

# Centre LRT Route Selection

## Recommendation

That Urban Planning Committee recommend to City Council:

1. That the recommended Centre LRT route alignment, as set out in Attachment 2 of the August 14, 2018, Urban Form and Corporate Strategic Development report CR\_5193, be approved for further concept level planning.
2. That Administration prepare amendments to Transportation System Bylaw 15101 following completion of the Centre LRT concept level plan and return to a future City Council Public Hearing.

## Executive Summary

Light Rail Transit (LRT) supports many aspects of the City's long-term vision. The Centre LRT is an important component of the City's Long Term LRT network and will provide additional opportunities for seamless connections between Downtown, the University of Alberta area, Whyte Avenue, and other locations in the city served by the network. After evaluating a number of potential routes, Administration recommends moving forward with the next level of design (concept) for two segments of the Centre LRT route: the Downtown segment, and the segment along Whyte Avenue between 109 Street and 83 Street. The routing near University of Alberta, as well as a recommendation to cross the river, requires additional technical analysis, engagement and planning review with the University of Alberta, Alberta Health Services and the Garneau community. The eastern extension (Energy Line) beyond Bonnie Doon will be evaluated in the future as a separate study in the context of regional growth.

## Report

### Project Background

The City's Long Term LRT Network Plan, adopted by City Council in 2009, outlines an LRT network that includes urban style LRT with enhanced transit accessibility to connect more people and places across the city. The Plan identifies the strategic importance of the Centre LRT route, as it will diversify travel opportunities throughout the network and provide the network with greater operational flexibility. The Centre LRT is planned as an Urban LRT and will operate in an integrated manner with the

Valley Line LRT, to provide an Old Strathcona/University route option for Valley Line passengers. The route will provide additional capacity and route options for Edmontonians, and enhance the current functionality and address capacity constraints of the Capital Line LRT.

Helping citizens, businesses and property owners to better understand the potential benefits and impacts of the Centre LRT was cited by City Council as a priority within the remaining LRT Network planning efforts. The project is being delivered in two sequential phases: 1) Corridor Analysis and 2) Concept Design. The corridor analysis informs the selection of the route based on evaluation criteria. The concept design provides direction on the alignment within the corridor (centre or side running), station location and frequency, property impacts, and cost estimates.

The original approved project budget is \$2.5 million and completion schedule is March 2019. A schedule extension and additional budget allocation is required to complete the engagement and related technical work. The latest projection is to be complete Q1 2020.

### **Corridor Evaluation and Selection**

The Centre LRT route will provide opportunities for direct or one-transfer connections between Downtown, the University of Alberta, Strathcona, Bonnie Doon and the wider LRT network. The study area for the Centre LRT is bounded by 104 Avenue to the north, 76 Avenue to the south, 116 Street to the west, and the city limits to the east, with a north - south river crossing generally in the area between the Dudley B. Menzies LRT Bridge and the High Level Bridge.

The overall process of route selection for the Centre LRT was similar to the process followed for other LRT route alignment selections and is outlined in Attachment 1. The step-by-step evaluation process started with the identification of all possible route options, including those identified by the public and stakeholders.

Initial screening removed corridors that had significant feasibility challenges, or fatal flaws. These include steep gradients, narrow corridor widths, significant construction and environmental issues, and other elements that would negatively impact LRT development.

Further evaluation of individual segments along the corridor removed lower/poor performing segments. Some segments performed very poorly against a single category, such as narrow alignments that would have significant property and community impacts. Other segments were lower performing across multiple categories.

From the remaining segments, Administration developed potential viable routes and considered them using more detailed evaluation criteria and operational aspects. These aspects include route length, travel time, operability, cost, potential station locations close to key destinations, and integration with the Valley Line and the existing and planned transit system.

From this work, a tentative preferred route emerged that performed best at both a segment and route level. Information on this route that connected Downtown, the University of Alberta / Garneau, Strathcona and Bonnie Doon, was communicated to City Council and the public in February 2018.

### **Preferred LRT Route**

Attachment 2 illustrates a preferred route through Downtown and along Whyte Avenue. Since February, Administration has identified that the river crossing and the route through the University of Alberta Area / Garneau community requires further study and stakeholder engagement involving the University of Alberta, Alberta Health Services and the Garneau Community.

Administration is seeking Council approval for the Downtown and Whyte Avenue segments of the preferred route in order to begin the concept planning phase for the route. The information and implications obtained from the concept phase of planning will not only refine the requirements for these segments of the route, but will also better inform the yet-undefined river crossing and route alignment through the University of Alberta / Garneau area.

### **Downtown**

The Centre LRT route will connect with the Valley Line West LRT at 102 Avenue and 107 Street. It will continue south on 107 Street, turning west on 99 Avenue along the north boundary of the Legislature grounds and then south (just west of 109 Street) to a bridge crossing the river.

### **River Crossing**

In conjunction with the LRT route selection, Administration undertook a high level assessment of the High Level Bridge structural capacity to carry LRT. This study confirmed that it is not feasible for the existing bridge structure to support the additional load of LRT trains in its current condition.

Additional technical analysis is required to better understand the optimized functional and lifecycle approach, including potential upgrades to existing crossings in comparison to a new bridge to accommodate LRT, potential site constraints (including environmental, geotechnical, archaeological and historical considerations and constructability), and to assess opportunities to accommodate future user needs,

including LRT, pedestrians, cyclists, and motor vehicles. Administration will advance a route recommendation for the river crossing once this further analysis is complete.

### **University of Alberta Area/ Garneau Community**

Through ongoing discussions and coordination with the University of Alberta, Walter C. Mackenzie Health Sciences Centre, and the Garneau community, Administration has determined that a more detailed analysis is needed to understand and address the concerns and requirements of these stakeholders. As such, Administration is not advancing a preferred route in this area at this time and will continue to work with these stakeholders to address concerns and identify a preferred route.

### **Whyte Avenue**

Whyte Avenue emerged as the preferred east/west route. While this segment will provide better connections to key destinations, Administration will need to examine trade-offs during the concept planning phase to manage potential impacts to parking, trees, medians and travel lanes. Concept planning will consider the draft *planWhyte* land use study and Main Streets Guideline, and will identify how Centre LRT and Valley Line LRT integrate.

### **Next Steps**

Approval of the Centre LRT preferred route identified in Attachment 2 will provide clarity and direction for Administration to continue with the project development. Should Council approve the preferred Centre LRT route illustrated in Attachment 2, Administration will:

- initiate concept planning for the approved segments, and leverage this planning phase to better inform the route alignment and requirements through the University of Alberta / Garneau area, and to inform the next phase of engagement for the entire corridor;
- continue engagement with representatives from the University of Alberta, Walter C. Mackenzie Health Sciences Centre, and the Garneau community on the corridor alignment, including provision of more detailed planning and analysis as required to address stakeholder concerns; and
- conduct a technical and lifecycle analysis for the river crossing.

Administration will update Council on major milestones throughout the process, including route alignment resolution through the University area. Concept plans for the entire route will be presented for Council's consideration with an amendment to the Transportation System Bylaw 15101 at a Public Hearing.

### **Budget/Financial**

The Centre LRT Study is funded through the Public Transit Infrastructure Fund to the completion of the concept planning stage through Capital Profile 16-66-7019 . The original approved project budget is \$2.5 million and completion schedule is March

2019. A budget adjustment is expected to be required to complete the project, with funding for the adjustment to come from reallocations within the existing approved capital program.

### **Public Engagement to Date**

Since June 2017, Administration has engaged with Edmontonians, business owners and stakeholders to gather local knowledge and to better understand issues, concerns, opportunities, and perspectives on the future LRT route. To date, engagement has included six public sessions, 2,349 public survey responses, 72 business survey responses, 13 University of Alberta survey responses, meetings with local business associations, organizations, and area community leagues, and nine pop-up events conducted by the street team.

Key themes of what was heard include:

- Consider a route that connects key destinations - the public identified Whyte Avenue, the University of Alberta, Walter C. Mackenzie Health Sciences Centre, Bonnie Doon, Downtown and the King's University as destinations they prefer to go to most often in and near the study area;
- Consider Whyte Avenue as the east/west route segment – Whyte Avenue is mentioned most often as the preferred route segment. 76 Avenue / University Avenue is considered too far from key destinations and has higher impacts to residential areas;
- Consider the impacts to vehicle traffic – the public voiced concern that the new LRT route will add to traffic congestion and delays, and they want to understand the traffic impacts of the chosen route;
- Consider Emergency Services Access to the University Hospital - there is concern about potential impact on area traffic and hospital operations, most importantly emergency vehicle access;
- Consider impacts to residents, businesses and communities – this includes increased traffic, parking and shortcutting, blocked accesses, impacts to trees, increased noise from LRT operations, land acquisition/expropriation, construction impacts and decreased property values;
- Consider crossing the river using existing infrastructure – surveys indicated a public preference to use existing infrastructure (High Level Bridge) to cross the river and to consider how the streetcar could be preserved.

Attachment 3 provides a summary of input received during the first phase of engagement about the route evaluation. Attachment 4 provides a summary of the engagement activity for the second phase of engagement.

Based on the input received, the concept planning phase will include assessments that consider areas of concern.

## Future Public Engagement

Engagement strategies continue to evolve based on what Administration has learned from the route selection process so far. Administration envisions collecting public and stakeholder input on the following broad topics during the concept planning phase:

- **Track Alignment** - the public will be invited to advise on benefits and impacts of location of the LRT track (centre versus side-running) and roadway design elements.
- **Stop Locations** - the public will be invited to advise on stop locations along the route by identifying key nodes and centres of activity.
- **Integration into the Community** - the public will be invited to help refine what infrastructure is needed to connect stations into the local neighbourhood and provide ease of use for other modes of transportation.
- **Impacts to Businesses** - through a distinct business stakeholder plan, businesses will be asked to advise on key elements that will support in mitigating impacts to businesses along the route.

Administration has developed an Indigenous Engagement and Communication Plan for the Centre LRT route work and river crossing study. Based on the input from Indigenous communities and their preferences for engagement, this specific plan will create opportunities for meaningful dialogue and knowledge collection, help maintain transparency, and honour the City's long-term commitment to keep Indigenous communities informed about projects that may have the potential to intersect with their interests. One of the goals of engaging Indigenous peoples early on in the process is to work together to use their Traditional Knowledge to identify constraints and considerations along the corridor. During the summer and fall of 2018, the City will be conducting intensive engagement with Indigenous communities by offering site visits and carrying out desktop mapping workshops.

## Corporate Outcomes and Performance Management

| Corporate Outcome: Edmontonians use public transit and active modes of transportation |                                                                      |                          |                         |
|---------------------------------------------------------------------------------------|----------------------------------------------------------------------|--------------------------|-------------------------|
| Outcome(s)                                                                            | Measure(s)                                                           | Result(s)                | Target(s)               |
| Edmontonians use public transit and active modes of transportation                    | Transit ridership                                                    | 91.6 rides/capita (2017) | 105 rides/capita (2018) |
|                                                                                       | Journey to work mode (Auto Passenger, Transit, Walk, Cycle or Other) | 26.1% (2016)             | 25.9% (2018)            |

  

| Corporate Outcome: Edmonton is attractive and compact |         |        |        |
|-------------------------------------------------------|---------|--------|--------|
| Outcome                                               | Measure | Result | Target |

|                                    |                                                                                                                |            |            |
|------------------------------------|----------------------------------------------------------------------------------------------------------------|------------|------------|
| Edmonton is attractive and compact | Edmontonians' assessment:<br>Well-designed, attractive city (% of survey respondents who agree/strongly agree) | 53% (2017) | 55% (2018) |
|------------------------------------|----------------------------------------------------------------------------------------------------------------|------------|------------|

| Corporate Outcome: The City of Edmonton has sustainable and accessible infrastructure |                                                                                                         |            |                                      |
|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|------------|--------------------------------------|
| Outcome                                                                               | Measure                                                                                                 | Result     | Target                               |
| The City of Edmonton has sustainable and accessible infrastructure                    | Edmontonians' assessment: Access to infrastructure, amenities and services that improve quality of life | 68% (2017) | 70% (2018) positive survey responses |

## Risk Assessment

This section identifies the key risks identified in the feasibility analysis and that the key mitigation is to proceed with implementation of the project through the project development and delivery model.

| Risk Element         | Risk Description                                                                                                                                                                    | Likelihood | Impact | Risk Score (with current mitigations) | Current Mitigations                                                                                                                             | Potential Future Mitigations |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| Project Management   | Project not delivered on time, on budget and to desired quality. Extended timelines may affect ability to recover funding from Public Transportation Infrastructure Funding source. | 2          | 4      | 8-Medium                              | Implement thorough project development and delivery model to properly address design uncertainties, project management, and budget requirements |                              |
| Political Influences | Public service providers have identified potential concerns with the previously announced preferred routes.                                                                         | 3          | 5      | 15 - High                             | Additional study and review with University of Alberta and Alberta Health Services Stakeholders                                                 |                              |

|                   |                                                                                                                                                  |   |   |            |                                                                                                       |                                                                                                                |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|---|---|------------|-------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| Public Perception | Public perception of insufficient consultation may generate backlash about poor process and outcomes that in turn may tarnish City's reputation. | 3 | 3 | 9 - Medium | Incorporating additional public engagement and Indigenous engagement into next phases of the project. | Being flexible and allowing for additional time and budget to incorporate more public engagement into project. |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|---|---|------------|-------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|

### Attachments

1. Route Evaluation Process
2. Preferred Centre LRT Route
3. Phase 1 - What We Heard Summary
4. Phase 2 - Engagement Summary

### Others Reviewing this Report

- S. Padbury/R. Kits, Acting Deputy City Managers Financial and Corporate Services
- M. Sturgeon, Acting Deputy City Manager, Communications and Engagement
- G. Cebryk, Deputy City Manager, City Operations
- A. Laughlin, Deputy City Manager, Integrated Infrastructure Services
- K. Block, Acting Deputy City Manager, Citizen Services