City of Calgary

Macleod Trail Corridor Study Glenmore Trail to Anderson Road FINAL REPORT

### **Executive Summary**

### **ES.1 INTRODUCTION**

The vision and policies for sustainable growth for Calgary, incorporating a more compact city form that promotes walking, cycling and transit, and preserves open space, parks and other environmental amenities have been laid out by Council through the Calgary Municipal Development Plan (MDP) and Calgary Transportation Plan (CTP).

The MDP defined the Macleod Trail Corridor as an *Urban Corridor* which provides for a high level of residential and employment intensification along an *Urban Boulevard* street type, as defined in the CTP.

The City of Calgary has embarked on a corridor planning initiative to transform Macleod Trail into an Urban Boulevard, which will support future land use that is consistent with the MDP vision and policies for the Macleod Trail corridor. As shown in **Exhibit ES-1**, this initial study consists of two segments:

- Anderson Road to Glenmore Trail
- Glenmore Trail to 25 Avenue SE

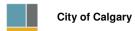
**Exhibit ES-1: Macleod Trail Corridor** 



#### As defined in the CTP,

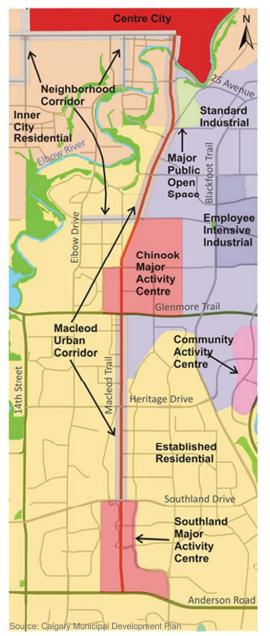
"Urban Boulevards form the backbone of higher-density Corridors and Activity Centres. They give the highest priority to walking, cycling and transit, but accommodate reasonably high volumes of vehicular traffic. These streets are destinations, both locally and regionally. They are fully integrated with adjacent land uses and provide high levels of connectivity to surrounding communities or destinations. High-quality urban design and green infrastructure are critical components of Urban Boulevards. Snow clearing should be handled in such a way that it does not interfere with pedestrian and bicycle movement."

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**Exhibit ES-2: MDP Urban Form around Macleod Trail** 



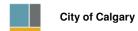
This report summarizes the findings for southern segment of Macleod Trail from Glenmore Trail to Anderson Road. Macleod Trail is a major north-south arterial serving the south part of Calgary, from downtown Calgary south to the City limits. Macleod Trail also accommodates some regional traffic destined for Calgary as it becomes Highway 2A south of the City and connects to key regional transportation routes such as Highway 2.

### **ES.2 POLICY CONTEXT**

The Macleod Trail Transportation Corridor Study is one of the first implementation initiatives resulting from the 2009 Calgary Transportation Plan. The CTP provides policy direction for Calgary's transportation system, and the policies are linked directly to the Municipal Development Plan (MDP). The MDP anticipates a high level of residential and employment intensification along the Macleod Trail corridor, with a minimum intensity threshold of 200 jobs and population per gross developable hectare as an Urban Corridor. Macleod Trail will also service Major Activity Centres located at 61 Avenue (Chinook Centre Area) and from Anderson Road to Southland Drive (including the Anderson Station lands and the Southcentre Mall area). Major activity centres are areas of high employment and population growth located in strategic areas central to larger residential catchment areas linked citywide by the Primary Transit Network. The general land use form from the MDP is shown in Exhibit ES-2.

The CTP has redefined the road and street network to include a new palette of street types. **Exhibit ES-3** shows the CTP road and street network in the vicinity of the Macleod Trail Corridor.

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**Exhibit ES-3: CTP Street and Road Network** 



Source: Calgary Transportation Plan

Macleod Trail has been designated as an Urban Boulevard. Significant change in the function and form of Macleod Trail will be necessary to achieve the CTP vision as an Urban Boulevard and to support the land use redevelopment as envisioned in the MDP. As an Urban Boulevard, the primary function of Macleod Trail will be to accommodate all modes of transportation in a high density, moderate speed urban environment.

The CTP has defined important roles for all modes in the Macleod Trail corridor:

- Pedestrian corridor As an Urban
  Boulevard, walking will be a key mode of
  travel which will require making Macleod
  Trail a pedestrian-friendly street, with
  high-quality urban design elements.
- Bike route The CTP classifies Macleod Trail as a key north-south Primary Bike Route in the Primary Cycling Network, connected to an east-west Primary Bike Route north of Anderson Road and through Willow Park
- Transit route The CTP designates
   Macleod Trail as part of the Primary
   Transit Network from Southport Road SW
   to downtown Calgary.
- HOV route The CTP identifies Macleod Trail as part of the Primary HOV Network.

Growth in south Calgary has placed an increased demand on the corridor as well as on the major intersecting roadways. The Macleod Trail corridor is expected to continue to serve an important north-south movement function as well as multi modal access to developments along the corridor.

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# ES.3 OPTION GENERATION AND EVALUATION

Development of the options for Macleod Trail was based on the following principles:

- Municipal Development Plan which designates Macleod Trail as an Urban Corridor, with Major Activity Centres at Anderson Road and Chinook
- Calgary Transportation Plan which classifies Macleod Trail as an Urban Boulevard
- Focus on the long-term (2039+) vision for Macleod Trail
- Complete Streets 2011 Interim
   Guidelines as the basis for the design
   for Macleod Trail
- Compatibility with planning for the adjacent section of Macleod Trail to the north, north of Glenmore Trail

The option generation and evaluation process is illustrated in **Exhibit ES-4** 

# **ES.3.1 Option Generation Principles**

The form of the Macleod Trail Urban Boulevard is guided by The City's 2011 Interim Complete Streets Guidelines, which was developed specifically in response to objectives outlined in the CTP. The current form of Macleod Trail places priority on goods movement, automobile and commercial access by providing high quality facilities to support these functions. Future development of the corridor places the greater priority on high standards for walking, cycling, transit and the streetscape environment, with less stringent and variable standards to support moderately high vehicle traffic and goods movement.

## Exhibit ES-4: Option Generation and Evaluation Process





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In 2010, Council approved the *Principles of Road Right-of-Way Variance*. The Principles guide decisions regarding the protection and allocation of Road Right of Way which may differ from current standards. All Principles align with *Calgary Transportation Plan* (CTP) policies and Transportation Goals.

Based on the **2011 Interim Complete Streets Guide**, the following principles were applied to develop concepts to transform Macleod Trail to an Urban Boulevard:

- Macleod Trail will be a multi modal corridor with greatest emphasis on walking and cycling, followed by transit
- Pedestrians will be provided with wider sidewalks, greater separation of sidewalks from vehicular traffic and additional crossing opportunities
- Off-road bike facilities on both sides of Macleod Trail will be included where practical, and will be supported by other parallel north-south cycling facilities west or east of Macleod Trail
- Provisions for transit priority will be included as needed
- Protection for future HOV lanes, which may also provide transit priority, will be considered
- The overall pavement width will be reduced
- The Macleod Trail Corridor will support a grid network of streets with more closely spaced intersections along the corridor
- A slower speed travel environment will be created
- Private driveways will be consolidated, relocated or eliminated to reduce conflicts with pedestrians, cyclists, and transit
- Streetscaping will be of a high quality to reflect the role of the corridor as a destination

 Aerial and underground utilities will be considered in street concepts

In transforming the corridor to one that places a greater emphasis on high quality of service for pedestrians, cyclists and transit, it is recognized that additional lanes to add vehicle capacity is inconsistent with the concept development principles and the intent of the CTP and MDP. Further, this approach accepts that there will be potential for increased traffic congestion and a reduction in travel speed as traffic volumes increase.

High-speed, long-distance through trips will be discouraged by changing the environment of the Macleod Trail Corridor through narrower lanes, elimination of acceleration lanes, higher intersection density, streetscaping and urban design, and generally slowing vehicular traffic speeds. By placing focus on the corridor as a destination rather than a regional connection, a greater proportion of local trips will be encouraged by multiple modes.





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# ES.3.2 Initial Option Generation

Initial options for the Macleod Trail Corridor between Glenmore Trail and Anderson Road considered two elements of the corridor:

- Street network options which define the street network along the Macleod Trail corridor
- Cross-section options which involve alternative configurations for all the elements of the street (from curb to curb) and the public realm (outside the curb edges to the road right-of-way limits)

Street network options were developed for the Macleod Trail corridor. The network options represent long-term aspirations (2039+) for the corridor. In developing these options, the following principles were followed:

- Smaller blocks to support redevelopment and intensification
- Finer grid network west and east of Macleod Trail, providing continuous eastwest and north-south roads at closer spacing, to achieve smaller development blocks
- Increased connectivity with Macleod Trail
- Protection of existing residential communities
- Recognition of existing constraints such as the CP / LRT corridor
- Gradual evolution over time to achieve the long-term aspirations

The finer grid network of streets provides the following benefits:

- Smaller block pattern to support intensification
- More alternative travel routes for all modes

- More access options for businesses and developments along Macleod Trail, enabling private driveways on Macleod Trail to be removed
- Decreased traffic pressures on Macleod Trail and at congested intersections such as Heritage Drive

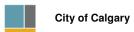
Since land use planning for Macleod Trail as an Urban Corridor has only recently started, the network options identified in this study are for discussion purposes only and have no official status. They provide direction for a future street system in the corridor. It is not the intent of this study to recommend the future street network in the Macleod Trail corridor—that will be the subject of future land use planning studies.

The initial network options were divided into three sections:

- Glenmore to Heritage (7 options)
- Heritage to Southland (3 options)
- Southland to Anderson (4 options)

The network options are intended to be illustrative and provide guidance to future land use planning in the corridor. The supporting local street networks will ultimately be developed in conjunction with the detailed land use plans for the corridor. Several potential cross-section options on Macleod Trail were developed as summarized in **Table ES-1**.

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Table ES-1: Number of Cross-Section Options Generated

	6-Lane Macleod Trail		4-Lane Macleod Trail	
Section	On-Street Parking	No Parking	On-Street Parking	No Parking
Glenmore to 75 Avenue With Frontage Roads	2	4	3	4
Glenmore to 75 Avenue Without Frontage Roads	2	6	2	2
CP Overpass		4		3
Heritage to Southland	2	4	3	2
Southland to 109 Avenue	2	4	3	2

· Auto level of service and mobility

# ES.3.3 Screening and Evaluation

An iterative process of screening, evaluation and refinement was used to first narrow the number of options considered, then ultimately select a preferred option.

### Level 1 Screening

Following the identification of the initial crosssection options, an initial screening (Level 1 Screening) was carried out to eliminate alternatives that clearly do not adequately meet the objectives for an urban corridor. This step allowed the large number of alternatives to be reduced to a more manageable number.

#### Level 2 Screening

A more detailed screening (Level 2 Screening) was then conducted for the options. Based on the Triple Bottom Line Policy Framework (October 2011) of The City of Calgary, the criteria (and subcriteria) for the Level 2 Screening were:

#### Economic

- Support for Anderson Station Major Activity Centre and Urban Corridor
- Support for local business and industry accessibility

#### Social

- · Walking quality of service and mobility
- Cycling quality of service and mobility
- Transit quality of service and mobility

#### Environmental

Energy consumption

#### Costs

- Construction costs
- Property costs

#### **Detailed Evaluation**

Options shortlisted from the Level 2 Screening were carried forward for a detailed evaluation, using the following criteria. Due to unique conditions and varying priorities for each of the corridor segments, different weights were assigned for some of the economic sub criteria. **Table ES-2** presents the range of weights that were assigned. In all cases, the combination of the economic sub criteria represented 40% of the overall weight.

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#### **Table ES-2: Detailed Evaluation Criteria**

Criteria	Sub Criteria	Weights
Economic		40%
	Support for Urban Corridor / Major Activity Centre	25-30%
	Aesthetics and Streetscaping	20%
	Local Business and Industry Accessibility	5-15%
	Auto Level of Service and Mobility	5-25%
	Truck Level of Service and Mobility	5%
	Staging Flexibility	5-20%
	Costs	5-20%
Social		40%
	Walking Quality of Service and Mobility	30%
	Cycling Quality of Service and Mobility	30%
	Transit Quality of Service and Mobility	25%
	Heritage / Cultural Preservation	5%
	Community Impacts	10%
Environmental		20%
	Greenhouse Gas Emissions / Energy Consumption	50%
	Green Infrastructure	50%

### **ES.4 RECOMMENDATIONS**

### **ES.4.1 Recommended Concept**

The recommended concept for Macleod Trail (from Glenmore Trail to 109 Avenue) is a multi modal corridor with the following key elements:

- Retention of the 60 m wide right-of-way
- Wide continuous sidewalks on both sides
- Greater separation between sidewalks and vehicular traffic lanes, additional signalized pedestrian crossing opportunities along Macleod Trail
- Two-way, off-street, continuous bike paths on both sides with a separation between the bike path and sidewalk
- Green space for green infrastructure and plantings, separating the bike paths from the travel lanes

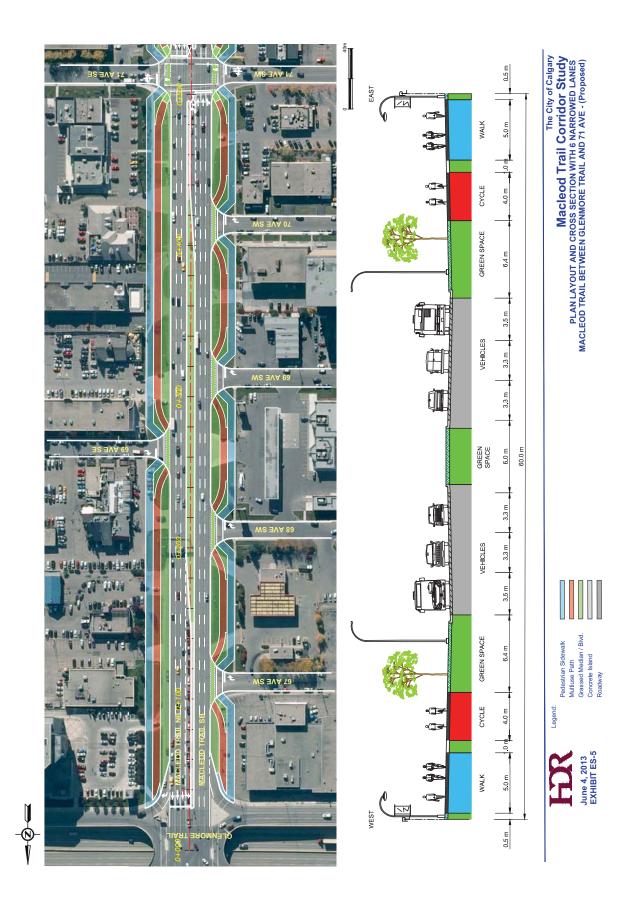
- Narrowed traffic lanes
- Significant reduction in exclusive right turn lanes and channelization
- Exclusive left turn lanes
- Landscaped median

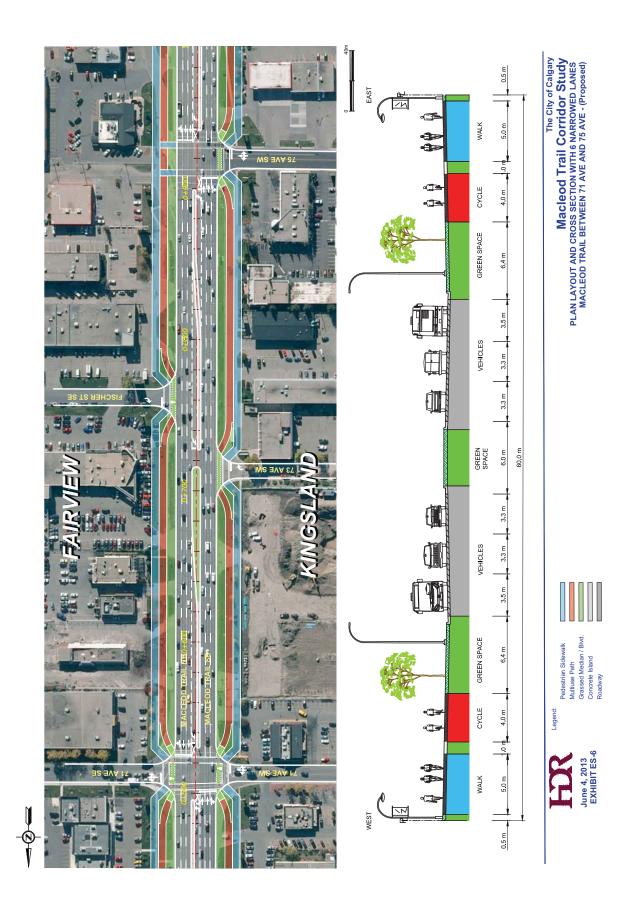
The recommended concept is summarized in Exhibit ES-5 - ES-14.

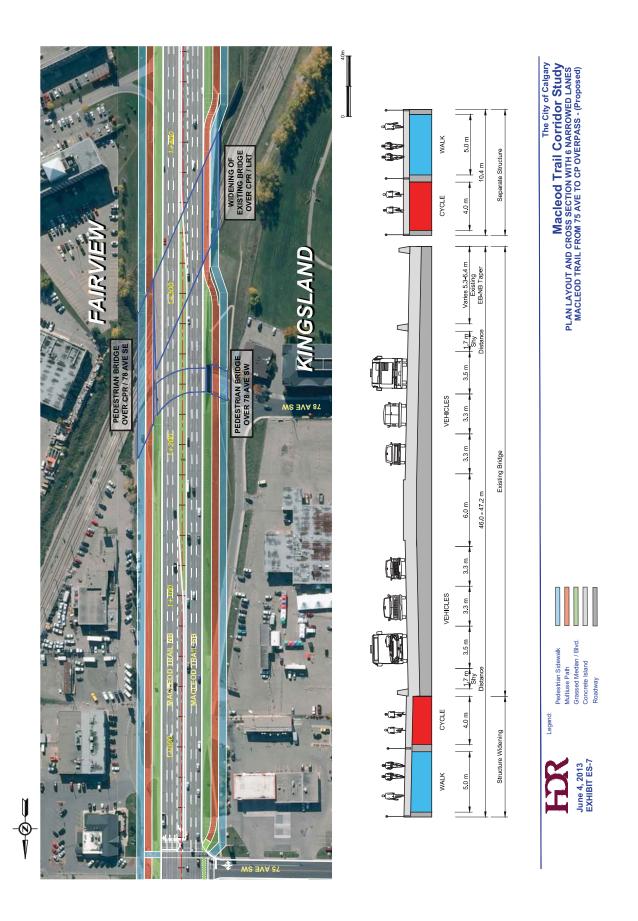
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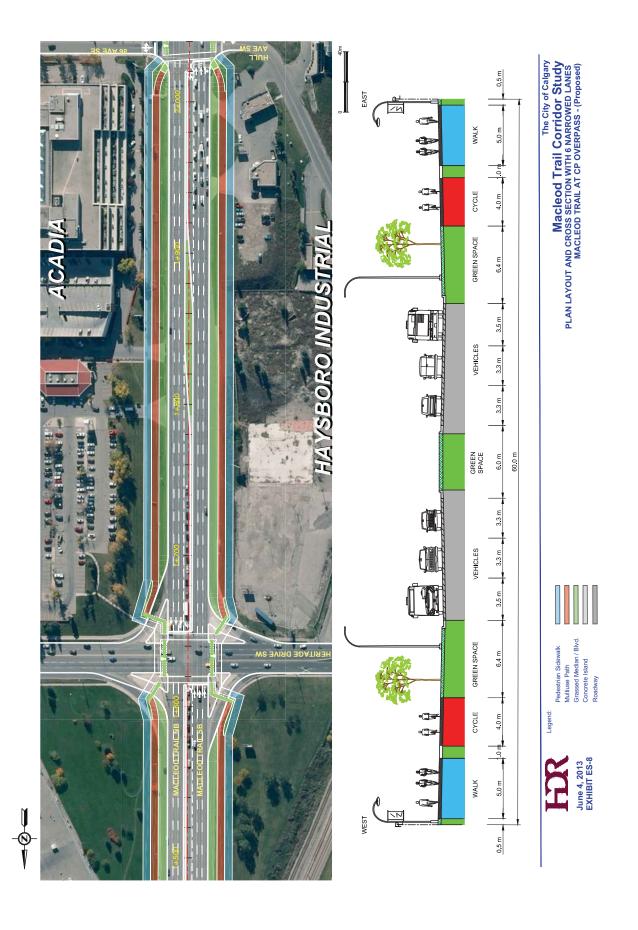
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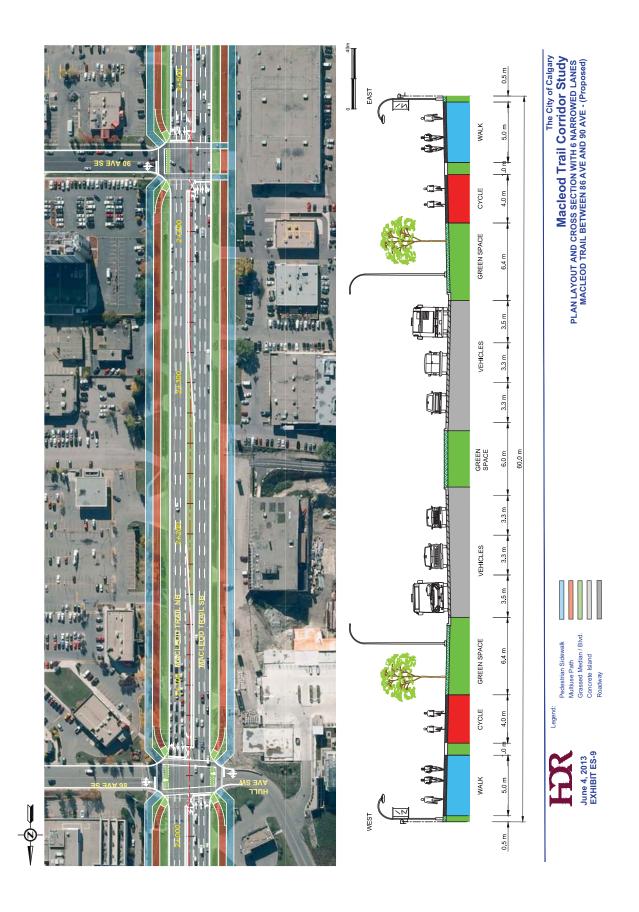
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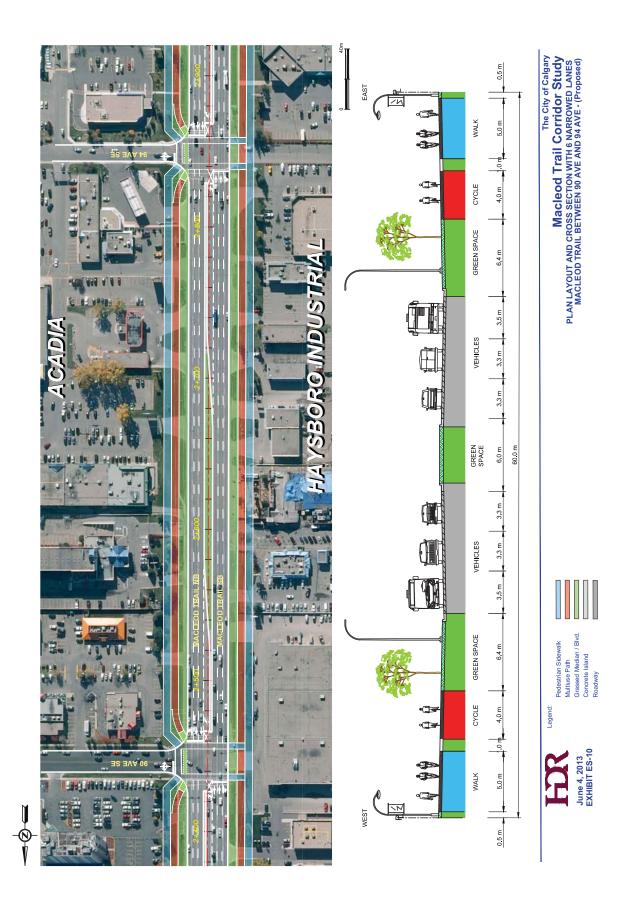


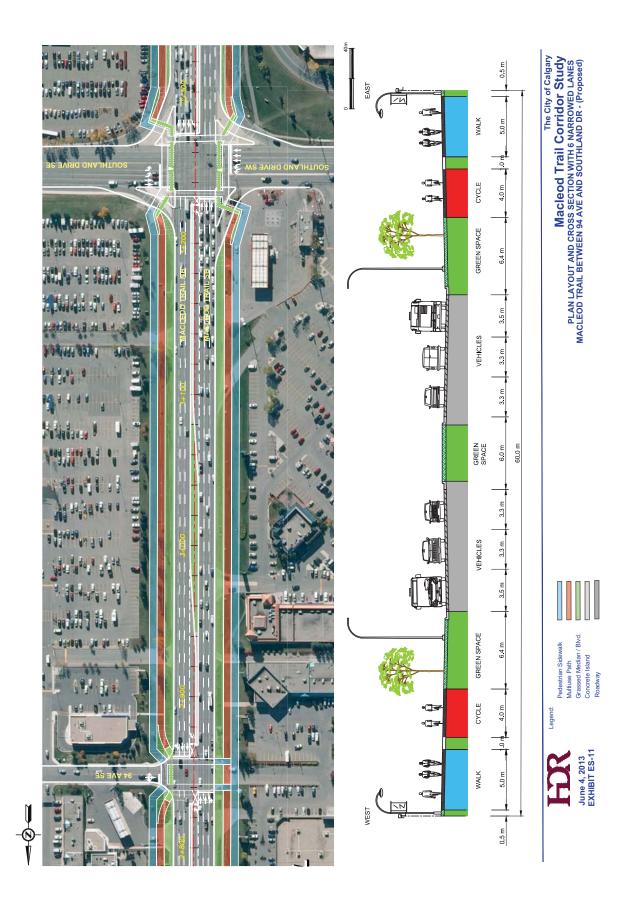


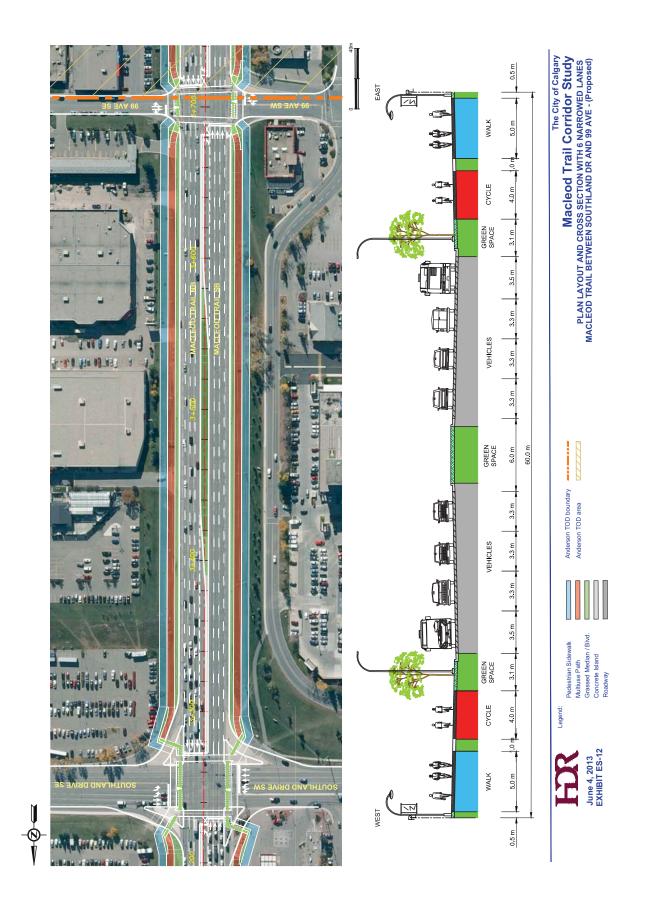


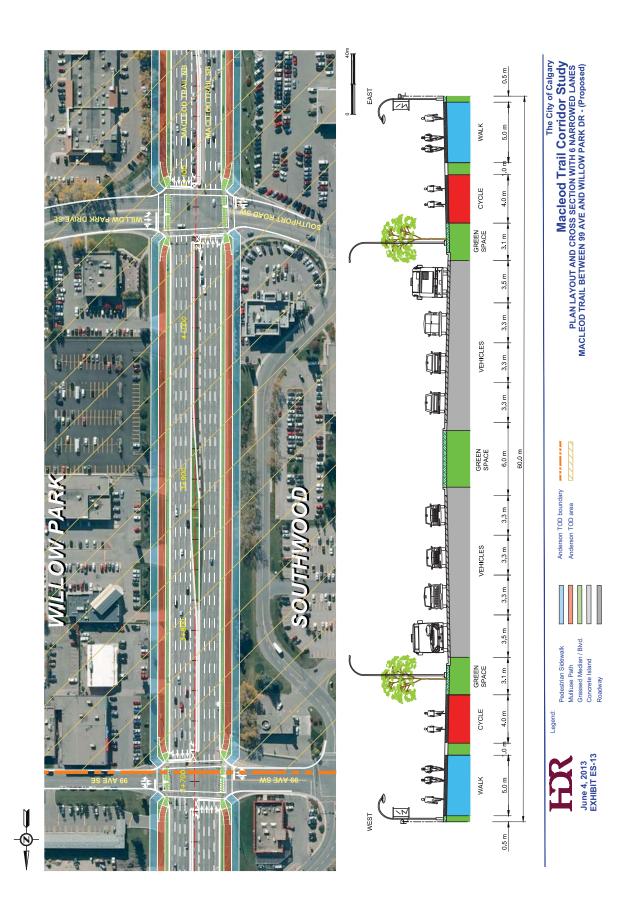


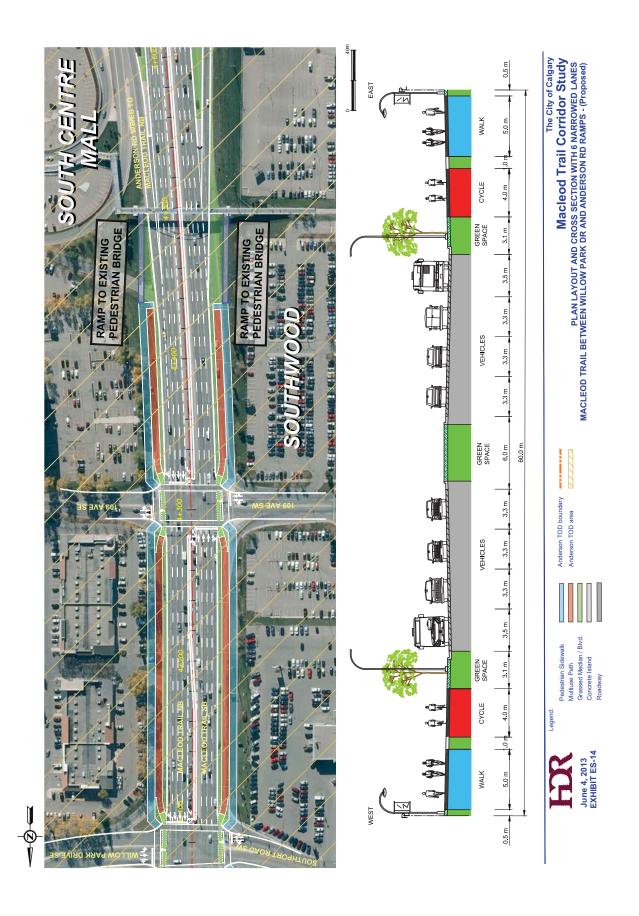














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### ES.4.2 Specific Issues

### Frontage Roads

The section of Macleod Trail between Glenmore Trail and the CP Overpass currently has several short segments of frontage road to provide commercial access.

Frontage roads provide benefits to vehicles, pedestrians and bicycles by providing a separate roadway for property access. Although frontage roads are not consistent with the CTP definition of an Urban Boulevard, they provide significant pedestrian and cycling benefits in locations where there is high access density. Therefore, it is recommended that frontage roads remain a consideration on Macleod Trail in areas of high access density until such time as significant land use change occurs, removing the need for them.

Specific land use planning for the Urban Corridor will need to carefully consider redevelopment options and the role of frontage roads as future land use is implemented.

#### **CP** Overpass

At the CP overpass, the recommended concept involves:

- Narrowing the travel lanes on the existing overpass structure to 3.3 m width for the inside lanes and 3.5 m width for the outside lanes
- Widening the existing overpass structure to the west side to accommodate a 5 m wide sidewalk and 4 m wide bike path
- Constructing a new separate structure east of the existing overpass structure to accommodate a 5 m wide sidewalk and 4 m wide bike path

Until the structural improvements have been implemented, the existing cycling and pedestrian network will continue to provide pedestrian and cycling connections. Detailed land use planning in the Kingsland and Fairview areas should consider specific staging for the overpass such as a pathway between Kingsland Park and the railway to improve access to the at-grade railway crossing on Heritage Drive.

#### 109 Avenue to Anderson Road

Macleod Trail between 109 Avenue and Anderson Road provides a transition between the future Urban Boulevard character of Macleod Trail north of 109 Avenue and the skeletal road character of Macleod Trail through the Anderson Road interchange.

For this transition section, it is recommended that:

- 4 lanes in each direction be provided on Macleod Trail between 109 Avenue and the interchange ramps immediately south of 109 Avenue
- Sidewalks on both sides of Macleod Trail be designed to transition into existing and future development at the Anderson Station area and Southcentre area

Planning for the Anderson Station area is ongoing. The Macleod Trail Transportation Corridor Study has considered the work completed to date for the Anderson Station area.

### **ES.5 Next Steps**

This transportation corridor study provides guidance on the transportation issues associated with transforming the Macleod Trail Corridor to an Urban Boulevard. There are several aspects that will require refinement



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and further consideration as detailed land use planning and redevelopment of the area to reflect the Urban Corridor form occurs.

Transportation issues that will need to be revisited and refined with more detailed land use planning include:

- The street network / block patterns adjacent to Macleod Trail, ideally to include a grid network of streets
- Frontage roads, particularly for the section of Macleod Trail from Glenmore Trail to 75 Avenue
- Opportunities for increased east-west connectivity for pedestrians, cyclists, and transit through new developments
- Additional network planning in the Heritage Drive area, reflecting plans for and providing improved connections and continuity, including new connections for walking and cycling
- Integration of the ongoing land use and transportation planning for the Major Activity Centre at the Anderson Station with the Macleod Trail recommendations

Additional functional planning and design will be required to further define corridor requirements. Priorities for functional studies include:

- Alternatives and the feasibility for a new north-south connection west of Macleod Trail, from 78 Avenue to Heritage Drive (between Haddon Road and the CP corridor).
- Feasibility of an extension of 75 Avenue to Flint Road, across the CP / LRT corridor or other alternatives that would provide the same connection

### **ES.6 Engagement Summary**

A separate report, "Macleod Trail Corridor Study Public Consultation", was prepared to provide all of the details of the public engagement for this study. The following provides a brief synopsis.

### **ES.6.1 Project Website**

The project website (<a href="www.calgary.ca/macleod">www.calgary.ca/macleod</a>) explains the project purpose and how it aligns with the Calgary Transportation Plan and the Municipal Development Plan. The timing of the study is noted: "Corridor studies are typically 10 to 30 years in advance of construction to identify issues such as how much room is needed and to determine upgrades to existing roadways." No funding is currently available to implement study recommendations.

At each stage of the project, the website showed the most current public engagement information as follows:

- Link to complete the online survey and information for the upcoming June Open Houses
- Survey results summary
- June Open House Boards
- Information for the upcoming October Open House
- October Open House Boards (recommended plans)

Links to related information are also provided on the site:

- Calgary Transportation Plan
- Urban Boulevard definition
- Municipal Development Plan
- Transportation Infrastructure Investment Plan (TIIP)

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 Macleod Trail Corridor Planning Study Area Map

### **ES.6.2 Online Survey**

The Macleod Trail survey was available online from April 23 to May 4, 2012. The survey asked respondents to identify their top mobility concerns and the changes they would like to see on Macleod Trail in the future. The responses were considered when developing the preliminary design concepts.

The survey was advertised through variable message signs along Macleod trail. The online survey was located here: <a href="http://www.calgary.ca/macleod">http://www.calgary.ca/macleod</a>. The City received 3,232 survey responses. The main things that were heard from the online survey included:

- Most of the respondents travel to destinations within the study boundaries and are frequent travellers on Macleod Trail, mostly using automobiles
- The most common concern was traffic delays
- The most commonly desired improvement was more trees and landscaping
- For future alternative mode choice, there was a fairly even split between transit, cycling and walking
- Very few respondents supported future on-street parking

# ES.6.3 June 2012 Public Open Houses

The City of Calgary hosted two Open House presentations on the Macleod Trail Corridor Study on June 14 and 19, 2012, at Chinook Mall and Southcentre Mall, respectively. Attendance at the Chinook Mall and

Southcentre Mall events were estimated at about 200 and 140 persons, respectively. Notification of these events was provided by letters to businesses, variable message signs on Macleod Trail, and information on The City of Calgary website. Community Associations along the corridor were contacted and encouraged to pass on notification of the open houses to their membership. This was the first set of Open Houses held for this study; they were preceded by an on-line survey.

The Open Houses held in June 2012 provided information on the study purpose, urban boulevards, responses from the on-line survey, and presented design features under consideration and preliminary cross-section alternatives for the corridor.

A Public Feedback Form was provided at both Open Houses for attendees to share their thoughts regarding the study and the preliminary design concepts. The Feedback Form asked the attendees for feedback on the preliminary design concepts, general feedback on the Open House, information related to travel on Macleod Trail and location of residence, as well as optional contact information. Sixty-eight forms were returned. The main things that were heard at these Open Houses included:

- The attendees at the Open Houses found the information presented to be clear and easy to understand
- The attendees found that City representatives and consultants were helpful in answering their questions
- Over half (52%) of the respondents had not heard of the on-line survey, but would have filled it out if they had known about it





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 The most common comments received included support for the increased public realm and concerns over future traffic accommodation October 25, 2012. There were 28 feedback forms from this public Open House. The main things that were heard at this Open House included:

### ES.6.4 October 2012 Stakeholder Information Session

The second round of public consultation for the Macleod Trail Corridor Transportation Study consisted of an Open House plus presentation by invitation only for business and/or property owners along the corridor. The property owner Open House was held at the Carriage House Inn from 5 p.m. to 7 p.m. on October 23, 2012.

There were less than ten attendees at the property owner Open House. A PowerPoint presentation was originally scheduled for this Open House; however, since there were so few attendees, there was no presentation. Instead, HDR staff, AECOM staff and City representatives ensured that all questions relating to the project were answered with individuals using the Open House boards as a tool.

Only two attendees filled out feedback forms. Both respondents found the purpose of the study clear, understood how public input was considered and that the City representatives and consultants were very helpful in answering their questions.

# ES.6.5 October 2012 Public Open House

The second round of public consultation for the Macleod Trail Corridor Transportation Study also consisted of an Open House for the general public. The public Open House was held at Chinook Mall from 5 p.m. to 8 p.m. on

- Most of the attendees at the October Open House saw the event when walking by
- Most attendees found the study purpose clear
- Most attendees support Macleod Trail as an Urban Boulevard
- There was a fairly even split for desired alternative modes on Macleod Trail
- The majority of those who filled out feedback forms understood how public input was considered in the recommended plan and found the open house representatives to be very helpful

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