Airport Transit Study

Stakeholder Report Back: What We Heard – What We Did

September 3, 2019

Project overview

The City of Calgary is undertaking a study to develop functional-level plans for a future transit connection that will ultimately provide improved transit access to the Calgary International Airport by connecting the future Green Line LRT with the future Blue Line LRT.

The Airport Transit Study will provide recommendations for:

- Transit technology
- Route alignment and stations between the future 96 Avenue N.E. Green Line station and 19 Street N.E.
- Location for a maintenance and storage facility
- Land requirements
- Staging plan and cost estimates

We are conducting this study now to ensure the future airport connection is:

- Coordinated with the pre-design planning for the Blue Line extension that is currently underway
- Aligned with the updated functional plan for Green Line
- Accommodated in the Aurora Business Park Outline Plan update
- Considered in the Airport Authority Master Plan update (ongoing)

There is currently no funding for the detailed design or construction of this connection.

Engagement overview

In Phase 1, The City sought input from the public and stakeholders on criteria that should be used when making decisions about technology, alignment and station locations, as well as general concerns and ideas.

In Phase 2, The City presented the technology, alignment and station location options that were considered and showed how each of the options addressed the criteria stakeholders and the public identified as important in Phase 1, as well as how well each option met The City's technical criteria. Stakeholders and the public were then asked for feedback on the study recommendations.

What we heard

When participants were asked about criteria they felt were most important when evaluating **technology**, integration with existing transit systems emerged as the highest-rated evaluation criterion indicating it would be important in making the final decision. Speed was the second-highest criterion and cost effectiveness and accessibility followed at third and fourth, respectively.

When asked about criteria they felt were most important when evaluating **alignment and station location** options, participants chose integration with existing LRT systems and station locations as the highest-rated evaluation criterion. Ride time was the second-highest rated criterion and cost was third.

Overall, almost 3,000 submissions were received, sharing thoughts about what criteria should be considered as well as concerns and ideas.

What we did

Feedback from all in-person and online engagement activities were transcribed and themed according to the topics of technology and alignment and station locations. This information provided the project team with an understanding of citizen priorities for the evaluation of options and in decision-making. The themes were then incorporated into the multiple account evaluation criteria that was used to evaluate options under consideration.

The graphics below show how the themes that were important to the public and stakeholders were integrated with the City's technical evaluation criteria.

Technology

	Accounts (equal importance)	What we heard was important to citizens in Phase 1	City Evaluation Criteria
Technology	Community well-being	• Speed • Fast travel time to downtown • Frequent service to/from airport • Operates same hours as YYC employees • Provide parking	Convenient travel times and frequency
		• Connect to Green Line • Connect to Blue Line • Accessible • Accommodates people with disabilities • Accommodates luggage	Convenient, reliable, safe and accessible transfers to/from transit network
	Feasibility and Deliverability		Code and regulatory considerations
		• Integration with existing Transit system	Ability to leverage or integrate into planned facilities or infrastructure
		• Integration with existing Transit system	Alignment constraints
		• Construction timeline	Implementation (civil construction and systems)
	Financial Capacity	• Fares/ticket cost considerations	Branding and fare revenue
		• Value for money	Anticipated capital, operating & maintenance, and lifecycle costs
	Sustainable Environment	• Preserve green space • Low impact to environment • Use green energy	Reduced impacts to environmentally sensitive areas
		• Low impact to environment • Use green energy • Sustainable	Protects local air and water quality
	Transportation	• Flexibility to accommodate demand fluctuations • Frequent service to/from the airport	System capacity
		• Reliability	Service reliability
		• Look at other cities' systems/technology (e.g. Skytrain) • Proven track record	Proven technology
	Urban & Neighbourhood Development	• Calgary-wide access	System expansion to connect to existing and future land use
		• Safety • Low impact to traffic	Urban Realm impacts (grade separations/barrier effect/noise impacts)

Alignment and station locations

	Accounts (equal importance)	What we heard was important to citizens in Phase 1	City Evaluation Criteria
Alignment	Community well-being	• Safety and security	Safety, security and emergency access
		• Easy to use • Reliable service • Accessible/easy to get to • Ease of transfer	Accessibility
	Feasibility and Deliverability	• Construction timeline	Constructability
		• Construction timeline • No impact to traffic	Construction impacts
		• Construction timeline • Reduce impact to adjacent businesses	Impacts to residences and businesses
	Financial Capacity	• Value for money • Cost-effectiveness	Capital cost
		• Concern about expropriation of land	Land impacts
		• Cost-effectiveness	Operating and maintenance cost
	Sustainable Environment	• Preserve green space, wildlife and Nose Creek Parkway	Impact on existing natural environment
		• Accommodate weather in Calgary	Adaptability to extreme climate conditions
		• Consider environmental impact	Environmental soil conditions and contamination
		• Reduce noise impact on adjacent community	Noise and vibration impacts
	Transportation	• Speed • Be competitive with other modes (e.g. car trips)	Ride time
		• Reliable service	Transportation network reliability
		• Connect with Green Line • Connect with Blue Line • Connect with future high speed rail	Integration with existing and future Transit service
		• Reliable service	Transit service reliability
		• Stations in high density areas	Catchment area
		• Accommodate bikes • Bike lockers	Complete Streets: multi-modes, connectivity and accessibility
	Urban & Neighbourhood Development	• TOD opportunities • Development opportunity on west side & 19 Street N.E.	TOD and development potential

In Phase 2, technology and alignment and station location options that were considered and evaluated were shared with the public. The description of each option included the benefits and trade-offs, and showed how well each option met the public and technical evaluation criteria. The recommended technology as well as alignment and station locations were chosen based on how well they met the multiple account evaluation criteria.

Technology recommendation:

Recommended

Automated People Mover (APM)

Automated People Mover (APM), *Canada Line*

Vehicles are likely to be similar in nature to Canada Line, which services the Vancouver International Airport.

Key Characteristics/Evaluation Outcomes:

- Automated operation reduces turnaround time at dead-end stations (88 Avenue, 96 Avenue, and YYC)
- Train frequency is only limited by boarding/alighting times allowing for more frequent operation of smaller vehicles
- Limited pressure to reduce off-peak service due to low operating cost
- APM requires significant investment in fixed infrastructure including rails, power and signals increasing capital and maintenance costs; but has lowest operating cost due to avoidance of operator labour expense

Operating and maintenance cost: **$$**

Capital cost: **$$$$**

Additional costs for automation and safety systems are offset by reduced station sizes and related infrastructure. Operating costs are lower than LRT.

Best meets the following MAE criteria:

Alignment and station location recommendation:

Recommended

Option 3: Harvest Hills Link N.E.

Alignment:

- From the 96 Avenue N.E. station, travels east along 96 Avenue N.E. to Aurora Business Park, near Harvest Hills Link N.E.
- Requires a shallow tunnel to connect with the 96 Avenue N.E. station
- The Aero Drive alignment is central to Deerfoot North Aviation Park and will encourage transit-oriented development.
- Improved travel time over Option 1

Station locations:

- Provides excellent connection to Aurora Business Park
- Station located adjacent to 96 Avenue N.E. to provide improved access for buses and pick-up/drop-off area
- Less overlap of catchment areas, so would serve more riders

Best meets the following MAE criteria:

In Phase 2, participants were asked what they liked and didn't like about the recommended plan, and how the plan could be improved. The following table describes how the recommendations address participants' feedback.

Feedback received in Phase 2	How the plan does or does not address the feedback
What participants liked about the plan	
A link to the airport is necessary and/or overdue	• The Airport Transit Study is a long-term plan for a cross-town transit connection between the Green Line and Blue Line, with a connection to the Calgary International Airport (YYC). • There is currently no funding for the design or construction of this connection as a functional planning study needs to be completed and approved by Council before funding can be made available.
Provides an east-west connection between Blue Line and Green Line	• The Airport Transit Study recommends a route alignment that will connect the Green Line, Blue Line and the Calgary International Airport (YYC).
Benefits the surrounding areas	• When built, the Airport Transit Connector will provide: ○ an east-west transit connection between the Green Line, Blue Line and the Calgary International Airport ○ additional transportation options for people who work at the Calgary International Airport (YYC) or in adjacent business parks, and for tourists travelling through the Calgary International Airport (YYC)
There was a detailed/balanced review of options	• Throughout the project the work listed below has been taken into consideration by the project team when developing and reviewing options prior to making recommendations: ○ Worked with the Calgary International Airport to understand their future plans ○ Conducted research to: ▪ Understand unique ridership projections associated with airport travel ▪ Investigate airports across North America with rail connections to understand their peak periods and ridership ○ Consulted industry experts in airport transit ○ Conducted technical analysis and screening to: ▪ Understand technical constraints unique to the airport (e.g. NAV CANADA requirements, Airport Tunnel) ▪ Screen technology options to short-list those that can accommodate future ridership, have been

	proven to operate in weather conditions similar to Calgary, and address technical constraints ○ Undertook two phases of public engagement to gather feedback from Calgarians to incorporate into the evaluation process
Provides a link between airport and downtown	• When built, the Airport Transit Connection will provide an additional transit option for people travelling to and from the airport and downtown.
How participants said the plan could be improved	
Don't want to have to transfer between the Blue Line and/or Green Line and the airport	A separate line for the Airport Transit Connection is planned as it: • allows for stations to be sized to meet the demands of this line. • reduces customer confusion about which train to take at mainline stations, as customers do not need to determine which Green Line or Blue Line train will take them to the airport or skip the airport and take them to stations north of the airport. • allows frequency of service to be maintained for the communities north of Airport Trail on both the Green Line and Blue Line.
Prioritize the project, build it soon	• If Council approves the Airport Transit Study, it will be prioritized with all other transportation infrastructure projects for funding and construction.
Consider luggage space/service	• One of the factors in deciding that an Automated People Mover is the most appropriate technology for this transit link is that it provides customers with wider doors and can accommodate luggage well. • The stations have not been designed yet. Ensuring that it is easy for people carrying luggage to travel through the space will be taken into consideration.
Minimize travel time/stops	• Automated People Mover was selected as the recommended technology for the Airport Transit Connector as it enables faster turn-around time at stations, which saves 25% in travel and wait times.
Secure funding	• To secure funding a functional planning study needs to be completed and approved by Council. • If Council approves the Airport Transit Study, it will be prioritized with all other transportation infrastructure projects for funding and construction.
What participants don't like about the plan	
No direct link to downtown	• A separate line is planned as it is more cost-effective and provides for better customer experience. The benefits of a separate line are: ○ Service planning and operations are flexible and scalable to meet demands. ○ Allows for stations to be sized to meet Airport Transit Connection demands. A spur forces the Airport Transit

	Connection station platforms to accommodate 4-car-trains. ○ The frequency of service can be maintained for the communities north of Airport Trail on both the Green Line and Blue Line. ○ The frequency of service for the Airport Transit Connection is not limited to mainline service. ○ The system is easy to understand and reduces customer confusion about which train to take at the mainline stations. • The recommended APM technology will allow for frequent service reducing the impact of transfers at the mainline stations.
Spend money elsewhere	• There is currently no funding for the design and construction of this connection. • To secure funding a functional planning study needs to be completed and approved by Council. • If Council approves the Airport Transit Study, it will be prioritized with all other transportation infrastructure projects for funding and construction.
Not enough priority, progress is too slow	• While we have heard that this is an important service for Calgarians and visitors to the city, a functional planning study needs to be completed before funding can be secured for design work and construction.
Requires a transfer	A separate line for the Airport Transit Connection is planned as it: • allows for stations to be sized to meet the demands of this line. • reduces customer confusion about which train to take at mainline stations, as customers do not need to determine which Green Line or Blue Line train will take them to the airport or skip the airport and take them to stations north of the airport. • allows frequency of service to be maintained for the communities north of Airport Trail on both the Green Line and Blue Line.
Different technologies, patchwork system	Automated People Mover (APM) is the recommended technology for the following reasons: • APMs can run more frequently as drivers don't need to change ends at the terminal stations, reducing the time required to sit at these stations. A faster turn-around at the airport station allows for a 25% savings in travel and wait times. • Better customer experience with wider doors and accommodation of luggage. • Lower operating cost than LRT for similar passenger capacity. • Reduced station sizes and related infrastructure.