Downtown LRT Connector – Concept Plan

Recommendation:
That the December 8, 2010, Transportation Department report 2010TD5606 be received for information.

Report Summary

This report provides an update to the concept plan for the Downtown LRT Connector between the West and Southeast LRT lines.

Report

At the June 21, 2010, City Council meeting, Bylaw 15469, a Bylaw to amend Transportation System Bylaw 15101 was approved. This Bylaw amendment defined the LRT route through the Downtown that connected the Southeast and West LRT lines.

Background

- The Transportation Department is providing a status update to the Downtown LRT planning process and presenting a draft concept plan. Additional planning work will be completed by February to develop the recommended plan.
- The Downtown LRT Corridor Study was approved by City Council in June 2010. The study recommended the Downtown LRT route connect with the West LRT on 104 Avenue before turning south onto 107 Street then running east along 102 Avenue through to 96 Street where the corridor would connect with the Southeast LRT Corridor.
- The Downtown LRT Corridor Study also identified a future connection to a proposed wider Downtown circulator continuing south on 107 Street at 102 Avenue.
- The identification and evaluation of the Downtown LRT Corridor was undertaken in conjunction with the Quarters Development Team and the development of the Capital City Downtown Plan. The Downtown LRT Connector was identified in the Capital City Downtown Plan as one of the "catalyst projects" to support new development, improved public spaces, and a more vibrant and pedestrian-oriented Downtown.
- The City intends to use the Downtown LRT as a 'city shaper' that will encourage new development on underutilized and vacant land, promote pedestrian scale development with active street-facing frontages, and provide the basis for more attractive, functional, and valued public spaces.

Downtown LRT Concept Plan

- The Downtown LRT Connector concept planning commenced in July 2010, with the project team undertaking the development of a number of alignment and stop options to determine the optimal stop and street configuration to maximize the opportunities for transit, pedestrian, and bicycle improvements. The draft alignment is for the LRT to continue from the West LRT down the centre of 104 Avenue, along the west side of 107 Street, and along the north side of 102 Avenue connecting to the Southeast LRT.
- The downtown 102 Avenue alignment is significantly constrained

making it difficult to provide the surface LRT and associated stations and also provide continuous auto travel lanes. As a result, the draft plan includes a combination of two-way auto traffic, one lane of traffic in some blocks, and one location contemplates a full closure to auto traffic.

- There are five stops identified in the Downtown section of the LRT. For each proposed stop various options were developed that focused upon the arrangement at each stop. The options are outlined in Attachments 1, 2, and 3. The following outlines the proposed stop locations draft and alignment configuration.

*Warehouse/*Campus *District*

The Campus stop is located on the west-end of Downtown and is to serve the warehouse/campus district, including Grant MacEwan University and NorQuest College.

The proposed stop uses a 'diagonal' layout across the block bounded by 104 and 103 Avenues and 108 and 107 Streets. This stop requires significant property acquisition but provides convenient off-street access for both Grant MacEwan and NorQuest. This configuration also provides opportunities for redevelopment on the site; however, the parcel size and configuration may pose some development challenges. The proposed location also provides a third holding track, which enhances operational flexibility when required for major events in the Downtown area. The project team is still evaluating design options that create a configuration more suitable for redevelopment.

The purpose of this stop location is to provide a stop as far west as possible on 102 Avenue to provide walking links through to Jasper Avenue and Corona Station. As well, a track has been identified south of the intersection of 107 Street and 102 Avenue to accommodate the future Downtown circulator.

The 105/106 Street stop is on the north side of 102 Avenue, occupying much of the block between 105 Street and 106 Street. For this block, auto capacity is reduced to one lane eastbound, enabling dedicated bicycle lanes to be provided. A partial property acquisition would be required on the south side of the Avenue at the stop and on the north east corner of 107 Street and 102 Avenue.

City Centre West

This stop serves the commercial district including City Centre West and East and Don Wheaton YMCA and Manulife Place. The stop would be located on the north side of 102 Avenue with the stop platform located adjacent to 101 Street. The purpose of this stop is to provide connectivity to the commercial core, walking links to Jasper Avenue, interchange with transit on 101 Street, and future connectivity to the potential Downtown entertainment district.

The supported option is to provide one eastbound vehicle lane from 102 Street through to 101 Street. Between 102 Street and 103 Street, a single westbound traffic lane with a

dedicated right-turn lane would be provided. This is to maintain vehicle access and circulation near this stop. Based on stakeholder feedback the station location is still being reviewed to consider moving it closer to 103 Avenue.

Churchill Square:

The purpose of this stop is to provide access to the arts and civic district within the Downtown, interchange with the existing LRT line and access to municipal government. The proposed stop will be located between 100 and 99 Streets.

The proposed option is to remove auto access, providing dedicated two-way bicycle lanes and wider station platform. The arrangement also provides a more integrated pedestrian space connecting the stop to Churchill Square and to the Library.

This stop configuration includes the closure of 99 Street between 102 Avenue and 102A Avenue. The closure would provide further opportunities to improve the public realm, create a new direct connection to the Churchill LRT station, and simplify the intersection arrangement on 102 Avenue for the LRT route. This project team will continue to examine this location with respect to bus movements and access management.

The Quarters:

This stop is on the east-end of Downtown and serves the Quarters District area. The stop location was developed in conjunction with the Quarters Development Team. This stop would be located on the north side of 102 Avenue, west of 96 Street where it provides the greatest opportunity for the LRT to act as a stimulus for redevelopment in the area. 102 Avenue would be closed to through traffic at 96 Street, and a single eastbound traffic lane is provided from 97 Street to the lane just west of 96 Street; this will provide local access and maintain street parking for the businesses along the block.

Property Acquisition

- The stop options were developed with the aim of minimizing property acquisitions where possible. The only stop requiring significant property acquisition is the Campus stop which would require the acquisition of a number of surface parking lots and buildings. Additionally, the 105/106 stop may require the acquisition of a small portion of property along the south side of 102 Avenue; that property is a surface parking lot and frontage parking.

Traffic/Access Modifications

- The road network within the Downtown consists of a typical grid network, providing traffic with multiple routes. The main arterial routes running north/south within the Downtown include 101,105, and 109 Streets, the latter providing connectivity to the High Level Bridge over the North Saskatchewan River. In the east/west direction 104 Avenue and Jasper Avenue are the

main arterial routes into the Downtown.

- Traffic analysis was completed to determine overall adjustments and impacts to traffic movement in the Downtown, related to the introduction of the new LRT. The analysis was developed using model data, updated to reflect the inclusion of the proposed LRT (Downtown, West, and Southeast). The road network within the Downtown currently provides an adequate level of service, the inclusion of the future LRT will result in increases in delay and congestion but within levels found within Downtown centres in other major cities.
- The development of the LRT routes and the use of existing road space within the identified corridors, results in reduced traffic volumes within the LRT corridors, with some reassignment of traffic to other routes. The new LRT routes themselves will provide people with improved and new journey opportunities, reducing the reliance of the private car into the Downtown.
- The Downtown transportation network can accommodate the reduced capacity on 102 Avenue because of the proximity to corridors like Jasper Avenue, 103 Avenue, and 104 Avenue. 102 Avenue will no longer function as a through arterial and in combination with 103 Avenue it will operate primarily as an internal circulation roadway west of 100 Street within the Downtown.
- As the concept planning continues further, work will be undertaken to assess the impact to traffic patterns.
- The project team identified the remaining one-way sections of 103 Avenue, could be converted to two-way operation, to provide a more complete parallel corridor to that of 102 Avenue.

<u>Noise and Vibration</u>

- The areas adjacent to the corridor in the Downtown do not meet the parameters identified in the Urban Traffic Noise Policy (C506); therefore, noise measurements and modelling were not completed and noise attenuation measures are not required.
- Operation of LRT vehicles through sharp turns in the track can generate noise. This type of track arrangement is required on the route at 102 Avenue and 107 Street. To alleviate the potential impact, the LRT vehicle would operate at slow speeds and can, if required, be fitted with a wheel dampening system to reduce wheel noise. These measures, in conjunction with good design and maintenance of the alignment, should reduce the generation of noise and the associated impacts.
- The only identified location where additional measures will need to be considered is alongside the Winspear and Citadel Theatres. At this location, consideration should be given to the use of a form of track construction that reduces ground borne vibration (floating track slab design).

<u>Pedestrian and Cycling</u>

- By developing the Downtown LRT alignment, an emphasis has been placed on the LRT stops becoming focal points for pedestrian activity.

Connectivity and improvement to existing walk links have been considered within the draft concept design. These include improved sidewalks to improve the walkability and space available to LRT passengers and the local community.

- The Capital City Downtown Plan identifies 102 Avenue as a central pedestrian spine and makes reference to the provision of a cycle route along 102 Avenue. The proposal for the LRT along the corridor provides enhanced pedestrian facilities and a dedicated or improved provision for cyclists parallel to the LRT along the length of the route on 102 Avenue.

Cost Estimates

- The conceptual cost estimate for the Downtown LRT Connector is approximately $155 million in 2010/2011 dollars. The estimated cost including inflation is approximately $180 million based on completing construction in 2016. This estimate includes property acquisition, vehicles, engineering, and construction administration. These cost estimates are summarized in Attachment 3.

Land Use Opportunities

- The Downtown LRT is a catalyst project within the Capital City Downtown Plan and as such the corridor and the draft LRT alignment has been developed to support the four policies of the Capital City Downtown Plan:
  - Sustainable
  - Vibrant
  - Well-Designed
  - Accessibility
- The draft LRT alignment will help support development along the corridor, such as at Grant MacEwan University and NorQuest College. The Campus and 106/105 Street stops are both centred on areas of the Downtown that are currently less well developed, which should increase the desirability of development around these two locations, helping to generate development within the Warehouse/Campus District.
- The location of the Campus stop will offer the City with the opportunity to instigate Transit Oriented Development in combination with the LRT Stop.

Summary

- Additional analysis for the draft concept plan will continue through December and January to develop the recommended concept plan. The campus station alignment, the centre west station, and the traffic circulation along the corridor are some specific items that will be reviewed in more detail.

Public Consultation

- A public involvement process was completed in accordance with the Public Involvement Policy C513. Over 265 participants attended, open houses, presentations, and small group meetings. A detailed outline of the public involvement activities and themes is provided in Attachment 3
- The process for the Downtown LRT project included two major stages. In September 2010, a number of options were presented and discussed with a broad range of

stakeholders at presentations and in small group meetings. This input was considered along with a technical study and the City's long-term policy goals to develop a draft LRT Concept Plan that was presented for further feedback through a questionnaire at an open house held in November 2010.

- Almost half of the respondents (47%) who completed the open house survey indicated they were satisfied with the draft LRT Concept Plan, with 27% indicating they were neutral, and 26% indicating they were dissatisfied.
- Participants who were satisfied with the draft Concept Plan most frequently stated it was a good plan that was well balanced to consider the needs of many stakeholders, that the plan needs to move forward, and that they see benefits from reducing road capacity and enhancing pedestrian focus. Those who indicated dissatisfaction were most likely to be concerned about the impact of reduced roadway capacity and on cars and traffic congestion, and they noted concerns regarding station locations and bus transit integration.
- Issues raised through public involvement are similar to the previous LRT planning projects. These include concerns about noise, traffic, safety, and community impacts. The information obtained through the consultation helped refine the concept plan and develop appropriate mitigation measures.

Budget/Financial Implications

The budget for the Downtown LRT Project has not been identified in the Capital Budget and budget requirements will be reviewed as part of the upcoming 2012-2014 budget process or through supplementary budget adjustments in 2011. Administration will be presenting a report to City Council on December 10, 2010, identifying options to fund fast tracking construction of the West to Southeast LRT line.

Attachments

1. Downtown LRT Connector Report
2. Downtown LRT Concept Plans
3. Cost Estimates
4. Public Consultation

Others Reviewing this Report

- L. Rosen, Chief Financial Officer and Treasurer
- M. Koziol, General Manager, Capital Construction Department and A/General Manager, Asset Management and Public Works Department
- R. G. Klassen, General Manager, Planning and Development Department