Airport Transit Connector Blue Line to Airport

Connecting the Blue Line LRT from 88 Ave NE Station to the Airport, this project brings travelers and employees to and from the Calgary International Airport, with a stop in the NE industrial area, via a new transit line.

2048 WEEKDAY RIDERSHIP 13,000

CAPITAL COST \$600,000,000

NET ANNUAL OPERATING COST \$6,800,000

BENEFITS SCORE



Additional Considerations

- Dependent on future construction of Blue Line NE to 88 Avenue Station.
- Coordination required with Airport Trail NE interchanges and Calgary International Airport master planning and infrastructure investments.
- Current Airport demand is met by Routes 100 and 300, future travel demand forecasted increases support mode progression to a higher capacity rapid transit connection.
- Functional planning complete.
- Operating cost primarily based on increased service hours and frequency on the Airport Connector.
- Moderate risk to ridership in Increased Crisis COVID-19 recovery scenario due to decreased airport travel.
- Supports Calgary's Economic Strategy by connecting rapid transit lines and enhancing access between the Centre City, airport and the

ISC: UNRESTRICTED

Length 6 km

Readiness No

Technology People Mover

Trip Generators Airport

Page 1 of 20

Airport Transit Connector – Green Line to Airport

Connecting the Green Line LRT from 96 Ave N Station to the Airport, this project brings travelers and employees to and from the Calgary International Airport, with several industrial area stops, via a new transit line.

2048 WEEKDAY RIDERSHIP 9.500

CAPITAL COST \$750,000,000

NET ANNUAL OPERATING COST \$-3,200,000

BENEFITS SCORE

59



Additional Considerations

- Dependent on future Green Line construction to 96 Ave N.
- Current Airport demand is met by Routes 100 and 300, future travel demand forecasted increases support mode progression to a higher capacity rapid transit connection.
- Requires coordination with Green Line LRT, Aurora Business Park planning/development, and Calgary International Airport master planning and infrastructure investments.
- Functional planning complete.
- Operating cost savings primarily based on removal of route 300.
- Moderate risk to ridership in Increased Crisis COVID-19 recovery scenario due to decreased airport travel.
- Supports Calgary's Economic Strategy by connecting rapid transit lines and enhancing access between the Centre City, airport and the region

egion. ISC: UNRESTRICTED Length 5 km

Readiness No

Technology People Mover

Trip Generators Airport,

industrial area

TT2020-1289 ATTACHMENT 3 Page 2 of 20

Blue Line NE -Saddletowne to 88 Ave NE

Extending the existing Blue Line LRT further to the NE, this project provides LRT service to high-density northeast Calgary communities, also enabling the Blue Line portion of the Airport Connector.

2048 WEEKDAY RIDERSHIP 3.500

CAPITAL COST \$158,000,000

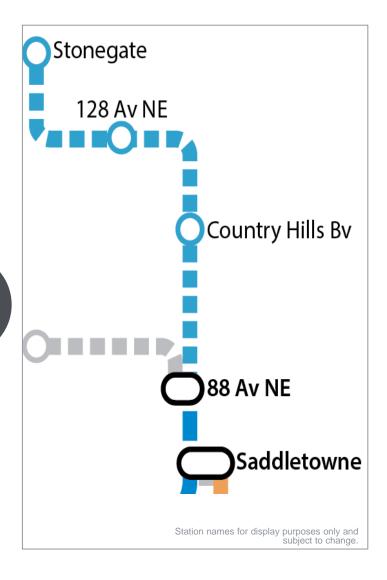
NET ANNUAL OPERATING COST \$1,000,000

BENEFITS SCORE

48

Additional Considerations

- Serves new and developing communities and provides the transfer station between the Blue Line and Airport Transit Connector.
- Land acquisition near completion.
- Enables Blue Line Airport Transit Connector.
- Requires coordination with the Airport Transit Connector, specifically the transfer station connecting the two services.
- Functional Study approved by Council after stakeholder and public consultation in 2012.
- Operating cost based on shorter LRT feeder routes and increased LRT length.
- Presents logical mode progression from
- · feeder bus network to LRT.
- Moderate to high risk in all COVID-19 recovery scenarios due to potential for decreased commuting, significant impact in Increased Crisis scenario from decreased travel.



Length 0.9 km

Readiness Yes

Technology LRT

Trip Generators Northeast communities

ISC: UNRESTRICTED TT2020-1289 ATTACHMENT 3 Page 3 of 20

Blue Line NE - 88 Ave to 128 Ave NE

Extending the Blue Line LRT by two stations to Country Hills Blvd. and 128 Ave. NE, this project provides LRT service to high-density developed and developing northeast Calgary communities.

2048 WEEKDAY RIDERSHIP 9.700

CAPITAL COST

\$405,000,000

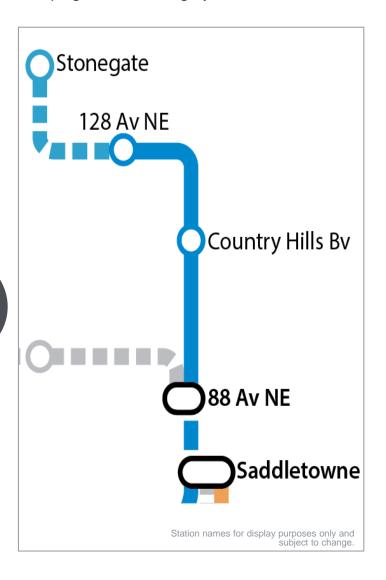
NET ANNUAL OPERATING COST \$2,300,000

BENEFITS SCORE

68

Additional Considerations

- The Blue Line NE extension from 88 Ave NE to 128 Ave NE serves new and developing communities.
- Requires coordination with the Airport Transit Connector, specifically the transfer station connecting the two services.
- Functional Study approved by Council after stakeholder and public consultation in 2012.
- Operating cost based on shorter LRT feeder routes and increased LRT length.
- Significant impact in all COVID-19 recovery scenarios due to decreased commuting and slow to negative growth in new communities.



Length 4.2 km

Readiness Yes

Technology LRT

Trip Generators NE communities, MAC at Country Hills Blvd

ISC: UNRESTRICTED TT2020-1289 ATTACHMENT 3 Page 4 of 20

Blue Line NE - 128 Ave to Stonegate NE

Extending the Blue Line LRT by one station to Stonegate NE, this project provides LRT service to high-density developing northeast Calgary communities with a primary focus on serving the industrial area.

2048 WEEKDAY RIDERSHIP 3.700

CAPITAL COST \$160,000,000

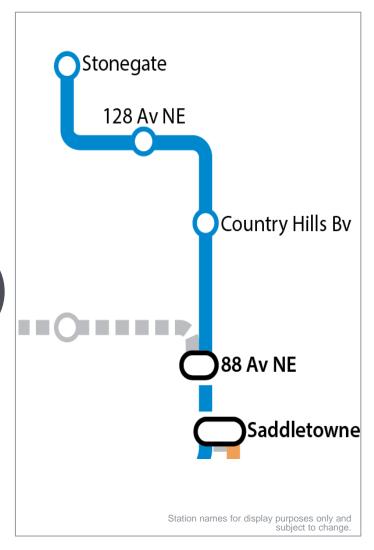
NET ANNUAL OPERATING COST \$2,400,000

BENEFITS SCORE

39

Additional Considerations

- The Blue Line NE extension from 128 Ave NE to Stonegate serves new and developing communities and industrial areas.
- · Functional planning not complete.
- Operating cost based on shorter LRT feeder routes and increased LRT length.
- Less impacted by Transformational Change COVID-19 recovery scenario due to front line worker ridership to the industrial area, but significant impact due to location in a new community which may experience slower development and relies first on extension to 128 Ave NE.



Length 2.1 km

Readiness No

Technology LRT

Trip Generators Nev

New NE residential and industrial developments

ISC: UNRESTRICTED TT2020-1289 ATTACHMENT 3 Page 5 of 20 developments

Blue Line W – Extension to 85 St SW

Extending the existing Blue Line West LRT by one station, this project provides LRT service to existing communities in West Calgary.

2048 WEEKDAY RIDERSHIP 1.500

CAPITAL COST \$213,000,000

NET ANNUAL OPERATING COST \$5,400,000

BENEFITS SCORE

31



Additional Considerations

- The current Blue Line West terminus, 69 St SW Station, has the highest ridership of the West LRT stations, likely a combination of adjacent land uses (multiple institutional and recreation uses) and feeder bus service to the station. A new station at 85 St W may transfer some of this this high ridership to the new terminus.
- Future LRT right-of-way has been reserved at the early stages of community planning.
- Operating cost attributed to additional length, and therefore service hours, on the Blue Line.
- Significant impact projected in all COVID-19 recovery scenarios due to reduced commuting, especially given nature of trips on this leg of the LRT.

Length 2.1 km

Readiness No

Technology LRT

Trip Generators West

communities

ISC: UNRESTRICTED TT2020-1289 ATTACHMENT 3 Page 6 of 20

Red Line S - Extension to 210 Ave S

Extending the existing Red Line LRT S by two stations to 210 Ave. S, this project provides LRT service to developing residential communities.

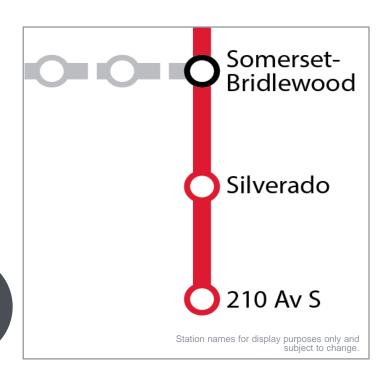
2048 WEEKDAY RIDERSHIP 14,700

CAPITAL COST \$341,000,000

NET ANNUAL OPERATING COST \$9,300,000

BENEFITS SCORE

72



Additional Considerations

- Extends the Red Line South, Calgary's highest ridership LRT leg, to serve new and developing communities.
- Potential to increase capacity issues during peak periods as additional riders will be attracted to the system.
- Includes a Storage and Maintenance Facility (MSF) to expand Calgary Transit's ability to store and maintain light rail vehicles to ensure maximum lifecycle from this investment.
- Operating cost attributed to additional length, and therefore service hours, on the Red Line.
- Significant impact in all COVID-19 recovery scenarios from commuting reduction and risk that suburban development will slow; however, construction could be justified by need for new SMF.

Length 3.5 km

Readiness No

Technology LRT

Trip Generators New south communities

ISC: UNRESTRICTED TT2020-1289 ATTACHMENT 3 Page 7 of 20

Westbrook to MRU Transit Connection

Providing a connection in SW Calgary between Westbrook Station and Mount Royal University, this project would use streetcars to serve the 37 Ave SW corridor.

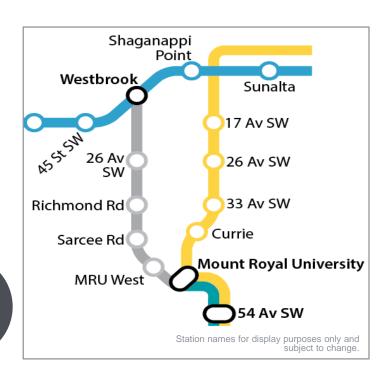
2048 WEEKDAY RIDERSHIP 9.400

CAPITAL COST \$292,000,000

NET ANNUAL OPERATING COST \$9,300,000

BENEFITS SCORE

85



Additional Considerations

- MAX Teal already serves this area using same route and currently has capacity. This project would likely result in shortened MAX Teal route.
- There are potential benefits and risks of introducing new streetcar technology to the existing system.
- Operating cost attributed to high frequency, and therefore additional service hours, on the streetcar line.
- Small impact on ridership in Increased Crisis COVID-19 recovery scenario if Westbrook mall doesn't redevelop; minimal to no impact in Rapid Recovery and Transformational Change scenarios.

Length 5.2 km

Readiness No

Technology Streetcar

Trip Generators Westbrook, Mount Royal University

ISC: UNRESTRICTED TT2020-1289 ATTACHMENT 3 Page 8 of 20

MAX 301 North

Upgrading the current Route 301 to reflect a MAX level service, this project aims to improve travel times and transit service along the Centre Street N corridor.

2048 WEEKDAY RIDERSHIP 12,500

CAPITAL COST \$22,500,000

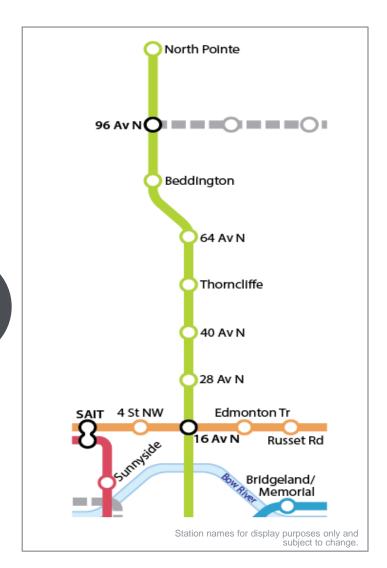
NET ANNUAL OPERATING COST \$1,700,000

BENEFITS SCORE

91

Additional Considerations

- Contributes to mode progression and increased transit service along the Green Line North corridor.
- Requires coordination with Green Line Stage 1 construction and future tie-ins, and depends on Green Line Stage 1 timelines.
- Operating cost attributed to route length and high revenue from ridership.
- Minimal impact in all COVID-19 recovery scenarios as Centre St ridership was steady during COVID-19.



Length 13.5 km

Readiness Yes

Technology BRT

Trip Generators Downtown,
Centre Street N
Corridor

ISC: UNRESTRICTED TT2020-1289 ATTACHMENT 3 Page 9 of 20

MAX 302 South

Upgrading the existing route Route 302 to reflect an in-street MAX level service this project aims to improve travel times and transit service from SE Calgary to Downtown.

2048 WEEKDAY RIDERSHIP 6.400

CAPITAL COST \$13,500,000

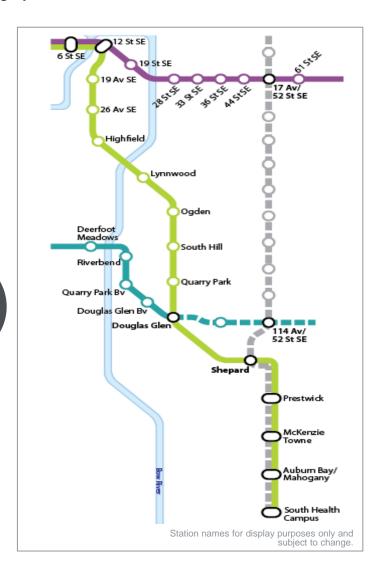
NET ANNUAL OPERATING COST \$2,000,000

BENEFITS SCORE

67

Additional Considerations

- Contributes to mode progression and increased transit service along the Green Line South corridor.
- Requires coordination with Green Line Stage 1 construction and future tie-ins, and depends on Green Line Stage 1 timelines.
- Requires coordination with 52 St BRT, as the routes connect in the far SE. Capital cost is subject to change depending on project sequencing with 52 St BRT.
- Operating cost attributed to route length.
- Significant impact in all COVID-19 recovery scenarios from commuting reduction, but industrial connections mitigate impact.



Length 8.5 km

Readiness Yes

Technology BRT

Trip Generators

Downtown, Quarry Park, SE communities & industrial_{Page 10 of 20}

ISC: UNRESTRICTED TT2020-1289 ATTACHMENT 3

MAX Purple/17 Ave SE - 52 St E to 84 St SE

Extending the existing MAX Purple transitway from its current end point at 52 St E to the current MAX Purple route terminus at 84 St SE, this project improves travel time and efficiency.

2048 WEEKDAY RIDERSHIP 3.300

CAPITAL COST \$43,000,000

NET ANNUAL OPERATING COST \$-200,000

BENEFITS SCORE

43



Additional Considerations

- Improves transit service levels on existing MAX Purple route to current terminus at East Hills.
- Contributes to development along 17 Ave SE, and sets up potential regional transit connections to the east.
- Operating cost savings due to faster run times on the same length of route.
- Moderate impact in Transformational Change COVID-19 recovery scenario due to resiliency of 17 Ave main street corridor. Moderate impact in Increased Crisis scenario due to established communities potentially shrinking in population. Minimal impact in Rapid Recovery Scenario from reduced commuting.

Length 2.8 km

Readiness Yes

Technology BRT

Trip Generators International Ave, East Hills

ISC: UNRESTRICTED TT2020-1289 ATTACHMENT 3 Page 11 of 20

MAX Purple/17 Ave SE - 84 St E to City Limits

Extending the existing MAX Purple route and transitway from its current terminus at 84 St SE to the east City Limits, this project provides BRT service to new communities.

2048 WEEKDAY RIDERSHIP 2.200

CAPITAL COST \$71,000,000

NET ANNUAL OPERATING COST \$1,500,000

BENEFITS SCORE

38



Additional Considerations

- Project timing largely depends on the rate of development in east Calgary.
- Contributes to development along 17 Ave SE, and sets up potential regional transit connections to the east.
- Operating cost increase due to added route length, therefore additional operating hours to serve a longer route.
- Higher risk in Transformational Change and Increased Crisis COVID-19 recovery scenarios due to less suburban development. Minimal impact in Rapid Recovery scenario due to reduced commuting.

Length 3.3 km

Readiness No

Technology BRT

Trip Generators New west communities

ISC: UNRESTRICTED TT2020-1289 ATTACHMENT 3 Page 12 of 20

MAX Purple/17 Ave SE - Blackfoot Truck Stop to Downtown/Green Line

Extending the existing MAX Purple transitway from its current end point at Blackfoot Truckstop westward to Downtown, this project improves travel time and efficiency, while creating a connection to Green Line South.

2048 WEEKDAY RIDERSHIP 1.980

CAPITAL COST \$156,000,000

NET ANNUAL OPERATING COST \$-1,700,000

BENEFITS SCORE

44



Additional Considerations

- Increases transit service levels east of downtown and provides Green Line connection.
- Requires coordination with Green Line on the Green line tie-in connection and timelines.
- Operating cost savings due to faster run times on the same length of route as exists today.
- Moderate impact in Transformational Change COVID-19 scenario since this project builds connections to other downtown lines, but has high resilience due to nature and ridership of MAX Purple along a main street. Moderate impact in Increased Crisis scenario from reduced commuting to downtown. Minimal impact in Rapid Recovery scenario from slightly reduced commuting.

Length 1.4 km

Readiness Yes

Technology BRT

Trip Generators Downtown, Inglewood

Max Teal/South Crosstown BRT - Extension to 68 St E

Extending the existing MAX Teal route in-street further east to 68 St, this project provides BRT service to Calgary's industrial and employment area.

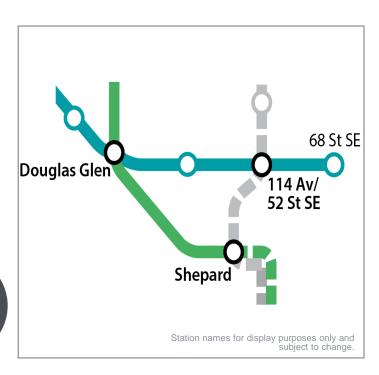
2048 WEEKDAY RIDERSHIP 1.500

CAPITAL COST \$6,600,000

NET ANNUAL OPERATING COST \$4,600,000

BENEFITS SCORE

28



Additional Considerations

- Provides additional connections in SE Calgary to the MAX Teal route which currently serves Westbrook, Mount Royal University, and Rockyview Hospital.
- Tie-in and coordination with WB to MRU transit connection is required.
- Increased operating cost due to increased route length and more service hours required.
- Minimal impact in all COVID-19 recovery scenarios due to nature of the route serving industrial and front line work areas.

Length 4.5 km

Readiness Yes

Technology BRT

Trip Generators Quarry Park, SE industrial

ISC: UNRESTRICTED TT2020-1289 ATTACHMENT 3 Page 14 of 20

North Regional Context Study/144 Ave N BRT - Tuscany to Nose Creek

Providing a new in-street BRT route across north Calgary on 144 Ave, this project serves new and developing residential communities.

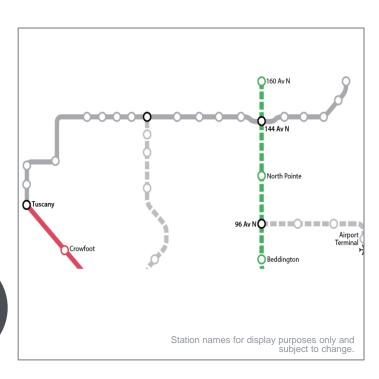
2048 WEEKDAY RIDERSHIP 10,800

CAPITAL COST \$42,000,000

NET ANNUAL OPERATING COST \$21,400,000

BENEFITS SCORE

79



Additional Considerations

- Project timing largely depends on the rate of development in north Calgary.
- Provides a significant crosstown connection in the north.
- High operating cost attributed to long route length.
- Moderate risk in Transformational Change and Increased Crisis COVID-19 recovery scenarios since developing communities may not experience the same rate of urban growth due to increased exurban growth, and may take longer for buildout. Minimal impact in Rapid Recovery scenario.

Length 22 km

Readiness No

Technology BRT

Trip Generators New north communities

ISC: UNRESTRICTED TT2020-1289 ATTACHMENT 3 Page 15 of 20

NW-HUB / West Campus Mobility

Providing a new in-street circulator route to serve the University of Calgary and Foothills Medical Centre area, this project improves transit service in a major activity centre and newly developing residential community.

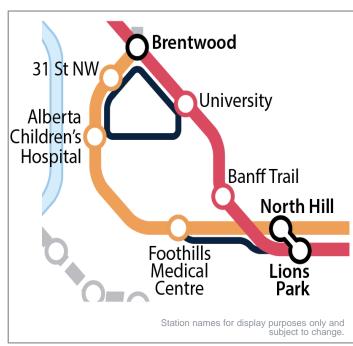
2048 WEEKDAY RIDERSHIP 4.220

CAPITAL COST \$22,000,000

NET ANNUAL OPERATING COST \$5,300,000

BENEFITS SCORE

67



Additional Considerations

- NW Hub provides enhanced transit service to major activity centres and the actively developing community of University District.
- Operating cost attributed to increased service hours with introduction of new route.
- Low impact in Transformational Change and Increased Crisis COVID-19 recovery scenarios due to the project serving a major activity centre and front line work, and minimal risk to innercity development in University District. Minimal impact in Rapid Recovery scenario.

Length 5 km

Readiness No

Technology BRT

Trip Generators University, Foothills

Hospital, McMahon Stadium

ISC: UNRESTRICTED TT2020-1289 ATTACHMENT 3 Page 16 of 20

Route 305 West

Upgrading the existing Route 305 in-street service, this project improves transit service between new and developed residential communities and Canada Olympic Park in west Calgary, and Downtown.

2048 WEEKDAY RIDERSHIP 6.700

CAPITAL COST \$30,000,000

NET ANNUAL OPERATING COST \$7,300,000

BENEFITS SCORE

72



Additional Considerations

- Route 305 currently operates as peak only service. Route 1 currently provides all-day service along the same route. Capacity exists along both routes.
- Coordination and consideration is required on the effect of upgrading Route 305 on Route 1.
- Operating costs due to increased service hours attributed to shorter headways and all-day service.
- High impact in Transformational Change and Increased Crisis COVID-19 recovery scenarios due to reduced commuting; impact slightly buffered by main street service in Bowness. Moderate risk in Rapid Recovery scenario.

Length 13 km

Readiness Yes

Technology BRT

Trip Generators Downtown, Bowness, Canada

Olympic Park

ISC: UNRESTRICTED TT2020-1289 ATTACHMENT 3 Page 17 of 20

Shaganappi HOV - Bowness Road to Stoney Trail

Enhancing transit service in NW Calgary along Shaganappi Trail through High Occupancy Vehicle (HOV) Lanes, this project provides better transit service for established communities.

2048 WEEKDAY RIDERSHIP 8.000

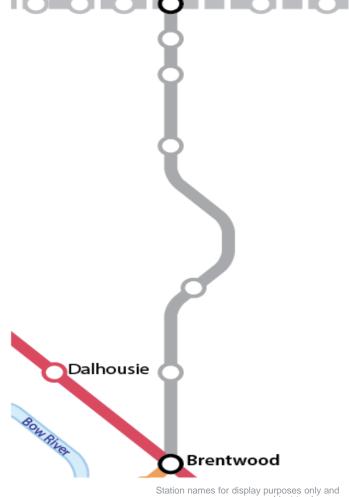
CAPITAL COST \$179,000,000

NET ANNUAL OPERATING COST \$6,100,000

BENEFITS SCORE

Additional Considerations

- Project depends on traffic and congestion along Shaganappi Tr to trigger need for HOV lanes.
- Capital cost represents all-in cost for Shaganappi Tr corridor construction, of which transit will use the HOV lanes.
- Operating costs due to increased service hours attributed to short headways.
- Significant impact in all COVID-19 recovery scenarios due to reduced commuting.



subject to change.

Length 14 km

Readiness No

Technology BRT

Trip Generators NW

communities

Page 18 of 20 ISC: UNRESTRICTED TT2020-1289 ATTACHMENT 3

52 Street E BRT - Saddletowne to Seton

Enhancing transit service with a north to south crosstown route in-street in east Calgary, this project connects new and developed residential communities in north and south Calgary with the SE industrial area.

2048 WEEKDAY RIDERSHIP 20,500

CAPITAL COST \$60,000,000

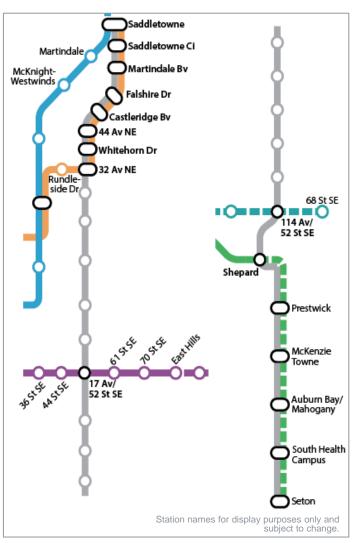
NET ANNUAL OPERATING COST \$14,600,000

BENEFITS SCORE

92

Additional Considerations

- Route 23, which currently serves a portion of the 52 St corridor, is at or near capacity.
- Considerations required for tie-ins to MAX 302 and Green Line connections in the south.
- Capital cost subject to change depending on project sequencing with MAX 302 South due to shared stops.
- Operating costs due to sheer length of route and increased service hours attributed to short headways.
- Low to no impact in all COVID-19 recovery scenarios due to route directness serving industrial areas, built-out residential communities, and the hospital.



Length 30 km

Readiness Yes

Technology BRT

Trip Generators SE industrial, South Health

South Health Campus, Seton

ISC: UNRESTRICTED TT2020-1289 ATTACHMENT 3 Page 19 of 20

Attachment 3 TT2020-1289

162 Ave BRT - Somerset **Bridlewood Station to Providence**

Providing a new transit route in SW Calgary, this project serves newly developing residential

2048 WEEKDAY RIDERSHIP

6.500

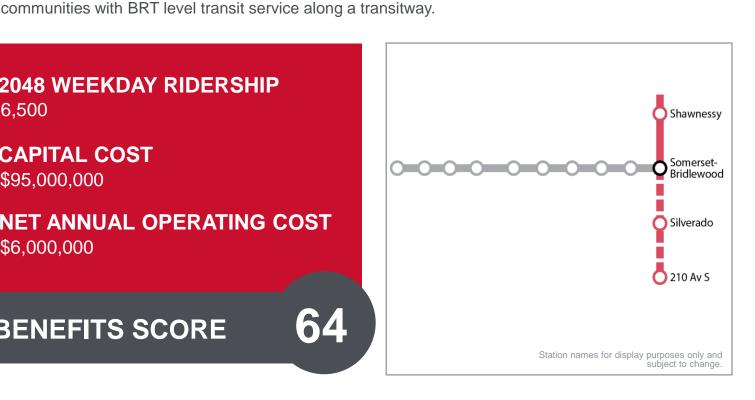
CAPITAL COST

\$95,000,000

NET ANNUAL OPERATING COST

\$6,000,000

BENEFITS SCORE



Additional Considerations

- Project timeline largely depends on buildout of new communities in the SW providence area.
- Transitway right of way has been protected and considered during planning of new communities.
- High operating costs due to short headways reflecting BRT level of service.
- High to significant impact in all COVID-19 recovery scenarios due to reductions to commuting and potential for slow growth in new communities.

Length 9 km

Readiness No

Technology BRT

Trip Generators SW

communities