

Capital Line Planning

Recommendation:

That the May 23, 2017, Integrated Infrastructure Services report CR_4524, be received for information.

Report Summary

This information report summarizes the potential for efficiencies in extending the scope of the current Capital Line south expansion project from Ellerslie Road to the south City limits, along with the challenges and risks in doing so.

Previous Council/Committee Action

At the February 21, 2017, City Council meeting, the following motion was passed:

That Administration provide a report detailing possible efficiencies gained by coupling the Capital Line extension from Century Park to Ellerslie with the Ellerslie to Heritage Valley Town Centre extension.

Report

A consulting design team has been engaged to update the existing preliminary design for the Capital Line south extension from Century Park to Ellerslie Road and develop a construction procurement-ready package. The current scope of work does not extend south of Ellerslie Road as that segment is not prioritized for advancement at this time.

An analysis has also been completed, with the assistance of an external consultant, evaluating the potential benefits and risks of concurrently advancing the two segments of the Capital South LRT extension as a single project:

- Segment 1 = Century Park to Ellerslie Road
- Segment 2 = Ellerslie Road to 41 Avenue SW

Attachment 1 is a map of the Capital South LRT alignment.

To support the analysis, background information was collected to understand the current development status in the following areas:

- East of 127 Street SW are existing residential developments (Rutherford).
- South of 28 Avenue SW is currently being developed as a transit-oriented development containing mixed use residential and commercial developments (Heritage Valley Town Centre). Land use plans for this neighbourhood include the LRT corridor and station location. South of Heritage Valley Town Centre are the Desrochers and Allard neighbourhoods, which will also benefit from a future

LRT station.

- Land north of 28 Avenue SW and west of 127 Street SW is provincially-owned greenfield with no land use plans or timelines for development.

The estimated capital cost of Segment 1 is \$600 million (2019 dollars) and includes the cost of a future operations and maintenance facility.

The estimated capital cost of Segment 2 is \$475 million (2019 dollars).

The following two scenarios were analyzed:

- Scenario 1: Status quo. Design and construct the two segments as separate projects with assumed construction dates of:
 - Segment 1 - 2019 to 2023
 - Segment 2 - 2039 to 2043
- Scenario 2: Design and construct both segments as a single project with construction occurring from 2019 to 2023.

Scenario 2 assumes that all land use plans are in place for the provincially-owned lands. In this event, Scenario 2 could present up to \$50 million (approximately 5 percent) in capital savings over Scenario 1 due to:

- a single set of procurement, mobilization and administrative costs;
- potential efficiencies due to economies of scale
- potential savings due to reduced escalation rates

The actual savings that could be experienced under Scenario 2 are dependent on a variety of factors, including, but not limited to:

- industry capacity
- global economics
- actual construction escalation rates

However, there are several challenges associated with Scenario 2 that stem from the absence of land use plans for the provincially-owned lands. These include:

- The inability to finalize track alignment and station locations.
- Undefined transportation network and facility types needed to inform traffic and ridership modelling.
- Absence of utilities for traction power and LRT station services (power, water and sewer).

If assumptions were made regarding the above unknowns, and Segment 2 advanced into construction and operations ahead of land use plans for the provincially-owned lands, then the following risks exist:

- Re-alignment of track and station locations to achieve “best-fit” with future provincial land uses.
- Disruption of LRT service to accommodate future track and station re-alignments.

- Without track and station re-alignment, optimal land uses and densities may not be achieved.
- Low opening day ridership/revenues would require a larger than normal subsidization of the operations and maintenance costs for Segment 2.

What cannot be assessed at this time are the potential costs to re-align track or retrofit LRT stations, roadway crossings and utilities to support future development of provincial lands. These additional retrofit costs could exceed any savings seen by proceeding with Scenario 2 at this time.

Ideally, design and construction of Segment 2 would occur in parallel with planning, design and construction of development on provincial lands to maximize project delivery efficiencies, avoid future retrofit costs and initiate LRT service at a time when higher density institutional land uses will generate additional LRT ridership.

Summary

Although Scenario 2 indicates a potential for short term capital cost benefits, the timing of combining the design and construction presents a number of risks with build-out along segment 2. Based on these risks Administration recommends proceeding with Scenario 1, designing and constructing the two segments as separate projects.

Policy

The Way We Move: Transportation Master Plan
Section 4.1 - Integrating Transit with Land Use
Section 5.1 - Light Rail Transit (LRT) Network

The Way We Grow: Municipal Development Plan
Section 3.3 - Integrating Transit with Land Use

Corporate Outcomes

- This report supports the corporate outcome “The City of Edmonton has sustainable and accessible infrastructure” through consideration of how delivering these two Capital South LRT extension segments in parallel might impact the surrounding community and integrate with future development plans
- This report supports the corporate outcome “Edmontonians use public transit and active modes of transportation” through consideration of delivering LRT infrastructure when ridership levels warrant the capital investment.

Risk Assessment

Risk Element	Risk Description	Likelihood	Impact	Risk Score	Current Mitigations	Potential Future Mitigations
Adjacent Development (Scenario 2)	Adjacent development plans have not been finalized, so location and timing of system built in advance may not optimally integrate with future development plans	5 - Almost Certain	3 - Major	15 - High	Evaluate technical aspects and impacts	Work closely with developers and Province to facilitate their plans
Low Ridership (Scenario 2)	If LRT system is expanded prior to development, low ridership could lead to heavily subsidized operations and maintenance costs	4- Likely	3 - Major	12 - Medium	Encourage accelerated development	Work closely with developers and Province to facilitate their plans
Funding (Scenario 2)	It is more difficult to secure funding for both segments at once, delaying delivery of either.	3 - Possible	3 - Major	12 - Medium	Not yet started	Engage other orders of government
Public Engagement	Stakeholders do not support the change; public engagement	3 - Possible	2 - Moderate	6 - Medium	Not yet started	Establish a public engagement plan.

	requires additional time and resources to address public concerns, which cause project delays and cost overruns.					
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Public Engagement

No public engagement was undertaken in support of this analysis, as it was not applicable to the calculations undertaken.

Budget/Financial Implications

The Capital Line South extension, south of Ellerslie Road is not listed on the most recent 10-year Capital Investment Agenda. Per the April 27, 2016, Transportation Committee report CR_3314 (Long Term Funding Plan for the LRT – Strategic Option Extension Planning and Proposed Stages of Construction) recommending LRT network expansion prioritization, Segment 2 is listed as the 11 priority out of 16 LRT expansion projects.

Metrics, Targets and Outcomes

Metrics	Targets	Outcomes
<ul style="list-style-type: none"> Journey to Work Mode (percent of survey respondents who select auto passenger, transit, walk, cycle, or other) 	<ul style="list-style-type: none"> <i>The Way Ahead</i> identifies a target for 2018 25.9% 	<ul style="list-style-type: none"> 24.3% (2014)
<ul style="list-style-type: none"> Transit Ridership (rates per capita) 	<ul style="list-style-type: none"> <i>The Way Ahead</i> identifies a target for 2018 of 105.0 	<ul style="list-style-type: none"> 99.1 (2015)

Attachments

1. Capital Line South Map

Others Reviewing this Report

- T. Burge, Chief Financial Officer and Deputy City Manager, Financial and Corporate Services
- R. G. Klassen, Deputy City Manager, Sustainable Development
- D. Jones, Deputy City Manager, City Operations