

## **MCKNIGHT BLVD TRANSPORTATION STUDY**

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### **EXECUTIVE SUMMARY**

McKnight Blvd is a critical east-west link within Calgary's northeast transportation network. Significant area development as well as changes to the transportation network, including the closure of Barlow Trail, the opening of the Airport Tunnel and the completion of northeast Stoney Trail, has resulted in the need for an updated future plan. The McKnight Blvd Transportation Study examined optimization opportunities to improve the flow of traffic in the short- and medium-term by better optimizing the existing infrastructure using low-cost measures. The intention was to provide congestion relief until such time as grade-separation is provided along the corridor.

In addition, the scope of the study included an examination of McKnight Blvd's role in the High Occupancy Vehicle (HOV) network between Deerfoot Trail and Stoney Trail, as well as a review of the current interchange functional plan for McKnight Blvd and 12 Street N.E..

This report outlines the recommendations of the McKnight Blvd Transportation Study's three phases:

1. Phase 1: Optimization (Deerfoot Trail to Barlow Trail)
2. Phase 2: HOV Feasibility (Deerfoot Trail to Stoney Trail)
3. Phase 3: Interchange Functional Review (McKnight Blvd & 12 Street N.E.)

A summary of the public engagement program undertaken as part of the study is included.

### **ADMINISTRATION RECOMMENDATIONS**

That the SPC on Transportation and Transit recommend that Council:

1. Adopt the recommended medium-term improvements to the McKnight Blvd and 12 Street N.E. intersection and direct Administration to acquire the additional right-of-way required on an opportunity basis, funded using the Transportation Infrastructure future land account or other appropriate funding sources (as included in Attachment 1, page 10, Figure ES 2).
2. Adopt the updated long-term plan for the McKnight Blvd and 12 Street N.E. interchange (as included in Attachment 1, page 16, Figure ES 3).
3. Receive the HOV corridor feasibility recommendations for information (as included in Attachment 1, pages 12 – 14).

### **RECOMMENDATION OF THE SPC ON TRANSPORTATION AND TRANSIT, DATED 2016 OCTOBER 12:**

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That the Administration Recommendations contained in Report TT2016-0647 be approved.

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### **PREVIOUS COUNCIL DIRECTION**

On December 5, 1978, at a special Public Hearing, City Council adopted the McKnight Boulevard Right-of-Way Report, CALTS 48.

On 1986 June 16 City Council adopted revised functional plans for the intersection of McKnight Boulevard and 12 Street N.E.

### **BACKGROUND**

McKnight Blvd is a skeletal road which serves as one of three east-west corridors in northeast Calgary that provide a continuous connection between Deerfoot Trail and Stoney Trail. McKnight Blvd is also identified as a candidate route in the High Occupancy Vehicle (HOV) network. Between Deerfoot Trail and Barlow Trail, McKnight Blvd currently carries approximately 60,000 vehicles per day (vpd).

McKnight Blvd was initially studied as part of the 1977 CALTS 48 McKnight Boulevard Right-of-Way Report, and has been the subject of numerous subsequent studies. The City's current 10-year capital investment plan (Investing in Mobility 2015-2024) identifies high-priority unfunded infrastructure projects along both Airport Trail and 16 Avenue N.E. which, along with McKnight Blvd, serve as the primary east-west corridors in the northeast.

Recognizing that funding for grade-separated improvements along the McKnight Blvd corridor is not available in the near future, a decision was made to examine short-term, low-cost optimization options that would prolong the functionality of existing infrastructure and enable McKnight Blvd to continue its role in supporting east-west travel in the northeast. This decision was supported by the Calgary Transportation Plan's (CTP) *Transportation Goal #7: Ensure transportation infrastructure is well managed* and the associated policy (f) that *the capacity and life-cycle of existing transportation infrastructure should be optimized before investing in new infrastructure in existing areas*.

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

The McKnight Blvd Transportation Study consisted of three phases; a review of options that would provide low-cost, short-term optimization recommendations from Deerfoot Trail to Barlow Trail (Phase 1), a review of the feasibility of implementing High Occupancy Vehicle (HOV) measures between Deerfoot Trail and Stoney Trail (Phase 2), and an updated interchange functional plan for McKnight Blvd and 12 Street N.E. (Phase 3). The results of each phase of the study are outlined below.

#### Phase 1: Optimization (Deerfoot Trail to Barlow Trail):

Numerous low-cost, short-term optimization options for the intersections at 12 Street N.E., 19 Street N.E. and Barlow Trail were developed and assessed. Options were categorized as 1) Intersection Layout Improvements; 2) Relocate Turning Movements to Right-Ins (RI) and/or Right-Outs (RO); 3) Relocate Turning Movements to New Intersections; 4) Innovative Intersection Treatments; and 5) Minor Grade Separation. Two to three preferred options for each intersection were short-listed, shared with the public and evaluated.

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The recommended option for 12 Street N.E. is a medium-term option which would remove left turns from the intersection, re-routing them via RI/RO intersections to the east. The (Class 4) cost estimate for this recommendation is \$3.7 million (excluding property costs); 0.06 hectares of land would be required from one property owner. The recommended options for the 19 Street N.E. and Barlow Trail intersections (based on stakeholder feedback) were to leave as is, with the provision that minor operational improvements (e.g., turn bay extensions) would be implemented as appropriate.

### Phase 2: HOV Feasibility (Deerfoot Trail to Stoney Trail)

McKnight Boulevard between Deerfoot Trail and Stoney Trail is designated as part of The City's Primary High Occupancy Vehicle (HOV) network in the CTP. The corridor was reviewed to assess whether the characteristics of the corridor support the implementation of HOV facilities, using a number of different criteria. The evaluation determined that the corridor characteristics are not currently conducive to the implementation of HOV facilities; in particular, McKnight Blvd is isolated in terms of having no supporting HOV network, the presence of at-grade intersections would result in a discontinuous HOV corridor, and there are no existing or planned bus routes along the corridor. The need for HOV measures along McKnight Blvd should be re-investigated if and when any of the corridor characteristics change.

### Phase 3: McKnight Blvd & 12 Street Interchange Functional Review

The current interchange functional plan consists of a flyover of 12 Street N.E. at McKnight Blvd, with turning movement accommodated via right-in/right-out ramps located to the east of 12 Street N.E.. This arrangement is similar to the medium-term recommendations identified in Phase 1. To assess the continued alignment of the future interchange plan with the medium-term optimization recommendations, a review of the current interchange plan was undertaken. Given recent development in the area, and changing traffic patterns, the alignment of the 12 Street N.E. bridge was modified to reduce property impacts and provide better access. Given the proximity of the 12 Street N.E. interchange to the Deerfoot Trail interchange, the flyover is still considered the most feasible option. The (Class 4) cost estimate for the ultimate interchange plan is \$15.1 million, excluding any property acquisition costs. The right-of-way required is the same as that required for the Phase 1 medium-term recommendation, 0.06 hectares from one property owner.

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

A robust engagement strategy was followed to align with the Corridor Study Policy. As part of the engagement program, a Community Advisory Group (CAG) was established, with representatives from the surrounding communities, area businesses, and commuters. The CAG held 3 meetings as well as a workshop over the course of the project, and participated in developing and refining options, developing and applying the evaluation criteria to select the preferred options, and providing input on open house and public engagement material.

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Open houses were held at the outset of the project to obtain an understanding of stakeholder concerns and priorities, and mid-way through the project to present preferred options prior to evaluation. An online information session, including live chats, was held at the end of the project to share the project recommendations. Throughout the project, meetings/presentations were held with the N.E. Community Associations' Presidents and the Falcon Ridge Community Forum; in addition, numerous one-on-one meetings were held with 6 different impacted landowners in the area.

### **Strategic Alignment**

This study aligns with multiple policies, principles and key directions that form the basis of the Calgary Transportation Plan (CTP) and the Municipal Development Plan (MDP):

- CTP Transportation Goal #5: Promote economic development by ensuring the efficient movement of workers and goods.
- CTP Transportation Goal #7: Ensure transportation infrastructure is well-managed.
- CTP Transportation Objective #3.1: Maintain automobile, commercial goods and emergency mobility in Calgary.
- CTP Transportation Objective #3.4: To recognize the important economic role of goods movement by providing a safe, efficient and connective goods movement network.
- CTP Transportation Objective #3.12: Use best infrastructure management practices to keep Calgary's transportation infrastructure safe and reliable, and minimize future expenditures by optimizing the life-cycle of existing and future facilities.
- CTP Sustainability Principle for Land Use and Mobility #9: Connect people, goods and services locally, regionally and globally.
- CTP Key Direction for Land Use and Mobility #8: Optimize infrastructure.

### **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 items are highlighted:

Social: Options were evaluated to determine their effect on community connectivity, business access and redevelopment opportunity as well as overall urban character.

Environmental: Options were evaluated and ranked based on their ability to reduce travel times, idling and congestion, resulting in environmental benefits and aligning with the Calgary Community Greenhouse Gas Reduction Plan. In addition, options for addition of pathways for pedestrian and cyclists have been investigated in conjunction with roadway upgrades.

Economic (External): The recommended plan will improve the movement of workers and goods along the corridor.

### **Financial Capacity**

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

The operating budget will be higher than current costs as a result of the additional infrastructure. The additional operating cost of the proposed upgrades has not been quantified.

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

There are no capital budget expenditures triggered by the recommendations of this study.

### **Risk Assessment**

Without approval of the recommendation to protect the required right-of-way, protection for land required for the ultimate interchange will not occur. This will increase the cost of the interchange should out-right purchase of the right-of-way be required at the time of construction. Lack of protection of the required right-of-way also limits The City's ability to implement the medium-term optimization recommendation should congestion and safety concerns warrant.

### **REASONS FOR RECOMMENDATIONS:**

Protection of the land required for the long-term interchange plan on an opportunity basis will position The City to fund and implement necessary infrastructure upgrades when needed.

### **ATTACHMENTS:**

1. McKnight Blvd Transportation Study Executive Summary