



Quick Facts

- Administration has evaluated several alignment options that would connect the Green Line in the Beltline to Victoria Park and Inglewood/Ramsay station.
- No single option serves all stakeholders and meets all program objectives without trade-offs, but Administration believes one option presents the best balance against all evaluation criteria.
- Option 4: Transition to 10 Avenue S.E. will be recommended to the Standing Policy Committee on Transportation and Transit and, subsequently, to City Council.
- Transition to 10 Avenue S.E. limits the impact to the community of Ramsay and addresses concerns regarding traffic access and circulation in Victoria Park. The recommended option also supports the long-term vision for the future Rivers District Master Plan.
- The recommended alignment requires land acquisition in the form of partial (only a part of the property is required), full (all of the property is required), and underground strata (property is required underground for the tunnel). The exact land requirements are still under review. Once the alignment is approved by Council, Administration will advance design and arrange to meet one-on-one with all impacted property owners. Land acquisition is a risk for any project. If The City cannot acquire the required land, Administration will re-evaluate the remaining alignment options and determine the best course of action.
- City Council is ultimately responsible for approving the alignment.

Option #4: Transition 10 Avenue S.E.



What Happens Next?

Administration will recommend Option 4: Transition to 10 Avenue S to the Standing Policy Committee on Transportation and Transit on June 21, 2017, and then to City Council on June 26, 2017



Introduction

Since early 2016, Administration has been evaluating how best to connect the Beltline communities to the future Inglewood/Ramsay station. In December, 2016, City Council approved 12 Avenue S as the preferred corridor for the Green Line. Administration then turned their attention to the short but complex stretch in Victoria Park that would complete the connection of the north and southeast segments of the Green Line.

The stretch between MacLeod Trail S.E. and the Inglewood/Ramsay station constrained the design of the Green Line due to several factors:

- **Victoria Park redevelopment** -Canada Municipal Land Corporation (CMLC) is currently developing its Rivers District Masterplan, a new vision for the area that includes the Stampede grounds, the Saddledome, and a future culture and entertainment district. The City of Calgary is working with CMLC to support the area transportation network once the Rivers District Masterplan is built out to best serve Calgarians, whether you travel by foot, bike, transit or car.
- **Victoria Park Transit Centre** – The Victoria Park Transit Centre (VPTC) sits just west of the Elbow River, between CP Railway and 12 Avenues S. It is an active transit centre, open 24/7, with one third of the city’s daily bus fleet operating out of the facility. The centre can be relocated in the future but no commitments have been made in terms of funding or timelines. The estimated cost of a replacement facility, not including remediation of the lands in Victoria Park, is approximately \$300 million. The City does not currently have the funds to relocate the centre, so Administration has been exploring Green Line alignment options that would not require immediate relocation of the Transit Centre.

It is Administration’s responsibility to explore all technically possible alignment options to understand potential issues and opportunities, and to provide City Council with the information and context they need to make an alignment decision.



The Four Short-listed Options

Option 1 – North of the Victoria Park Transit Centre (VPTC)

The team began by exploring a surface alignment on 12 Avenue S that would turn north and skirt around the **Victoria Park Transit Centre (VPTC)**, as shown below. This option:

- Would connect to the approved southeast alignment of the Green Line
- Would result in slower travel times and costly wear and tear on LRT vehicles in the long-term due to the alignment’s sharp turn at the VPTC.
- Would impede bus operations out of the VPTC, which would increase operating costs.



Option 2 – MacDonald Avenue

In early March, the team began exploring an alternative alignment option that would connect the Beltline to the Inglewood/Ramsay station via **MacDonald Avenue S.E.**, as shown below. This alignment option:

- Would have faster travel times for transit customers than Option 1
- Would not produce the same wear on LRT vehicles as Option 1
- Would reduce impact to bus operations at VPTC because the main entrance/exit is not shared with LRT
- Is not supported by the community due to the required property acquisition, the potential impact to access and circulation in the community, and the perceived community division created by the LRT tracks



Option 3 -The Staged Option

This would allow the Green Line to skirt north of the Transit Centre until the Centre is re-located, at which time the Green Line tracks would be re-aligned and a station would be built on the former Transit Centre lands, as shown below. Early evaluation suggests that this option:

- Could provide some opportunity to adapt to future conditions in Victoria Park once the Transit Centre is relocated and the area becomes more developed.
- Does not include a station in the first stage. The station would be added as part of the track realignment and relocation of the Transit Centre.
- Does not align with initial concepts for the future vision of Victoria Park.
- Could result in higher costs in the long-term related to modifying the infrastructure in the future.



Short Term



Long Term

Option 4 - Transition to 10 Avenue S Option **RECOMMENDED ALIGNMENT**

The Transition to 10 Avenue S Option would see the line jog north underground from the Centre Street station on 12 Avenue S to 10 Avenue S, where it would come to surface and run parallel to the south side of the CP tracks until it reaches the Inglewood/Ramsay station, as shown below. This option has:

- Minimal impact to the existing area traffic network
- Faster travel times for the LRT
- Minimal impact to the Victoria Park Transit Centre
- Minimal disruption to existing residential communities
- Aligns with initial concept for the future vision of Victoria Park
- Would likely have impacts to business stakeholders in the area
- Would likely require property not previously contemplated





The team explored all four options, which included evaluating technical feasibility, constructability, costs, property impacts, community readiness, bus and LRT transit operations, stakeholder sentiment, and development potential.

How do the four options compare?

Metric	Option 1: North of Victoria Park Transit Centre	Option 2: MacDonald Avenue	Option 3: Staged Around Victoria Park Transit Centre		Option 4: Transition to 10 Avenue S
			Near-term	Long-term	
Estimated LRT Run Time	Slowest (8.5 minutes)	Fast (7.0 minutes)	Fast (6.5 minutes)	Medium (8.0 minutes)	Fast (7.0 minutes)
Community Impacts	Minimal impacts to existing communities	Highest impacts to existing communities	Minimal impacts to existing communities	Minimal impact to existing communities	Some impact to Victoria Park community
Development Impacts	Places portal adjacent to development site	Places portal adjacent to development site	No station in Victoria Park	Complicates future development of Transit Centre lands	Complicates development above tunnel
Capital Cost Consideration	\$550 million	\$600 million	\$540 million	Additional \$20 million for track reconstruction and station.	\$600 million
Property Cost Consideration	Property costs will be a major differentiator between individual options. Costs are determined through negotiated land agreements. Property acquisition remains a high risk for the project.				
Stakeholder Sentiment	Concern about portal location & 12 Ave S traffic access and circulation impacts	Concern about community impact, portal location & 12 Ave S traffic access and circulation impacts	Concern about portal location & 12 Ave S traffic access and circulation impacts	Concern about portal location & 12 Ave S traffic access and circulation impacts	Minimizes impacts to community, traffic access and circulation
Operational Considerations	Significant impacts to bus & LRT operations	Minimal operational impacts	Impacts to Transit Centre operations & LRT operations	Minimal operational impacts	No impact to Transit Centre & LRT operations



Who is ultimately responsible for approving the alignment?

City Council is responsible for approving the alignment recommended by Administration. Council can approve the recommendation or defer the decision until a future date and direct Administration to provide further analysis.

What are The City's priorities in designing this LRT line?

The Green Line is more than just a transit service that will move people from point A to point B. It's a project that will respond to growth demands, connect people with places and programs, and will make Calgary a more attractive, accessible and vibrant city.

Planning the Green Line requires The City to balance a number of priorities including:

- Operational requirements for transit (ie. providing a service that operates efficiently and sustainably)
- The needs of local stakeholders (ie. residents, businesses, community hubs, and attractions)
- The need to design and operate the right LRT for all Calgarians, for today and for the next 100 years

Administration will recommend an alignment to City Council in June 2017 based on:

- Return on investment – the option recommended will offer the best value and return on investment to the city and taxpayers. This includes quantifying the impact to transit operations and/or the full cost of relocating of the VPTC.
- Community implications – identifying and understanding the impacts and opportunities of each option for the communities of Beltline, Ramsay and Victoria Park.
- Vision for Calgary's future – the recommended option needs to be right for Calgary today, and for Calgary for the next 100 years. This means looking at how the Green Line will serve substantial population growth, and how it will support and integrate with new development and existing communities along the length of the line.

How does The City justify the benefits and impacts of a given alignment?

Choosing the alignment for the largest capital infrastructure project in The City's history requires Administration and Council to make a series of big, complex decisions. No single alignment option, at any point along the LRT line, can serve all stakeholders and meet all objectives without impact. It is the responsibility of Administration and Council to evaluate, understand and weigh the trade-offs of each option.

In working towards alignment recommendations, the project team considered:

- Technical feasibility
- Constructability
- Costs
- Property impacts
- Community readiness
- Connectivity
- Bus and LRT transit operations
- Stakeholder sentiment
- Development potential

All criteria were evaluated in terms of contributing to the objectives of delivering a sustainable system that will serve the city as it grows and provide the best value for Calgarians.

How and why was 12 Avenue S selected as the recommended Beltline corridor?

Several avenues were evaluated in 2016 as part of the Multiple Accounts Evaluation (MAE) for the Beltline segment of the Green Line. There are many technically feasible options, but technical feasibility is only one of seven criteria to be considered.

The MAE was completed with the following assumptions and/or considerations in mind:

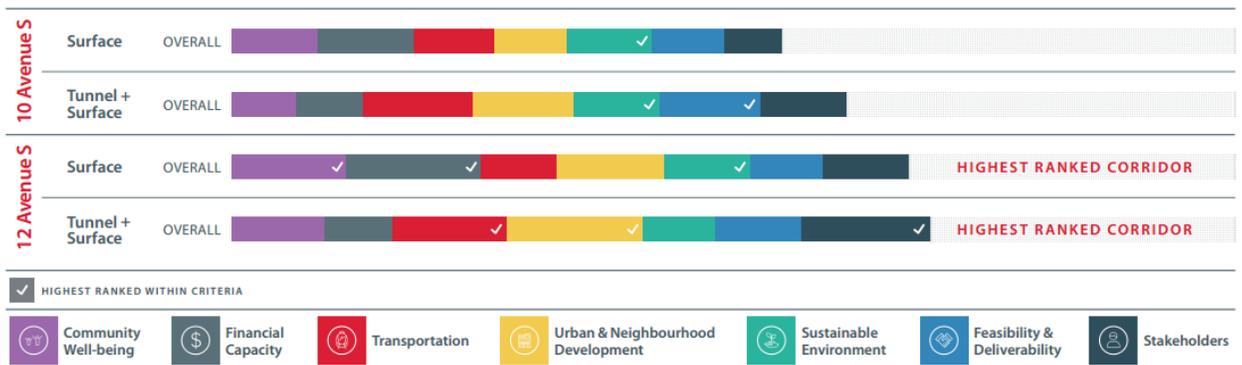
- Area evaluated included 2 Street SW to 6 Street SE south of the CP tracks
- All options would connect to the tunnel in Centre City under the CP tracks

The four options explored during the Beltline MAE were:

- 10 Avenue S Surface
- 10 Avenue S Tunnel + Surface
- 12 Avenue S Surface
- 12 Avenue S Tunnel + Surface

You can see the more detailed overview of the Beltline MAE on our [web page](#), and we have summarized the results below.

Together, the two options on the 12 Avenue S corridor ranked highest in five of seven categories, and the 12 Avenue S Surface option tied for highest ranking in Sustainable Environment with the two 10 Avenue S options.





- 10 Avenue S Tunnel + Surface scored highest overall in the category of Feasibility & Deliverability
- All options but 12 Avenue S Tunnel + Surface tied for score in the category of Sustainable Environment
- 12 Avenue S Surface option scored highest overall in two of the remaining five categories: Community Well-Being and Financial Capacity
- 12 Avenue S Tunnel + Surface option scored highest overall in the remainder of the options: Transportation, Urban & Neighbourhood Development, and Stakeholders

Why were the MacDonald Avenue S.E. option, the Staged Option, and the Transition to 10 Avenue S Option opened for consideration?

It is Administration's responsibility to explore all technically possible alignment options before making a recommendation to City Council on the best way to connect the Beltline to the Inglewood/Ramsay station.

We began by exploring the VPTC option, which would see the LRT come to surface on 12 Avenue S after 4 Street S.E. and turn north to skirt around the Transit Centre before running parallel to the CP tracks until it reaches the Inglewood/Ramsay station.

The VPTC option is technically feasible, but we have discovered that this alignment would impede bus operations, result in slower travel times for buses and the LRT, and produce higher annual maintenance costs for the LRT and higher operating costs for bus service. The MacDonald Avenue S.E. option, the staged option and the Transition to 10 Avenue S.E. Option were investigated to understand how these options compare.

These options were considered and analyzed to understand the potential issues and opportunities, and to provide City Council with the information and context they need to make an alignment decision.

How would each of the options impact area transportation access and circulation?

The transportation network in Victoria Park will be different than what we see today. CMLC's Rivers District Masterplan will result in new development and more people living, working and playing in the area. The future culture and entertainment district and the Green Line will both bring large scale changes to the area. The Green Line LRT needs to serve this growth and support transportation choices in the area. Understanding the impacts to the transportation network will be part of the ongoing evaluation.



How fast will the train travel?

Where the Green Line runs in-street (such as on Centre Street N), the train would not exceed the posted speed limit. Where the Green Line is fenced in or operates in a tunnel, the train would not exceed 80 kilometres per hour.

How much noise will the train make?

There will be noise and vibration associated with the Green Line. The noise produced by the Green Line will depend on the type of vehicle that is purchased, how the vehicles are built, and how the track itself is constructed. You might have noticed a difference in noise and vibration between our older train vehicles and the newer vehicles. Individuals experience noise and vibration differently.

What will The City do to ensure safety for communities in close proximity to the train?

Safety is a top priority for The City of Calgary, and Calgary Transit always follows industry best practice with regard to safety. Additional design and operational considerations will determine safety measures over the coming months.