

## **NORTH CENTRAL LRT ROUTE PLANNING STUDY RECOMMENDATIONS**

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### **EXECUTIVE SUMMARY**

Administration recommends Centre Street North as the route for the future North Central LRT. The Centre Street route represents the optimal route to improve mobility for Calgarians by providing rapid transit service in a high ridership corridor, support redevelopment along the route, and assist in achieving The City's long term transportation and land use goals. This report provides the findings and recommendations of the extensive route planning study.

### **ADMINISTRATION RECOMMENDATIONS**

That the SPC on Transportation and Transit recommends that Council:

1. Approve the recommended alignment for the future North Central LRT on Centre Street North;
2. Direct Administration to conduct a functional planning study for the Centre Street alignment, including further analysis of the two alignment options presented south of 24 Avenue North (at-grade on the existing Centre Street bridge, and tunnelled); and
3. Direct Administration to update City documents (Municipal Development Plan/Calgary Transportation Plan) to reflect the approved alignment, in conjunction with regularly scheduled updates to those documents.

### **RECOMMENDATION OF THE SPC ON TRANSPORTATION AND TRANSIT, DATED 2014 DECEMBER 17:**

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That Council:

1. Approve the recommended alignment for the future North Central LRT on Centre Street North;
2. Direct Administration to update City documents (Municipal Development Plan/Calgary Transportation Plan) to reflect the approved alignment, in conjunction with regularly scheduled updates to those documents.

### **Opposition to Recommendations:**

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Opposed: A. Chabot

Excerpt from the Minutes of the Regular Meeting of the SPC on Transportation and Transit, held 2014 December 17:

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"REFER, Moved by Councillor Demong, that Administration Recommendation 2, as follows, contained in Report TT2014-0916, be referred to Administration, to return with a report to the 2015 February 18 Regular Meeting of the SPC on Transportation and Transit:

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That the SPC on Transportation and Transit recommends that Council:

2. Direct Administration to conduct a functional planning study for the Centre Street alignment, including further analysis of the two alignment options presented south of 24 Avenue North (at-grade on the existing Centre Street bridge, and tunnelled).

CARRIED”

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

At the 2012 April 09 Combined Meeting of Council, the *North Central Light Rail Transit Planning* (TT2012-06) report was approved, initiating the current study. The report outlined technical and long-term land use and transportation concerns with the previously approved Nose Creek Valley alignment. Public engagement events held in 2011 indicated the public was in support of examining alignments that brought LRT closer to their communities. Recommendations of TT2012-06 stated:

That the SPC on Transportation and Transit recommends that Council direct Administration to:

1. Conduct a route planning study as the first phase of a two-phase planning study based on The City's Sustainability Direction principles. This study will identify a route for North Central LRT that also addresses ridership projections, vehicle and right-of-way technology, station locations and amenities, opportunities for transit oriented development (TOD), and projected capital and operating costs.
2. Report back to the SPC on Transportation and Transit no later than the end of 2014 with findings and recommendations from Phase 1 of the study.

At the 2012 November 05 Combined Meeting of Council, the *Northeast LRT Functional Plan – Saddletowne to Stoney Trail* (TT2012-0657) report was approved as part of the consent agenda. Recommendations of the report:

Direct Administration to finalize a plan for a high quality airport transit service connection:

- a) As part of the North Central LRT route study;
- b) To request that the Calgary Airport Authority include a rail based public transit service in the airport master plan; and
- c) Direct Administration to report back to the SPC on Transportation and Transit no later than 2014 December.

At the 2014 March 31 Regular Meeting of Council, the *North Central LRT Route Planning Study Update* (TT2014-0227) report was approved as part of the consent agenda. The report outlined the criteria that were used to evaluate the four route options: 4 Street Northwest, Centre Street North, Edmonton Trail Northeast, and Nose Creek Valley. Council approved Administration's recommendations to abandon the 4 Street NW and Nose Creek Valley options and focus remaining efforts on the Centre Street North at-grade and Edmonton Trail Northeast at-grade options.

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### **BACKGROUND**

The North Central LRT Route Planning Study involves multiple phases (see Figure 1). The findings and recommendations of the first phase of the study are being presented in this report.

This report presents the findings and recommendations of the Route Study, where the route for the future LRT is selected. The next phase is the functional planning study, which involves additional planning and design of the selected route including refinement of station locations, vertical alignments (tunnel, grade separation at roadways, etc), land requirements, and geotechnical investigation.

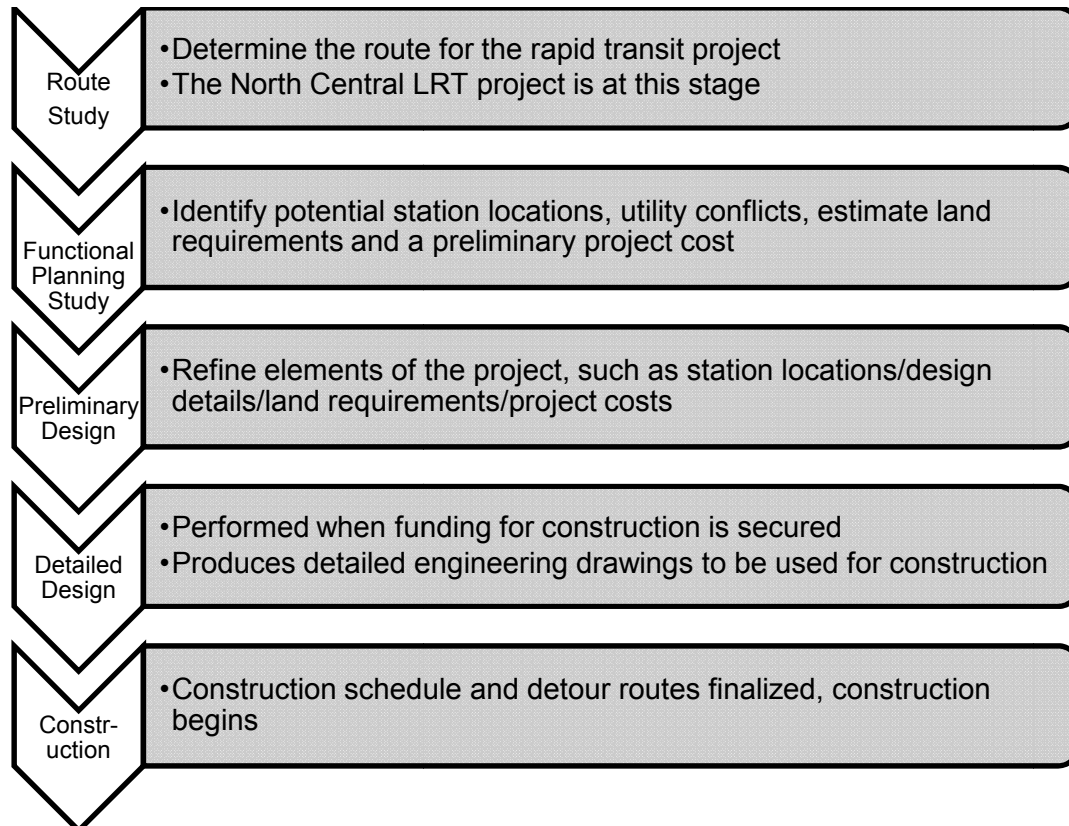
After the functional planning study comes the preliminary design. Preliminary design further refines the concept and plan from previous stages, and determines the phasing of construction activities. The next step is detailed design, which starts when funding for construction is available. Detailed design is done when funding for construction is available because technology and best practices can change from today to the future date when the project is funded. The engineering drawings that are used to construct the project are created during the detailed design phase. This phase further refines construction staging, utility locations, roadway design, pedestrian access, station architecture, and landscaping.

The first two phases of the study will each take approximately two years (2013-2014 and 2015-2016), and involve extensive public and stakeholder engagement. After Council approval of the route, Administration will begin the functional planning study for the North Central LRT, and the functional planning study for the Centre Street Transitway in 2015 subject to approval of the Route Study.

Figure 1: Typical steps in the planning and design process for rapid transit corridors:

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The North Central LRT is the north leg of Calgary's next LRT line, named the Green Line. As outlined in RouteAhead, a 30-year strategic plan for transit in Calgary, the Green Line will include LRT from North Pointe in North Central Calgary (and Keystone in the long term) to Seton in the Southeast. The first infrastructure improvement for the rapid transit network in the North Central corridor is the Centre Street Transitway which will provide a travel time advantage to existing bus service in the corridor.

In 2011, Administration engaged the communities in the North Central corridor to explore alternative alignments. There was overwhelming support to investigating Centre Street, Edmonton Trail and Nose Creek Valley as possible routes for the North Central LRT. In response to the public support and issues identified with the Nose Creek Valley alignment (limited access, limited redevelopment potential, travel time, etc), Administration requested Council approval in 2012 to undertake the North Central LRT Route Planning Study.

One of the first tasks of the project team, in partnership with stakeholders, was to develop the project vision. The vision is the overall purpose of the project. The vision calls for the project to achieve:

- A transit service that improves mobility in existing and new communities in North Central Calgary, connecting people and places, and enhancing the quality of life in the city.

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Through the stakeholder consultation process, a number of comments were received that help make the project vision more specific. As a result, a set of principles were developed for the project. The 'Community Principles', developed with stakeholders, state the North Central LRT should:

- Enhance connectivity between people and places, connecting to all modes of transportation in the community;
- Contribute positively to community development and revitalization;
- Be the affordable transportation mode;
- Be accessible for people to get to, board and use;
- Contribute to the character and cohesion of the community through integrated design with no barriers to accessibility;
- Contribute to an efficient traffic management system that promotes the optimal transportation choice, and reduces congestion and travel times;
- Contribute to the vitality of businesses in the community by promoting business development and access;
- Enhance the environment by reducing greenhouse gases (GHG), protecting natural areas and urban beautification;
- Create a positive transportation experience - safe, accessible, efficient; and
- Contribute to complete streets including landscaping, urban form, pedestrian and cycling systems.

In 2014 March, Council approved Administration's recommendations to abandon the Nose Creek Valley and 4 Street NW routes as they fall short of current mobility and land use goals identified in the Municipal Development Plan (MDP) and Calgary Transportation Plan (CTP). Additionally, Calgary Transit has identified LRT network and operational issues related to the Nose Creek Valley alignment.

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

The North Central LRT Route Planning Study is The City's first large transit infrastructure project to adopt The City's sustainability approach to decision making. The sustainability approach is based on The City's 2020 Sustainability Direction and informed by stakeholder input. This input was used to determine what is important to community members and how the future transportation network can contribute to enhancing communities. This input also helped the project team to develop criteria for the analysis (discussed below) that would reflect the communities' aspirations.

After Council approval of the project update report in 2014 March, the project team was able to focus effort on a comparison of the Centre Street and Edmonton Trail routes. This allowed the team to investigate these two possible routes in further detail and provide a recommendation on the optimal route.

### **Comparison of the Centre Street and Edmonton Trail Corridors**

The initial review of the four potential corridors (Nose Creek, Edmonton Trail, Centre Street and 4 Street NW) concluded that there were two routes to take forward into a more detailed review. As a result, Edmonton Trail and Centre Street were kept for further comparison and analysis.

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The comparison of the two corridors included investigation of the following points:

- Preliminary comparison of the two routes
- Right-of-way width available
- Access by walking (walksheds)
- Projected future customer boardings
- Journey time/speed restrictions
- Access/egress to and from the downtown core
- Development/redevelopment potential
- Environmental issues
- Public preference

The technical analysis considered the right-of-way available, the right-of-way required, projected property requirements, likely station locations and ability to access downtown. The intent was to provide sufficient detail in order to allow a comparison of the corridors and ultimately begin the process of selecting a final corridor to bring forward to the public and Council in the fall.

### **High-level Comparison of the Two Routes**

A high-level comparison, or multiple account evaluation (MAE), was conducted based on the technical review in order to provide a base line understanding of the corridors prior to seeking public input in March 2014. The analysis was conducted on the portion of the two routes between 16 Avenue N and Beddington Trail (due to the complexities of the routes entering the Centre City south of 16 Avenue N).

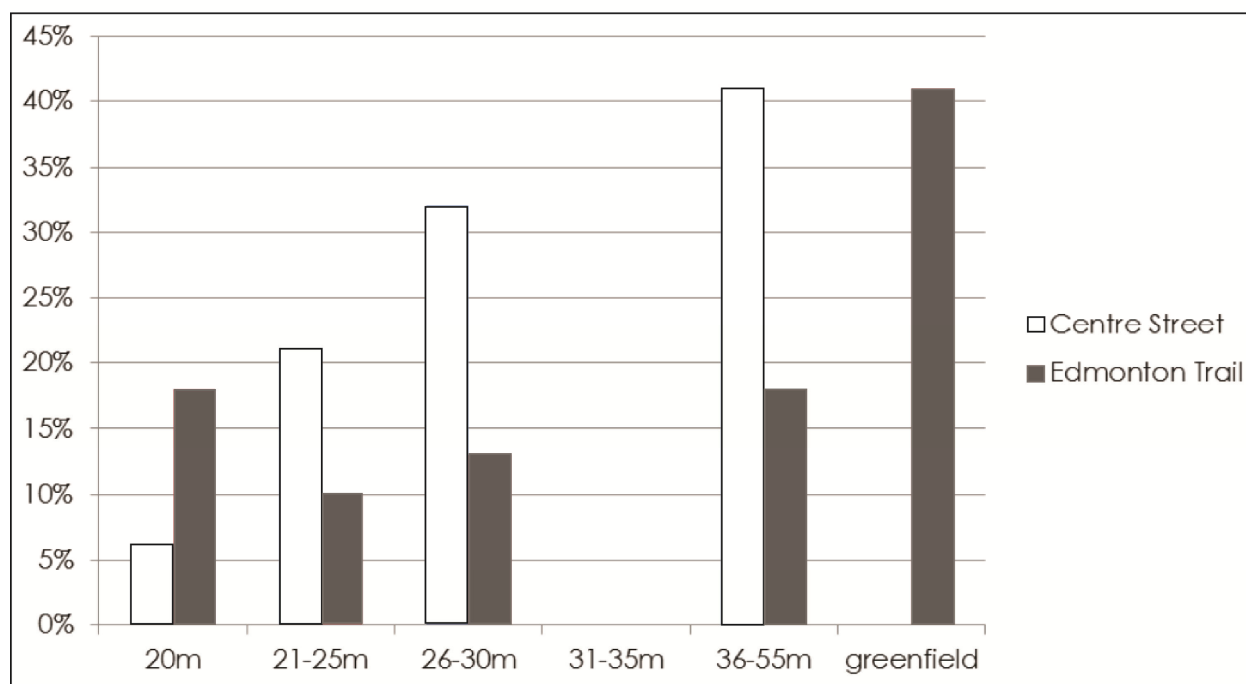
This preliminary review for the portion of the two routes between 16 Avenue N and Beddington Trail showed that Centre Street had an overall advantage compared to the Edmonton Trail option. Though Edmonton Trail had some advantage in terms of potential jobs served due to proximity to the Greenview Industrial Park and the shorter distance to Calgary International Airport, Centre Street scored better overall due community interface and access, and the environmental challenges of building part of the Edmonton Trail route in the Nose Creek valley.

### **Right-of-way Width Available**

The review of the existing right-of-way shows that both routes vary considerably in available width. Approximately 18% of the Edmonton Trail route is only 20 metres wide, compared to 5% of the Centre Street route (see Figure 2). Over 70% of Centre Street has a right-of-way width greater than 26 metres providing opportunities for turn bays at key intersections. Edmonton Trail has a more constrained right-of-way than Centre Street overall but does have more than 40% of its route in undeveloped greenfield areas and parks.

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Figure 2: Right of Way Width (Percent of Total Alignment) Comparison for Centre Street and Edmonton Trail



Low-floor, in-street LRT requires approximately seven metres width for two tracks. The minimum width required for the LRT, one traffic lane in each direction, and sidewalks is 20 metres. An additional 3.5 meters (minimum) is required for a station platform that serves one direction of LRT travel, or an additional seven metres (minimum) for a platform that is located between the LRT tracks, and serves both directions.

### Access by Walking (Walksheds)

Based on the City of Calgary's preliminary walkshed assessment for the North Central LRT study area (Centre City north to Beddington Trail) and the consultant's transit oriented development assessment, the Centre Street route serves a current population of approximately 43,000 within a 600 metre walking distance. The Edmonton Trail route serves a population of approximately 35,000 within a 600 metre walking distance.

### Customer Boardings

An analysis of peak hour boardings on each alignment between 16 Avenue NE and Stoney Trail was based on the use of The City's regional transportation model (RTM) using the 2076 land use and network (LUN) assumptions. Results of this analysis show the Centre Street route would generate 14-19% more boardings per hour in the peak direction than the Edmonton Trail option (see Figure 3).

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Figure 3: Comparison of LRT Boardings North of 16 Avenue N

	Centre Street	Edmonton Trail	Additional Boardings on Centre Street
<b>AM Peak Hour</b>	6,500	5,600	14%
<b>PM Peak Hour</b>	6,100	5,000	18%
<b>AM Peak Hour, Peak Direction</b>	8,400	6,800	19%
<b>PM Peak Hour, Peak Direction</b>	2,900	2,500	14%

### Speed Restrictions

An initial review of the corridors for potential running speeds has indicated that the curvature of Edmonton Trail in two areas potentially creates speed restrictions. These two areas are at 33 Avenue NE and 5 Avenue NE. There are no similar restricted areas on the Centre Street corridor outside the Centre City.

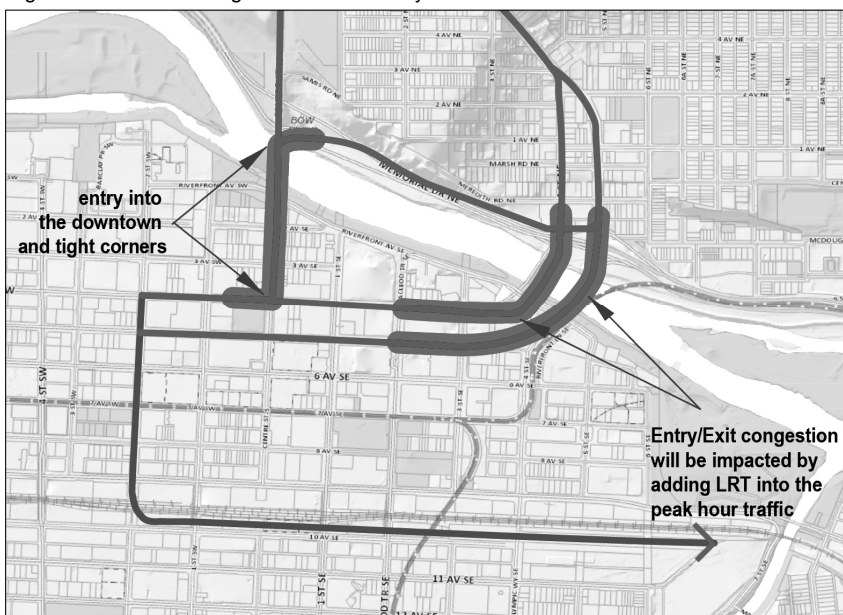
### Access to Downtown (at-grade)

The entry of an LRT into the downtown area at-grade presents some challenges with respect to impacts on existing traffic and transportation systems (Figure 4).

The Centre Street alignment, if it uses Centre Street in the downtown would likely reduce traffic access into the downtown across the bridge and into the Chinatown area.

Edmonton Trail has two potential options, both of which have an impact upon existing access into the downtown. Using Memorial Drive and onto Centre Street or the 5 Avenue SE option have similar ramifications to the Centre Street option. Bringing LRT through Edmonton Trail and onto 4 Avenue SE or 5 Avenue SE will exacerbate existing entry and exit congestion into the downtown.

Figure 4: Access Challenges in the Centre City





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### **Transit Oriented Development (TOD) and Redevelopment Potential**

A review on the relative development potential of each route revealed the following geographic areas/categories:

- Centre City and adjacent communities (eg. Beltline, Eau Claire, Stampede, Railtown)
- Business or Industrial Parks (Aurora and Greenview)
- Station Areas
- Vacant Sites
- Active but highly redevelopable

The review examined the potential of each route with respect to future development potential.

Centre Street advantages include:

- Publically and privately owned land in large lot configurations along route
- Access to future Aurora business park
- Current redevelopment activities south of McKnight Blvd, including Highland Park Golf Course
- Current mixed use medium density trend

Edmonton Trail advantages include:

- Redevelopment possibilities in Greenview industrial – however, City policy to maintain industrial land use
- Access through future Aurora business park
- Current redevelopment activity south of 8 Avenue NE

Overall, the Centre Street corridor had a greater potential for transit oriented development in the near term, particularly south of 24 Avenue N, while Edmonton Trail had longer term advantages due to the potential to redevelop light industrial land. However, conservation of industrial lands is important to The City so that redevelopment will likely be further into the future.

### **Environmental Issues**

More than 40% of the Edmonton Trail alignment runs through greenfield areas or parks where there is no existing development. A portion of this includes the development of the Aurora Business Park north of Beddington Trail while a large segment is within the Nose Creek Valley adjacent to the creek.

Preliminary investigation indicates sites in Nose Creek Valley that may have contamination risks due to previous uses, such as landfills and contaminated soils. There are also a few sites on the Centre Street route that may pose a risk, such as old gas station sites. Any site discovered and disturbed by LRT construction will require some level of remediation.

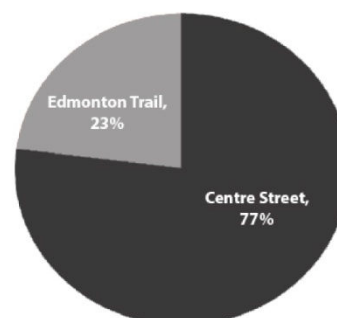
### **Public Preference**

The public engagement for the North Central LRT project has been ongoing since the spring of 2013 with a detailed set of workshops and open houses in 2014 April aimed at seeking public input on the two alignments. Attendees to the 2014 April open houses were shown the Centre

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Street and Edmonton Trail alignments at a scale of 1:700 so that individual houses were identifiable. The alignments were placed on the floor in order to allow attendees to 'walk' the alignment with stations shown. Information boards along the alignment showed the available right-of-way and a number of optional designs with different width requirements. The intent was to solicit feedback on a preference for corridors along with the character of the corridor (i.e. LRT with one travel lane, two travel lanes, parking etc). Several hundred residents attended the two open houses and provided significant verbal and written feedback.

Figure 5: Stated Preference at Open Houses



A survey of preferences conducted for the entire corridors (as opposed to the previous review from 16 Avenue N northwards) showed support for the use of Centre Street (77%) for the LRT (Figure 5). There were a number of residents of Edmonton Trail that commented verbally to staff that they understood that traffic would likely divert to their area if Centre Street was used but still maintained a preference for Centre Street.

The shorter length of the Centre Street route, the greater proximity of residences near Centre Street and the value placed on the Nose Creek green space were among the factors cited for the preference.

### Summary of High-level Comparison of Centre Street and Edmonton Trail

The high-level comparison indicated Centre Street is the preferred route for the future North Central LRT (see Figure 6). The project steering committee reviewed the analysis and provided direction to focus remaining efforts on the Centre Street route. This determination permitted the project team to focus resources on the Centre Street route and the connection to the Centre City. The remainder of this report, and Attachments 4 and 5 provide additional detail on the analysis.

Figure 6: Summary of High-level Comparison of Centre Street and Edmonton Trail

ASSESSMENT	CENTRE STREET	EDMONTON TRAIL
1 – 16 Avenue NE to Beddington Trail	●	
High Level MAE	●	
2 – Public Preference	●	
3 – ROW Width	●	
4 – Walksheds	●	
5 – Boardings	●	
6 – Speed Restrictions	●	
7 – Access to Downtown	○	○
8 – TOD Potential	○	○
9 – Environment Issues	●	

● - Indicates a clear benefit over the other corridor

○ - Indicates that the corridors are equal

### Detailed Analysis of the Centre Street Route

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Following the selection of Centre Street as the preferred corridor for the LRT, criteria were developed to inform Administration's recommendations regarding the design of the LRT and roadway on Centre Street. The criteria were selected based on variables, such as existing policies (2020 Sustainability Direction/MDP/CTP), city-wide goals, capital cost, safety and security, and transportation improvements and impacts. The criteria are also similar to the criteria used in the high-level analysis of the route options to maintain consistency throughout the project. The criteria used in this analysis are summarized below:

- Financial Capacity/Sustainable Corporation
  - Capital cost
  - Phasing possibilities
  - Impact on existing City assets
- Community Well-being
  - Impact on community cohesion: visual intrusion
  - Impact on community cohesion: severance
  - Safety
  - Security
  - Emergency access
  - User centred design/accessibility
- Prosperous Economy
  - Value capture
  - Impact on goods movement
- Transportation
  - Improvements for walking and cycling
  - Changes in journey time (LRT)
  - Changes in journey time (auto)
  - Reliability
  - Impact of displaced traffic and demand on parallel routes
  - Impact on parking
- Urban development/urban realm
  - Land acquisition impacts
  - Contributes to improved streetscape and public realm
- Sustainable environment
  - Impact on natural environment
  - Noise impacts
- Deliverability
  - Constructability/technical constraints
  - Construction impacts
  - Alignment with CTP/MDP
  - Acceptability

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The criteria, along with input from the public and the project's Community Advisory Group, and Technical Advisory Committee, and direction from the Steering Committee, helped to form the recommendations of this report. Attachment 4 indicates how each of the options scored relative to each other.

For this stage of the analysis, the project team focused on three key locations along the Centre Street route labelled segment 1, 2 and 3 (see Figure 7). The sections are: Centre City to 9 Avenue N (segment 1), 24 Avenue to McKnight Blvd (segment 2), and Beddington Boulevard to Beddington Trail (segment 3). These key locations required additional analysis due to the constraints the presented to the project team.

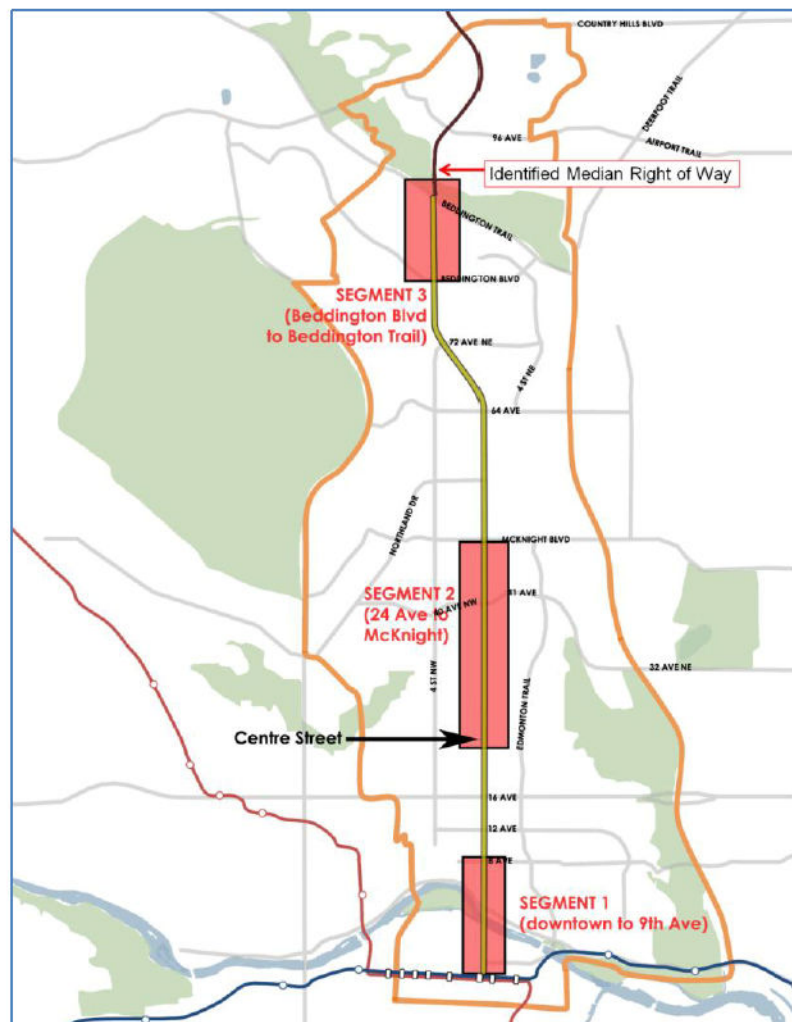
### Centre Street – Segment 1: Connection to the Centre City

This segment of the route has a number of constraints, including:

- Connecting the North Central LRT to the Southeast LRT
- Grade separating the existing 7 Avenue Blue Line LRT service to optimize LRT operations and for safe operations
- Grade separating the future 8 Avenue Red Line LRT subway
- Crossing the Bow River
- Grade change introduced by the escarpment north of the Bow River
- Consideration for grade separation at 16 Avenue N

A number of options were considered for this segment to connect the North Central LRT with the Centre City, the Southeast LRT, and respond to the project vision. Attachment 5 includes detailed discussion on segment 1 and the options that were investigated as part of this study.

Figure 7: Location of Segments 1, 2, and 3



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Option 1 includes a new bridge over the Bow River to carry the LRT. Tunnels would be required between the Bow River escarpment and 20 Avenue North, on the north side of the river, and between 2 Avenue South and 10 Avenue South on the south side of the river.

Option 2 would minimize capital construction costs by using the existing Centre Street bridge to cross the Bow River. A tunnel would still be required between 10 Avenue South and 2 Avenue South to grade separate the future North Central LRT from the future 8 Avenue S tunnel, and existing LRT and CP Rail tracks.

Option 3 is a tunnel from 24 Avenue North to 10 Avenue South, a distance of 3.9 kilometres. This option provides grade separation of the future North Central LRT from 16 Avenue N, the Bow River, the future 8 Avenue S tunnel, and existing LRT and CP Rail tracks.

Based on the project team's analysis, the recommendation is to perform further investigation of options 2 and 3 as part of the functional planning study. Option 1 is not recommended for further investigation.

### **Centre Street – Segment 2 (24 Avenue North to McKnight Boulevard)**

This segment of the route has a number of constraints, including:

- The narrow width of the right-of-way
- Consideration for grade separation at McKnight Boulevard

Two options were considered for this segment. Attachment 5 includes detailed discussion on segment 2 and the options that were investigated as part of this study.

Option 1 provides one traffic lane in each direction with the LRT in the middle of the roadway. This is referred to as the 'narrow option'.

Option 2 provides two traffic lanes in each direction with the LRT in the middle of the roadway. This is referred to as the 'wide option'.

Based on the project team's analysis, the recommendation is to move forward with option 1 ('narrow option').

### **Centre Street – Segment 3 (Beddington Boulevard to Beddington Trail)**

This segment of the route has a number of constraints, including:

- The narrow width of the right-of-way
- The residential nature of this street, particularly immediately south of the bus-only crossing.

Two options were considered for this segment. Attachment 5 includes detailed discussion on segment 3 and the options that were investigated as part of this study.

Option 1 provides one traffic lane in each direction with the LRT in the middle of the roadway. This would require removal of residential on-street parking in this community.

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Option 2 retains the on-street parking, and requires land purchases to widen the right-of-way.

Based on the project team's analysis, the recommendation is to move forward with option 2 to allow on-street parking in this community and investigate ways to minimize the impacts on the remaining community.

The full alignment, including detailed discussion of the options is included in Attachment 5.

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

The North Central LRT Route Planning Study began in spring 2013 and the first public events were held in summer 2013. Stakeholders were notified of the events and online engagement using social media, email distribution lists, Calgary Transit's website and temporary signs on busy roads in the North Central communities.

Three interactive open house events held in 2013 June attracted approximately 700 participants. The events continued the conversation and built on the feedback that was received during the 2011 open houses. Participants were asked to provide information that would help the project team to identify community characteristics and values. The information was used to develop the evaluation criteria for analyzing the alignments. Administration provided participants with background information on the LRT alignment options, how urban low-floor LRT integrates with land use and how participants can stay involved in the project. As a result of participant input at the open houses the project team added 4 Street Northwest to the analysis.

Two interactive workshops were scheduled for late 2013 June. The interactive workshops were cancelled and rescheduled due to the June floods. The workshops were combined and one event was held on 2013 July 23. Approximately 60 people attended the event. Participants completed three activities that helped to inform the project team. The first activity asked participants to identify important places and destinations in their communities. The second activity involved arranging pieces of infrastructure on a cross-section to determine the difficulties in fitting all desired features (LRT, wide sidewalks, bike lanes, trees, etc) in a narrow roadway. The third activity provided input to the draft vision and evaluation criteria for the project. In the fall of 2013, the project team concentrated on analysis and technical evaluations of each of the alignments. Engagement with City staff continued and a workshop was held in 2013 December to craft the goals for the LRT alignment in the Centre City. The project team utilized input from Administration to assist with determining the LRT alignment in the Centre City.

### **2014 April Public Engagement**

Interactive workshops and open houses in 2014 April presented the Centre Street and Edmonton Trail routes to the public. Four events were held to identify the public's preferences relating to the two remaining route options. During the events, over 580 people actively participated in group discussions about the routes, pedestrian access, traffic, community benefits, land acquisition, and relative costs of the various options.

Information on the road layout options after construction of the LRT is complete was also provided. Three options were provided:

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1. **Wide:** LRT and two driving lanes in each direction (requires 30 metre width).
2. **Wide with parking:** LRT, one driving lane, and one parking lane in each direction (requires 28 metre width).
3. **Narrow:** LRT and one driving lane in each direction (requires 20 metre width).

3a. **Tunnel – only provided as an option south of 24 Avenue North:** LRT is underground in a tunnel, with two driving lanes in each direction on the surface (requires 20 metre width).

Note: additional width will be required at some station locations.

The public indicated a preference to maintain two traffic lanes in each direction (option 1) throughout the route. A preference for the tunnel south of 24 Avenue North (option 3a) was also indicated by the public.

The team investigated the possibility of maintaining two traffic lanes (wide/option 1) in each direction to respond to the public's preference. The wide option would maintain two traffic lanes in each direction on Centre Street with the LRT running in the middle. It would disrupt the urban fabric of many communities as land is purchased and buildings are demolished to widen Centre Street. There would also be a significant cost to purchase properties, and Calgarians' lives and livelihoods would be disrupted by the process. The impacts on the community, and the project, were considerable:

- Disruption to residents and businesses located along the route
- Increased land purchase costs of approximately \$300-500 million
- Vacant parcels left over with reduced redevelopment potential due to their small size
- Reduced income to The City from property taxes

The project's Community Advisory Group, comprised of residents and business owners, support one lane of traffic in each direction (option 3) south of McKnight Boulevard to minimize disruption to land owners, tenants, and businesses. The project Steering Committee (directors and managers of multiple business units) provided direction to adopt option 3 to achieve The City's long term goals, and to improve the likelihood of this project being realized amid competing fiscal priorities.

Due to the community impacts and costs of maintaining two traffic lanes (option 1), the direction provided from the Steering Committee, better alignment with City policies, and evaluation of the criteria, the project team recommends one traffic lane in each direction (option 3) where the space is not available to maintain two traffic lanes. South of McKnight Boulevard the right-of-way is generally narrow and will accommodate one lane of traffic in each direction and the LRT. North of McKnight Boulevard the right-of-way is generally wide enough to accommodate two lanes of traffic in each direction and the LRT (option 1). This means the project continues to adhere to the Project Vision and Community Principles that were crafted in 2013 with input and support from Calgarians. It also responds to the public who overwhelmingly support Centre Street as the right place for the future LRT line.

The narrow option (option 3) maintains one traffic lane in each direction with the LRT running in the middle. The addition of the LRT will mostly occur within the existing width of Centre Street.

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This approach will still require some property purchases, but not to the extent that would be needed if the road was widened, reducing disruption to Calgarians who live and make a living along Centre Street.

### **2014 August Public Engagement**

In 2014 August the project team attended the Chinatown Street Festival to discuss the project with Calgarians. There was support for providing rapid transit on Centre Street and building the LRT sooner than finances will allow.

Also in August, the project team shared the final recommendations to pursue a Centre Street alignment with Council and Administration. Two weeks later, stakeholders and the public were informed by email and community newsletters. Additional information, including the open house information boards were shared in advance of the public events. Sharing the information before the open houses in October helped stakeholders to understand the project's complexities and review the information before attending the events.

### **2014 October Public Engagement**

Three public open houses were held in 2014 October to present Administration's recommendations, and receive feedback from the public. Approximately 300 people attended the open houses. There was strong support from the public for the tunnel option south of 24 Avenue North, despite the additional cost. There was also strong support for the recommended route on Centre Street North, and many attendees wanting the project to be built soon. Traffic and parking concerns were raised in terms of their impact on communities adjacent to Centre Street.

The public is also, generally speaking, eager to be involved in the Centre Street Transitway project as it is funded and the timeline promises benefits to transit customers in the foreseeable future.

### **Strategic Alignment**

This report is aligned with the following long-term plans: Calgary Transportation Plan and Municipal Development Plan (2009), RouteAhead: A Strategic Plan for Transit in Calgary (2013) and the Centre City Plan (2007). The project team will continue to coordinate with the Southeast Transitway predesign team, and Planning, Development and Assessment's (PDA) Main Streets project.

Members of the project team meet with planning staff from Calgary International Airport as part of regularly scheduled quarterly meetings to coordinate projects of mutual interest. This group will continue to work together to provide high quality transit service to the airport to meet the needs of travellers and airport staff.

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

#### **Social**

High quality public transit service is an essential requirement for the creation of attractive, vibrant and economically competitive cities. Public transit provides affordable mobility and accessibility to people, places, goods and services. The Canadian Urban Transit Association



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(CUTA), has outlined the public health benefits of public transit, including improving urban air quality, and increasing physical activity which can lower the risk for many diseases, such as heart and vascular disease, strokes and diabetes.

### **Environmental**

Movement of people on public transit makes the most efficient use of natural resources, allows for a more compact city and offsets the need for motor vehicle travel, resulting in fewer impacts to existing communities. Implementing a network of rapid transit services is a fundamental objective in the Municipal Development Plan and Calgary Transportation Plan. Improved, higher quality transit services will attract higher levels of ridership and decrease the environmental impacts associated with urban travel.

### **Economic**

The North Central rapid transit corridor represents a substantial opportunity to positively influence private investment along the corridor. Studies have shown public investment in improving mobility and access increases the attractiveness of adjacent communities for redevelopment.

### **Financial Capacity**

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

The project is on time. The project budget will be exceeded by approximately \$150,000 due to additional public engagement activities and analysis of additional route options conducted within the Council-directed timeline.

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

The capital cost comparison between the Edmonton Trail and Centre Street alignments found that magnitude of each to be approximately equal.

The report attachments include high level cost estimates of constructing the LRT, including the capital cost for the two options for the southern segment of the route on Centre Street. Capital cost estimates will be refined in subsequent phases of this project (functional planning study, preliminary design, and detailed design).

### **Risk Assessment**

A decision on the route for the future North Central LRT is required before the functional planning study can begin. The timeline for the Centre Street Transitway would also be affected by a delayed decision on the North Central LRT route.

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### **REASONS FOR RECOMMENDATIONS:**

Public input, alignment with City goals and objectives, and technical analysis indicate Centre Street is the preferred route for the future North Central LRT.

### **ATTACHMENTS**

1. North Central LRT Timeline
2. North Central LRT Route Planning Study Project Timeline
3. Green Line Map
4. Centre Street Multiple Account Evaluation (MAE)
5. North Central LRT Corridor Study