

## **25th Avenue S.E. LRT Grade Separation Functional Planning Study**

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### **EXECUTIVE SUMMARY**

The purpose of this project is to establish a recommended grade separation of the Red Line LRT tracks and 25 Avenue S.E. The recommended plan will address congestion as well as operational concerns that have been noted at the intersection of Macleod Trail and 25 Avenue S.E. The City worked with communities and area stakeholders in the development of the plan. This study identified three alternative concepts to an interchange and has evaluated them relative to The City's policies and objectives, as well as stakeholder priorities.

The boundary of the Elbow River floodway is under review by Alberta Environment and Parks. It may be subject to further modification when planned upstream flood mitigation measures are implemented. Consequently, until flood mitigation measures are in place, the area of land that may be developable under future Provincial and City flood mitigation policies is uncertain.

There is currently no funding allocated for grade separation of 25 Avenue S.E. and the Red Line LRT tracks. Due to the uncertainty and potential change of the floodway zone and flood fringe boundaries, and given that there are no new redevelopment proposals imminent in the Erlton LRT station area, it is recommended to defer a decision between proposed concepts. Once flood mitigation measures are in place and a new floodway zone has been identified, a re-evaluation of the Transit Oriented Development (TOD) potential can be undertaken. This re-evaluation will help establish a recommended infrastructure plan that meets flood resiliency requirements and maximize the collective value of the infrastructure and development opportunities within the study area. In the interim, modest traffic improvements can be achieved by implementing improved traffic signal control technology at the 25 Avenue S.E. and Macleod Trail intersection. Construction of a pathway along the east side of Macleod Trail would improve connectivity between the Elbow River Pathway and Reader Rock Garden. Also, reduction of the posted speed limit on Macleod Trail to 50 km/h in the study area would improve the pedestrian environment on both sides of the roadway.

### **ADMINISTRATION RECOMMENDATION:**

That the SPC on Transportation and Transit recommend that Council:

1. Receive the 25 Avenue S.E./LRT Grade Separation Functional Planning Study report for information.
2. Direct Administration to re-evaluate the TOD potential of all concepts and develop a recommended long-term plan to grade separate 25 Avenue S.E. and the Red Line LRT tracks, once flood mitigation measures are in place and a new floodway zone has been identified and/or a new land use and development information is available for the Erlton station area.
3. Direct Administration to implement the short-term recommendations as noted in the INVESTIGATION: ALTERNATIVES AND ANALYSIS section, as funding becomes available.

### **PREVIOUS COUNCIL DIRECTION / POLICY**

In March 2018, the SPC on Transportation and Transit recommend that Council defer the report on 25 Avenue S.E. / LRT Grade Separation Study and report back to the SPC on Transportation and Transit by 2018 May 3 (TT2018-0119).

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In July 2016, Council directed Administration “to develop a recommended plan to grade separate 25 Avenue S.E. and the LRT tracks east of Macleod Trail, and report back to Council through the SPC on Transportation and Transit in Q1 2018” (TT2016-0439).

In May 2015, Council directed Administration to bring forward a follow-up report which investigates alternative design solutions which provide necessary traffic capacity to support redevelopment in the vicinity while improving pedestrian access and safety, along with reducing or eliminating conflicts with the Light Rail Transit (LRT), and to return to the SPC on Transportation and Transit no later than Q2 2016 with design recommendations and potential amendments to the land protection at 25 Avenue S.E. (TT2015-0183) Administration undertook a feasibility study which demonstrated that grade separation concepts other than an interchange were possible.

### **BACKGROUND**

The intersection of Macleod Trail and 25 Avenue S.E. is an important node in Calgary’s road network, where converging traffic from the southern part of the city crosses the Elbow River to enter Calgary’s downtown core. Adjacent to the intersection, the Erlton LRT Station, alongside the Red Line LRT tracks, attracts pedestrians from the surrounding area and provides access to the Calgary Stampede grounds north of the Elbow River.

As identified in the Calgary Transportation Plan (CTP), Macleod Trail is classified as an urban boulevard that is a major north-south route connecting south Calgary with the Downtown core. 25 Avenue S. is an east-west roadway classified as a collector roadway west of Macleod Trail, and an arterial roadway east of Macleod Trail. It connects the communities of Cliff Bungalow, Mission, Erlton, Ramsay and Alyth/Bonnybrook/Manchester.

The Red Line LRT tracks cross 25 Avenue S.E. at-grade east of Macleod Trail. Due to the proximity of the LRT tracks to the intersection of Macleod Trail and 25 Avenue S.E., frequent pre-emption of the traffic signal occurs, which results in delays to pedestrians and motorists, as well as operational concerns. To eliminate pre-emption of the traffic signal by the LRT, grade separation is required. Previous planning for grade separation at this location was for an interchange; the original plans dated back to the 1970’s and were updated through the 25 Avenue S.E. Connector project in 2009. The proposed interchange does not align well with the roles of the transportation facilities in the area as identified in the Calgary Transportation Plan (CTP).

This area of the Elbow River is one of the most complex and important flood areas in Calgary. The boundary of the floodway is under review by Alberta Environment and Parks and may be subject to further modification when upstream flood mitigation measures are implemented. It is expected that with the upstream reservoirs, Springbank Reservoir, and the new gates on the Glenmore Dam, a 2013-sized flood could be managed without overland flooding along the Elbow River. Consequently, until these mitigation measures are in place, the area of land that may be developable under future Provincial and City flood mitigation policies is uncertain. The Provincial Flood Hazard Map for Study Area is included as Attachment 2.

### **INVESTIGATION: ALTERNATIVES AND ANALYSIS**

The project team considered several alternative design solutions during this study. Concepts that were initially considered included elevating the LRT tracks above 25 Avenue S.E., elevating 25 Avenue S.E. above the LRT tracks and relocating the at-grade LRT tracks crossing further east of Macleod Trail. Administration has completed the evaluation and the technical analysis

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for the three concepts. The evaluation criteria were established by the project team based on an all-inclusive approach including the feedback received from stakeholders during the initial engagement events, policies and guidelines, and technical requirements. Combining the feedback received from internal and external stakeholders, the project team identified a total of eleven major evaluation criteria. A summary of the evaluation criteria is provided in Attachment 1, Table ES-1, along with the completed evaluation matrix in Attachment 1, Table ES-2 and Table ES-3.

This study identified three alternative concepts to an interchange and has evaluated these concepts relative to The City's policies and objectives, as well as stakeholder priorities. The three concepts are provided in Attachment 1, Figures ES-6 to Figure ES-9, which include:

- Concept A: elevated LRT tracks and Erlton Station above realigned 25 Avenue S.E.
- Concept B: a median flyover from Macleod Trail to existing 25 Avenue S.E.
- Concept C: relocated at-grade crossing further east of Macleod Trail.

The current potential for development in the study area is dependent on existing flood mapping and the Land Use Bylaw. However, the flood mapping and Land Use Bylaw may change with the flood mitigation measures currently planned. The overall evaluation of the concepts was undertaken for two development scenarios: conservative TOD potential based on current bylaws and maximum TOD potential assuming full development of the area can occur. All other evaluation criteria remained the same throughout the evaluation process. All concepts continue to have merits in meeting the study objectives and should be re-evaluated once the flood mitigation measures are in place and a new floodway zone has been identified. At that time, the TOD potential can be better determined with the actual developable land area.

The Class 4 cost estimate includes four basic types of costs; Roadway, LRT Track, Station, and Structural. The costs are presented in 2017 dollars and have not been adjusted for inflation as timelines for this project are unknown. The cost estimates for the concepts range from \$26M to \$130M, and are included in Attachment 1, Table ES-4 for reference.

Through the evaluation process, possible short-term improvements were also identified. The recommended short-term improvements include:

- upgrading the existing traffic signal with newer technology at Macleod Trail and 25 Avenue S.E.,
- improving eastbound traffic flow on 25 Avenue S.E. by re-assigning one traffic lane as a dedicated right-turn lane (eastbound to southbound),
- building a pathway along the east side of Macleod Trail to connect Reader Rock Garden with the Elbow River pathway, and
- reducing the speed limit of Macleod Trail within the study area to 50 km/hr.

If approved, the short-term improvements could be implemented as funding comes available through existing City programs. The total estimated cost to implement the short term recommendations range from \$2,000 to \$300,000, depending on the suggested improvement.

For more detailed information on the study, the 25 Avenue S.E./LRT Grade Separation Functional Planning Study report is available at [calgary.ca/25AveStudy](http://calgary.ca/25AveStudy).

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### **Stakeholder Engagement, Research and Communication**

The project team engaged with key internal and external stakeholders throughout this study. These conversations were used to identify stakeholder priorities, as well as develop and refine the concepts. Conversations took place with impacted City departments, the Calgary Stampede, Anthem Properties, Repsol Sport Centre, the Erlton Community Association board, the Lindsay Park Community Association board, the Mission Cliff Bungalow Community Association planning committee, Ramsay Community Association, and with Inglewood and Ramsay community members. The project recommendations were shared with the above-mentioned stakeholders and all were in support of the recommendations in this report. A letter of support from the Calgary Stampede is included as Attachment 3.

### **Strategic Alignment**

This study aligns with multiple policies, such as the CTP, Municipal Development Plan (MDP) and the 2020 Sustainability Direction. It aligns with:

- CTP Goal 2: Promote safety for all transportation system users.
- CTP Goal 4: Transit, walking and cycling as preferred mobility choice for more people.
- MDP Policy 2.2.2.a: Increase development densities in proximity of Primary Transit.
- Sustainability Principle for Land Use and Mobility 2: Create walkable environments.
- Sustainability Principle for Land Use and Mobility 4: Provide a variety of transportation options.

### **Social, Environmental, Economic (External)**

This report has been reviewed for alignment with The City of Calgary's Triple Bottom Line (TBL) Policy Framework. The following implications were identified, and further study is required.

#### Social

Grade separation of the LRT tracks and the roads in this area will change how the transportation facilities integrate with the surrounding land uses. Community traffic impact, facilitation of active modes and transit, and improvements to connectivity to adjacent communities were key considerations of the study. All proposed concepts have been developed to support transit, active modes, operational challenges and community connectivity.

#### Environmental

The intersection of Macleod Trail and 25 Avenue S.E. and the surrounding lands are identified on Alberta Environment's Flood Hazard Map. Further study is required to establish a recommended plan that can provide the best flood resiliency requirements for the area. All proposed concepts reduce congestion and vehicle green house gas emissions.

#### Economic

The proposed concepts have been developed to provide for the safe and efficient movement of people and goods and improve connectivity, accessibility and travel time reliability for all modes of transportation including pedestrians, cyclists and public transit. Grade separation of the LRT and 25 Avenue S.E. has an impact on the development potential of land around Erlton Station. All proposed concepts provide better collective values of the infrastructure and development opportunities in the area than the 'do nothing' option. Once established, a recommended plan will maximize the collective value of the infrastructure and development opportunities in the area.

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### **Financial Capacity**

#### ***Current and Future Operating Budget:***

There are no current or future operating budget impacts associated with this report.

#### ***Current and Future Capital Budget:***

There are no current or future capital budget impacts associated with this report. This project will be considered as a candidate project for future capital budgets.

### **Risk Assessment**

It is not anticipated that this recommendation will have any impacts on approval processes in the area.

#### **REASON(S) FOR RECOMMENDATION(S):**

A re-evaluation of the TOD potential of all concepts and development of a recommended long-term plan to grade separate 25 Avenue S.E. and the Red Line LRT tracks is recommended once flood mitigation measures are in place and a new floodway zone has been identified. There is neither funding allocated for grade separation of 25 Avenue S.E. and the Red Line LRT, nor new redevelopment proposals imminent in the area. Once the mitigation measures are in place and a new floodway zone has been identified, a re-evaluation of the TOD potential of all concepts can be undertaken at that stage.

#### **ATTACHMENT(S)**

1. Attachment 1 - 25 Avenue LRT Grade Separation Functional Planning Study - Report Executive Summary
2. Attachment 2 - Provincial Flood Hazard Map for Study Area
3. Attachment 3 - Calgary Stampede letter