

# Concept Planning Study – Walterdale Bridge Replacement and Approach Evaluation

## Update on Concept Planning Study

### Recommendation:

That the January 25, 2011, Transportation Department report 2011TD5741, be received for information.

### Report Summary

**This report details the concept planning work completed to date for the replacement of the Walterdale Bridge and associated roadworks.**

### Previous Council/Committee Action

At the April 7, 2009, Transportation and Public Works Committee meeting, the following motion was passed:

That Administration continue with plans to replace the Walterdale Bridge based on Option 1 as outlined in the March 6, 2009, Transportation Department report 2009TD4147. This option includes demolishing the existing bridge and replacing the bridge with a modern “signature” structure, connecting to existing roadways.

### Report

#### Background:

The Walterdale Bridge is nearing 100 years of age and is at the end of its serviceable life. Previous assessments

indicate the bridge will require replacement by the end of 2014. In May 2010, Transportation Department initiated a concept planning study for the Walterdale Bridge replacement. This study follows the 2008 Walterdale Bridge Crossing Strategic Planning Study. It includes a further evaluation of the recommendations of the 2008 study, as well as evaluation of other alternatives. This study will develop a recommendation for a new bridge alignment, “signature” style structure and associated road network improvements. The final recommendation will present the bridge replacement along with an ultimate scenario for the road network between 82 Avenue and 97 Avenue. The bridge replacement may be staged such that the recommended bridge may connect to the existing road network with minor improvements and allow for the associated ultimate road network improvements in the future.

### Progress to Date:

#### **Bridge Alignment and Road Network Options:**

The project team developed numerous concepts for the bridge replacement. An initial screening was completed to remove options that were not technically feasible. This resulted in ten options for further evaluation.

Evaluations of the ten options were completed by the project team and resulted in four options moving forward and then presented at a public open house for input.

The four options presented at the open house are in Attachment 1.

The Option 4 bridge location segment (located to the east of the existing bridge through EPCOR to the north of the river, as well as Option 3 north bank road network segment (grade separation at River Valley Road) were subsequently eliminated as traffic operations would become worse and not compatible with the proposed West Rosedale Land Use Plan.

Following the evaluation screening and the addition of new ideas, each segment currently remains with the following options:

South Bank – The road network options between 82 Avenue and the south bridge approach include the four options (Attachment 1) presented in the open house displays. Road geometry refinements, as well as environmental, geotechnical, historical and neighbourhood impacts will be reviewed in detail in consideration of impacts to Old Strathcona and the river valley.

North Bank – The recently eliminated road network options result in one remaining option. The bridge approach will be at grade or near the existing north approach (Attachment 1 – Option 1 and Option 2). The proposed road network in Rosedale will remain as per the West Rosedale Urban Design Plan.

River Crossing – With the elimination of Option 4 (Attachment 1), the river crossing has been limited to three location options, as detailed in Attachment 2, that include:

- 1) A base replacement alignment where the new bridge will be located along the existing bridge location.

- 2) An east alignment where the new bridge will be angled east of the existing bridge location at the south bank.
- 3) A west alignment where the new bridge will sit parallel to and west of the existing location. This option has been recently added but was not presented to the public. This is subject to review regarding historical lands impact.

### Bridge Style Options

Four bridge styles were presented at the public open house for comment. The four bridge styles under consideration include girder, extra dosed, arch and cable-stayed. Within each style, there are several design variables and complexities with each having advantages and disadvantages. A matrix outlining each bridge style relative to several key design considerations, as well as illustrations and renderings of these bridges are in Attachment 3.

An interim report summary of the project background and the evaluation process for the bridge replacement is provided in Attachment 4.

### Key Considerations

The project team and the extended group of internal City stakeholders developed several criteria to include evaluating the road and bridge alignment options. Several key issues are illustrated in Attachment 5, including the following:

### Environmental and Geotechnical Considerations

The environmentally sensitive locations within the study area include the North

Saskatchewan River Valley. A full Environmental Impact Assessment will be completed as part of the preliminary engineering that satisfies the requirements for the federal regulatory agencies as well as City of Edmonton Bylaw 7188 (North Saskatchewan River Valley Area Redevelopment Plan). Initial discussions have taken place with the Federal and Provincial regulatory agencies to identify the schedule for replacement and help guide the design process. Dormant landslides on the south bank need to be considered as some construction activities may negatively impact the current condition of the slope.

#### Historical Considerations

There are several historically significant locations within the study area requiring consideration including the Fort Edmonton Cemetery and Traditional Burial Grounds Commemoration Site. Historic locations and status are illustrated in Attachment 6.

Management of the cultural land areas and resources has been a priority during this planning stage and remediation measures are being reviewed to mitigate potential impacts. A Historical Resources Impact Assessment is required immediately upon choosing the recommended alignment.

#### Land Use Integration

Design options are being co-ordinated with other area planning initiatives including the West Rosedale Urban Design Plan and the EPCOR Rosedale Re-purposing project.

#### Geometry and Operations

Technical considerations include maintaining neighbourhood and

commercial access between 82 Avenue and 97 Avenue, accommodating traffic (vehicular, pedestrian and bicycle), managing detours and closure impacts and reviewing complex grades at the south approach.

#### Pedestrian and Cyclist Accommodation

Alternative transportation modes require safe and convenient accommodation and integration with the proposed roadway and bridge options. Proposed pedestrian/cyclist facilities on the bridge will be designed in consideration of the existing area walk and trail facilities, as well as future facilities and the Capital Region River Valley Park Plan.

#### Next Steps

In consultation with affected departments, the project team will continue to evaluate and refine the options to greater detail. The final phase of public involvement will occur between January and March 2011, and will include a second round of interviews with key stakeholders, as well as a second public open house. A final bridge replacement recommendation including bridge style and alignment and associated road network improvements will be presented to Transportation Public Works Committee in spring 2011, for approval. Conceptual plans must be completed by spring of 2011, to allow the preliminary and detailed engineering to be completed over 2011 and 2012 to meet the 2014 replacement date.

#### **Policy**

To incorporate the City of Edmonton Policy C458C (Percent for Art to Provide and Encourage Art in Public Areas Policy), the project team, in conjunction with the Edmonton Arts Council, has

retained a renowned artist to participate as part of the design team through the concept planning study, as well as throughout preliminary and detailed design phases. The involvement of the artist throughout the project stages is expected to result in enhanced value for the art component of the project, and is intended to integrate art into the bridge project, either as part of the bridge structure or in a way that complements the signature bridge and the context of the surroundings.

The Walterdale Bridge Replacement project will replace aging infrastructure, provide an opportunity for a variety of transportation modes and accommodates area planning currently underway. This project aligns with the City's strategic vision the Way Ahead and more specifically the goals identified in the policy documents The Way We Move and The Way We Grow.

### **Public Consultation**

The consultation process for this project consists of three phases. Phase one includes profiling interviews with affected key stakeholders to make contact and gather initial information. Phase two is a public open house to present the progress to date and solicit feedback regarding the road and bridge options to date. Phase three includes follow-up meetings with key stakeholders, as well as a second public open house to communicate the bridge replacement recommendation prior to presenting to Transportation Public Works Committee in Spring 2011. To date, phases one and two have been completed. An interim public consultation report summarizing the input from stakeholders and the public is

included in Attachment 7. An expanded compilation of all of the comments received at the open house, as well as email questions and responses is available upon request.

After reviewing the diverse range of comments and competing interests, there is general support for Option 1 regarding the roadways on the south bank; however, comments also suggest that flexibility should be maintained to allow possible roadway re-configuration in the future, if required.

There was little support for the north side of Option 3 (elevating the bridge over River Valley Road).

There was significant support for a southbound lane for access from the north bank to Kinsmen Sports Centre.

The public comments regarding the four bridge styles presented identified preference for the arch and extra dosed bridge styles.

### **Attachments**

1. Roadway Network Options 1, 2, 3 and 4
2. Bridge Location Options – Base, East, West
3. Bridge Style Option 1 (Girder), Bridge Style Option 2 (Extradosed), Bridge Style Option 3 (Arch), Bridge Style Option 4 (Cable-Stayed)
4. Interim Report Summary
5. Key Considerations/Constraints Map
6. Historical Areas Map
7. Public Involvement - Interim Summary Report

**Others Reviewing this Report**

- M. Koziol, Acting General Manager, Asset Management and Public Works, and General Manager, Capital Construction Department
- R. G. Klassen, General Manager, Planning and Development Department
- L. Cochrane, General Manager, Community Services Department