

Additional Information

Background

- The Downtown LRT Corridor Study was approved by City Council in June 2010 as part of the Capital City Downtown Plan (CCDP) following a statutory public hearing. This included approval of the updated Transportation System Bylaw which has been subsequently approved by the Province of Alberta. 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 previous recommendation for the Downtown LRT Concept Plan was presented to Transportation and Infrastructure Committee on May 25, 2011, and provided in Attachment 1 and 2.

Report

Grant MacEwan University and NorQuest College

- The project team met with representatives from Grant MacEwan University and NorQuest College (September 2011) to discuss the Diagonal 107 Street station option south of 104 Avenue and west of 107 Street.
- Both institutions support the Diagonal 107 Street station; however, commitments from both Grant MacEwan University and NorQuest College are required in developing the site consistent with the CCDP development principles and associated financial contributions to develop the residual lands surrounding the station. Until this formal commitment is in place, the preliminary engineering will take place for both alternatives and the concept plan will acknowledge that both options are feasible (Attachment 6).

The Quarters Area

- Administration carried out consultation with stakeholders in the Quarters area which included members of the Chinese Community, Boyle Street, and business and property owners. A series of consultation sessions were held to obtain input from these groups to help develop possible modifications to the recommended LRT alignment between 97 Street and 95 Street.

- An analysis was completed of the four options that were developed through the workshops. The options were assessed based on the City Council approved evaluation criteria that was applied to other LRT corridors recently evaluated (i.e. West, Southeast, and Northwest). The criteria include:
 - Land-use and Promoting Compact Urban Form;
 - Movement of People and Goods;
 - Feasibility/Constructability;
 - Parks, River Valley and Ravine System;
 - Social Environment; and
 - Natural Environment.

Details of the evaluation criteria and analysis are provided in Attachment 7. Based on the application of the criteria; the 102 Avenue continues to be the most appropriate corridor. There is not one specific element that results in 102 Avenue performing better, but rather a number of reasons as follows.

Land Use/Promoting Compact Urban Form

- Current and future population density is higher on 102 Avenue corridor.
- Number of present and future activity centres is greater on 102 Avenue.

Movement of Goods and People

- 102 Avenue has greater connectivity to both current and future population/ridership.
- Shorter LRT travel time.

Feasibility/Constructability

- Lower capital and operating costs on 102 Avenue.
- Underground options are significantly more expensive and more impactful during construction.
- 102 Avenue requires the least amount of right of way.

Revised Recommendation

In the second workshop stakeholders developed LRT options on both 102 and 102A Avenues with both surface and underground options. The stakeholders worked within the design constraints using scaled LRT puzzle pieces, accurately designed for each potential option. Administration developed representative designs to analysis each of the options including the revised recommendation for 102 Avenue.

The revised recommendation on 102 Avenue addresses a number of the concerns that were raised during the consultation. The alignment has been changed to the south side of the street and is as shown in Attachment 8. The features of this plan are outlined as follows:

- LRT track and stop on the south-side of the street.
- The portal has been narrowed and the LRT curve has become shorter to maintain a mid-block pedestrian crossing and shorten the portal length.
- On-street parking and passenger drop-off zones have been added.
- Property requirements south of 102 Avenue significantly reduced.
- Passenger drop-off ability enhanced moving the LRT alignment to the south side of 102 Avenue, leaving one westbound lane adjacent more widely used local facilities.

The above features were incorporated to address the community concerns of pedestrian safety, removal of community buildings on the south side of 102 Avenue, portal, access, parking, and traffic circulation.

While the revised recommendation addresses a considerable number of community concerns, there are trade-off's from a transportation operations and land development perspective, namely:

- The reduced portal width creates additional challenges in terms of day to day maintenance activities.
- The sharper curve approaching the portal will result in slower LRT speeds approaching and leaving the Quarters Station.
- Removal of the eastbound lane limits vehicle circulation opportunities for adjacent properties.
- An additional access off Jasper Avenue is required to serve properties south of 102 Avenue.

Chinatown Gate

- As part of the Southeast to West LRT preliminary engineering assignment an initial assessment of the Chinatown Gate has been completed. From the preliminary reviews of available structural drawings and field investigations the Chinatown Gate is capable of withstanding the LRT passing underneath. There are different options that can be used to protect the Chinatown Gate during construction, but the appropriate construction techniques will be identified as the engineering progresses.
- Initial investigations examined the design and materials used to construct the gate, and through a non-invasive survey of the gate, confirmed clearances, and exterior condition. The assessment identified potential for the foundation of the gate to be impacted by adjacent excavation, as well there is potential for the superstructure of the gate to be damaged by construction equipment. Depending on the horizontal separation and depth of existing utilities passing under the gate, utility relocation activities could compromise the stability of the gate foundation. The risk of damage to the gate by impact from construction equipment also exists.
- There are different options that can be used to protect the Chinatown Gate during construction, but the appropriate construction techniques will be identified as the engineering progresses. A method to reduce the risk of impact during construction is to restrict the size and type of equipment allowed in the vicinity of the Chinatown Gate.
- An option that could be explored is to remove the superstructure of the gate during construction, place it in storage, and re-assemble the gate after construction activities are completed. This would provide an opportunity to enhance the structure of the Chinatown Gate and refurbish the facade. However, this would only be considered if supported by the stakeholders.
- There was also a review to assess the potential for impacts due to operation of the LRT passing through the Chinatown Gate. Initial assessments determined the operation of LRT will pose no additional danger to the gate. The risk of impact from LRT operations is lower than that of vehicles and the impact of vibration from the LRT will be similar to that of the road traffic already passing through the gate.

Property Impacts

- The proposed Diagonal 107 Street station results in considerable property impacts to accommodate the station and future development.
- The revised recommendation for the portion between 97 Street and 95 Street removes the requirement for significant property impacts on the south side of 102 Avenue specifically the Toi Shan and other culturally significant buildings. However, additional property impacts have been identified to accommodate access improvements for properties on the south side of 102 Avenue between 95 and 96 Street. The property impacts are identified in Attachment 8.

Cost Estimates

The conceptual cost estimate for the Downtown LRT Connector is approximately \$165 million in 2011 dollars. The estimated cost including inflation is approximately \$195 million based on completing construction in 2017. This estimate includes property acquisition, vehicles, engineering, and construction administration. These cost estimates are summarized in Attachment 7 and are part of the overall Southeast to West LRT project costs previously outlined to City Council.

Preliminary Engineering

The Southeast to West LRT preliminary engineering assignment has been initiated and includes the preliminary engineering of the Downtown LRT section. The project is being scheduled to focus firstly on the Southeast section followed by the West leg. Approval of the Downtown portion of the Southeast to West LRT is critical to ensure the timely completion of the engineering assignment and to reduce the risk of schedule and cost impacts created by the uncertainty of Downtown portion of the line.