



CITY OF OTTAWA

Statement of Work

**Airport Parkway Pedestrian/Cycling Bridge
Third Party Independent Review**

1. Background

The City wishes to undertake a comprehensive independent third party review (“Review”) of the Airport Parkway Pedestrian/Cycling Bridge Project (the Project) from the Environmental Assessment process until the day a new consultant was brought in to complete the project redesign. The findings of the Review will be reported to Mayor Jim Watson.

A Background Chronology of the Project can be found in Appendix 1. The Project that was conceived as a gateway pedestrian facility to connect two communities flanking the Airport Parkway has been delayed. As of today it is still not ready to use.

As a result of the project delivery delays and the design issues experienced, some necessary initial measures have been instituted. These can be found in Appendix 2.

2. Purpose

The City of Ottawa is soliciting proposals from engineering industry professionals with direct project delivery experience.

This Statement of Work is to solicit and select the most qualified proponent to:

- Conduct interviews with key staff and review relevant background material to refine and focus a detailed review to the key risk areas;
- Conduct a detailed focused review of the key areas of risk and
- Prepare a report, including visuals and a presentation that provides a concise and meaningful assessment of the cause of the Project delays and to make recommendations regarding potential enhancements to City processes that would mitigate the risk of a similar incident in future.

3. Project Scope

The scope of the Review includes identifying measures aimed at preventing similar problems from occurring in the future. The Review will not assess the structural adequacy of the design by Genivar, or subsequent designs, as that task will be done separately as needed.

It is expected that the Review will include a project management assessment for the Airport Parkway Pedestrian/Cycling Bridge and initial actions taken (appendix 2).

The City considers that the assessment of decisions and processes will focus on the following project stages:

- 1) Environmental Assessment Process - The EA undertaken by our Planning and Growth Department (PGM) identified the location of and the preliminary functional design of the project. Given that this component of the project essentially "set the stage" for the ultimate facility to be provided, it is important to consider the impact of this stage on the Project.
- 2) Project Intake Process - The Infrastructure Services Department (ISD) has a project intake process that occurs when a completed EA is transferred to the department for implementation. This process is intended to provide ISD with the scope of work, budget

information and approximate schedules that may have been developed to be used by the project management staff in the next phases. A review will be conducted of how the intake process captured that information.

- 3) Project Design - Design and construction staff in ISD work with the Procurement specialists in the City's finance department to select and retain qualified consultants to undertake the preliminary and detailed design as defined in the EA. The consultant selection process is based on an evaluation of both the financial and the technical information presented in the consultant proposals submitted in response to the project description and scope of work defined in the terms of reference. Stage one of the consultant design assignment included refinement of the functional design, including public consultation and input. A gateway concept was selected and advanced.
- 4) Project Construction - The City then went through a competitive process to select a contractor to build the bridge to the design and schedule specified in the contract.
- 5) Project Oversight - A combination of City staff and consultants oversees the construction phase of the project. The City takes a risk based management approach in this regard to ensure that key activities on site are carefully monitored.

Approach

Approach will be through the review of data and files associated with the project, supplemented with interviews of staff in ISD (Managers and PM's), PGM (EA Staff), Finance (Procurement) City Clerk and Solicitor (Legal support) as well as any other individuals as may be identified in the review. The proposal should include up to four (4) trips to Ottawa to conduct interviews and present the findings of the report.

4. Project Deliverables

- Phase 1 – Background data gathering and development of focussed review
- Phase 2 – Detailed assessment and cause/contributing factors analysis
- Phase 3 – Identification of recommended enhancement or changes to mitigate future risk
- Interim report in the form of a verbal or written briefing.
- Final written report.

5. Project Management

Any questions regarding this proposal are to be submitted to:

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On behalf of:

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6. Anticipated Timelines – to be finalized with successful proponent

Deliverable	Timeline
Deadline for submission of Proposal	November 23, 2013
Project Commencement	November 30, 2013
Interim Report	December 2013
Project Completion and Final Report	January 2013

Appendix 1: Background Chronology

Background and timeline

This project formally began with an environmental assessment which identified the need for a clear span, year round pedestrian and cycling bridge crossing the Airport Parkway to accommodate the future twinning of the parkway and incorporating the context sensitive aesthetics features of a National Capital Gateway. The project consists on a pedestrian overpass over the Airport Parkway, pathway connections to East and West, a railway underpass under the O-Train line and a connection to South Keys Transit Station. The total approved budget for this project is \$6.9M.

EA timeline

- June 4, 2008 – statement of work for the EA approved by Transportation Committee
- February 2009 – seek transportation consultant via MERX
- April 2009 – EA consultant work awarded to Genivar
- June 23, 2009 – Notice of Study Commencement and Public Open House #1
- December 1, 2009 – Public Open House #2
- January 6, 2010 – Report to Transportation Committee
- January 13, 2010 – Report approved by Council
- April 2, 2010 – publication of notice of study completion (published twice)
- April 26, 2010 – confirmation from MOE no part II order (bump up) requests received

Design Procurement timeline

- 13 April 2010 Advertisement on Merx
- 14 May 2010 RFQ Evaluation of 4 consultant proposals was completed by staff. Only two consultants were shortlisted for next submission (Genivar and Delcan)
- 21 June 2010 RFP Terms of reference were submitted to shortlisted consultants
- 23 July 2010 RFP Evaluation was completed by staff
- 25 August 2010 design contract was awarded to Genivar
- 8 September 2010 Public Advisory group meeting
- 3 November 2010 Public Advisory group meeting
- 7 December 2012 Public Open House River Ward
- 26 January 2011 Public Open house Gloucester-Southgate Ward

- 24 May 2011 Project was advertised for tender

Tender timeline

- 22 June tender closed(City received 5 bids)
- L.W Bray (LWB) was the selected contractor (lowest compliant bid)
- 6 July 2011 pre-construction meeting
- 6 July 2011 Commence Work Order was issued

Hazeldean Bridge

It should be noted that in August 2011, problems with a newly constructed bridge on Hazeldean Road with the same design engineers as the Airport Pedestrian/Cycling Bridge were encountered. After a third party review of the design by Delcan concluded that "the issues with the bridge which are noted above and which were observed on August 13, 2011, were the result of the design produced by the Designer".

Based on this outcome and at the request of the City on February 8, 2012, Genivar stated that with respect to their design of the Airport Parkway Pedestrian Bridge, "there is no known structural deficiency in the design that could adversely affect the performance of the Bridge".

Construction

(Note: the timeline for construction only flags critical construction activities that are relevant to the scope of this review and do not speak to the many other construction activities that took place)

- The project was set to be completed on 31 October 2011
- 7 November substantial completion was extended to 28 November 2011
- 10 November lower tower concrete was poured
- 17 November evidence of poor concrete was discovered after formwork was removed.
- Poor concrete leads to investigation
- LDs were charged from 29 November 2011 to 30 December 2011
- 01 December 2011 LDs were suspended during winter shutdown until 15 May 2012
- 17 January 2012 investigation plan was approved
- 30 January 2012 contractor mobilized on site to begin testing
- 13 April 2012 investigation report from contractor was submitted to City

- Mid April to mid May lower tower was taken down
- Schedule completion shifted to 31 December 2012 (and many revised schedules followed)
- 15 May 2012 LDs charges resumed
- From mid May 2012 to end September reconstruction of the lower tower was done
- 03 October lower tower concrete pour was done
- Early October 2012 construction of the upper tower started
- October 2012 shop drawings of the structural steel anchor connection were reviewed by Genivar
- December 2012 fabrication of structural steel tower anchor started (in a fabrication plant)
- 21 December 2012 contractor agreed to work throughout the winter and have the project substantially completed by 15 May, 2013
- 22 December LDs were suspended
- January 2013 contractor informs City that they were changing fabricators for the steel tower anchor piece (first piece was unusable)
- 23 January letter from City (ISD) to LWB expressing concerns with delays and performance
- February 2013 contractor started with the fabrication of a new steel tower anchor piece.
- February 2013 contractor submitted schedule with revised completion date moved to July 2013
- February 2013 City engaged By-Town Engineers to assess risks and ensure schedule certainty for the on-going construction through a workshop approach involving LWB, consultant and City staff.
- 4 March 2013 Session #1 Schedule Risk Workshop
- 8 March 2013 By-Town presented memo with findings after workshop
- 25 March 2013 Session #2 Schedule Risk Workshop
- 05 April 2013 Session #3 Schedule Risk Workshop
- 19 April 2013 the City issued a letter to contractor with copy to its bonding company.
- The letter was an official notice concerning the contractor's failure to meet its contractual obligations to complete the project in a timely manner.
- 15 May 2013 the steel tower anchor piece was delivered to the site
- 16 May 2013 LDs charges resumed

- Last two weeks in May contractor tried to align the stay anchorage piece to its final position
- 3 June 2013 urgent meeting is called to discuss the inability to align the stay anchorage piece
- At 3 June 2013 meeting decision was made to introduce a construction joint so pour of upper tower could proceed.
- After 3 June 2013 meeting Delcan raised concerns with the fixed connection and the use of pipes as stays
- Similar comments on the fixed connection and the challenge with constructing the bridge as designed are raised by engineers approached by the contractor to prepare the erection procedures
- 14 June 2013 upper tower was poured up to 1 metre from the top to allow for better opportunity for alignment of stay anchorage piece
- After the upper tower pour, contractor continued to find challenges with the alignment of the anchorage piece
- Genivar was presented with the concerns raised by others to be able to address them
- 5 June and 6 June 2013 contractor presented letters from its sub (John Otter P.Eng.) outlining concerns on the stay engagement and the design. Letters were sent to Genivar for response
- 6 June 2013 Delcan staff presented their concerns in writing and these were sent to Genivar for response
- Other correspondence by email and verbal discussions took place regarding these issues
- 7 June 2013 Genivar responded to John Otter issues on the stay engagement
- 10 June 2013 Delcan sent the City a paper related to a bridge failure due to stay fatigue
- 21 June 2013 Genivar responded to Delcan's concerns
- 21 June 2013 Genivar responded to John Otter's design concerns
- 25 June 2013 after reviewing the responses from the designers, Delcan requests that the City proceed with a detailed third party review and that the City consider the option that the anchorage piece not be concreted in place until this issue is resolved

Peer Review

- 25 June 2013 City contacted Buckland & Taylor (“B&T”) and inquired as to their availability to conduct a review of the stay supporting system. B&T agreed and they started a proposal preparation.
- 26 June 2013 Genivar was informed that a Third party peer review was to take place
- 26 June 2013 Genivar acknowledged the notification
- 26 June 2013 after a quick review of drawings B&T presented the City with a letter and raised some concerns with the design. Also pointed to a related article with a bridge failure caused by wind-induced vibrations.
- 28 June 2013 first DCMO letter was sent to Genivar outlining concerns
- 28 June 2013 City met with Contractor and requested them to stop work on the stay alignment and proceed with other work on site while a review of the stay connection was taking place
- 02 July 2013 City followed up with LWB in writing regarding stopping the work on the stay alignment. Also LDs were then suspended
- 02 July 2013 PEO (Professional Engineers of Ontario) was informed about the steps taken by the City regarding Genivar and a third party review
- 04 July 2013 City received and accepted proposal from B&T
- 08 July 2013 City received letter from Genivar indicating their Finland Office was to review their design
- Contractor proposed a change of sequence of work that allowed for a great amount of work to continue on site
- 01 August 2013 meeting #1 between reviewers, designers and City took place
- 06 August 2013 meeting #2 between reviewers, designers and City took place
- 08 August 2013 Draft letter report from B&T was received
- 16 August 2013 City scheduled a Conference Call with Genivar and provided verbal direction to proceed with changes arising from B&T report
- 18 August 2013 revised draft letter report from B&T was received
- 23 August 2013 final letter report from B&T was received
- 30 August 2013 suspension of Genivar services
- 30 August 2013 City contacted Delcan to inquire as to their interest for taking over the design

- 03 September 2013 City scheduled a Conference Call with Delcan and indicated to them the City was read to proceed with them moving forward with this project
- 04 September 2013 a PO was created for Delcan
- 04 September 2013 all day session with Delcan on site (half day contractor participation)
- 05 September 2013 Genivar was formally terminated

Appendix 2: Actions Taken to Date

The following program management changes have been made to date on a move forward basis:

- A structural engineer in our Asset Management group has been identified to take on an oversight and advisory role;
- More stringent pre-qualifications for engineering consultants and contractors have been added to the procurement process;
- Third-party reviews of any future bridge designs will be undertaken based on a technical assessment of the individual bridge and its constructability;
- Risk management and construction claim consultants will be engaged, as needed;
- Additional financial securities from contractors and a review of the use of penalties to discourage delays is being undertaken; and,
- The introduction of financial securities for engineering consultant assignments to provide for the recovery of costs related to design errors and/or omissions.

In addition and in recognition of potential design challenges, the City has informed the Professional Engineers of Ontario of the peer review undertaken by Buckland and Taylor. The City will also apprise the Professional Engineers of Ontario of the outcome of the reviews, and ultimately the design modifications.