carry vehicle traffic or other utilities other than those required for snow plowing and maintenance vehicles.
- The design will consider some form of physical access control to ensure usage is limited to pedestrians and bicycles.
- The site will be a significant destination for pedestrians and cyclists, therefore signage and lighting will be considered.
- The rehabilitation work will include deck replacement, installation of new railings and recoating of the superstructure (trusses).
- It is the intent to implement an alternative such that no in-water work is required. It is also the intent that all physical work will be contained in the City's right-of-way limits where possible.

- The assessment and mitigation measures will be of sufficient scope and detail to gain the required approvals and authorizations required.
- Crime Prevention Through Environmental Design (CPTED) principles will be implemented where possible to improve safety and reduce vandalism.
- This study is budgeted for 2012, with construction to be completed in 2013.

This process served as a mechanism to understand environmental, social, technical and economic issues prior to implementing improvements or changes to the structure. Recommendations have been identified and a preferred solution has been selected based on a comparative evaluation, taking into consideration the natural, social, technical and economic environments.

1.3 Public Consultation

Public involvement is an important part of the study process therefore, several steps have been completed to inform relevant agencies, affected landowners, First Nation communities and members of the public about the project and to solicit their comments. The following mandatory points of contact as well as specific methods for contacting and consulting with stakeholders were undertaken. These include:

- Direct mailing to affected land owners and review agencies regarding notice of project milestones; including Notice of Project Commencement August 20, 2012, Notice of Public Information Centre (PIC) (October 16th, 2012), Notice of Public Participation Meeting at CWC meeting scheduled for Dec.3, 2013 (November 14, 2012) and Notice of Completion (To be completed).
- All notifications and documentation have been posted on the City of London website at: http://www.london.ca/d.aspx?s=/Transportation/trans_planning.htm
- Consultation with Aboriginal communities to determine the potential effect on their lands/treaty rights and their interest in the study was carried out through direct correspondence and telephone calls to Aboriginal Affairs and Aboriginal Affairs and Northern Development Canada and local councils (Chippewas of the Thames, Oneida Nation of the Thames, Aamjiwnaang, Caldwell First Nation, Munsee-Delaware nation, Bkejwanong Territory, Delaware Nation and Chippewas of Kettle & Stony Point).
- Consultation with review agencies (MOE, MNR, and UTRCA) was carried out through direct correspondence and meetings were held on September 20th, 2012 with MOE and on September 28th, 2012 with the Upper Thames River Conservation Authority.
- A Public Information Centre was held on November 1, 2012 to provide background information on the project, an overview of the Class EA process being followed, identification and evaluation of the alternative solutions considered and the recommended solution.
- Notices for all project milestones were published as follows:
 - Notice of Project Commencement (2 publications in the London Free Press – Saturday September 1, 2012 and Saturday September 8, 2012).
 - Notice of Public Information Centre (2 publications in the Londoner - Thursday October 18, 2012 and Thursday October 25, 2012).
 - Notice of meeting before Civic Works Committee (2 publications in the Londoner - November 15, November 22, 2012).

- o Notice of Completion (2 publications to be completed).

1.4 Alternative Solutions

To best address the deterioration of the bridge and identify appropriate measures to improve its structural integrity, the following alternative solutions have been considered.

DO NOTHING

Under this alternative, no measures to improve the condition of the structure are considered and the bridge remains in its present condition.

RESTORATION OF THE EXISTING BRIDGE

Restoration of the bridge using either historic or contemporary materials or techniques would be undertaken. The full width of the bridge would be open to pedestrian/bicycle traffic. Supplemental concrete supports would be removed and selective repairs would be performed.

PARTIAL RESTORATION & REPLACEMENT

Partial restoration of sections of the bridge & partial replacement of the pony trusses would be completed. New footings would be required. The full width of the bridge would be open to pedestrian/bicycle traffic.

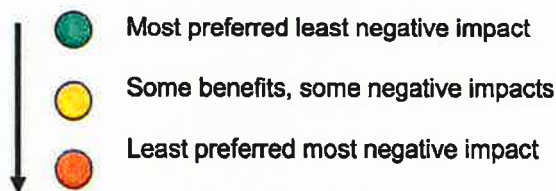
REPLACE THE EXISTING BRIDGE

Replace existing bridge with a new bridge that complies with acceptable design standards.

1.5 Evaluation Process

To assess the suitability of each alternative solution, a qualitative evaluation was used to identify significant advantages and disadvantages with respect to specific evaluation criteria developed for each environmental component (economic, social/cultural, natural environment, and technical). After the various evaluation criteria were developed, they were then applied to each of the alternative solutions to identify their potential effects on the environment.

To provide an impartial, traceable and consistent evaluation, as required by the Class EA process, the following was used to illustrate the highest and lowest impact of each alternative relative to the evaluation criteria for each environmental component. A green circle illustrates the *least negative impact* or the *most preferred alternative*, while a red circle illustrates the *highest negative impact* or the *least preferred alternative*.



The evaluation of alternatives has been captured in a matrix format to allow for direct comparison between the alternative solutions. Refer to **Figure EX.2 - Evaluation of Alternative Solutions**.

Figure EX.-2 – Evaluation of Alternatives Summary

Evaluation of Alternative Solutions					
Options	OPTION 1 Do Nothing	OPTION 2 Bridge Restoration		OPTION 3 Partial Restoration/Partial Replacement	OPTION 4 Bridge Replacement
CRITERIA	No improvements or changes would be made to the bridge.	OPTION 2A Historic Restoration	OPTION 2B Contemporary Restoration		
Social/Cultural Impacts <ul style="list-style-type: none"> Public Health & Safety Cultural Heritage Resources Aesthetics First Nation/Aboriginal Issues 	<ul style="list-style-type: none"> Bridge will continue to deteriorate overtime with increased risk to public safety. Vandalism, graffiti would likely continue Important cultural heritage value could be lost due to continued deterioration of structure Current hydrology does not meet the aesthetic value of the bridge No known impacts to First Nation/Aboriginal issues 	<ul style="list-style-type: none"> Restoration will eliminate existing fence, help reduce graffiti, and improve safety Improvement to safety through design features (removal of some vegetation and improved lighting) Historic preservation may not be compatible with building code requirements Bridge would be restored to its original or similar aesthetic condition No known impacts to First Nation/Aboriginal issues 	<ul style="list-style-type: none"> Restoration will eliminate existing fence, help reduce graffiti, and improve safety Improvement to safety through design features (removal of some vegetation and improved lighting) Restoration would be compliant with building code requirements Bridge would be restored to its original or similar aesthetic condition No known impacts to First Nation/Aboriginal issues 	<ul style="list-style-type: none"> Restoration will eliminate existing fence, help reduce graffiti, and improve safety Improvement to safety through design features (removal of some vegetation and improved lighting) Restoration would be compliant with building code requirements Bridge restored to its original or similar aesthetic condition No known impacts to First Nation/Aboriginal issues 	<ul style="list-style-type: none"> Restoration will eliminate existing fence, help reduce graffiti, and improve safety Improvement to safety through design features (removal of some vegetation and improved lighting) Rehabilitation would be compliant with building code requirements Loss of culturally-significant structure No known impacts to First nation/Aboriginal issues
Natural Environmental <ul style="list-style-type: none"> Terrestrial Wildlife & Vegetation Aquatic Life & Vegetation 	<ul style="list-style-type: none"> Terrestrial and aquatic wildlife impacts exist No improvements to vegetation conditions immediately surrounding the bridge (i.e. no removal of invasive species) No agency approvals required 	<ul style="list-style-type: none"> No in water works, therefore, no agency approvals in terms of aquatic habitat No disruption of aquatic Species at Risk habitat No loss of riparian vegetation along shoreline Potential for loss of mature trees through construction of foundation works. Trees lost include Manitoba maple and creek willow Terrestrial habitat improvements can be implemented (i.e. invasive plant species removals) 	<ul style="list-style-type: none"> No in water works, therefore, no agency approvals in terms of aquatic habitat No disruption of aquatic Species at Risk habitat No loss of riparian vegetation along shoreline Potential for loss of mature trees through construction of foundation works. Trees lost include Manitoba maple, Black walnut and creek willow Terrestrial habitat improvements can be implemented (i.e. invasive plant species removals) 	<ul style="list-style-type: none"> Potential for loss /disruption of fish habitat through construction of new footings Permits under the Endangered Species Act may be required In-water works required. Approval through DFO/UTRCAMOE regulations required Potential for loss of mature trees and riparian habitat through construction of foundation works and bridge improvements. Trees lost include Manitoba maple, black walnut and creek willow Terrestrial habitat improvements can be implemented (i.e. invasive plant species removals) 	<ul style="list-style-type: none"> Potential for loss /disruption of fish habitat through construction of new footings and new bridge Permits under the Endangered Species Act required In-water works required. Approval through DFO/UTRCAMOE regulations required Potential for loss of mature trees and riparian habitat through construction of foundation works and bridge improvements. Trees lost include Manitoba maple, black walnut and creek willow Terrestrial habitat improvements can be implemented (i.e. invasive plant species removals)
Technical/Engineering <ul style="list-style-type: none"> Design (materials, substructure, trusses, deck) Construction Operation & Maintenance Applicable Policies/Approvals 	<ul style="list-style-type: none"> Degradation of existing bridge will continue. No construction related impacts to adjacent community No conflict with existing utilities Existing bridge has load limitations which are consistent with council resolution to preserve bridge for pedestrian/bike traffic only Ongoing maintenance required as bridge continues to deteriorate No agency approvals required Loss of integrity may cause pieces of structure to fall in the river requiring salvaging costs Does not comply with council directive to recognize Meadowly Footbridge as an important cultural heritage resource that should be protected This site has outlived its predictable service life 	<ul style="list-style-type: none"> Replacement materials will require ongoing maintenance regime Potential for construction related impacts to adjacent community Original bridge geometry will be preserved Existing bridge has load limitations which are consistent with council resolution to preserve bridge for pedestrian/bike traffic only Some structural/architectural elements have residual life Bridge can be accessed using light machinery and platforms for restoration work Non-destructive testing of all rivet connections required (costly) Additional construction time required for riveting Opportunity to install hand rail to current building code and sympathetic to original design aesthetics 50 year service life of bridge High durability restoration with typically low maintenance Painting required every 30 years Skid steel required to access footings area Longest length of bridge closure The possibility of skilled labour could be a potential issue Existing hydro line would be undisturbed Full width of deck will be restored Full bridge enclosure required for painting Agency approvals required 	<ul style="list-style-type: none"> Replacement materials require ongoing maintenance regime Potential for construction related impacts to adjacent community Original bridge geometry will be preserved Existing bridge has load limitations which are consistent with council resolution to preserve bridge for pedestrian/bike traffic only Opportunity to install hand rail to current building code and sympathetic to original design aesthetics Some structural/architectural elements have residual life Bridge can be accessed using light machinery and platforms for restoration work Opportunity to install hand rail to current building code and sympathetic to original design aesthetics 50 year service life of bridge High durability restoration with typically low maintenance Painting required every 30 years On-site construction with minimal preassembly Skid steel required to access footings area Bridge closure required Use of round head bolts similar to rivets but process quicker, more reliable and cost effective Existing hydro line would be undisturbed Full width of deck will be restored Full bridge enclosure required for painting Agency approvals required 	<ul style="list-style-type: none"> Replacement materials require ongoing maintenance regime Potential for construction related impacts to adjacent community Potential to design wider deck Potential to add enhanced architectural features Removal and replacement of existing pony trusses may be quicker than rehabilitation Access road required for installation of pony trusses and footings Opportunity to install hand rail to current building code and sympathetic to original design aesthetics Increased service life with use of new materials 50 year service life on main span/80 years on pony truss Bridge painting required every 30 years Elimination of expansion joints can defer major repairs Access road will be required during the installation of new footings and pile driving Bridge closure will be required Some of substructure removal will be dependent on geological conditions and construction wisdom for repair spans Replacement of the existing hydro line would be required Full width of deck will be restored Full bridge enclosure required for coating Agency approvals required 	<ul style="list-style-type: none"> Replacement materials require ongoing maintenance regime Potential for construction related impacts to adjacent community Replacement materials will reduce dead loads Increased service life with use of new materials Opportunity to install hand rail to current building code and sympathetic to original design aesthetics Temporary road required to access centre piers during construction Dewatering of foundation elements will require settling pond placement, removal and remediation Mobilization of pile driving and heavy lifting equipment would be required Full width of original bridge width can be restored Longest service life Bridge closure will be required Timing of construction will be dependent on ecological conditions and construction wisdom for repair spans Does not comply with council directive to recognize Meadowly Footbridge as an important cultural heritage resource that should be protected Agency approvals required
Economic <ul style="list-style-type: none"> Initial Capital Costs Operating & Maintenance Costs 	<ul style="list-style-type: none"> No associated capital cost as nothing would be implemented Potential for ongoing operation and maintenance issues as bridge deteriorates 	<ul style="list-style-type: none"> Moderate capital costs High risk of additional cost increases due to small skill market for speciality labour force (riveting) Low operation and maintenance costs 	<ul style="list-style-type: none"> Lowest capital costs Potential for additional construction costs due to long string casting trusses Low operation and maintenance costs 	<ul style="list-style-type: none"> Moderate to high capital costs Low risk for construction cost increases Potential for additional operation and environmental costs Low operation and maintenance costs 	<ul style="list-style-type: none"> Highest capital costs High risk for additional construction costs due to the depth of foundation Low operation and maintenance costs

1.6 Public Comments Received

Prior the public open house 3 written comments and one voice mail were received. These comments included the following.

- Confirmation as to whether the recommendations would be brought forward to the Civic Works Committee and Council.
- Clarification on how the Class EA process will be incorporated with the work previously completed for Meadowlily Bridge.
- As property owners of the Meadowlily Nature Preserve the Thames Talbot Land Trust expressed their interest in the project, and all matters relating to their property and their neighbours.
- Confirmation of the cost and feasibility of installing a surveillance camera on the south side of the bridge to improve safety.

The Public Open House was held on November 1, 2012. Fifteen people were in attendance and 3 comments sheets were received by the November 16, 2012 deadline. No significant issues were identified. The comments received have been categorized into different themes which are briefly summarized below.

Safety

Residents generally want a safe bridge to cross for all users. There were concerns relating to the number of vehicles broken into while parked along Meadowlily Road. A resident inquired about the cost and feasibility of installing a surveillance camera at the south side of the bridge. A concern was also raised that if the railing similar to the King Street Bridge was to be installed, people would have more accessibility to climb the trusses.

Environmental Impacts

Clarification was provided to a resident that no trees will be removed in order to construct parking along Meadowlily Road.

A comment was received regarding light pollution resulting from increased lighting on and around the bridge.

It was noted by several residents that overland flow has caused erosion and icing in the winter months, south of the study area.

Alternative Solutions

Those in attendance at the PIC strongly supported rehabilitation of the bridge. It was noted that the "Do Nothing" and "Replace the Bridge" alternatives were not acceptable.

Design Details

A preference to install a railing similar to what was used for the King Street Bridge was brought forward. It was suggested that this type of railing is more compatible with a heritage structure.

A resident inquired about the possibility of installing a temporary bridge for pedestrians and cyclists during construction.

General

Several comments received from residents related specifically to construction timing, duration, bridge closure and the possibility of expediting the process in order to complete the bridge rehabilitation as soon as possible.

No comments have been received from First Nations Communities.

1.7 Conclusions & Recommendations

The City of London has evaluated all viable alternatives to address the deterioration of the Meadowily Footbridge and improve its structural integrity. **Option 2B – Bridge Restoration using Contemporary Materials and Techniques** has been recommended as the preferred alternative for the following reasons.

- The culturally significant structure will be retained.
- The dead load will be reduced on the bridge.
- The existing chain link fence will be removed.
- The bridge deck will be restored to its full width.
- The design will incorporate CPTED principles for safety.
- The rehabilitated structure will be highly durable (anticipated service life of the restored structure is approximately 50 years).
- Low maintenance materials will be used.
- This is the lowest cost alternative compared to the others evaluated as part of this study.
- There will be limited tree/vegetation removal required.
- No in-water work is required.
- Although contemporary materials will be used, the bridge will maintain an historic appearance.

Refer to Figure EX. 3 - Preferred Alternative

Bridge rehabilitation consists of the removal and reattachment of several key structural elements, painting, re-decking with a wooden deck which will not permit staging of construction. The bridge deck will be completely impassable to pedestrian and bicycle usage and will be closed for the duration of construction. This closure is recognized to have a significant impact on pedestrian/bicycle access across the River, as there is no real viable, safe, alternative detour for cyclists and pedestrians. A temporary bridge option was explored but it would pose significant challenges and is an expensive addition to the project for the following reasons:

- For clearance and hydraulic opening requirements, the temporary bridge would have to be similar in size to the existing foot bridge.
- The location of the temporary bridge would require separation from the existing bridge to accommodate appropriate work space and safety considerations.
- The temporary bridge would intrude into the ESA and involve in water work, both requiring environmental approvals. As a result adherence to construction windows to avoid periods of spawning, migration and other critical life history stages for habitat would be required. These timing windows are applied to protect fish from any works in and around water, resulting in a construction start after July 15, 2013. This would impact the start of construction by up to 3 months and jeopardize the ability to complete the bridge rehabilitation in one season and in the 2013 calendar year.
- Approach work to the temporary structure would require extensive removals and restoration.
- The cost of the temporary bridge would be approximately \$700,000.

As a result during construction a temporary bridge has not been recommended.

As part of this project, the north and south approaches to the bridge have been considered in the overall design of the area, specifically the alignment of the multi-use pathways. Currently, the north approach separates the skewed alignment of the multi-use path. With the recommended approach, pavement

markings will direct path users across the right of way (ROW) to the continuation of the path. Full access to the private property on the northwest side of the bridge will be maintained, which will also accommodate municipal services (i.e. snowplowing). Formalized parking will be provided along the west edge of the existing ROW on the north side of the bridge. At the south approach, the ROW will be terminated back from the bridge and a 3.0m path will direct pedestrians and bicycle users towards the bridge. Parking will also be provided at the east edge. Barriers and bollards will be implemented at both approaches to discourage vehicular traffic across the bridge. Refer to **Figure EX.4 – Turn-around & Parking**.

1.8 Preliminary Cost Estimate

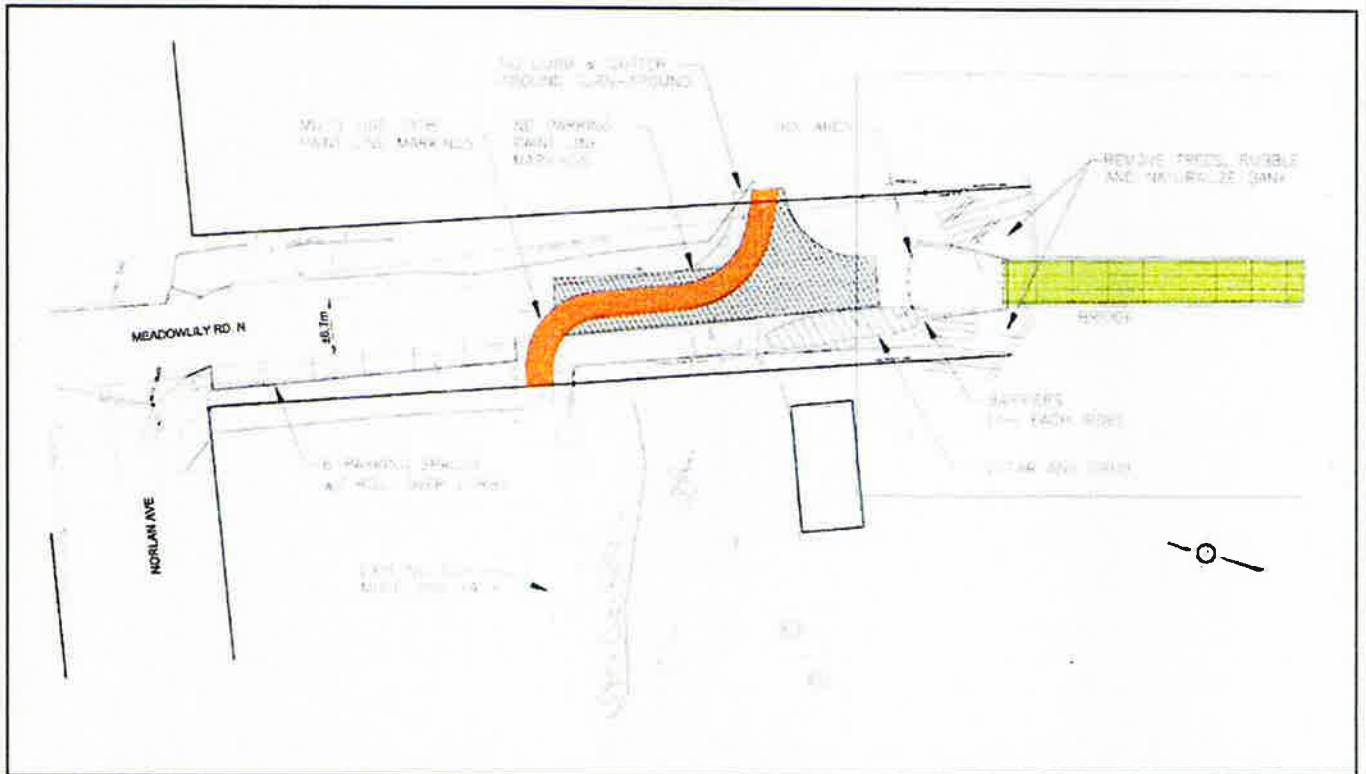
The preliminary cost estimate for the Meadowlily Footbridge rehabilitation is approximately \$1.9M. This is based on the Restoration and Cultural Heritage Evaluation Report (2011) previously completed and will be confirmed as part of detailed design.

1.9 Schedule

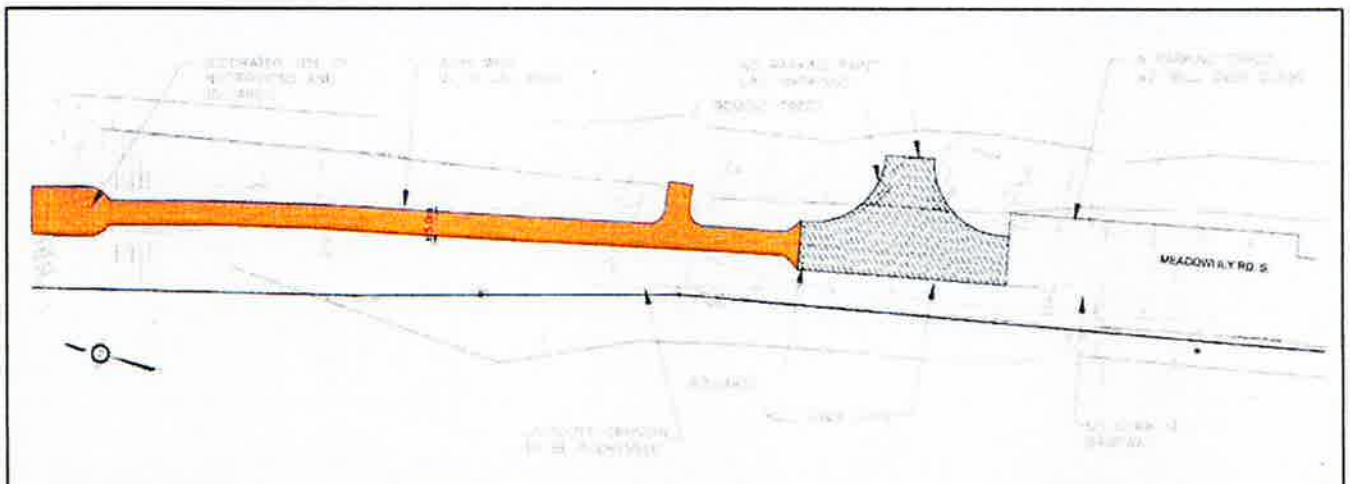
Subject to Council approval, the following schedule has been identified:

- Class Environmental Assessment 30 day review period to begin mid- December 2012 with completion the end of January 2013 (extra time added due to Christmas Closure).
- Detailed design, tendering and construction to be completed by the end of October 2013, it being noted that a public meeting will be held as part of detailed design.

North Approach



South Approach



MEADOWLILY FOOTBRIDGE REHABILITATION MUNICIPAL CLASS EA

FIGURE EX4:

Turn-around & Parking

PN: 60150277

DATE: NOVEMBER 2012

SCALE: AS SHOWN