#### Report to/Rapport au :

#### **Finance and Economic Development Committee**

#### **Comité des finances et du développement économique**

#### and Council / et au Conseil

#### **December 3, 2013**

#### **3 décembre 2013**

#### Submitted by/Soumis par : Nancy Schepers, Deputy City Manager/Directrice municipale adjointe, Planning and Infrastructure/ Urbanisme et Infrastructure

##### Contact Person / Personne ressource: Wayne R. Newell, General Manager/Directeur Général, Infrastructure Services/Services d’infrastructure

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| SUBJECT: | **Airport parkway pedestrian/cycling bridge update** |

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| OBJET : | **mise à jour sur la passerelle pour piétons et cyclistes de la promenade de l’aéroport** |

# REPORT RECOMMENDATIONS

**That the Finance and Economic Development Committee recommends that Council:**

1. **Receive the update on the “Airport Parkway Pedestrian/Cycling Bridge,” including the results of Delcan’s review and the recommended option for completing Airport Parkway Pedestrian/Cycling Connection, and the status of the Third Party Independent Review, as outlined in this report.**
2. **Approve additional funding in the amount of $4.65M to complete the Airport Parkway Pedestrian/ Cycling Connection (Hunt Club at South Keys) project as described in this report; and**
3. **Direct the City Clerk and Solicitor to pursue legal action to seek to recover the past, present and future costs and damages incurred by the City with respect to the Airport Parkway Pedestrian/ Cycling Bridge including, but not limited to, those related to any delays, claims, design, design review changes, construction modifications, breach of contract and negligence as against Genivar and any other party or parties liable for such costs and damages.**

# RecommandationS du rapport

**Que le Comité des finances et du développement économique recommande ce qui suit au Conseil :**

1. **Prendre connaissance de la mise à jour faite sur la « passerelle pour piétons et cyclistes de la promenade de l’Aéroport », notamment les résultats de l’étude de la firme Delcan et l’option recommandée pour achever le lien pour piétons et cyclistes de la promenade de l’Aéroport, et de l’état d’avancement de l’examen par un tiers indépendant, tel qu’exposé dans le présent rapport.**
2. **Approuver un financement supplémentaire de 4,65 millions de dollars pour l’achèvement du projet de lien pour piétons et cyclistes de la promenade de l’Aéroport (Hunt Club à l’angle de South Keys), tel qu’il est décrit dans le présent rapport;**
3. **Charger le greffier municipal et chef du contentieux d’intenter une poursuite judiciaire pour recouvrer les frais et dommages-intérêts passés, présents et futurs engagés par la Ville dans le cadre du projet de lien pour piétons et cyclistes de la promenade de l’Aéroport, notamment mais sans s’y limiter ceux liés aux retards, aux réclamations, à la conception, aux modifications apportées lors de l’examen de la conception, aux modifications de construction, à la violation de contrat et à la négligence, poursuite visant Genivar et toute autre partie responsable de tels frais et dommages-intérêts.**

## Background

The scope of the Airport Parkway Pedestrian Connection (Hunt Club at South Keys) project involves the construction of a pedestrian/cycling pathway between the Hunt Club community and the South East Transitway (South Keys Station) by way of a new bridge crossing the Airport Parkway. The total approved budget for this project was $6.9 million, and the recent engagement of a risk management specialist saw this budget adjusted to $7 million.

The need for a multi-use pathway connection between the Hunt Club community and the Southeast Transitway has been expressed by local residents, community organizations and advocacy groups for many years. In response to this need, in 2008, City staff received direction to proceed with an environmental assessment (EA) study to examine the possible implementation of a pedestrian facility that would provide a safe pedestrian connection. The EA study’s recommendations were approved by Council in 2010.

A non-City-approved short cut was used by pedestrians linking the Hunt Club community to destinations east of the Airport Parkway. This short cut was a dirt path between Cahill Drive West and an underpass of the rail line adjacent to the South Keys Transitway station. This involved a high-risk, unmarked crossing of the busy Airport Parkway. Despite the danger of such an action and the City’s caution against it, it has continued to be used by people of all ages, at all times of the day and during all seasons of the year. In 2007, a pedestrian fatality occurred at this unsafe crossing location and there have been several non-fatal pedestrian-car collisions. Since its completion, the Sawmill Creek Constructed Wetland and its encircling multi-use pathways have also been attracting people not only from the adjacent Hunt Club community immediately to the west, but also residents and visitors from the South Keys area south of Hunt Club Road and east of Bank Street.

The proposed multi-use pathway and bridge between Cahill Drive West and the South Keys Transitway Station will provide Hunt Club residents west of the Airport Parkway with a formal and safe connection, and more convenient access to:

* the Southeast Transitway at South Keys Station, as well as future access to the expanded O-Train Line;
* the current O-Train system at Greenboro Station;
* retail, restaurant, entertainment and employment facilities in and around South Keys and Bank and Hunt Club; and
* recreational and active commuting opportunities supported by an enhanced multi-use pathway network (from Walkley Road to Hunt Club within the Sawmill Creek Constructed Wetland area).

Further, when combined with other works either planned or underway in the area, the bridge will provide improved access to other fully segregated cycling options from this area to downtown.

In May 2010, a Request for Qualifications (RFQ) evaluation of four consultant proposals was completed, with two of four consultants (Genivar and Delcan) being shortlisted to advance to the Request for Proposal (RFP) stage. In August 2010, after a RFP submission, the design contract was awarded to Genivar on the basis of best value. During the preliminary design the selected design concept received further input from Public Advisory and Technical Advisory Groups that included the Airport Authority and the National Capital Commission (NCC) in accordance with the requirements negotiated at the time of the transfer of the Airport Parkway. Public Open Houses were also conducted to present the design to members of the community.

In June 2011, the tender for construction closed with the City receiving five bids. L.W Bray Construction Limited, the lowest compliant bid, was awarded the contract. In July 2011, a Commence Work Order was issued with a completion date of 31 October 2011, which was subsequently extended to 28 November 2011.

In November 2011, the lower concrete support tower was poured, and evidence of poor concrete was discovered immediately after the formwork was removed. As a result of an extensive investigation to determine the cause and alternatives to move forward with the project, the lower tower was taken down in May 2012. Reconstruction was completed by September 2012 at the contractor’s expense.

In early October 2012, the construction of the upper tower commenced. Also, the fabrication of the structural stay anchor support started off-site in a fabrication plant in early December 2012. The contractor worked through the winter both on and off-site to substantially complete the project by 15 May 2013.

In February 2013, the contractor informed the City that a new fabricator had been engaged to build the stay anchor support piece since attempts to construct the first one fabricated was deemed insufficient. The piece built by the new fabricator was delivered to the site in mid-May 2013. During this period (from February to April 2013), the City conducted a series of schedule risk workshops with the participation of the contractor, consultants and City Staff to assess the risks and to help develop schedule certainty for the ongoing construction.

Once the anchor piece was installed at the top of the tower, the contractor faced difficulties placing and aligning it to its final position. At this point, a decision was made to introduce a construction joint so the concrete pour of the upper tower could proceed while the alignment could be investigated further.

As construction continued—including efforts to determine how to position the stay anchor piece so that the stays could be connected to align with the bridge deck within acceptable tolerances—concerns were raised by professional engineers regarding the design of some elements of the bridge. Specifically, concerns with the fixed connection and the use of pipes as stays (as opposed to cables) and potential failures. As these issues held potentially serious implications for the completion of construction, as well as ongoing maintenance and management of this significant City asset, and as per professional engineering obligations, City staff retained an independent bridge engineering firm (Buckland & Taylor) to investigate the design elements in question. This independent review resulted in recommendations for modifications to the original design.

In a memorandum dated 4 October 2013, the Deputy City Manager, Planning and Infrastructure, updated the Mayor and Members of Council on the Status of the Airport Parkway Pedestrian/Cycling Bridge and advised of actions to be undertaken on this project. As mentioned in the memorandum, unproductive discussions with Genivar regarding design modifications led to their termination. The City then engaged a new consultant (Delcan) to modify and assume full responsibility for the bridge design moving forward.

## DISCUSSION

The purpose of this report is to provide an update to the Deputy City Manager’s memorandum to Mayor and Members of Council on 4 October 2013.

Work has advanced on four fronts, including:

* the completion of the review of the design, construction to date, and recommended options for completion of the project by Delcan;
* selection of a consultant and commencement of a third party independent review of the entire process;
* identification of a Senior Structural Engineering Advisor position to provide technical expertise and advice on the management of bridge and structural assets, and design and construction of all structure-related projects; and
* implementation of a two-phase review process for major bridge works.

Further information on each of these actions, in addition to an update on the actual construction of the project, is provided below.

Airport Parkway Pedestrian/Cycling Bridge Completion

Delcan has completed a review of the design and construction to date and has conducted a preliminary study to recommend options for the completion of the bridge. In addition to considering technical feasibility, cost-effectiveness and safety, several options were examined with a focus on utilizing the existing constructed elements; respecting the intent of the EA, the original design and federal design interests; mitigating potential “throw-aways”; responding to issues raised by Buckland & Taylor; and providing the earliest reasonable completion of the bridge.

This work has resulted in the recommendation that the original design be modified to construct a “Steel Deck Cable-Stayed Bridge.”

The review determined that a Steel Deck Cable-Stayed Bridge is the most cost/effective of the options evaluated. Further, it provides a structure that respects the original design, aligns to the EA recommendations with no need for an EA amendment or related consultation and endorsement, and provides for the earliest completion of the bridge. In addition, this option represents a reasonable completion plan that seeks to mitigate the City’s costs and damages.

The modification includes an orthotropic steel deck, steel framing and steel handrails. This all-steel construction will be supported by conventional cable-stays secured to the existing constructed tower. Orthotropic steel bridge decks consist of a structural steel deck plate stiffened either longitudinally or transversely, or in both directions, and are found across Canada and around the world, including the lift span of the Pretoria Vertical Lift Bridge and portions of the Champlain Bridge in Ottawa. Many of Canada’s largest and busiest bridges utilize orthotropic steel decks, including the MacDonald Suspension Bridge in Halifax and the Lions’ Gate Suspension Bridge in Vancouver.

The modified bridge will be designed to allow conventional winter maintenance operations. Infrastructure Services Department (ISD) will work with the Public Works Department as the design is finalized to endure that maintenance issues are fully considered.

The overall cost for the recommended option to complete the Airport Parkway Pedestrian/Cycling Bridge is $4.65M. The costs to complete the project include funding for preliminary studies, engineering design and on-site support, construction and contingency.

There are sufficient funds in the City-wide capital reserve, as a result of positive returns from the Endowment Fund in 2013, to allow this additional $4.65 million expenditure in 2014. This one-time funding source avoids the use of debt and does not create any new tax pressures. In the event that the final project disposition is a surplus, funds will be returned to the city-wide reserve as part of the annual capital closure exercise and report to Council.

Construction is expected to resume in late Spring/early Summer of 2014 to be complete for public use in late 2014/early 2015.

Third-Party Independent Review Update

A Statement of Work for the Airport Parkway Pedestrian/Cycling Bridge Third Party Independent Review, with an appended chronology, was developed in November 2013. This Statement of Work laid out the background, purpose, project scope and approach for the Third Party Independent Review.

Based on a search of firms with the technical expertise and regulatory knowledge to undertake this exercise, four companies were identified and reviewed. Of the four, two consulting firms were contacted during the week of 10 November 2013 in order to discuss the requirements for the Airport Parkway Pedestrian/Cycling Bridge Third Party Independent Review. Based on these discussions and their inclusion on the City’s standing offer list, SEG Management Consultants Inc. (“SEG”) was the only company fully qualified and were invited to submit a proposal. On 19 November 2013, SEG was chosen to undertake the independent review.

It is expected that SEG Management Consultants Inc. will begin its review in early December 2013. Ron de Vries, Senior Associate with SEG, who is well respected within government and industry for his ethical leadership and innovative approaches to procurement practices, will lead the assignment.

It should be recognized the scope of this Review includes identifying measures aimed at preventing similar problems from occurring in the future. However, the Review will not assess the overall structural adequacy of the design by Genivar, or subsequent designs, as that task will be done separately as needed and in coordination with the pursuit of legal action as against Genivar and others.

The Review will include a project management assessment for the Airport Parkway Pedestrian/Cycling Bridge as well as an assessment of decisions and processes involved in the following project stages:

Environmental Assessment Process

Project Intake Process

Project Design

Project Construction

Project Oversight

The Review will include a thorough look at all data and files associated with the project, supplemented with interviews with staff in ISD (Managers and Project Managers), Planning and Growth Management (EA Staff), Finance (Procurement), City Clerk and Solicitor (Legal support) as well as any other individuals as may be identified.

SEG will report its findings back to the Mayor and they will subsequently be brought before the Finance and Economic Development Committee.

Other Actions Taken

The City has already taken action on several fronts, in accordance with the Deputy City Manager’s memorandum of 4 October 2013.

As part of the 2014 budget process, Council approved a Senior Structural Engineering Advisor position to provide technical expertise and advice on the management of bridge and structural assets, as well as the design and construction of all structure-related projects. The addition of this position will enhance the City’s processes toward ensuring the structural integrity, constructability and efficient life-cycle management of the City’s structural assets.

City Staff have also implemented a two-phase review process for major bridge works; specifically, a “Value Engineering (VE) Exercise” that will be held during the preliminary design stage, followed by a “Third-Party Review” that will be conducted during the final design stage. VE is a creative approach used to optimize project renewal costs, save time, improve quality, solve problems, and/or use resources more effectively. VE helps balance required functions, performance, quality, safety, and scope against the cost and other resources necessary to accomplish those requirements. The proper balance results in maximizing the value of the project. A Third-Party Review provides the opportunity to review general conformance with standards and code requirements and undertake a detailed technical assessment and/or a complete independent review.

Although the City has used both VE exercises and third party reviews in the past, the intent is to use this two-phased process consistently for all major bridge works moving forward.

Further, for complex projects like the Airport Parkway Pedestrian/Cycling Bridge, specialists in risk management and scheduling will be retained to provide additional rigour. Additionally, the procurement process for consultants on bridge projects will have more stringent criteria for pre-qualification and require the consulting firm to post a letter of credit with the City guaranteeing the quality and timeliness of the design.

Project Construction Status Update

Construction on this project remains suspended.

Currently, crews on-site are removing temporary bridge formwork and falsework and performing general site cleanup. This work includes packaging up the scaffolding, beams, timbers, steel plates and other associated materials used for the temporary formwork and falsework. These materials will be shipped from the site before winter shut down. Removing these construction materials from the site, in advance of winter shut down, will help with mitigation of construction costs.

Once this work is complete, all temporary construction signage in the form of channelizing devices, barricades, and barriers will be removed from the Airport Parkway and the regulatory speed limit along the Airport Parkway will be reinstated. Removing this temporary construction signage will improve mobility for commuter traffic and facilitate winter maintenance and snow storage along the edge of the Airport Parkway.

When construction resumes on-site, appropriate construction signage will be reinstated and the regulatory speed limit will again be reduced to 60 km/h for the safety of workers.

## RURAL IMPLICATIONS

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There are no rural implications associated with this report.

## CONSULTATION

The recommended option provides a structure that respects the original design and aligns to the EA recommendations with no need for an EA Amendment or related consultation.

## Comments by the Ward Councillor(s)

The Ward Councillor is aware of the report.

## LEGAL IMPLICATIONS

There are no legal impediments to Committee and Council considering the recommendations in this report. That said, it is important to provide a summary of the litigation to date on this project as well as the potential claims that may be forthcoming.

1. **Current Litigation**
	* 1. *Ottawa (City) v. Genivar*

On October 16th, 2013, the City of Ottawa issued an initial claim in the amount of $100,000 in the Superior Court of Justice against Genivar Inc. This amount will change as further information as to damages and costs becomes available.  In summary, City staff became aware of some of the construction-related issues on the Airport Parkway Pedestrian/Cycling Bridge. These issues arose as a result of requests for Change Orders from the Contractor, LW Bray Construction.  The following three issues were identified at that time:

* + - * 1. the placement of electrical ducts in the bridge deck that were required to be moved to the parapet walls;
				2. the failure to provide for adequate spacing for reinforcing steel bars in the tower base; and
				3. the failure to provide for proper construction sequencing that results in a portion of the bridge requiring scaffold support longer than would have been expected under normal construction conditions.
		1. *RW Tomlinson (Cumberland Ready Mix) v. LW Bray Construction*

On October 18th, 2013, the City of Ottawa was served with a Statement of Defence and Counterclaim to the above-noted action from Bray Construction. The original Statement of Claim issued by Tomlinson seeks damages in the amount of $243,631 from Bray Construction for the supply of concrete to the Airport Parkway Bridge project.  In its Statement of Defence, Bray Construction alleges that Tomlinson was responsible for the concrete mix that produced the concrete which failed in the initial pour of the base of the bridge tower. Bray used a different concrete supplier for the re-pour of the tower and the Counterclaim alleges that Tomlinson is liable to Bray for its costs of demolishing and re-building the tower.  The Counterclaim also brings the City into this action and claims the following amounts:

* + - * 1. Damages for breach of contract and negligence ($1,295,432);
				2. Damages for delay and impact ($1,000,000); and
				3. Further damages ($333,750).

The combined damages counterclaimed by Bray Construction against the City exceed $2.6M. The allegations against the City focus on the specifications for the concrete, which Bray claims were inadequate.

1. **Potential Litigation**

As was noted in the October 4th, 2013, memo to the Mayor and Members of Council from the Deputy City Manager, Planning and Infrastructure, the City Clerk and Solicitor will be pursuing legal action to seek to recover the all available past, present and future costs and damages incurred by the City with respect to the Airport Parkway Pedestrian/Cycling Bridge including, but not limited to, those related to any delays, claims, design, design review changes, construction modifications, breach of contract and negligence as against Genivar and any other party or parties liable for such costs and damages. In addition and in relation specifically to the damages sought by Bray Construction detailed above, as the concrete specifications which are the subject of the allegations were prepared by Genivar Inc., the City will seek all available relief against Genivar to recover any and all costs and damages.

Like any litigation, the City’s potential recovery is limited to its actual costs and damages, subject always to its duty to mitigate its losses. Ultimately, the total amount that the City will be able to recover in the context of this litigation is at the discretion of the courts and cannot be guaranteed in advance.

On October 11, 2013, the City Clerk and Solicitor initiated the City’s litigation hold procedures in respect of the Airport Parkway Pedestrian/Cycling Bridge Project. This was done in response to the receipt of letters from both the President of Genivar, as well as the company’s legal counsel, asserting that representatives of the City had made inaccurate and false statements regarding the company and the engineering services that it provided to the Project.  While both letters claimed that Genivar’s reputation had been damaged by the allegedly inaccurate statements, the letter from the company’s legal counsel also claimed that Genivar suffered economic harm as a result of the statements.

As a final point, it may be noted that the magnitude of this litigation is likely to exceed that which the Litigation and Labour Relations Branch can accommodate with its in-house resources. As a result, the City Clerk and Solicitor has retained external legal counsel to both defend the claims made against the City, as well as to pursue the City’s claims against other parties. While the City, in keeping with standard practices, will seek recovery of its full legal costs as part of the litigation, these are ultimately in the discretion of the court and it is unlikely that the City will be able to recover these, in their entirety.

## RISK MANAGEMENT IMPLICATIONS

There are no risk management implications associated with this report.

An important element of the design process is achieving a design that will minimize the overall lifecycle cost of the structure. For example, providing a structure with a higher initial capital construction cost could result in a lower cost over the service life of the structure. The design and material selection have an impact on the cost to maintain the structure to achieve its anticipated service life. Two structures may be built to meet building code requirements and achieve the same service life objectives but one may require higher ongoing maintenance costs as a result of its design. Therefore, an effective design is essential to provide a structure that will reduce costs over the life of the asset.

The City has confidence in Delcan’s ability to complete this project and is pleased that it has also made a commitment that this project is its top priority. Delcan has demonstrated professional capacity, experience, and local knowledge; its Ottawa bridge group has 22 bridge engineering professionals with a combined 323 years of experience.

Delcan has a proven track record of delivering high-quality bridge projects with similar design and engineering concepts. These projects include Autoroute 25 Cable-Stayed Bridge over the Rivière-des-Prairies in Montreal, Quebec; the Pitt River Cable-Stayed Bridge in Vancouver, British Columbia; the cable-supported Humber River Arch Footbridge in Toronto, Ontario; and the cable-stayed Coast Meridian Bridge in Port Coquitlam, British Columbia. Delcan has completed many pedestrian/cycling bridges, including in Ottawa, and has led other major bridge projects in Ottawa.

Further, and as mentioned above, a City Senior Structural Engineering Advisor will be providing oversight and advice, and Revay and Associates will be offering risk-management and claim expertise on the project.

## FINANCIAL IMPLICATIONS

Funds are available in the city-wide capital reserve to provide for the additional $4.65 million in funding outlined in this report. The reserve has a forecast year-end balance of $33 million prior to the allocation for this additional project authority. In the event that the final project disposition is a surplus, funds will be returned to the city-wide reserve as part of the annual capital closure exercise and report to Council.

## ACCESSIBILITY IMPACTS

The report recommendations are in line with the Accessibility for Ontarians with Disabilities Act and the corporate Accessibility Policy; specifically, the recommended option will allow for improved access for persons with disabilities and/or seniors

## Technology Implications

There are no technology implications.

## TERm of council priorities

This report directly impacts the 2010-2014 Term of Council Priorities, as follows:

EP3: Support growth of local economy

TM3: Provide infrastructure to support mobility choices

TM2: Maximize density in and around transit stations

GP2: Apply management controls to achieve Council’s priorities

FS2: Maintain and enhance the City’s financial position

## SUPPORTING DOCUMENTATION

Document 1 – Hunt Club Community Pathway Footbridge Options Analysis

## DISPOSITION

Staff will implement Council’s direction.