Calgary

Southwest BRT Response to Public Questions

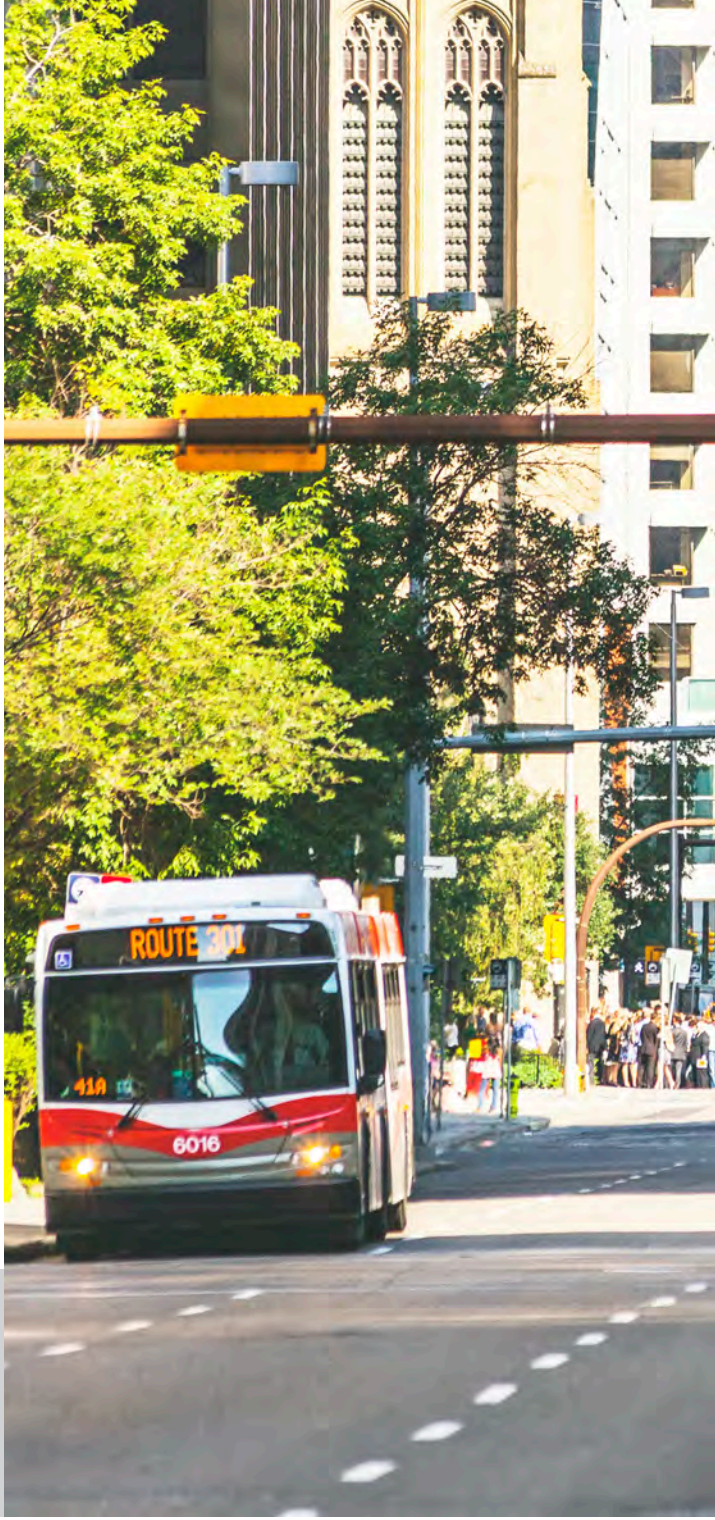
July 2016

Contents

Introduction

The City of Calgary has heard a number of questions and comments about the Southwest Bus Rapid Transit (BRT) project through community and public engagement, and at the April 20, 2016, Standing Policy Committee for Transportation and Transit (SPC for T&T). Administration committed to responding to the public's questions and reporting back at the July 20, 2016, meeting of SPC for T&T.

Administration has developed this document to accompany the presentation to be given at the July 20, 2016, SPC for T&T meeting. Questions from the public have been paraphrased for clarity and categorized by theme.



What is a BRT?

Bus Rapid Transit (or BRT) is a fast, reliable bus service. Cities around the world have adopted BRT services, and view them as an integral part of their overall transit and transportation plans. BRT routes have fewer stops than a regular bus route, which means they can cover more ground, more quickly.

Public Engagement

Your questions, answered.

1. Why didn't we hear about the Southwest BRT project until so late in the process? A number of speakers at committee quoted that they first heard about the project at the Southwest BRT and Southwest Calgary Ring Road open houses in October 2015.

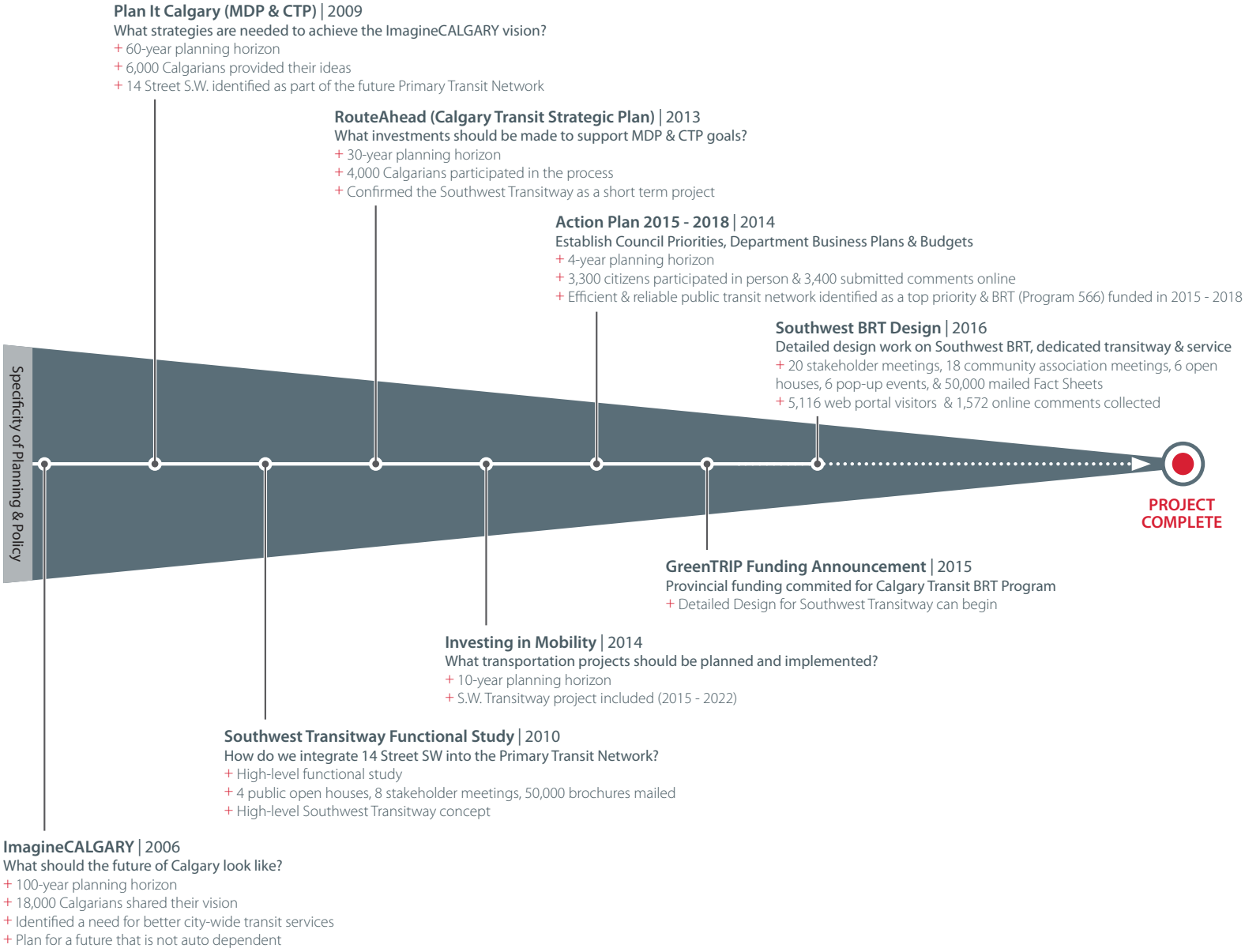
The Southwest BRT project, along with the three other projects comprising the BRT Program, dates back to 2005 when the City of Calgary launched the imagineCALGARY initiative. More than 18,000 Calgarians contributed to imagineCALGARY to produce a long range urban sustainability plan for Calgary.

Following the creation of the imagineCALGARY Plan, City Council asked City staff to create integrated plans for the future of transportation and land use. The City engaged more than 6,000 Calgarians to shape the vision for these plans through a process called Plan It Calgary. The result of Plan It Calgary was a new Municipal Development Plan (MDP) and the Calgary Transportation Plan (CTP), which were approved by Council in 2009.

The MDP and CTP identified the development of a Primary Transit Network in Calgary, which comprises a permanent network of high-frequency transit services (i.e., LRT, streetcars/trams and frequent bus service), including the Southwest BRT corridor. In 2010 City Council approved a Notice of Motion directing City staff to conduct a functional planning study for the Southwest BRT to identify routing, infrastructure needs, fleet requirements and cost estimates. Stakeholder meetings and public information sessions were held in 2010 to provide information and solicit feedback on the Southwest BRT to inform the functional planning study. Four public information events in November, 2010, were promoted through posters, community association newsletter updates, bold signs, and direct mail drops to 50,000 homes and businesses, which were all considered best practices at the time.

Stakeholder meetings and public information sessions were held in 2010 to provide information and solicit feedback on the Southwest BRT to inform the functional planning study.

Southwest BRT planning and policy timeline



The Southwest BRT functional planning study was completed in 2011 and was approved by Council following a Standing Policy Committee on Land Use, Planning and Transportation public hearing on January 19, 2011, where the public were invited to speak for or against the project. The Southwest BRT project was then included in engagement for RouteAhead (approved on March 4, 2013), and for Investing in Mobility (approved May 26, 2014).

The BRT program (including the Southwest BRT) received funding in September 2015 through the Province of Alberta's GreenTRIP program, and preliminary design on all four projects began as soon as the funding was announced. Within three weeks of the funding announcement and program launch, The City held two public information sessions and began the first of dozens of conversations with communities, commercial and institutional stakeholders. Promotion for the information sessions included bold signs, direct mail to 50,000 nearby residences and businesses, and social media advertising. The sessions saw a combined 800 attendees, which is considered high turnout.

Within three weeks of the funding announcement and project launch, The City held two public information sessions and began the first of dozens of conversations with communities, commercial, and institutional stakeholders.

2. Why was there such a time lag between the first open houses (2010) and the latest round of open houses (2015/2016)? Speaker stated she attended the Southwest BRT open houses in 2010, but they were high level concepts, then she didn't hear about the project again until 2015.

Based on the work required within each stage of long-term planning projects, there is often a significant amount of time between stages. The 2010 engagement on the Southwest BRT project as well as other City engagements that were used to inform the planning of the BRT Program fed into different administrative stages or steps. The checkpoints on this program were: the development of a functional planning study, the approval of the functional plan and the securing of capital budget.

The SW Transitway Functional Planning Study was conducted by an external consultant for The City of Calgary and determined the feasibility and desire for improved public transit on this corridor and established a proof of concept that a Transitway could function along 14 Street S.W. The Professional Engineers who were involved in the study, both for The City as well as for the Consultant, have confirmed that at no time was this study predicated on a predetermined outcome. The study undertook a technical analysis to evaluate the feasibility of the Transitway facility, and to supply a recommended option based on the technical analysis and the engagement conducted at that time.

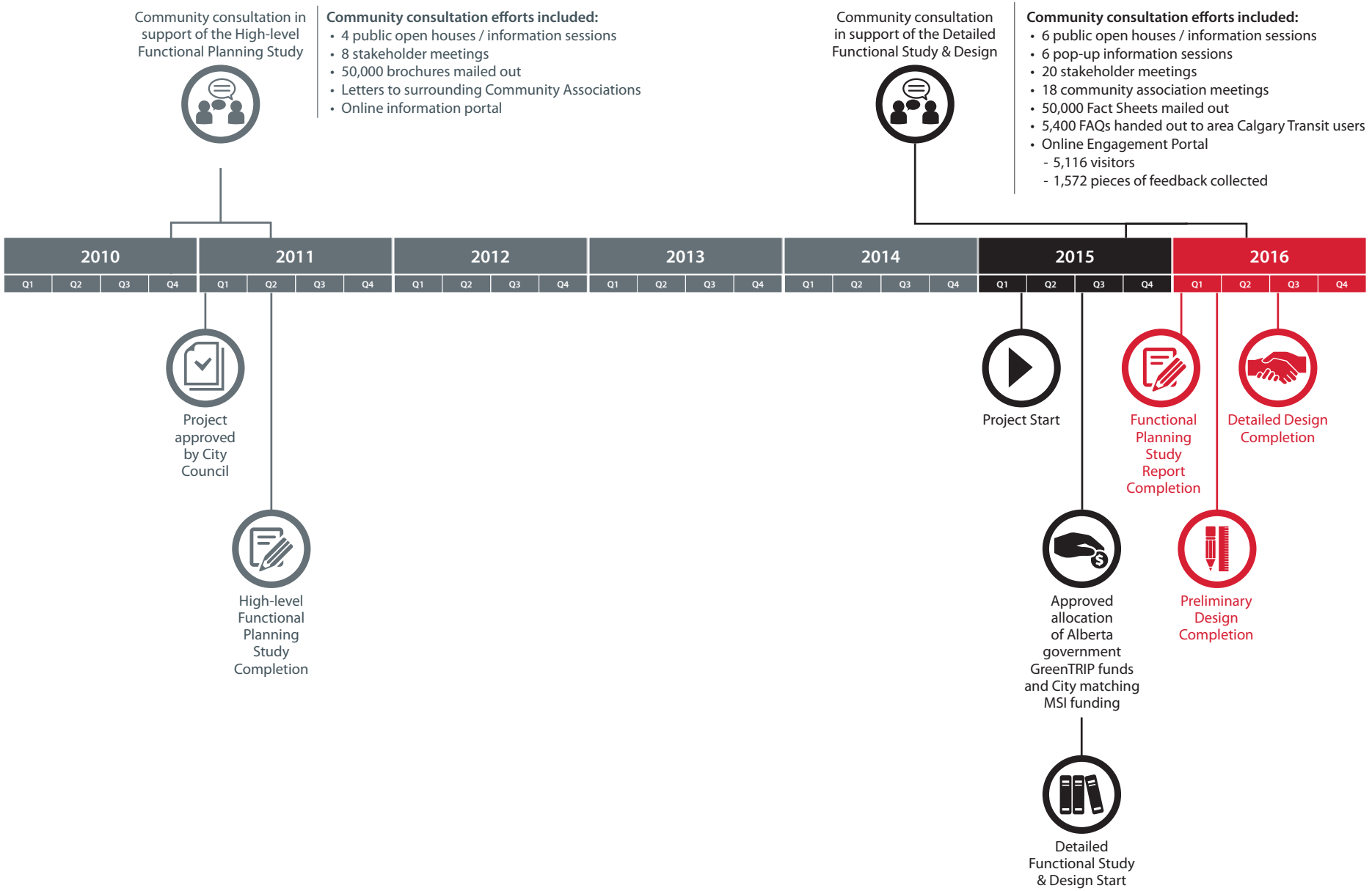
The engagement done in 2010 was incorporated into a report that was submitted to the Standing Policy Committee on Land Use, Planning and Transportation public hearing on January 19, 2011, and subsequently to City Council for approval to proceed as a project. Although the Southwest BRT functional planning study was approved by Council in 2011, it required capital budget funding for the project to move forward with design and construction.

Funding approval for the project was not approved by the Alberta Government until September 2015, and within weeks of that funding announcement the project team began to hold information sessions to re-introduce the project to the public, answer questions, and gather comments for consideration as the design commenced. Since the funding was approved, the City has held multiple engagement sessions with stakeholders and the community, including 18 community association and community group meetings; 20 meetings with stakeholders whose land is directly affected, including Rockyview General Hospital, Heritage Park, Mount Royal University and Currie Barracks; 6 pop-up information events at popular destinations near the route and 6 public open house/information sessions, to refine and progress the concept into a detailed design.

Although there is a gap in time between when the original 2010 engagement on the functional planning study was completed and the October 2015 open houses following funding approval, the Southwest BRT project along with the other three BRT projects in the Program were included in RouteAhead, Investing in Mobility, and Action Plan public engagement that occurred from 2011 to 2015.

More recently, the open houses, meetings, and online engagement held since October 2015 have provided an additional opportunity for The City to listen, understand, and consider the questions, concerns, and comments raised by the public. City staff have carefully considered and incorporated the feedback into project design elements, and have worked to provide as much information as possible in response to the questions outlined in this document.

Southwest BRT project timeline



3. Can we "reset" the Southwest BRT Project and start anew?

City Council and the various City committees provide direction to Administration with regard to projects, and have the ability to direct Administration to pause or adjust a project.

Through the public information sessions, meetings and other communications activities that were carried out throughout the fall of 2015 and winter of 2016, many questions about the project were raised. The City has heard and reviewed that feedback. As a result, City Administration has reviewed the need, design options, and network implications of the Southwest BRT project. At the conclusion of this review, the Southwest BRT remains aligned with The City's long range strategic plans, and the proposed plan remains the preferred option. Even if it were to start anew, it is expected that the project would arrive at the same recommendation.

The Southwest BRT project team has carefully considered and incorporated the feedback provided by the public to refine project concepts. The past eight months have allowed City staff to evaluate concerns and identify design improvements with those comments in mind. Public and stakeholder input have helped the project team improve and refine stop locations, intersection design, transit facility type, and station design.

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4. Issue is process – would some further delay be a worthwhile exercise?

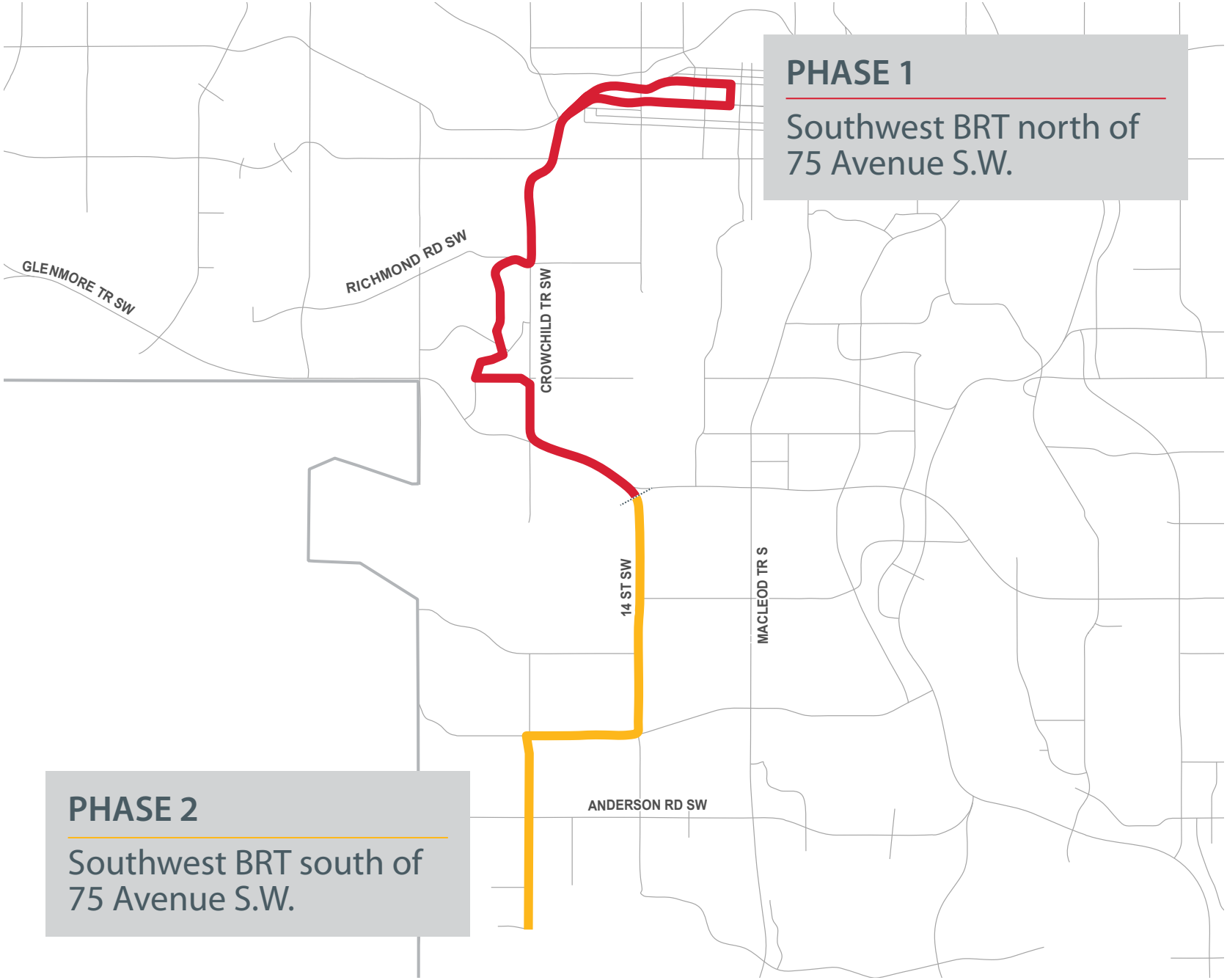
Since April 20, 2016, the project team has been working to respond to the questions raised by the public, and looking at the feedback provided, to ensure the project designs adequately consider and account for the concerns and comments The City has heard. This work has slowed the project pace, but is necessary to ensure all feedback is considered.

The project has also been divided into two phases to allow for some work to proceed north of Glenmore Trail while the project team spends more time working south of Glenmore Trail to confirm technical questions and stakeholder feedback has been reviewed and considered.

Administration has provided answers to the questions collected at the April 20, 2016, Transportation and Transit Committee Meeting within this document. In the coming months, Administration will connect with the public and stakeholders to discuss the next steps for the project.

The project team has also been working with ATCO to coordinate the Southwest BRT project with ATCO's planned nearby Urban Pipeline Replacement Program work. To ensure the two projects are coordinated, as presented at the April 20, 2016, Standing Policy Committee on Transportation and Transit, construction of the Southwest BRT south of 75 Avenue S.W. will be delayed to start following the ATCO gas pipeline relocation, allowing more time for coordination of design and construction. The project team will continue to work with ATCO as project timelines and details are clarified to ensure both projects are as coordinated as possible.

Through the work described here, Administration is confident in the proposed plan, and ultimately doesn't believe that further delay would result in a substantially different proposed plan.


PHASE 1
Southwest BRT north of 75 Avenue S.W.
PHASE 2
Southwest BRT south of 75 Avenue S.W.
GLENMORE TR SW
RICHMOND RD SW
CROWCHILD TR SW
14 ST SW
MACLEOD TR S
ANDERSON RD SW

5. Disconnect between what the public thinks is engagement and what The City thinks. Citizens want more than just input on station design; can the engagement be broadened to look at the larger question of the Southwest BRT? Not just minor details like the station design. Why is The City only asking questions to the public about aesthetics and not on whether we need this or not?

The project was determined necessary by Council in 2009 through the Calgary Transportation Plan and again under RouteAhead in 2013. The Southwest BRT Functional Planning Study was approved by Council in 2011. Engagement was included in each of these steps.

Because work had progressed on route planning, budget, and BRT network years prior to the funding announcement (as described in questions 1, 2, and 3) there initially weren't any decisions open for public input, as alignment, placement of stations and infrastructure were determined by transit needs, budget and technical feasibility. For this reason, information sessions served to inform the public rather than to seek input (or engage). Feedback forms were available at both information sessions and the project team reviewed all comments and considered all questions and ideas presented. Similarly, in meetings with community members, commercial and institutional stakeholders, the project team sought to primarily inform rather than to engage. All questions and ideas presented were considered. The exception to this level of engagement on the Southwest BRT project was with stakeholders whose property would be directly impacted by the project, such as Rockyview General Hospital or Heritage Park.

There will still be a need for public input to help develop the transit service plan for local routes connecting to the BRT. This process will be taking place in advance of the new BRT opening.

In early 2016, preliminary design on the projects had progressed to a point where the project team had concepts and design to share with the public, and so six public information sessions were planned for February and March. The intention of these sessions was to inform the public on the preliminary project plans, and to seek input on bus station design. These sessions were subsequently cancelled and the information and opportunity for engagement was moved online to the new Engage! portal.

As noted above, City staff solicited and received numerous comments, concerns, and questions from the public and stakeholders over the past several months, both at in-person sessions and on the online portal. Many excellent questions were asked, and we have reviewed these questions and suggestions, and have endeavoured to provide additional information and to refine some of the concepts to reflect the comments and concerns brought forward by the public. Much of this work is captured in this document, in response to these questions.

6. Why has there been such a lack of info and consultation on the Southwest BRT in comparison to other projects? E.g. 17 Avenue SE BRT

Information on all the BRT projects is available at calgary.ca. Relevant information is shared and updated regularly. Questions received on the Engage portal and answers provided will be shared on the program and project websites.

If there is still information on the project that you are not able to find, please make a request either through 311 or through the project email (BRT@calgary.ca).

Public engagement and communications on the other BRT projects is similar to what was undertaken on the Southwest BRT project.

One of the key differences between the engagement and communications efforts on the four BRT projects is that the 17 Avenue S.E. BRT project is more than the implementation of transit infrastructure, and is looking at re-configuring the corridor as a whole for all modes (pedestrians, bikes, transit, and vehicles). A Land Use Study was initiated for the corridor, which reviewed the land use and potential changes to land use along the corridor. This lead to additional engagement events that were tied to the land use planning efforts to look at how the commercial and retail developments of that corridor could evolve and re-develop over time.

If there is still information on the project that you are not able to find, please make a request either through 311 or through the project email (BRT@calgary.ca)

7. Why didn't The City follow the engage! policy?

The original engage! Policy was created in 2003, as part of The City's efforts to improve decision-making.

As outlined in the answer to Question #2, the original community consultation for this project sought to involve stakeholders in shaping the project, in accordance with the original policy.

This policy was amended in 2013 in order to ensure more consistent engagement practice, and a six-step process framework was subsequently developed. While the framework and tools were not in place for the 2010 engagement, The City has continually engaged with stakeholders and citizens on major City initiatives, while developing the consistency and standards that are in place today.

While important, stakeholder input is one of several factors that need to be considered in the development of a project. Other factors in this project included transit needs, cost and technical feasibility.

The majority of stakeholder engagement for infrastructure projects is typically conducted during the planning phases, such as Feasibility Studies and Concept Design stages. As the project moves toward more detailed design and/or implementation and construction stages, the engagement volume typically decreases, with an increased focus on informing stakeholders and the public of details and timing.

Because Southwest BRT project decisions (eg. alignment, infrastructure) were determined by transit needs, cost and technical feasibility, public input was not warranted on a project-specific basis once the program had received funding and entered the preliminary design phase. Once the project had progressed to a point where the project team was deciding on station design, The City asked the public for their insights and input on the design and features included in the bus stations. The engagement on station design and features was a ***Listen & Learn*** level on the engagement scale. The results of this engagement are shared in this information update and are available online.

City staff heard from many citizens and stakeholders with a variety of questions and concerns, and this feedback has informed and influenced the design of the project. City staff will continue to work to ensure the feedback is considered as project design progresses.

8. Who are the stakeholders? Primary stakeholders should be the citizens.

Stakeholders are anyone who is interested in and impacted by the project. Citizens are a stakeholder on all projects.

Each of the projects also has targeted stakeholders that are specific to the area: business, community associations, universities, institutions, etc. Stakeholders were identified during the Project Planning phase and include:

- **Citizens of Calgary which include residents in communities adjacent to the alignment, Calgary Transit customers, and commuters (pedestrians, cyclists, and motorists) through the area**
- **Community Associations of adjacent communities**
- **Businesses and property owners along the alignment and serviced by the BRT**
- **Ward 8, 11 and 13 Councillors**
- **Internal City of Calgary Business Units including Calgary Transit, Roads, Transportation Planning, Parks, Water Resources/Services, and Recreation**
- **Heritage Park**
- **Rockyview General Hospital/ Alberta Health Services/Carewest**
- **Mount Royal University**
- **Currie Barracks – Canada Lands Company;**
- **Lincoln Park – ATCO**
- **Glenmore Landing – RioCan**
- **Calgary Jewish Community Center**
- **Southland Leisure Centre**
- **Shallow Utility Companies including Oil & Gas Pipeline owners.**

"City staff heard from many citizens and stakeholders with a variety of questions and concerns, and this feedback has informed the project. City staff will continue to work to ensure the feedback is considered as project design progresses."

9. Where do we go to ask questions about the project?

Calgarians can use a number of channels to ask questions or gather information about the project, including the project webpage (**http://www.calgary.ca/SWBRT**), project email (**SWBRT@calgary.ca**), online engagement portal (**http://engage.calgary.ca/brt/**), the Mayor and Ward Councillors offices, or through 311.

The City also delivered a fact sheet and Frequently Asked Question document to 50,000 Calgarians living in southwest Calgary in early February, 2016. This fact sheet and FAQ are available on the website.


Gas Line

Your questions, answered.

10. There are a number of concerns with the gas line and also concerns with the integrity of the line underneath 14th Street S.W.

The City of Calgary project team has been working closely with ATCO to coordinate the Southwest BRT with ATCO's planned Urban Pipeline Replacement (UPR) Program work on 14 Street S.W. The UPR Program includes:

- Installing new high-pressure natural gas lines primarily alongside ring roads (Transportation/Utility Corridors) surrounding Calgary.
- Taking vintage high-pressure natural gas pipelines out of service.
- Installing new low-pressure natural gas lines and related infrastructure.

While the specifics of the UPR work at 14 Street are still in the design phase, it is anticipated to involve the following:

- Abandoning the existing high-pressure natural gas line currently located under 14 Street S.W.
- Installing a new high-pressure natural gas line into the Southwest Calgary ring road (TUC).
- Installing a new distribution (low-pressure) feeder line to be located under the existing median of 14 Street S.W.

There have been concerns raised regarding the condition, integrity, corrosion and pressure changes of the existing high-pressure line. These concerns will be eliminated by its abandonment. The new low-pressure distribution feeder line will exceed current pipeline construction standards and employ the latest technologies to ensure they are the safest in Alberta.

Additionally, concerns were raised about the potential for conflict between the current high-pressure natural gas line and the Southwest BRT. Depth of cover concerns have been raised (ie: there isn't enough cover between the top of the existing pipeline and the road). The proposed plan will remove this conflict.

See graphic on the next page for more detail or visit http://www.atcopipelines.com/upr.

The City of Calgary project team has been working closely with ATCO to coordinate the Southwest BRT with ATCO's planned Urban Pipeline Replacement (UPR) Program work on 14 Street S.W.

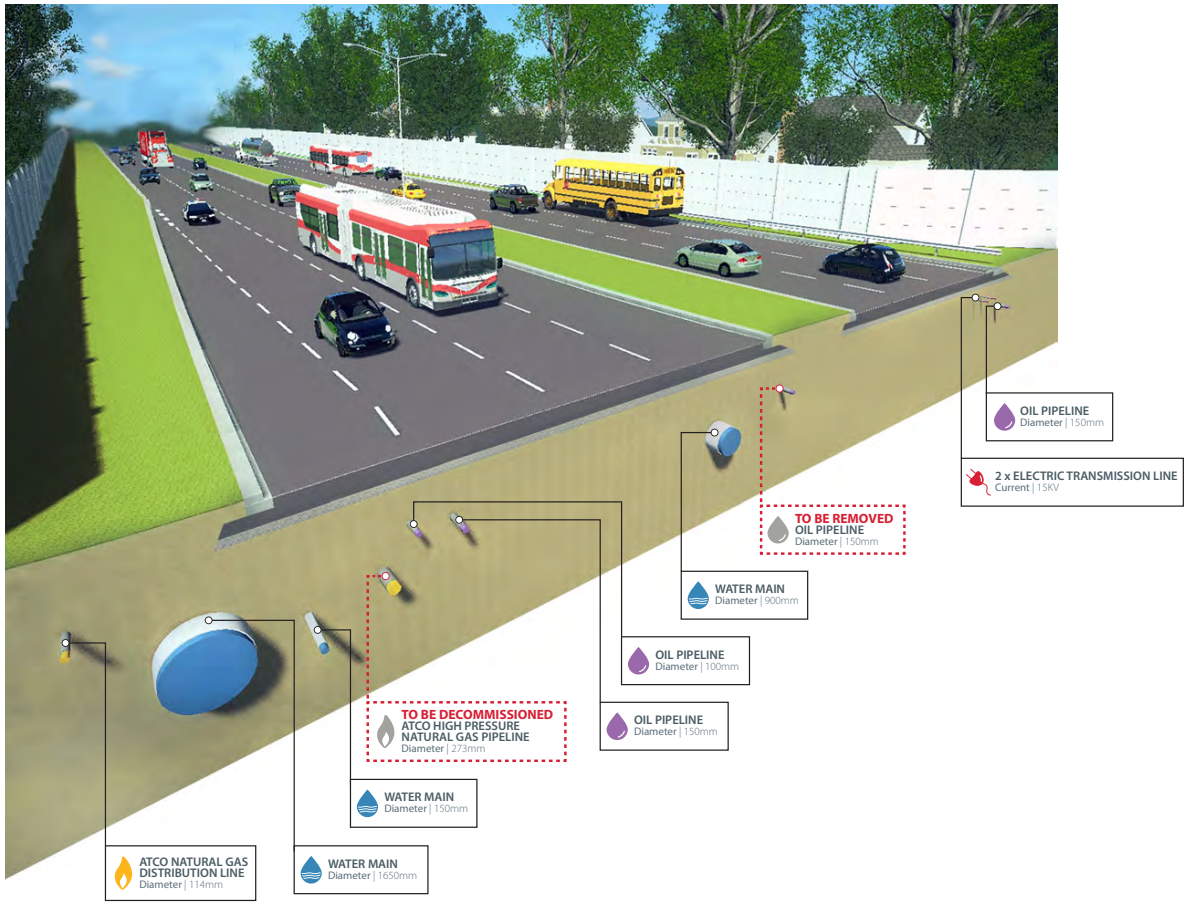
11. What assessments have been undertaken for the gas line and is lowering the pressure a concern?

Refer to response for question #10. The existing line will be abandoned.

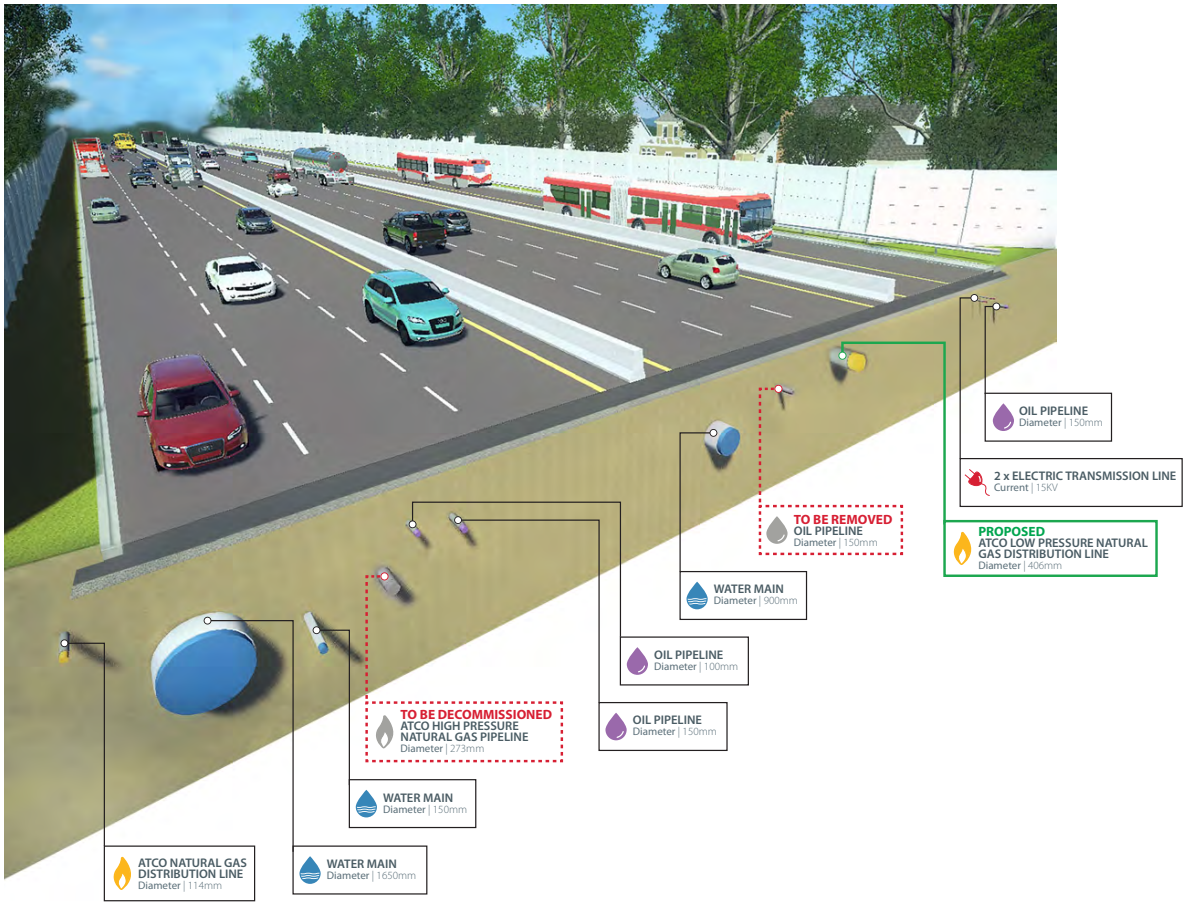
12. How will you address corrosion of the gas lines?

Refer to response for question #10. The existing line will be abandoned, corrosion of the existing high pressure gas line is not a concern.

Southwest BRT Utilities - Existing condition underground utilities - Looking south on 14 Street S.W.



Southwest BRT Utilities - Proposed condition underground utilities - Looking south on 14 Street S.W.



General

Your questions, answered.

13. Concerned about the rising cost estimates, concerned about the lack of ridership – project doesn't meet objectives of quality transit.

Cost Estimates

Infrastructure programs and projects follow the City of Calgary Project Management Framework, which is consistent with industry standard best practice and uses the following five-stage process for estimating and establishing program and project budgets:

- **Class 5 – Order of Magnitude**—Generally prepared based on very limited information. They're often based on judgment and/or experience.
  Expected accuracy range is -50% to +100%
- **Class 4 – Conceptual Design**—Generally prepared based on conceptual or feasibility studies considering project options and known constraints.
  Expected accuracy range is -40% to +75%
- **Class 3 – Preliminary Design**—Generally prepared based on preliminary design information. Project assumptions and constraints have been defined.
  Expected accuracy range is -30% to +50%
- **Class 2 – Detailed Design**—Generally prepared on detailed design information. Project constraints have been resolved and detailed design is advanced.
  Expected accuracy range is -15% to +20%
- **Class 1 – Final Design/Pre-Tender**—Generally prepared based on the final design information. At this stage the design is complete.
  Expected accuracy range is -10% to +10%

As projects evolve, the project definition increases and more accurate estimates can be produced.

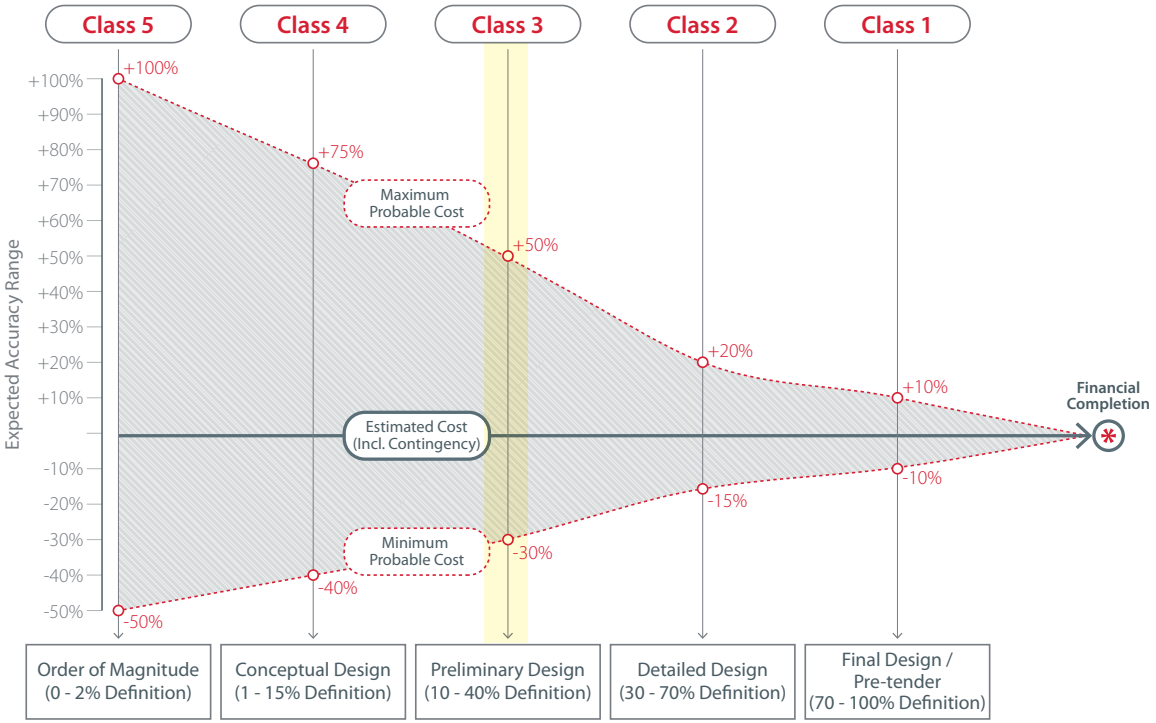
The City is currently in the design phase for all four of the new BRT projects. As design progresses, we know that the costs of some projects will decrease and others will increase.

The $208M BRT Program budget was established based on project estimates at the Order of Magnitude and Conceptual Design stage. The Conceptual Design was based on having bus stops with limited features. In the years since the conceptual design was produced, we've heard from Calgarians through engagement as part of RouteAhead in 2012 that they'd like to see a higher level of service, with better features for an improved customer experience. Investment in these improved features has had an impact on the cost of the overall project.

The City is currently in the design phase for all four of the new BRT projects. As design progresses, we know that the costs of some projects will decrease and others will increase.

The Southwest BRT project is part of a larger program, which also consists of the 17 Ave S.E. BRT project, and the North and South Crosstown BRT projects. Although the Southwest BRT project budget has increased, the program budget comprised of all four projects is still on budget.

Project cost estimate hierarchy



In the years since the conceptual design was produced, we've heard from Calgarians through engagement as part of RouteAhead in 2012 that they'd like to see a higher level of service, with better features for an improved customer experience.

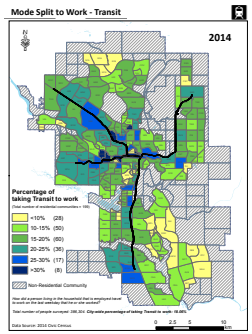
Ridership

A transit user survey was conducted in November and December 2015 for routes in S.W. Calgary. Over 3,000 responses were received.

Twelve bus routes were identified as "routes of interest" as they pertain to the Southwest Transitway with the following existing ridership.

Figure 1: 2015 transit users by route

Route Number	Route Name	Weekday Ridership
13	Mount Royal	2,340
16	Palliser	650
18	Lakeview	2,890
20	Heritage/Northmount	11,050
47	Lakeview/Chinook Station	410
56	Woodbine	3,020
63	Lakeview Express	340
79	Acadia/Oakridge	1,650
80	Oakridge/Acadia	1,360
84	Palliser	540
112	Sarcee Rd.	2,410
306	BRT Westbrook/Heritage	1,760
TOTAL		**28,420**



Origins and Destinations:

The origin and destination of the survey respondents were captured and summarized by major quadrant within the city.

The major destination area was the West district followed by the downtown and southwest districts. Travel within the west and southwest districts themselves (where they were both origin and destination) represent the most common trip type. Trips may originate and finish in non-southwest (W, S) districts but might travel through or use adjoining LRT stations.

Figure 2: Where did you start your trip? Where will your trip end?

Destination									
Origin	S	SW	W	NW	NE	SE	DT	?	Total
S	16	29	71	15	6	4	57	0	198
SW	13	203	153	66	22	34	161	14	666
W	20	100	475	58	40	45	187	22	947
NW	5	43	65	16	4	8	22	5	168
NE	1	22	127	7	20	0	25	1	203
SE	6	37	123	21	10	22	33	7	259
DT	8	41	104	6	4	4	11	5	183
?	1	14	38	5	1	1	16	6	82
Total	**70**	**489**	**1156**	**194**	**107**	**118**	**512**	**60**	**2706**

? = Location provided was indeterminate

Top 5 Major Origin and Destinations		
Origin	**Count**	**Percent**
Mount Royal University	178	6%
Heritage LRT station	50	2%
Southland LRT station	37	1%
Chinook LRT station/Chinook Mall	35	1%
Southwest (unspecified)	35	1%

Top 5 Major Origin and Destinations		
Destination	**Count**	**Percent**
Mount Royal University	511	18%
Westhills/Signal Hill Shopping Centres	83	3%
Southland LRT station	67	2%
Chinook LRT station/Chinook Mall	65	2%
City Hall/City Hall LRT station	62	2%

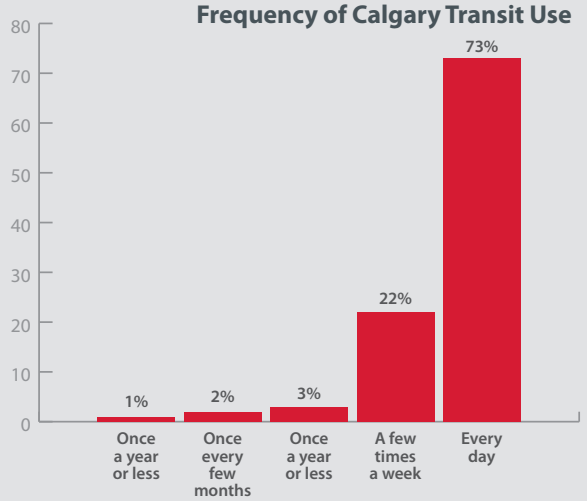
Other findings from the survey:

How often do you use Calgary Transit?

Most respondents use Calgary transit at least once a week (98%).

More frequent travellers tend not to have access to a private vehicle.

How often do you use Calgary Transit?		
Mode to first transit	**Count**	**Percent**
Once a year or less	17	1%
Once every few months	47	2%
Once a week	87	3%
A few times a week	658	22%
Every day	2,200	73%



Do you normally have access to a car when you use transit?

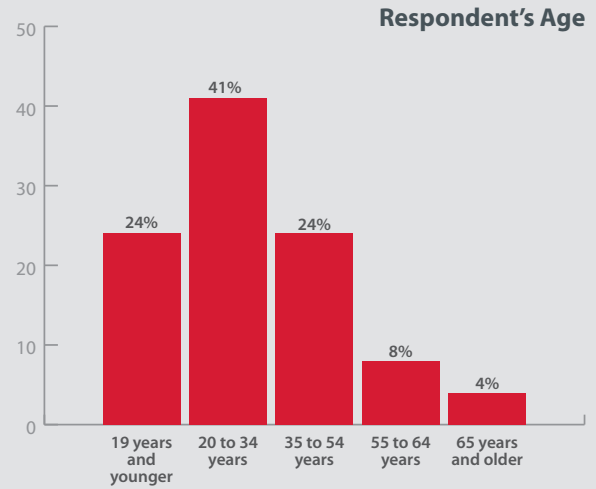
Two-thirds of respondents did not have a private vehicle available for their use when making their trip. This is considerably higher than reported in the 2015 annual customer satisfaction survey where only 23 per cent had no access to a vehicle.

Do you normally have access to a car when you use transit?		
Private vehicle available	**Count**	**Percent**
Yes	976	33%
No	1,977	67%

Please indicate your age group

Respondents younger than 35 were over-sampled and those aged '35 to 54 years' were under-sampled for this survey compared to the demographics from the 2015 Calgary Transit Customer Satisfaction Survey (CSS).

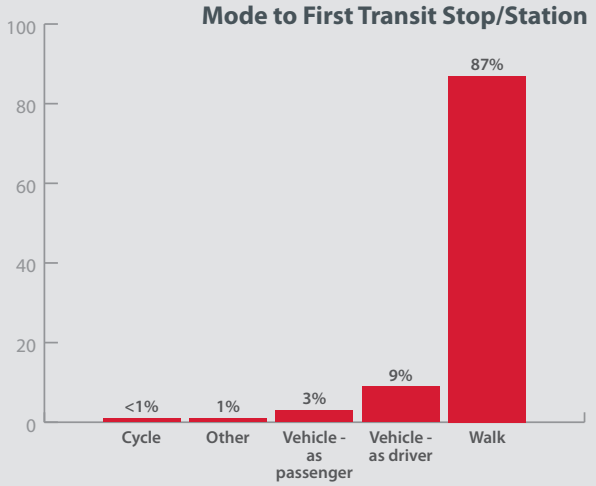
Respondant's age			
Age Group	**Count**	**Percent**	**CSS**
19 years and younger	709	24%	13%
20 to 34 years	1,196	41%	35%
35 to 54 years	693	24%	35%
55 to 64 years	221	8%	11%
65 years and older	122	4%	6%



How do you usually get to the start of your transit trip?

The 2015 survey results showed 78 per cent walk, 24 per cent drive, 4 per cent are passengers, less than 1 per cent cycle, and 1 per cent is other modes.

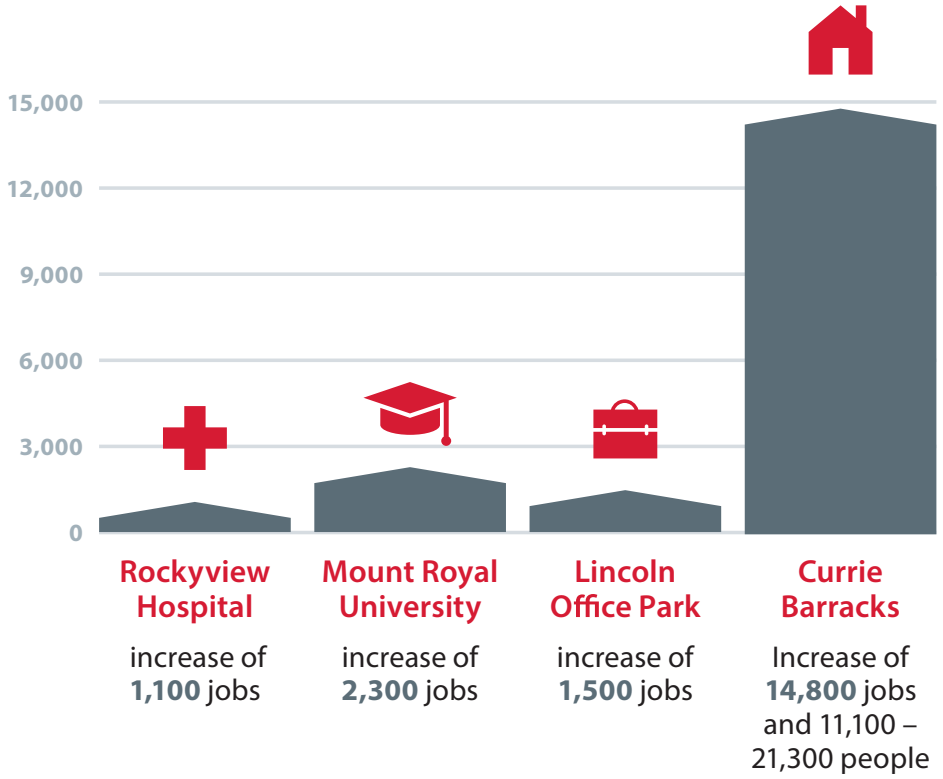
How do you usually get to the start of your transit trip?		
Mode to first transit	**Count**	**Percent**
Cycle	11	0%
Other	17	1%
Vehicle - as passenger	87	3%
Vehicle - as driver	269	9%
Walk	2,623	87%



Transit Objectives for Southwest BRT

Some destinations along the Southwest BRT project are well serviced, but others are not. For example, Mount Royal University and Currie Barracks are not well connected by transit to the southwest communities, and are expected to become a major activity centre and destination for workers, students, living and shopping. Currie Barracks estimates a residential population of 11,100 – 21,300 and an employment population of 14,800. Without good transit options in place, this large population will result in greater congestion and longer traffic delays.

Forcasted growth at southwest destinations



When asked in the Calgary Transit Customer Satisfaction Survey asked what they consider to be quality transit service, customers responded:

- **Being on time**
- **Service frequency**
- **Customer safety and security**
- **Not being overcrowded**
- **Directness of trip**

The Southwest BRT project, and the entire BRT network, were designed with this feedback in mind.

14. City shouldn't be giving cost estimates that have a high degree of uncertainty. Speaker states that in his business he only gives customers exactly what the project will cost.

The initial project budget is generally first estimated at a high level based on previous and similar projects, market conditions and with limited details pertaining to design. The initial estimate is considered as a Class 5 estimate, which provides an order of magnitude understanding for which the project can be allocated an initial budget. As the project moves through the feasibility and planning phases, previously unknown issues are uncovered and more details are decided upon which changes the estimates and moves the accuracy to a higher level (Class 4 or Class 3). Generally, these phases are where public input is considered. In this case, it was heard that canopies, heated shelters, wide and comfortable platforms are desired which has since impacted the costs since the early stages of the project.

Additional information on cost estimates is provided in Question #13 on page 23.

15. Ridership numbers don't make sense, could you provide more clarity on the ridership methodology?

The methodology for determining ridership for the Southwest BRT project and the other BRT projects is as follows:

- Future population and employment numbers are extracted from the City of Calgary's Regional Transportation Model (RTM). The RTM is a sophisticated computer simulation of travel behaviour in the city and surrounding region, and includes a representation of both personal travel and commercial vehicle travel. It is a regional model with a Calgary focus and is capable of delivering detailed analysis for Calgary along with information about major regional corridors.

- The RTM is a state-of-the-practice trip-based travel demand model that is well regarded across North America. It is a 24-hour weekday model that simulates all modes of travel including auto, transit, walking and cycling. The RTM is used in all transportation planning projects to determine future road capacities, interchange locations, and travel patterns as Calgary continues to grow.

- Using outputs from the model, the future population and employment numbers were extracted from within a 600 metre catchment area around each of the planned station locations for the Southwest BRT. The 600 metres distance represents a walking distance which can be travelled within 10 minutes. This gives us a good idea of what potential ridership will be around an area; the more population and employment within 600 metres, the more ridership there is likely to be. Ridership was considered within the 600 metres, and does not include any trips to the location by car, as there are no Park and Ride facilities included for the Southwest BRT.

- Trip generation rates are applied to determine what percentage of that population and employment are likely to use transit as not all the population and employment within the 600 metre catchment will use transit.

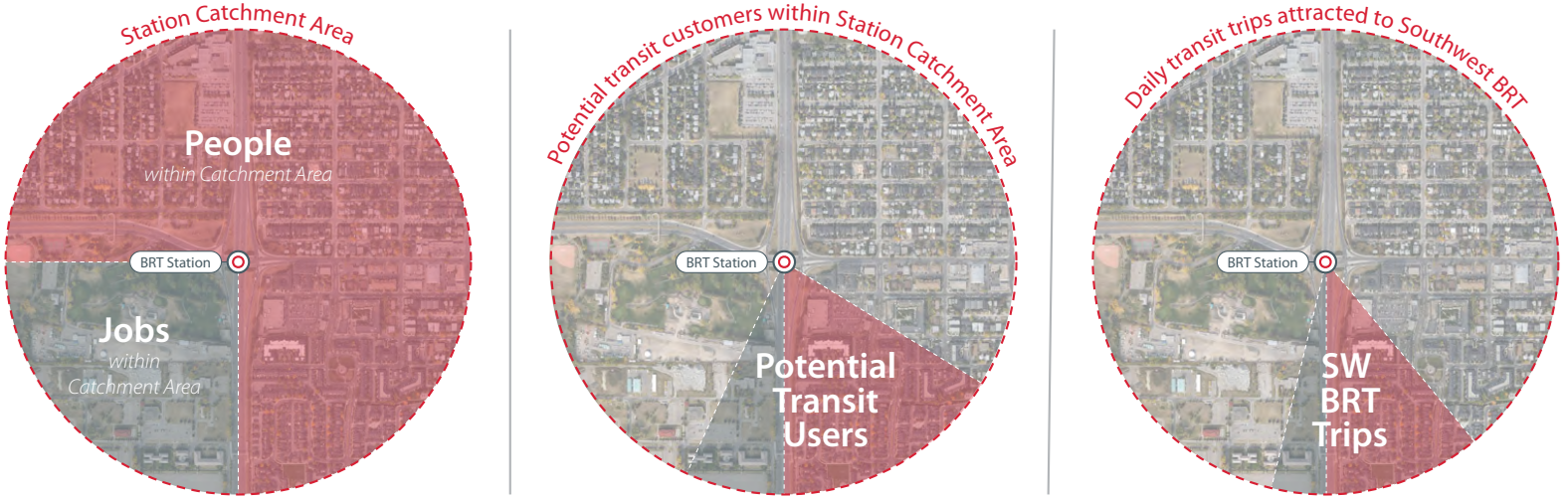
- This can be predicted by using current information and statistics we have on our existing ridership. With our existing transit ridership we calculate base city-wide generation rate as 0.3 transit trips per person. This is the generation rate we can apply to populations around a station location to determine ridership.

Using this method we have determined that for the Southwest BRT route that by 2024 there will be approximately 12,500 riders/day using the service.

The 0.3 factor can then be increased or decreased depending on other factors such as if the stop is within the centre of a community or on the edge of a community or if stop is adjacent to a major activity centre such as a university or a hospital as well as employment centres (ie. downtown). These generation rates have been extrapolated from the City of Calgary Travel Behaviour Report *(http://www.calgary.ca/Transportation/TP/Pages/Planning/Forecasting/Forecasting-surveys.aspx?redirect=/travelsurveys)* as well as using information on transit mode shares from City of Calgary census data *(http://www.calgary.ca/Transportation/TP/Pages/Planning/Transportation-Data/Transportation-Data.aspx)*.

Using this method we have determined that for the Southwest BRT route that by 2024 there will be approximately 12,500 riders/day using the service.

SW BRT ridership estimation process



Regional Transportation Model

City-wide spatial forecast model of develoment, population & employment growth

Forecast

+ Population
+ Employment *within Station Catchment Area*

Trip Generating Factors

+ Population density
+ Employment density
+ Area mode share (walk, bike, drive, or transit)
+ Average number of potential daily trips
+ Centrality within a community
+ Proximity to major activity centres

Daily Trip Share

+ Route specific share of future trips

NOTE: Shaded population and employment portions represent Station Catchment Area statistics and are non-location specific.

\+

All Station Catchment Areas

=

TOTAL NUMBER OF DAILY TRIPS

16. What is in the scope and phasing of the current project? For example, what is the projected phased construction for 14 Street? When will the new bus stops be opened north of Glenmore Trail? How many lanes will be closed and for what periods? How long will 90 Avenue and 14 Street S.W. be closed? What is the detour routing during construction?

The phasing of the project will keep both 14 Street and 90 Avenue S.W. open to traffic throughout construction. Along 14 Street S.W., construction will be closely coordinated with the work being undertaken by ATCO within the corridor. ATCO is expected to begin installation of a new distribution line on 14 Street S.W. in 2017. In conjunction with ATCO's construction, we endeavour to maintain six lanes of traffic during peak periods. At 90 Avenue S.W., a detour will be constructed to the north of 90 Avenue S.W., adjacent to Glenmore Landing, to allow for the first phase of construction of the underpass and relocation of existing utilities along 90 Avenue S.W.. The phasing of the underpass will maintain the same number of lanes on the 90 Avenue S.W. approach to the intersection throughout construction.

The new BRT stations will not be used until the overall project is completed, as the Southwest BRT will not be in service until that time. As some of the BRT stations are located at existing Calgary Transit bus stops, some will be utilized by existing routes upon station construction completion.

As noted above, we will endeavour to maintain six lanes of traffic during peak periods. During off peak hours, the Contractor may arrange for lane closures to facilitate construction activities. These will be coordinated to ensure that impacts to traffic are minimized and that lane closures are properly communicated to the public and motorists.

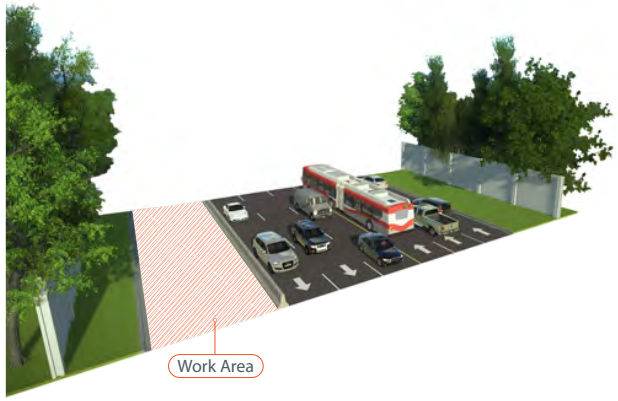
In conjunction with ATCO's construction, we endeavour to maintain six lanes of traffic during peak periods.

Southwest BRT 14 Street S.W. construction staging

Existing condition

Construction Limit 1

Construction Limit 2



Construction Limit 3

Proposed condition

Southwest BRT 14 Street S.W. construction staging

2016

Construction Limit 1

- Surface works
- Temporary traffic accomodation to facilitate construction

2017 - 2018

ATCO Installation

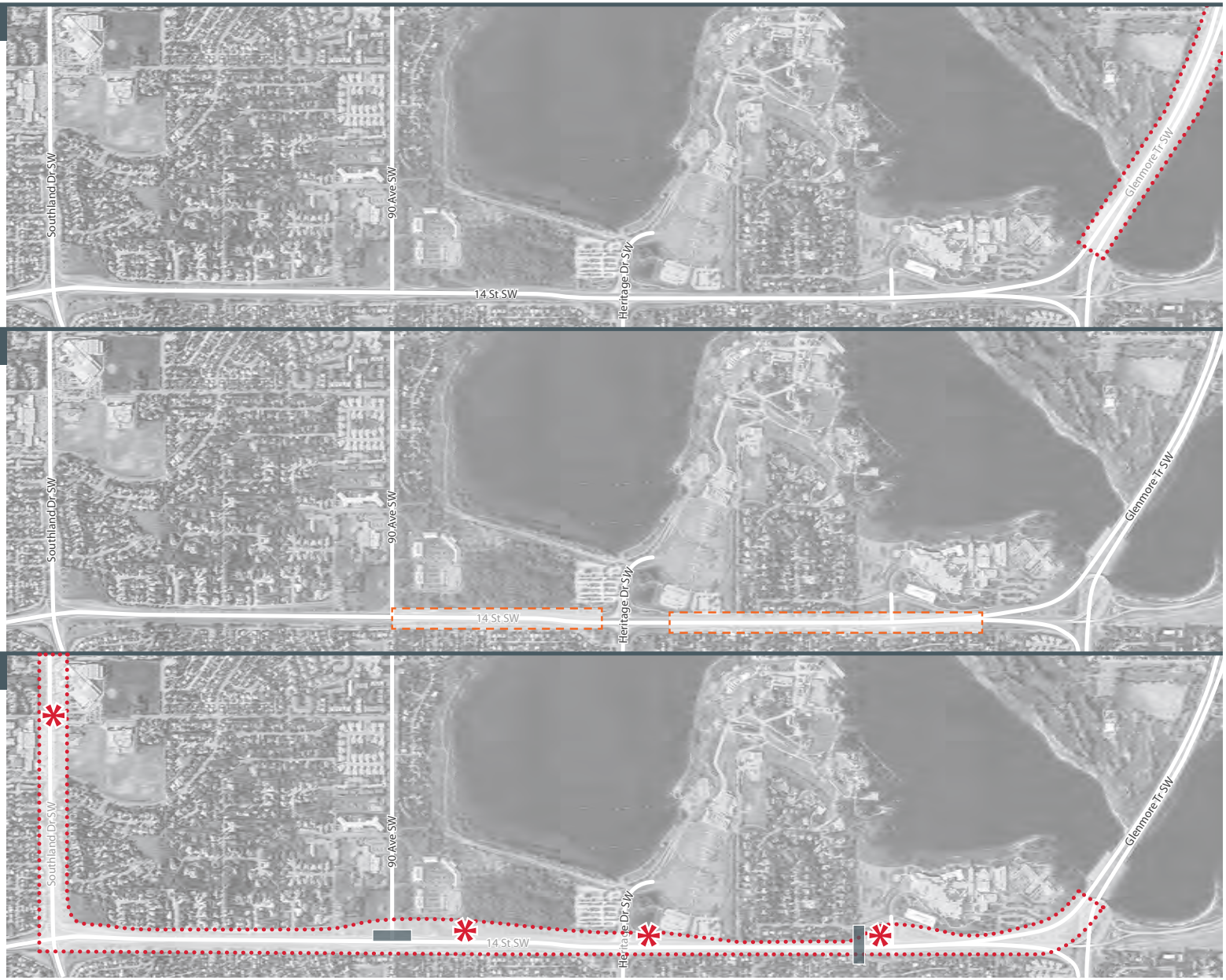
- ATCO Gas utilities

To Be Confirmed

Construction Limit 1, 2 & 3

Bridge Construction

Station Construction



17. What is the business case? Where is the cost benefit analysis?

The City of Calgary uses a Triple Bottom Line (TBL) approach to decision-making that considers economic, social, and environmental issues, and aligns with the strategic direction and intention of Council and their priorities and approved policies, including the Calgary Transportation Plan. TBL applies to the decisions the City makes, and the fundamental objective of the TBL Policy is to protect and enhance the economic, social, and environmental well-being of present and future generations of Calgarians. The Southwest BRT project also used a TBL approach to project cost benefit analysis. The social, environmental, and economic benefits of this project that were considered are described below.

This project helps address growing travel demand and includes the following benefits:

- Reduced congestion by making transit more convenient will take more single occupancy vehicles off the road reducing congestion.
- Homes and offices with good transit service are more marketable.
- Connections between people and places are improved.
- Access by transit to other areas of the city is improved.
- More choice for all Calgarians.
- Reduced need for additional parking structures at major employment centres.
- More affordable transportation options.
- Leverages other city transit investments.
- More reliable service.

According to Plan It Calgary, Calgary is forecasted to grow by another 1.3 million citizens, and that growth will generate travel demand.

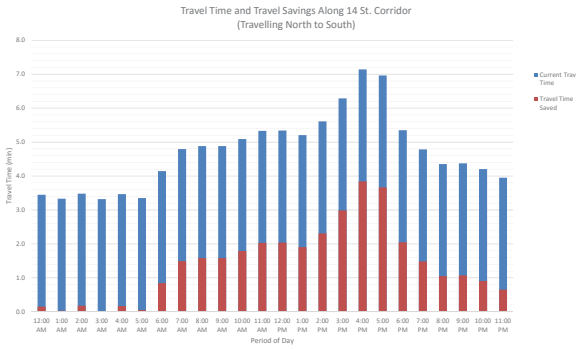
In general, there is a case that the overall benefit of public transit is known to far exceed the cost.

Benefits of more reliable service

Constructing dedicated transit lanes on 14 Street provides more reliability for the service as the buses are not impacted by accidents and congestion at signals. A less reliable service means that more buses need to be added to maintain bus schedule and bus frequency.

A public report to Council in 2013 entitled "Investing in Mobility Report – Transit Corridor Cost/Benefit Analysis" (TT2013-0290) included a cost-benefit analysis for all of the projects proposed as part of RouteAhead's 10-year rapid transit network. Below are two of the exhibits shown in that report.

Based on travel time studies undertaken and BluFax data collected along the Southwest BRT corridor, the Transitway is projected to provide 3 minutes in travel time savings in the southbound direction (from Crowchild Trail to Southland Drive) and 2.5 minutes in travel time savings in the northbound direction (from Southland Drive to 75 Avenue S.W.) during peak hours. This equates to about $2.1 million in annual travel time cost savings for transit customers on the transitway portion of the alignment alone. This does not factor in the additional travel time savings in reduced trip transfers and direct connections to end destinations as well as the travel time savings for the South Crosstown BRT.



Summary of Cost-Benefit Analysis
for 10-year Rapid Transit Corridors

Southwest Transitway

Project information

Key Objectives:

1. Reduce travel times
2. Encourage transit oriented development
3. Improve the customer experience to attract ridership

Length of project: 6.1 km dedicated + 13.5 km shared

Average transit travel time savings: 6 min

Routes using the infrastructure: Routes 18, 20, 63, 72, 73,112, 182 306 BRT, Southwest BRT (future)

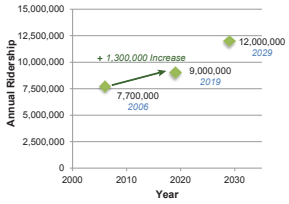
Number of buses in corridor per weekday: 114 – 572

Capital cost: $40,000,000

Capital cost / rider (2019) : $4.44

Annual operating cost increase (not including increased revenues): $5,400,000

Ridership Forecast



Service Area Indicators

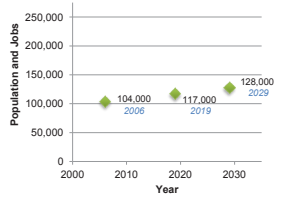
Service area (2019): 3,940 ha
(excluding downtown (2019): 3,370 ha)

Population and jobs intensity: 84/ha
(excluding downtown: 35/ha)

Emissions reduction attributed to the project: 64,690 kg

Population and jobs within 600m of infrastructure in Activity Centres and Corridors (2019, excluding downtown): 35/ha

Population and Jobs in Service Area (excluding downtown)



Social Indicators (within 600m of infrastructure)

Low Income (below low income cut-off in 2006) = 14,780 persons

Youth age 15-24 (2011): 10,290 persons

Seniors age 65+ (2011): 10,210 persons

18. Where can I find governance documents?

Council is the decision-making body with respect to reports before Committees like the Standing Policy Committee on Transportation and Transit. Council meetings consist of reviewing reports and approving or editing recommendations contained within them. This is done through a process of information sharing, inquiry, deliberation and voting. Each member of Council has an equal vote in the decision-making process. Reports are often shared with, and worked on, by a Council committee before going to Council.

The Southwest BRT project follows the City of Calgary Project Management Framework. The Framework requires administrative oversight beginning with an overall project plan. A project plan was developed for the project at the beginning of the project outlining the project governance. A summary of the Project Plan is as follows.

The scope of this project includes:

- New Transitway stations along the entire Southwest BRT alignment at proposed station locations which may include: Ticket Vending Machines (TVM), Passenger Information Systems, and shelters/furnishings (amenities will be defined in the Transitway Guidelines).
- Dedicated transit lanes on 14 Street S.W. between Glenmore Trail and Southland Drive, including a new underpass structure at 90 Avenue S and modifications to the existing pedestrian overpass at 75 Avenue S.
- Bus terminal station and facilities at Woodbine Community.

The Southwest BRT will be coordinated with other infrastructure projects planned in Southwest Calgary, including the Crowchild Trail/Flanders Avenue Interchange Project being undertaken by Canada Lands Corporation, 14 Street and Southland Drive intersection operational improvements, and the Southwest Ring Road construction which includes new connections at Anderson Road, 90 Avenue, and Southland Drive. In addition, there is a substantial amount of redevelopment being planned for properties adjacent or in close proximity to the current alignment including redevelopments at Currie Barracks, Lincoln Park, and the Calgary Jewish Community Centre.

More Information on Transit

Your questions, answered.

19. What will the bus speed be on average?

For the overall Southwest BRT route, a conservative estimate for the average speed of the bus is 25.5km/hr. Note that this takes into account the time buses are at station dropping off and picking up passengers, the acceleration and deceleration speeds coming into and leaving stations, and the maximum posted roadway speed a bus can reach when operating between stations. For the 14 Street S.W. dedicated bus lanes the average speed is expected to be 40km/hr. ***Refer to the graphic on the next page for the expected speeds in each segment of the alignment.***

20. What happens if the projected ridership does not occur?

There are several factors that can affect ridership levels, none more important than the transit service itself. We have seen that factors such as travel time, frequency, ease of transfers, accessibility of stops/stations and the directness of a trip all play into how much a service will be used. The more we can improve on these aspects with our transit service the more ridership we can expect.

If ridership is lower than anticipated, we would adjust service hours. Similarly, we would adjust service hours if ridership is higher than anticipated.

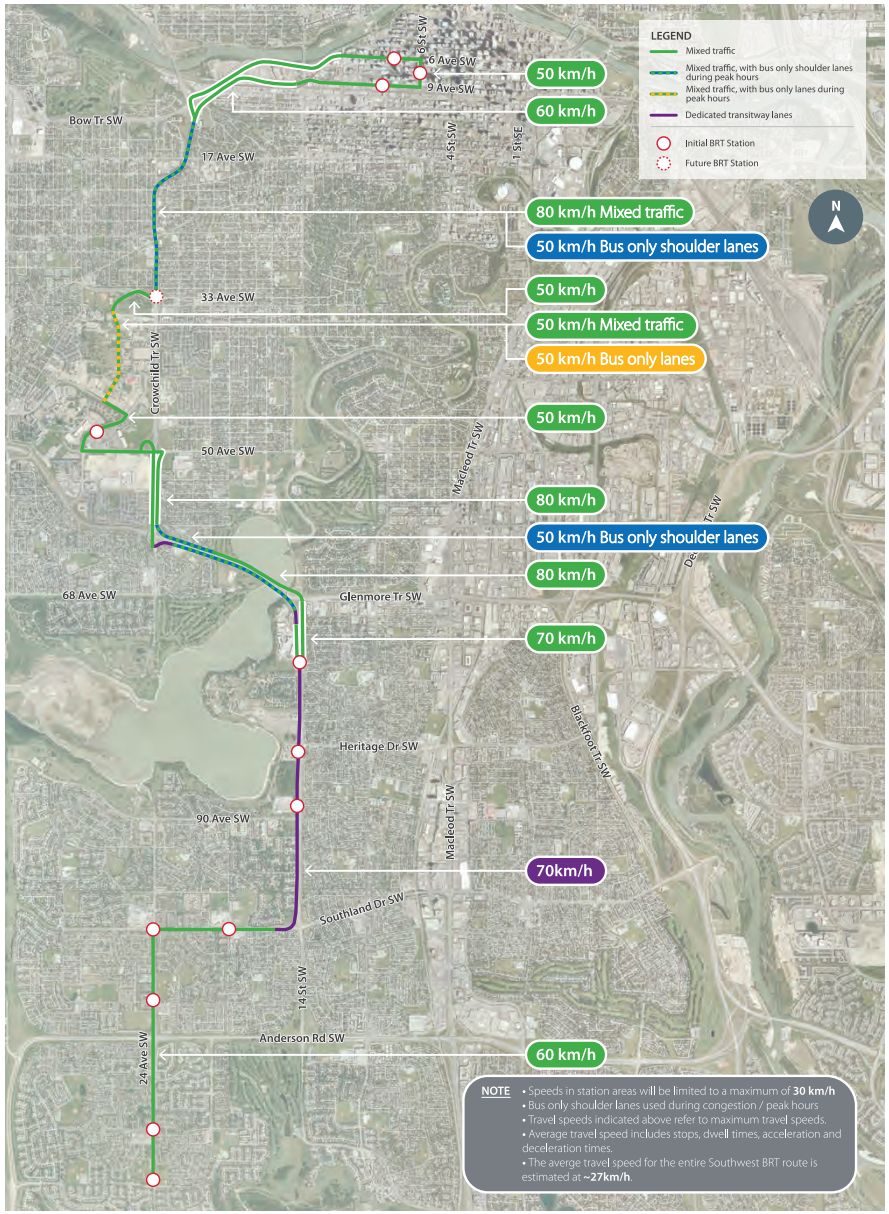
It should also be noted that ridership is part of a network, and growth is expected over time. After a transit service is implemented the results of ridership are not known immediately. Travel patterns to work, school, and places of interest can take months and years to develop and change. The land use patterns that support transit ridership could take even longer. An indication of low ridership shortly after a new transit service is implemented is not a cause for concern, over time and as travel patterns change, increases in ridership of a service will be seen.

The West LRT project is a good example of ridership growth over time:

Weekday Daily Ridership: 32,400 (2013), 34,000 (2014), 35,000 (2015).

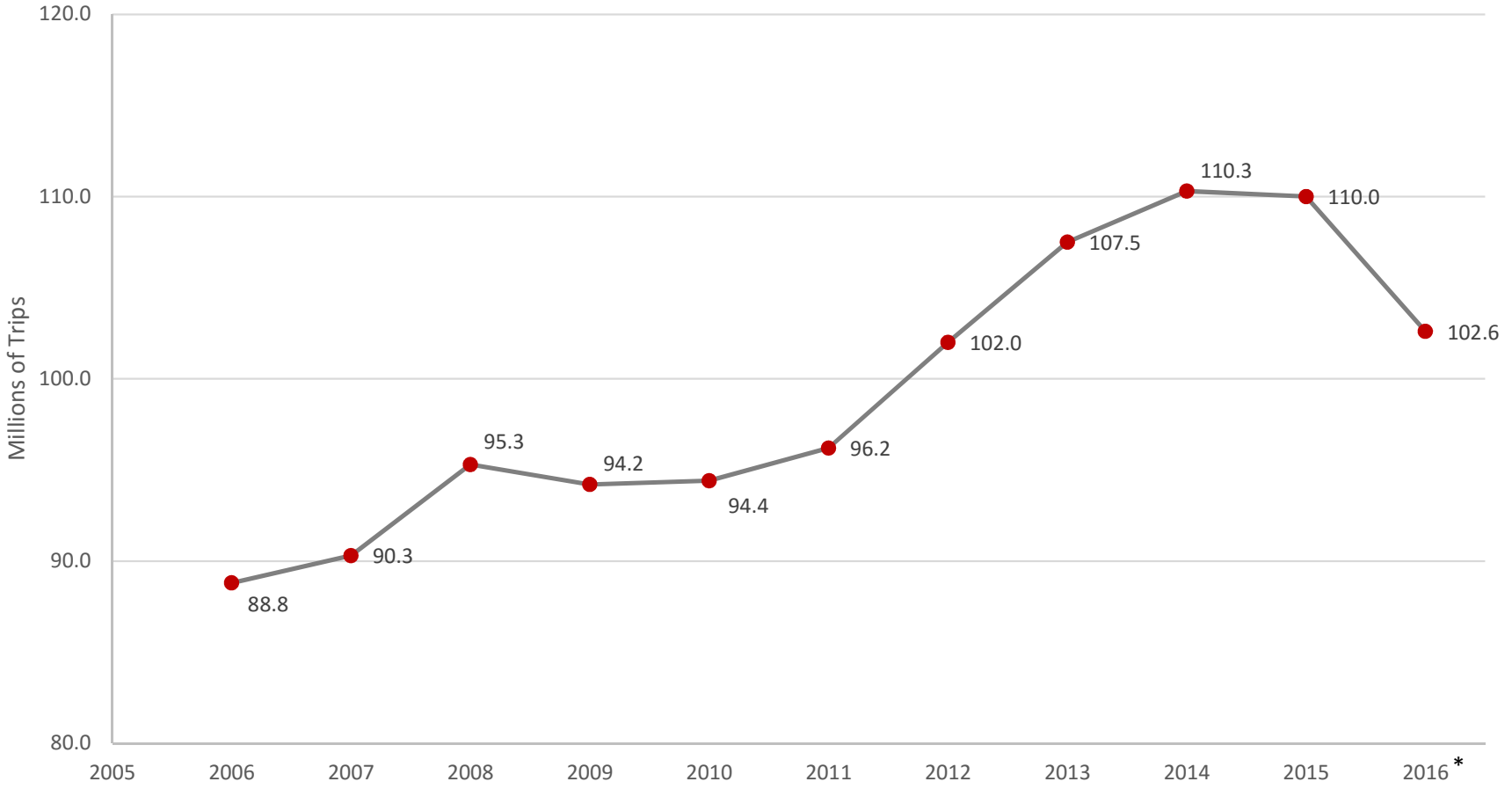
For the 14 Street S.W. dedicated bus lanes the average speed is expected to be 40km/hr.

Southwest BRT travel speeds



Ridership is also influenced by current economic conditions. During the 2009 recession ridership of the transit system fell to approximately 94 million trips, from the previous 95 million trips recorded in 2008. However in the subsequent years as the economy started to recover and improve, ridership on the system climbed back to these levels, and even higher, seeing large jumps in 2013 and 2014. With the current recession we are again seeing a drop in ridership, however as before when the economy begins to recover it is fully anticipated that ridership levels will recover and increase as downtown office building occupancy climbs.

Annual ridership trend



*Current year is actual year to date plus remainder of last year at current growth/shrinkage

21. There are concerns about removing green space. Is the project removing any?

The Southwest BRT, including the dedicated bus lanes and the BRT stations, will all be built within existing City owned lands and road right-of-way. There will not be any removal of designated park space, recreational fields, or off-leash dog areas as part of this project. Although grassed medians and boulevards will be impacted by the project, these areas are part of the road right-of-way reserved for future road use.

At the terminal in Woodbine, the roundabout and bus station will both be built in the existing roadway, and will not impact park space or private property.

At the terminal in Woodbine, the roundabout and bus station will both be built in the existing roadway, and will not impact park space or private property.

22. How frequent will the buses be?

The Southwest BRT, South Crosstown BRT and Route 20 are expected to utilize the transitway infrastructure on 14 Street S.W. and they are all part of the Primary Transit Network. These routes will operate every 10 minutes during peak hours, and every 15 to 20 minutes in off-peak hours. These service levels are similar to routes that run along roads such as Elbow Drive and Northmount Drive.

23. How much do new buses cost ($700,000 per bus?) What is the cost of purchasing the buses for the project?

40-foot buses are approximately $450,000, and 60-foot articulated buses are approximately $650,000 CDN. Between nine to 11 additional buses are required to serve the Southwest BRT route. Fleet purchases are done holistically for the needs of the entire network. Buses are not purchased for individual routes or projects.

24. How many routes will be using the Transitway? What bus routes will use the Transitway?

Three routes will use the dedicated bus lanes on 14 Street S.W.: the Southwest BRT, South Crosstown BRT and Route 20 Heritage/Northmount Drive. The lanes offer the flexibility for other routes to be added, and for Calgary Access and emergency vehicles to use this infrastructure.

The Southwest BRT, South Crosstown BRT and Route 20 are expected to utilize the transitway infrastructure on 14 Street S.W. and, in the longer term, are all part of the Primary Transit Network.

25. Will there be park and rides in the communities?

Park and Rides will not be provided for the Southwest BRT project, and was not envisioned as part of the original functional planning study. The stations are intended to serve local communities and will primarily be accessed from within the community via feeder buses, walking and cycling.

26. Can we commit that existing bus service will be maintained?

Calgary Transit will be working on a service plan that provides the best transit connections and service in the area. While service modifications may occur, overall service will be maintained and/or improved. There will still be a need for public input to help develop the transit service plan for local routes connecting to the BRT. This process will be taking place over the next two years in advance of the new BRT opening.

27. Can we commit to the BRT service levels?

Calgary Transit is planning to launch bus service at 10-minute frequency in the peak period and every 15-20 minutes in the off-peak period, beginning the first day of operation of the Southwest BRT. Calgary Transit commits to continually monitoring and reviewing ridership, and will make adjustments to service levels as required. Notwithstanding, Calgary Transit must always operate within the approved budget. Changes to the budget are at the discretion of future councils.

Park and Rides will not be provided for the Southwest BRT project and was not envisioned as part of the original functional planning study.

28. Concerns that transit infrastructure like heated shelters will bring crime into the community.

Crime is very low on the transit system, as are the general rates of crime in the area communities. The comparison is not easy as crime rates are measured per 100,000 population and crime rates on transit are generally reported as crimes per 1 million riders. On the whole, however, crime is very low in both incidence and rate. In 2015, violent crime, or more commonly 'crimes against persons', was at its lowest rate since the CTrain system opened for business in 1981. There were less than 180 crimes involving violence, and most of these crimes occur among a subculture of people who know each other.

The bus system has such low rates of crime that it is not reported on a regular basis. This is due in no small measure to the presence of a bus driver who determines who gets on the bus. The role of the bus driver is in fact described as a capable guardian in crime prevention language. With radio access to the Bus Control Centre, on board video cameras constantly recording, and location of the bus always tracked by global positioning satellite, customers are very safe on the bus system. Calgary Transit created a Bus Response Team, comprised of eight peace officers dedicated to bus issues, including responding to unruly customers. This Unit is constantly meeting with bus operators to ensure a better understanding of community risks. With well over 800 buses on the road, bus operators are also the eyes and ears for community safety.

The Bus Response Unit conducts high visibility patrols on routes which helps deter bad behavior and reassures safety for operators and customers.

For more information about transit crime, view the 2014 Public Safety and Enforcement Annual Report. Visit http://www.calgarytransit.com/sites/default/files/reports/2014_pse_annual_report.pdf

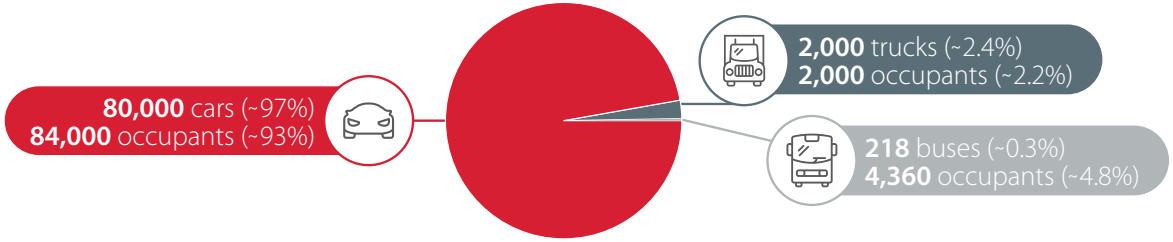
29. Provide more information on peak hours vs. non peak hours, number of buses per hour, community development plans and other transit metrics.

- Public transit peak hours in Calgary are 6:00 – 9:00 a.m., and 3:00 – 6:00 p.m.
- The Southwest BRT route will have six buses per hour per direction during peak hours. A total of 18 buses per hour per direction during peak times will utilize certain segments of the transitway, including the Southwest BRT and other routes. During off-peak hours, the Southwest BRT route will run approximately three to four buses per hour with approximately 15 to 20-minute frequency. This results in approximately 234 buses per day per direction, which accounts for 0.6% of total vehicles that currently travel on 14 Street S.W. Approximately 60-70 more buses will travel the corridor than they currently do.
- Through the Calgary Transit Customer Commitment, The City tracks metrics on topics such as Safety, Reliability (on-time performance), Helpful (customer service rating), Information (service changes, bus route changes, maintenance activities), Ease of Use, and Cleanliness.
- The Calgary Transit Customer Satisfaction Survey provides The City with information about transit customers, their transit habits and needs, and their satisfaction with their service.
- Calgary Transit has adopted performance measures and targets to guide long term strategy and to manage operations and day-to-day business. Calgary Transit has established nine performance measures and one benchmark for Action Plan 2015-2018 as outlined below:
  - Per cent of new and existing development within 400 metres of transit service.
  - Average safety ratings of Calgary Transit services.
  - Per cent of population that live within 400 metres of the Primary Transit Network (PTN).
  - Per cent of jobs that are located within 400 metres of the Primary Transit Network (PTN).
  - CTrain delays greater than five minutes per 1,000 hours of service.
  - Average distance (km) between bus breakdowns.
  - Passenger trips per transit service hour.
  - Annual Calgary Transit ridership (millions of riders).
  - Fleet greenhouse gas emissions (kg) per 1,000 kilometres.
  - Per cent of Calgary Transit customers that rated services as good or excellent.
  - Number of transit routes that perform below council approved service standards.
  - Cost per transit trip.
  - Calgary Transit operating cost per hour.
  - Benchmark: Trips per capita.

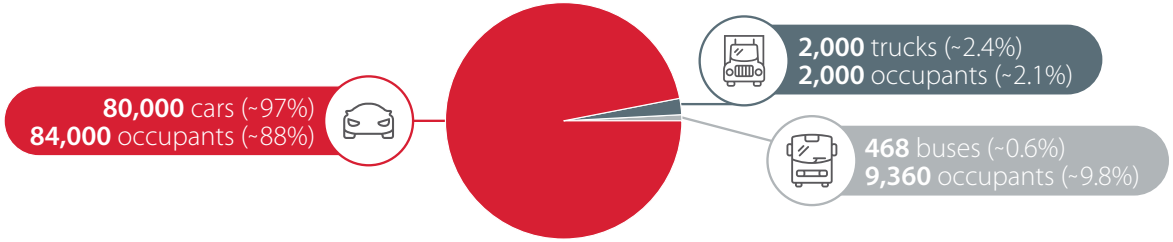
Passenger capacity of transit vehicles

Vehicles	Passengers
Calgary Transit Access	<10
Community Shuttle	<24 seated
Standard Bus	65-75
Articulated Bus	125
CTrain	600

Daily share of vehicles traveling along the 14 Street S.W. corridor



Daily share of vehicles traveling along the 14 Street S.W. corridor with Southwest BRT



A total of 18 buses per hour per direction will use the transitway during peak times. During off-peak hours, Southwest BRT will run approximately three to four buses per hour with approximately 15 to 20 minute frequency.

30. Why is the route terminus in the Woodbine neighbourhood?

The initial objective of the service is to maximize service to existing neighbourhoods. From Calgary Transit's 2015/2016 S.W. Transitway survey of all existing bus routes that currently travel the Southwest BRT corridor, 87 per cent of respondents indicated that they walk to a bus stop to start their transit trip. 91 per cent of respondents indicated that their walk time to their stop was within 10 minutes of their home.

A continuing theme from our customer satisfaction surveys is that people prefer one trip on transit where possible, rather than a transfer. The S.W. Transitway Survey of over 3,000 customers clearly indicated that accessibility in terms of how far and how easy it is to walk to transit services was ranked second highest in importance of service attributes. The City knows from joint studies with the University of Calgary that each time a rider is asked to make a transit transfer the number of people willing to make the trip on transit decreases by approximately 50 per cent. Simply put, the closer the bus route can get to where people live, the shorter the walk distance to their station, the quicker and easier their trip is, the more attractive the service becomes. Making transit easier to get to with shorter walking distances and eliminating the need to transfer multiple times helps all users, especially those who are aging or have mobility issues. This is why it is so important the Southwest BRT come down 24 Street S.W. into the core of Woodbine/Woodlands. ***Refer to graphic on page 51 for illustration of walk distances.***

31. Will the Southwest BRT service and the 14 Street SW Transitway attract new transit riders, or are these old transit riders taken from the LRT and other existing routes?

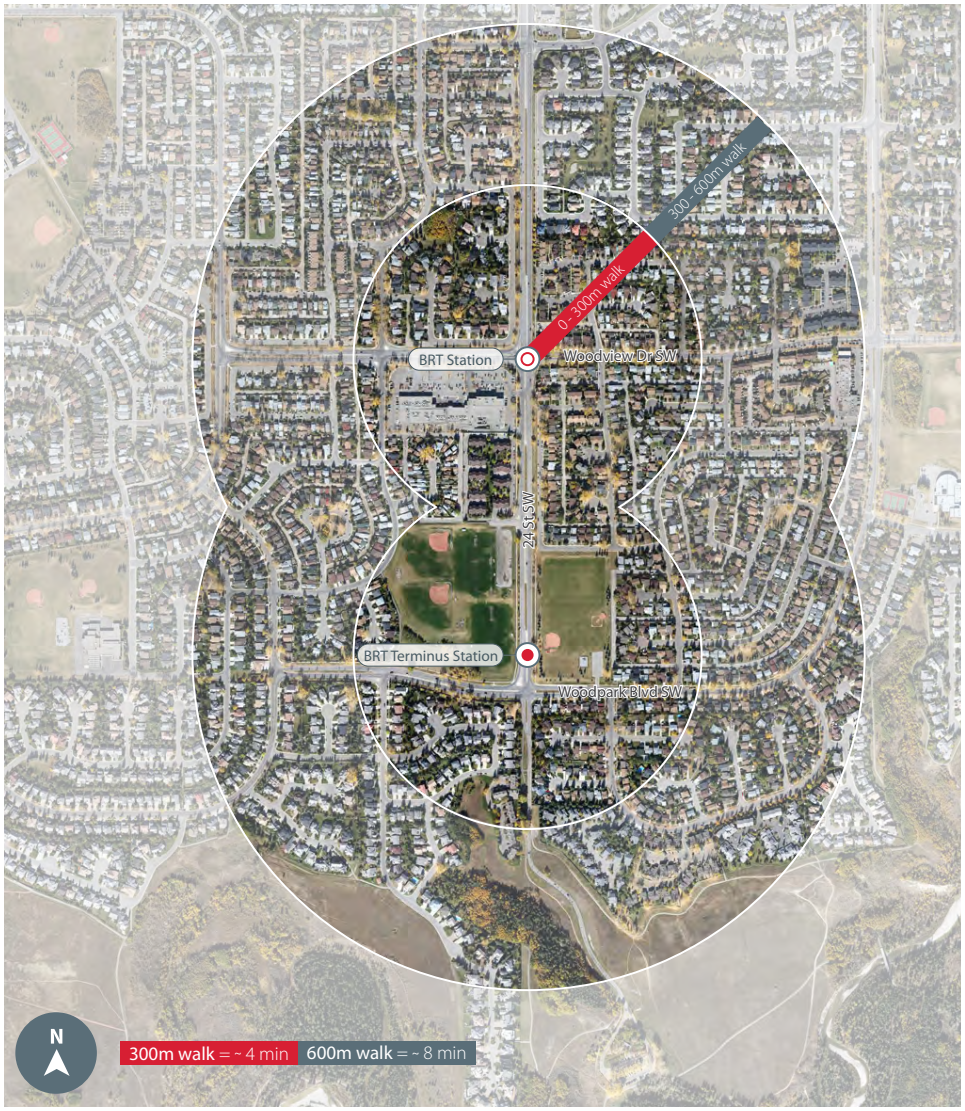
The answer is both. Projected new riders are based on new population and employment growth that will be occurring in the corridor, and people not using transit currently.

The extent to which the new service is attractive plays a part in bringing new riders to the system, as we have seen in previous projects, where a higher order of transit service has been implemented. For example, the West LRT found that nine per cent of riders of that service were new customers that formerly used a private vehicle, but started using transit as they had a reliable, frequent option that was in close proximity to their community.

From Calgary Transit's SW Transitway survey of all existing bus routes that currently travel the Southwest BRT corridor, **87 per cent** of respondents indicated that they walk to a bus stop to start their transit trip. **91 per cent** of respondents indicated that their walk time to their stop was within 10 minutes of their home.

Southwest BRT planned station walk distance in Woodbine community

The graphic below illustrates the walking distances from the stations in Woodbine. The gradient in distances essentially showcase the catchment area of the two stations where a 600 metre walk equates to approximately 10 minute travel time. By bringing the Southwest BRT route into this area, it encourages residents to utilize the transit service by providing an easy access option while also promoting ridership for Transit services.




Ring Road

Your questions, answered.

32. Would the Ring Road be a better transit solution than 14 Street S.W.?

In terms of access, the Southwest Ring Road is not proximate to origins/destinations. In addition, highway interchanges are poor waiting environments and do not generate any trips on their own. This would preclude any significant walk-on ridership. The Ring Road by-passes and goes around all the destinations people want to go to. The BRT on a ring road would add a significant amount of time and distance to the bus route if it had to exit off the ring road, then travel to the destination, then travel back onto the ring road. The ring road is a high speed road primarily to get people around Calgary.

Highways are not desirable environments for transit both for reasons of speed and access. At highway speeds (~100 km/h) our buses cannot have large numbers of people standing. In many other jurisdictions where buses operate on highways they have capacity standards that require additional buses to be scheduled if seating capacity is exceeded. At slower speeds 80 km/h or less this does not become a concern.

For example, picking up customers on 24 Street S.W. and then heading to the Ring Road means we would not service the important and major locations at Glenmore Landing, Rockyview Hospital, ATCO Lands, and Mount Royal University. We would similarly not save travel time over using a dedicated transitway. (ie. The time spent in the afternoon, westbound Glenmore bottleneck would be offset by the time spent in the morning eastbound bottleneck getting to MRU). The Southwest BRT connects to and gets lots of people (people, rather than vehicles) directly to destinations (schools, hospitals, employment, commercial, communities, etc.) in an affordable and efficient way. These destinations are on 14 Street S.W., Glenmore Trail and Crowchild Trail. There are no destinations on the Ring Road.

33. Why don't we wait until the Southwest Ring Road is built? If we wait, there will be a relief valve for the communities west of 14 street.

14 Street S.W. is and will remain busy road whether the Southwest Ring Road is in place or not. As detailed under **Question 16**, the project team will work with the contractor to manage traffic during construction. The City will need to be stringent on the staging strategy whether the Southwest Ring Road is in place or not.

If construction was to commence in 2021, the Southwest Calgary Ring Road is expected to open, and would then provide an alternative route to and from the north for some sector residents.

Development

Your questions, answered.

34. What is happening with redevelopment at Glenmore Landing and at the Calgary Jewish Community Centre?

GLENMORE LANDING

Calgary City Council approved a Notice of Motion on February 9, 2015, directing City Administration to work with the owner of the Glenmore Landing shopping centre, RioCan, to use The City's Explore planning approach to develop a comprehensive plan for redevelopment of the site. The City has formed a project team to respond to this Notice of Motion.

The Notice of Motion directs The City and RioCan to look at how a Bus Rapid Transit (BRT) station can be integrated into the shopping centre with a focus on mixed-use, transit-oriented development (TOD). RioCan is looking at the possibility of redeveloping the site, which could include housing options and services. Council also directed City Administration to look at the sale of surplus City-owned lands to be included in the developer's comprehensive plan for redevelopment, including opportunities for non-market housing. The lands are located between the shopping centre and 90 Avenue and 14 Street S.W.

RioCan is currently undertaking their due diligence to determine whether the company proceeds with redevelopment of the site; the final decision has yet to be made. No formal land use application has been submitted to The City at this time.

CALGARY JEWISH COMMUNITY CENTRE

The Calgary Jewish Community Center submitted to Calgary Planning Commission for a land use amendment for their site to create a new Direct Control District to allow for additional uses and capacity and for an expansion of the existing recreation facility. Council adopted the proposed redesignation to the new Direct Control District at the June 13, 2016, combined meeting of Council.

The Notice of Motion directs The City and RioCan to look at how a Bus Rapid Transit (BRT) station can be integrated into the shopping centre with a focus on mixed-use, transit-oriented development (TOD).

35. How much did RioCan pay for the land (by Glenmore Landing), why wasn't the land purchase open for bidding?

The surplus City-owned lands adjacent to RioCan have not been sold and negotiations are currently underway.

Calgary City Council approved a Notice of Motion (NM2015-02) on February 9, 2015, directing City Administration to work directly with RioCan to explore the disposition of surplus City owned lands to be included in the overall comprehensive redevelopment, which is why The City is negotiating directly with RioCan for these lands. The City does consider direct sale of lands to adjacent owners where a comprehensive redevelopment of the total parcel has the best possible outcome.

36. There are concerns about TOD in Oakridge, is there any TOD planned in Oakridge?

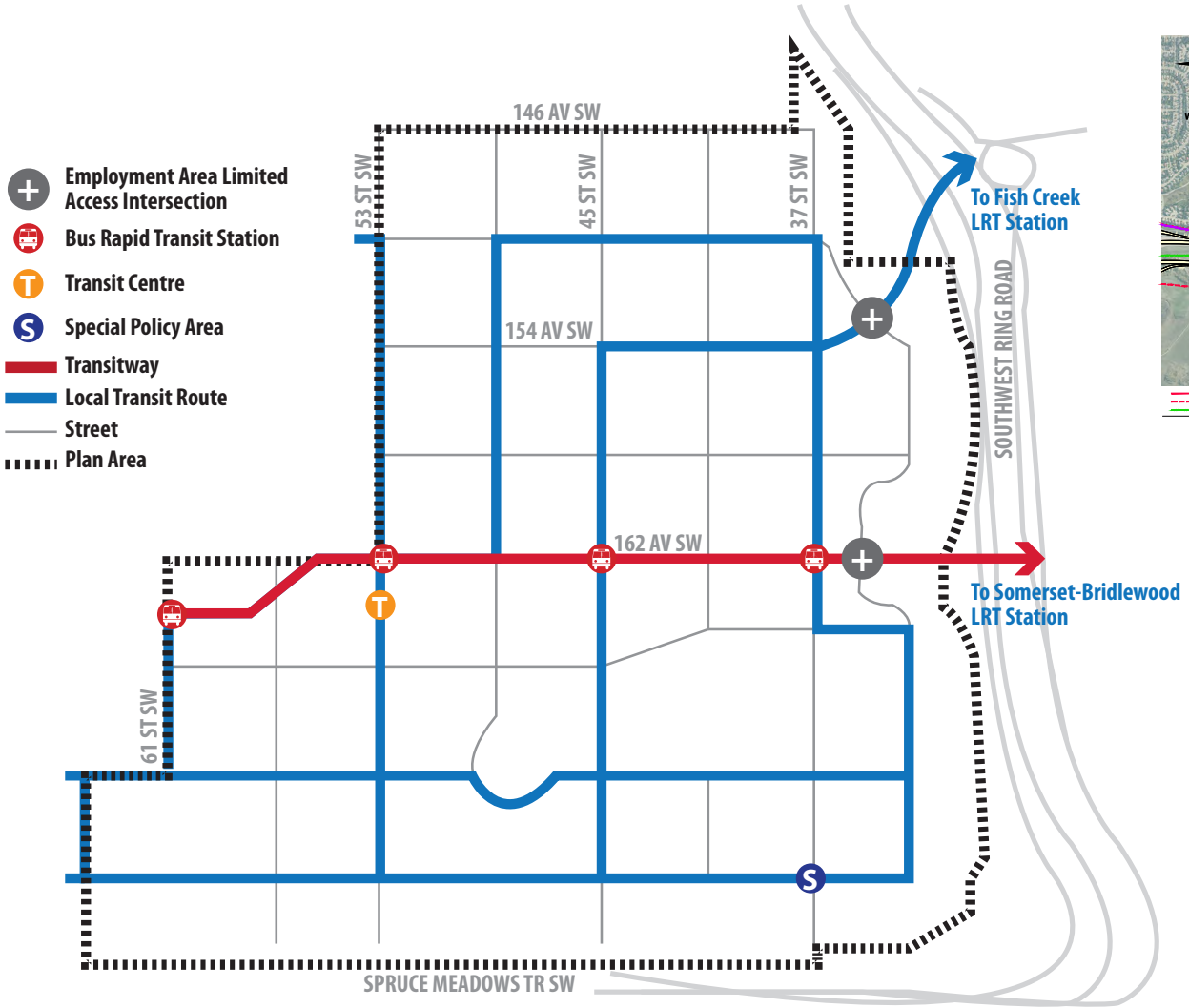
The City of Calgary has not initiated or planned for a Transit Oriented Development (TOD) in Oakridge as part of the Southwest BRT project. Although no TOD has been planned via the Southwest BRT project, private developers may pursue future TOD redevelopments on their property based on their own planning. No applications have been made at this time.

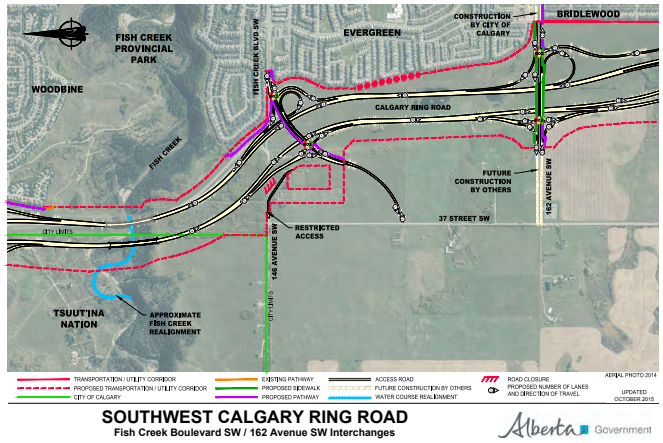
37. How will the development of Providence impact the Southwest BRT?

The Providence Area Structure Plan (ASP), which was approved in 2015, integrated the 162 Avenue Transitway into the community structure. The 162 Avenue Transitway will provide a BRT connection to Somerset-Bridlewood, and a local route to Fish Creek-Lacombe, as illustrated in the graphic on page 57. As well, the Southwest Ring Road design has made accommodation for this 162 Avenue Transitway connection to cross the Ring Road, in coordination with the Providence ASP work and future plans for the area. No BRT service from the 14 Street SW corridor is planned at this time. Bus service to/from the area will respond to travel demand as it evolves in the years ahead.

Although no TOD has been planned via the Southwest BRT project, private developers may pursue future TOD redevelopments on their property based on their own planning.

Providence Area Structure Plan Proposed Transit Network.





Roadway Concerns

Your questions, answered.

38. What will be done with the Glenmore bottleneck? What's the plan for the transition from northbound 14 Street to westbound Glenmore Trail?

Improvements to the interchange bridges are not part of the scope of this project, but may be reviewed in subsequent planning studies. The existing flyover, including the merge lane length, will remain as per existing condition.

39. There are issues with entering and exiting the communities along 14 Street, what are the traffic impacts at 75 Avenue?

We have developed an updated design at this location that will eliminate direct impact between the bus lane operations and operations of 75 Avenue and 14 Street. The bus lanes are now proposed to intersect with Eagle Ridge Drive, a roadway with substantially less traffic than 14 Street, and use the existing intersection and roadway infrastructure. In the southbound direction, the bus lanes are proposed to connect directly to Hospital Road, approximately 400 metres north of the intersection at 75 Avenue. Additionally, the project proposes to add an additional eastbound lane on the 75 Avenue approach to alleviate some of the congestion at this intersection during Rockyview General Hospital shift-change.

In the southbound direction, the bus lanes are proposed to connect directly to Hospital Road, approximately 400 metres north of the intersection at 75 Avenue S.W.

The updated design has been reviewed with Rockyview General Hospital. The revisions have addressed questions they had identified, and they have no concerns with the project at this time.

The proposed plan shifts the stations approximately 55 metres closer to the hospital than the previous plan. See plan below.

Southwest BRT 75 Avenue intersection design

40. Is this going to impact 14 street SW congestion?

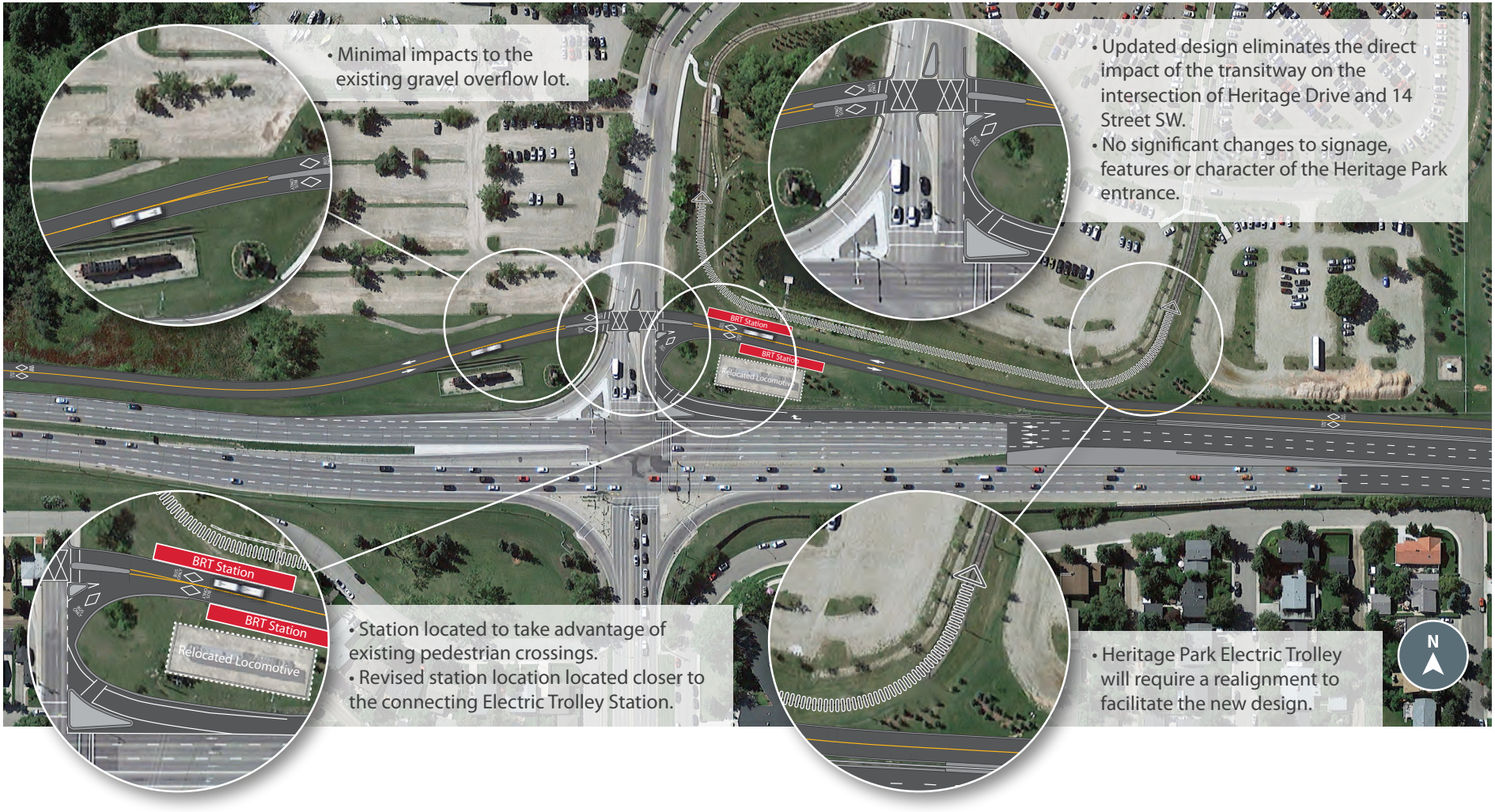
The updated design eliminates impacts to the operation of the intersection of 14 Street and 75 Avenue S.W. The revised concept brings buses through the existing intersection between Eagle Ridge Drive/Hospital Road and 75 Avenue S.W., with no requirement to add any additional transit priority signalling to the intersection of 14 Street and 75 Avenue S.W. The proposed additional eastbound lane on 75 Avenue S.W. will facilitate the additional buses, as well as improve operations for vehicles during shift change over. The limited number of buses will have limited impact on overall traffic volumes.

The transitway design has been revised to minimize impacts to intersections on 14 Street. This includes a revised design of the transitway at Heritage Drive to eliminate direct impacts to the signalized intersection. The transitway and station have been shifted further west, and are proposed to cross the access road into Heritage park, where less daily commuter traffic exists. Additional benefits of this design is that it improves the operations for the South Crosstown BRT along with maintaining the existing entrance characteristics of the Park.

Further traffic modelling has been undertaken at these intersections and all of these changes result in minimized impact to congestion on 14 Street S.W. In the long term, if enhancements to transit service are not made, traffic congestion will increase through trip generation associated with new land developments. This would require alternative transportation services and increased parking supply at major employment and post-secondary sites due to a lack of public transit choices.

The transitway and station have been shifted further west, and are proposed to cross the access road into Heritage park, where less daily commuter traffic exists.

Southwest BRT Heritage Drive S.W. intersection design



41. 14 Street is classified as a skeletal roadway – does the design conform to Complete Streets?

Yes, the design conforms to City of Calgary Complete Streets Policy. Design Standards for Retrofit Streets are provided under section 7.3 of the Complete Streets Policy and states:

7.3 Design Standards for Retrofit Streets:

7.3.1 In established areas, all efforts shall be made to conform to the right-of-way requirements contained in the Complete Streets Guide and the standards of the latest DGSS;

7.3.2 Where existing constraints (such as existing buildings, or rights-of-way) prevent right-of-way compliance, an alternative design standard may be approved at the discretion of the Director, Transportation Planning;

7.3.3 Alternative designs must meet or exceed the minimum requirements for street elements as indicated in the Complete Streets Guide;

7.3.4 A written rationale for the alternative design must be submitted at the time of development application submission; and

7.3.5 An approved alternative design can only be applied to a specific geographic area for a specific development application.

Following the requirements of the Complete Streets Policy, efforts were made on the Southwest BRT project to conform to the right-of-way requirements contained in the Complete Streets Guide and the standards of the latest Design Guidelines for Subdivision Servicing (DGSS). Where existing constraints on 14 Street S.W. prevented right-of-way compliance, an alternative design standard was reviewed and approved by the Director, Transportation Planning.

The design for 14 Street S.W. does follow the principles of the Complete Street Guide (section I.2.2) for protection and allocation of regional and primary transit in the road right of way. The 14 Street S.W. right of way is classified as a skeletal road and Table 1.4-14 shows the primary modes of travel to be provided in the right-of-way. As shown in the table, walking and cycling accommodations are not required on Skeletal Roads, which is consistent with the Southwest BRT design for 14 Street S.W.

The design for 14 Street S.W. also follows the principles outlined in Section 3.4 - Transit Design for walkability, station design and transit priority.

Where existing constraints on 14 Street prevented right-of-way compliance, an alternative design standard was reviewed and approved by the Director, Transportation Planning.

42. Are there concerns with flooding at 90 Avenue at 14 Street S.W. in the proposed bus underpass?

The storm sewers for the Southwest BRT project will be designed to City of Calgary guidelines and sized to address the 1:5 year (one in five year) storm event through the system, and 1:100 year (one in 100 year) event through overland flow. Stormwater directed towards the underpass consists of only the water that falls onto the transitway. The proposed design consists of two separate storm water collection systems for the area of 90 Avenue at 14 Street S.W. The existing roadways and area will collect the water through the existing storm sewers, similar to how it is collected today, with only a minor diversion of the storm sewer to avoid the underpass. The underpass will operate under a separate system that collects water, only that falls within the depressed portion of the transitway, and will be directed into a pumping station that discharges into the existing system.

In the past, there have been reports of "flooding" in the area. In discussions with the City of Calgary Water Resources, those events were caused by past issues with the existing catch basins leads. That infrastructure within the vicinity of the intersection of 14 Street and 90 Avenue S.W. will also be replaced as part of this work.

The existing roadways and area will collect the water through the existing storm sewers, similar to how it is collected today, with only a minor diversion of the storm sewer to avoid the underpass.

43. Concerns about safety, issues with lane width, narrowing from 3.7 metres to 3.5 metres, thought that reducing road widths will cause safety issues, referencing skeletal roads to be 3.7 metres wide. Is this an issue? Medians are too small, and reducing goes against Complete Streets Policy. A 2.6 metre median is too small.

Please refer to the response for Question #41. The existing 14 Street S.W. roadway, although classified as a skeletal roadway, does not currently adhere to all of the criteria identified in the Complete Streets Guide. In keeping with the Complete Streets Policy, the project team have recommended a design exception for lane widths along 14 Street, in a localized area between 75 Avenue and Heritage Drive S.W., to reduce the lanes by 0.1 metres, from 3.7- to 3.6-metre lanes.

The rationale for the design exception has several elements. Primarily this is due to the lack of available road right-of-way. Typical right- of-way requirements for a skeletal roadway are a minimum of 60 metres, however within this section, the available right-of-way between existing noise barriers is only 37 metres, far below the typical requirements of a skeletal roadway. Arterial Streets, by comparison, typically have right-of-ways between 36 metres and 43 metres, with lane widths of 3.5 metres. The design alternative of demolishing adjacent homes to widen the right-of-way is a poor trade-off given the impact to the community.

The design and operations of 14 Street S.W. in this segment is similar to the existing operation of Glenmore Trail. Snow clearing on 14 Street during the winter, for example, will be similar to Glenmore Trail where snow is cleared to the barriers and snow removal is undertaken as required using existing snow removal equipment.

A roadway safety audit has been undertaken as part of the preliminary design, and subsequent audits will be completed as part of the design process and prior to construction.

44. There are concerns with getting from Bradbury Drive to Southland to 14 Street. What is being done to accommodate this traffic during and after construction?

There will be minimal impact to this intersection during and after construction. The intersection currently operates as an uncontrolled T-Intersection with an existing left turn bay in the westbound direction of Southland Drive. The proposed bus lane improvements would include a transit-only left turn bay in the eastbound direction of Southland Drive, along with a transit-only access across from Bradbury Drive. A traffic signal is proposed at this location to accommodate the left turn of the bus lane across the two westbound lanes of Southland Drive.

With respect to traffic moving to and from Bradbury Drive, the only significant change will be that traffic headed northbound on Bradbury Drive, wanting to turn left (westbound) on Southland Drive, will be required to wait for a signal to make the left turn.

Improvements to the Southland Drive and 14 Street S.W. intersection are also included in the Southwest BRT project scope. These improvements will improve the operation at this intersection.

The proposed bus lane improvements would include a transit-only left turn bay in the eastbound direction of Southland Drive, along with a transit-only access across from Bradbury Drive.

Southwest BRT Bradbury Drive to Southland to 14 Street S.W.

45. Pedestrian and bicycle safety along 14 Street S.W. – issues during construction, how will this be accommodated?

Pedestrians and cyclists crossing of 14 Street S.W. will be accommodated during construction. When the pedestrian bridge south of 75 Avenue S.W. is removed during construction, pedestrians and cyclists will temporarily be allowed to cross the south side of the intersection of 14 Street and 75 Avenue S.W.
Refer to graphic for Q39 on page 60.

Southwest BRT 75 Avenue S.W. and 14 Street S.W.

46. Concerns with the frequency of buses on pedestrian safety, is this an issue? Many people run across 14 Street S.W. and do not use the pedestrian overpasses

Safety is of the utmost importance for our customers using Calgary Transit, both on the bus and while accessing stations. A higher frequency of buses would result in lower risk of pedestrians running across the street in jay-walking conditions to catch the bus. The understanding that there would be less than a 10 minute wait for the next bus would provide assurance that missing the initial bus would not have a long delay and would encourage pedestrians to be patient.

A collision history review has been conducted and has not found any pedestrian-related collisions in the history of this location.

Rockyview Hospital

Your questions, answered.

47. Right in and right out for emergency vehicles: how can a regular vehicle carrying an emergency passenger access and egress the Rockyview Hospital site? Will right turns on red be permitted?

The updated design of the transitway should alleviate the concern for right-in and right-out movements as the operation of the intersection will not be changed, except for the addition of a third eastbound left turn lane. The proposed design has been reviewed with Rockyview Hospital.

Refer to graphic for Q39 on page 60.

48. There are concerns about the intersection at Rockyview Hospital (75 Avenue). What is being done there?

As above, the updated design of the transitway should alleviate the concern for right-in and right-out movements as the operation of the intersection will not be changed with exception of the addition of a third eastbound left turn lane. The proposed design has been reviewed with Rockyview Hospital.

Refer to graphic for Q39 on page 60.

49. How will people access the Rockyview Hospital during and after construction?

Access to the hospital both during and after construction will remain the same. The widening required to accommodate the current concept will have a minimal impact to operations during construction.

50. There are concerns with emergency vehicle access at the Rockyview, how will emergency vehicle access be accommodated?

The Southwest BRT project team has been working with the Rockyview Hospital, Carewest and Alberta Health Services to ensure that access for emergency vehicles is accommodated and maintained at all times.

Emergency vehicles will have the ability to utilize the dedicated bus-only lanes in times of emergencies to access Rockyview Hospital and other destinations. As per the Alberta Traffic Safety Act, emergency vehicles operating in emergency situations will have the right of way. Similar to Glenmore Trail, vehicles must yield the right-of-way and safely move their vehicles aside to allow the emergency vehicle to pass. Buses in the dedicated bus-only lanes would also yield right-of-way to emergency vehicles.

With the revisions to the intersection of 14 Street and 75 Avenue S.W., emergency access and egress to Rockyview Hospital will not be constrained by the transitway facility.

Emergency vehicles will have the ability to utilize the dedicated bus-only lanes in times of emergencies to access the Rockyview Hospital and other destinations.

51. Who is going to walk to the Rockyview Hospital from the 14 Street BRT stop?

The proposed concept moves the station closer to the hospital than the previous concept. The hospital currently has a high bus ridership for both employees and patients, and it is anticipated that the Southwest BRT will provide improved service to the hospital for all users.

Current Transit ridership at the Rockyview Hospital		
	Weekday	Average Weekly Transit Trips
Riders getting on	708	3880
Riders getting off	571	3172
Total Activity	1279	7052

Data from 2014-2015 and includes all stops in the Rockyview Hospital area (Rockview, Glenmore Auxiliary, Carewest, 75 Avenue @ 14 Street S.W.)

Environmental

Your questions, answered.

52. What is being done about environmental assessments and noise measurements?

The Southwest BRT alignment falls along an existing transportation corridor where previous geotechnical and environmental studies have been completed over the course of development of 14 Street S.W. and the Glenmore Causeway. Most recently, the work that was completed for the widening of 14 Street between 90 Avenue and Heritage Drive S.W. included environmental components. The Southwest BRT project has yet to finalize the design, and any required environmental assessment and management activities will be appropriately undertaken as design and construction activities advance.

An Environmental Screen for the Southwest Transitway project was completed with the assistance of Environmental Safety Management early on in the Project. This information has been passed on to our Consultant team for their use in the design for the project and for their environmental and geotechnical assessments on the project. Environmental Site Assessments (ESA) are not required for this project as we are not acquiring any property for the project, but the project will be undertaking a Biophysical Impact Assessment, historical resources review, and noise analysis and monitoring as part of the design process for the project. Also, as the project moves into construction, the project team will be preparing tree protection plans, erosion and sediment control plans, and an Environmental Construction Operations (ECO) plan.

The City has completed a noise analysis to review the impacts of the proposed design, and to assess the requirement and effectiveness of the existing noise barriers.

Southwest BRT existing 14 Street S.W. condition, looking north

Southwest BRT proposed 14 Street S.W. condition, looking north

53. Buses are too loud and exceed decibels, what is being done about noise walls?

All vehicles generate noise from two major sources, the contact point between tires and the road and the engine-exhaust system.

Based on research completed by the Federal Highway Administration (FHWA) and their Traffic Noise Model (TNM) system, it is possible to compare levels received from buses and cars on a straight, level road with a receiver located approximately 50 feet (15 metres) from the centre of the nearest lane with no barriers. Below is a table showing levels of buses compared to typical other vehicles (automobiles, medium trucks, heavy trucks, and motorcycles).

TNM Vehicle levels - Average Pavement, Not Full Throttle (dBA) - SPL at (15m) 50 ft.				
Vehicle Type	Speed (km/hr)			
	50	70	80	100
Auto	63.5 dBA	69.5 dBA	72.0 dBA	76.0 dBA
Bus	74.3 dBA	77.0 dBA	78.3 dBA	80.5 dBA
Medium Truck	72.8 dBA	76.8 dBA	78.5 dBA	81.5 dBA
Heavy Truck	77.3 dBA	80.5 dBA	82.5 dBA	85.8 dBA
Motor Cycle (Avg/& Full Throttle)	72.5 dBA	77.5 dBA	80.0 dBA	83.5 dBA

- Buses are typically louder than cars, particularly at lower speeds. Up to approximately 80 km/h they are nominally louder than medium trucks, and they are consistently quieter than heavy trucks.
- Buses travelling in the corridor are less frequent than cars. For example, in the 14 Street S.W. corridor there are 80,000 vehicles per day. We are estimating 234 buses per day in each direction (468 total) ***(see question 29)***. This equates to 0.6% of traffic on roadway. With the transitway in place, the lanes that are along the west side of 14 Street S.W. will now have approximately 117 buses per day (half of 234) as compared to the approximately 69,000 - 84,000 vehicles per day (in 2014).

The details of those noise barriers are currently being finalized and further engagement will be undertaken with the directly impacted property owners upon completion.

The City has completed a noise analysis, as per The City of Calgary's Surface Transportation Noise Policy, to review the impacts of the proposed design, and to assess the requirement and effectiveness of the existing noise barriers. Current analysis suggests that no changes are required for existing noise barriers. The analysis has identified locations that require noise barriers, where currently no barriers exist. The details of those noise barriers are currently being finalized and further engagement will be undertaken with the directly impacted property owners upon completion.

54. Concerns over diesel fumes going over the sound walls into the backyards of residents.

The new Southwest BRT bus service aims to provide a reliable and efficient public transit alternative that connects people directly to their destinations. Improved public transit service will lead to more transit riders and fewer cars on the roads which reduces air pollution.

Calgary Transit operates a modern transit fleet that meets modern standards emissions. In 2015 we retired our last two-stroke diesel buses (the ones which, in the past, you might have associated with visible exhaust fumes). Our approximately 1,000 bus and shuttle fleet now consists of modern four-stroke diesel and gasoline combustion engines. All of our newest fleet utilize state-of-the-art pollution control technology including diesel particulate filter (DPF) and selective catalytic reduction (SCR) technology to minimize pollutant emissions affecting air quality. Our maintenance schedule for these vehicles and their pollution control technologies meets or exceeds manufacturer recommendations. We are also phasing in compressed natural gas powered buses which will further improve the noise and exhaust emissions reduction of our fleet.

55. Will construction and the additional buses in Woodbine endanger animals in Fish Creek?

Construction and the BRT buses in Woodbine will not endanger animals in Fish Creek Park. The roundabout at Woodpark Boulevard and 24 Street S.W., along with the BRT station in Woodbine, will all be constructed within the existing road right-of-way and will not have any impacts to designated park spaces. There are no impacts to Fish Creek Park or Bebo Grove to the south of Woodpark Boulevard and 24 Street S.W.

Alternative Options

Your questions, answered.

56. Why not HOV or Carpool Lanes? Or what about shoulder lanes or reverse lanes? Is that an alternative? Concern about the lack of alternatives given to the public. Speaker cited Green Line and how five different options were given to the public – why can't the southwest have a variety of options to choose from?

Options such as High Occupancy Vehicle (HOV) lanes, Carpool Lanes, Shoulder operations, and reversible lanes, are possible, and have been considered ultimately, on-road options do not address the primary objectives of Calgary Transit, and tend to be more vehicle focused, and less transit focused. The following table illustrates the benefits and limitations to the options suggested.

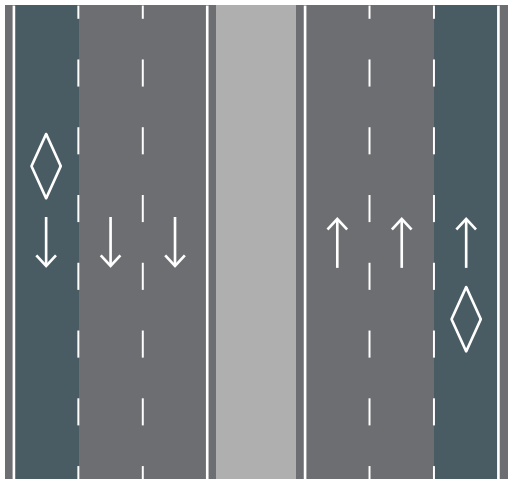
In allowing general traffic to use the shoulder lanes on 14 Street S.W., in addition to the bus, makes station environments less desirable and difficult to access. Customers would be waiting at a station where cars are traveling by at a high rate of speed. This would likely drive the need for lay-bys to set the customers further back from the road, which would result in the need for more road right-of-way and possibly acceleration/deceleration lanes. This will increase land impacts and project costs.

In allowing general traffic to use the shoulder lanes on 14 Street S.W., in addition to the bus, makes station environments less desirable and difficult to access.

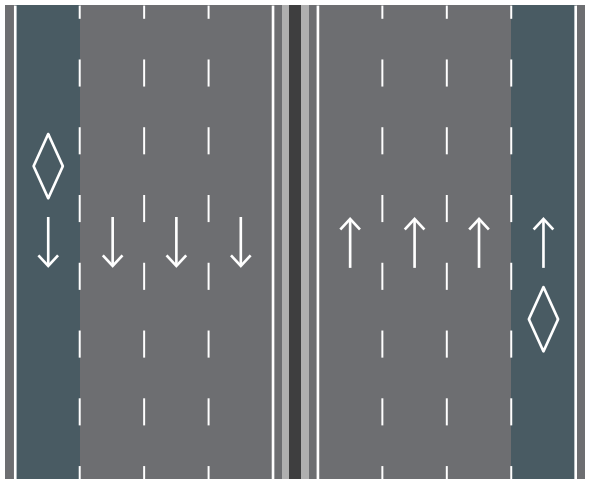
OPTION	ADVANTAGES	DISADVANTAGES
1. HOV Lanes on 14 Street 6-Lane (with bus pull out stations)	• Services both Transit and multi-passenger vehicles • Minimal impact to crossing streets • Less impact to 14 Street roadway infrastructure • Eliminates the need for an underpass at 90 Avenue SW • Eliminates utility relocations along 14 Street SW	• HOV lane would utilize the outside lanes and not be consistent through the corridor due to access requirements at intersections • Less efficient for Transit, mixing with vehicle traffic • Less efficient for Transit, requiring deceleration and merging in and out of stations • Safety concerns with varying bus speeds on HOV and access through HOV lane • No advantage to emergency services • Stations environment along 14 Street SW • Stations are located adjacent to travel lanes on 14 Street SW resulting in poor pedestrian/customer environment for transit users
2. HOV Lanes on 14 Street 8-Lane (Bus Stop in lane)	• Services both Transit and multi-passenger vehicles • Minimal impact to crossing streets • Eliminates the need for an underpass at 90 Avenue SW • Eliminates Utility relocations on 90 Avenue	• HOV lane would utilize the outside lanes and not be consistent through the corridor due to access requirements at intersections • Less efficient for Transit, mixing with general traffic • Less efficient for multi-passenger cars having to wait behind buses at stations • Safety concerns with buses stopping in travel lane. • No advantage to emergency services • Stations environment along 14 Street SW • Additional travel lane on 14 Street encourages additional traffic • Utility relocations required • Stations are located adjacent to travel lanes on 14 Street SW resulting in poor pedestrian/customer environment for transit users • Requires the reconstruction of the pedestrian overpass at 75 Avenue SW
3. Bus Shoulder running option (similar to Crowchild)	• Less impact to 14 Street with only shoulders being required • Minimal impact to crossing streets • Eliminates the underpass at 90 Avenue SW • Eliminates Utility relocations on 90 Avenue SW	• Less efficient for Transit • Stations are located on traffic islands adjacent to travel lanes on 14 Street SW resulting in poor pedestrian/customer environment for transit users • Appearance of transit does not promote a dedicated service above other modes • Requires the reconstruction of the pedestrian overpass at 75 Avenue SW
4. 14 Street Road – Reversible central lane (in median) for peak period.	• Services both Transit and multi-passenger vehicles • Minimal impact to crossing streets • Less impact to 14 Street roadway infrastructure • Eliminates the need for an underpass at 90 Avenue SW • Eliminates utility relocations along 14 Street SW	• Requires reconstruction of Pedestrian overpass • Would be challenging implementing through intersections • Stations would be located in the middle of 14 Street SW • Would require duplicate stations on the outside of 14 Street for off peak operations • Impacts to intersections at Southland Drive, 90 Avenue SW, Heritage Drive, 75 Avenue
5. Transitway – Reversible Lanes in space restricted areas	• Less impact to 14 Street between Heritage Drive and 75 Avenue SW • Maintains all other advantages of dedicated Transitway	• Less efficient for Transit by adding time due to waiting at signals on the dedicated transitway • Requires reconstruction of Pedestrian overpass • Maintains all other disadvantages of dedicated transitway

Southwest BRT possible road configurations

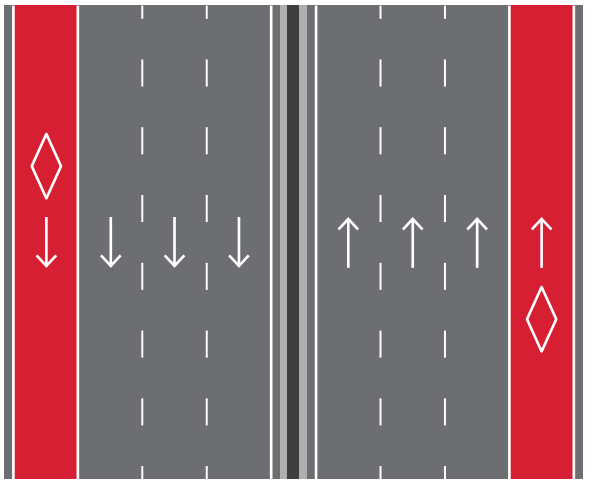
1 HOV Lanes 6 lanes



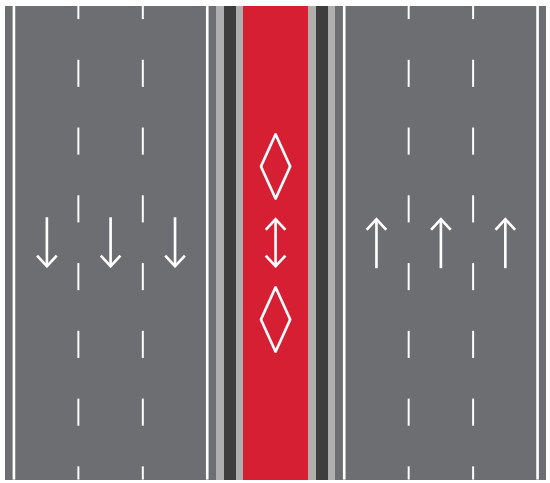
2 HOV Lanes 8 lanes



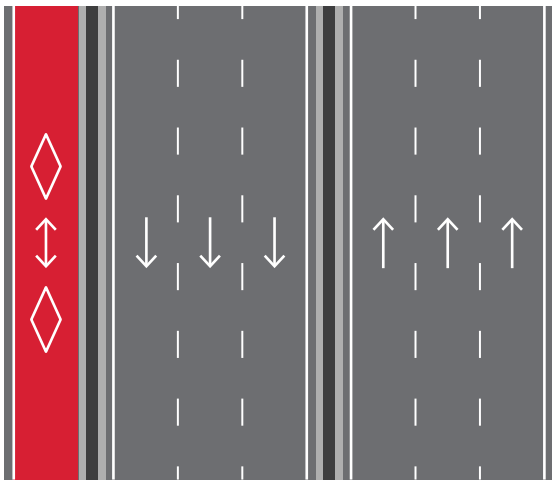
3 Shoulder Operation 8 lanes



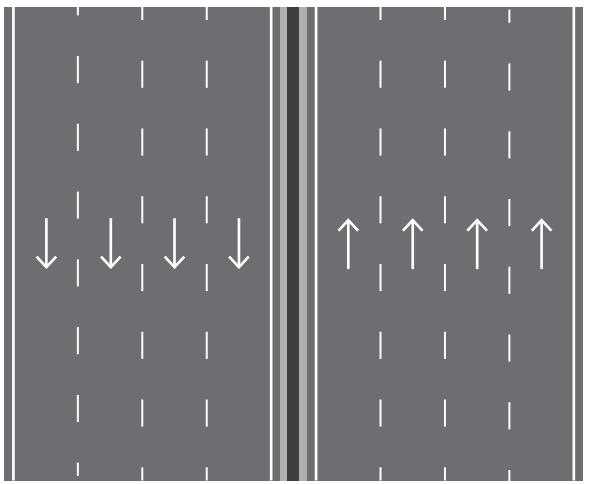
4 Transitway Reversible Central Lane (peak direction) 7 lanes



5 Transitway Reversible Lane (peak direction) 7 lanes



6 Expressway 8 lanes

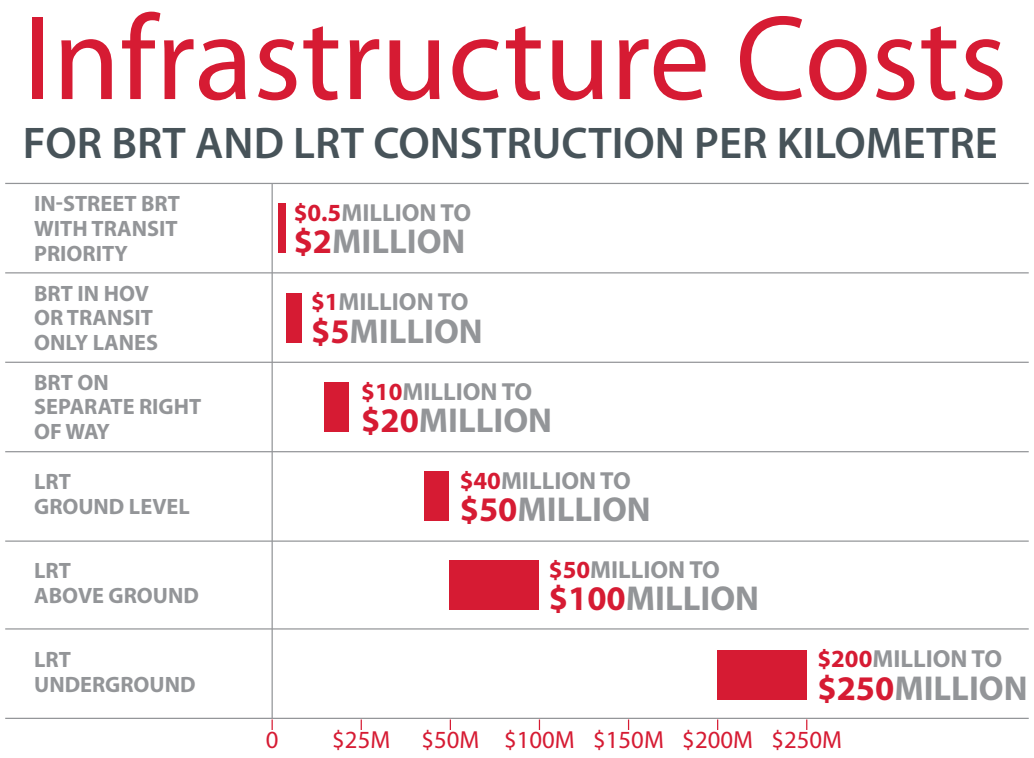


57. Can you just eliminate Southwest and South Crosstown BRTs and have LRT to Currie Barracks?

The capital cost to build LRT far exceeds the capital cost to build BRT. The South Crosstown cannot be eliminated as it will be serving riders from the southeast to facilitate a direct connection to major land uses in the southwest quadrant. An LRT to the Currie Barracks/Mount Royal University area would not improve transit access to and from the southwest communities south of Glenmore Trail.

The Southwest BRT and South Crosstown BRT connect to the future Green Line LRT and existing Red Line LRT.

The graphic below is an excerpt from the RouteAhead report that outlines the differences in construction capital costs, per kilometre, between various BRT and LRT infrastructure options. As the chart shows, there is an approximate difference of 2.5 - 4 times between a BRT on separate right of way and a ground level LRT.



58. Can 14 Street S.W. be an eight-lane expressway?

Yes, 14 Street S.W. could be upgraded to become an eight-lane expressway, however this option was not investigated in detail, as it doesn't provide the comparable benefits to transit. Independent of the BRT question, expanding 14 Street S.W. to an eight-lane expressway would have significant down-stream impacts, particularly at the 14 Street S.W. and Glenmore Trail interchange, resulting in significant costs to the project and changes in traffic flow. The table below identifies the benefits and limitations to this option.

It should be noted that upgrading 14 Street S.W. to an eight lane expressway would not be viewed as a transit project, and would be developed as a Mobility project. Mobility projects are funded differently than transit projects, and therefore, would fall under a different strategy for funding and implementation. The Southwest BRT is currently a transit project, and therefore qualifies for provincial Green Trip funding.

OPTION	ADVANTAGES	DISADVANTAGES
1. 8 Lane Expressway (with signals at 90th/Heritage/75th)	• Improves vehicle traffic flow along 14 Street between 75 Avenue and 90 Avenue S.W.	• Encourages more traffic to use 14 Street SW • No real benefit to transit as buses operate in mixed traffic • Buses would require deceleration and acceleration lanes to merge with traffic • Improvements would be required at 14 Street and Glenmore Trail interchange • Utility relocations required along 14 Street SW • Project scope would extend south, beyond Southland Drive to facilitate a tie in to the existing 4 lanes. • Intersection improvements would be required along 14 Street SW at Southland, 90 Avenue SW, Heritage Drive and 75 Avenue, modifying the turn bays and exit ramps • More lanes would encourage faster speeds, which is not conducive to a roadway with signals approximately every 800m creating a higher potential for accidents at intersections

Mobility projects are funded differently than transit projects, and would fall under a different strategy for funding and implementation.

59. Has the City considered fixing the service gap at MRU? Can we implement a trial? i.e. Add more service to Mount Royal buses in order to solve their transit issue.

Calgary Transit can, and regularly does, make service adjustments in certain areas as needed, subject to available funding. Mount Royal University (MRU) and the surrounding area requires more planning and consideration than adding a few buses to existing routes, particularly as the area continues to grow.

The number of buses per hour serving the MRU area has doubled since 1981, which is the equivalent of adding the Southwest BRT service to the area twice over. Most of this growth in service has occurred since 2001. The MRU campus is still growing, as are the surrounding areas in Currie Barracks and ATCO Park, which will result in continuing increased demand for transit services.

The number of buses serving the area is only one part of the equation, and bus trip origin and destination are key factors in service planning. Calgary Transit's recent SW Transitway Customer Survey showed that 23 per cent of trips originating in the southwest district terminate in the west district, near MRU. Existing connections to MRU from the southeast are poor, with trips taking 1 to 1.5 hours. Taking transit from the southwest to MRU, despite its close proximity, can take up to an hour. The Southwest BRT and South Crosstown BRT projects will provide significantly shorter transit travels times.

A trial of the Southwest BRT service would not provide a full indication of ridership for the service. Without the infrastructure to provide improved travel times, reliability and customer experience, the service would not be as attractive a travel option, and the resulting ridership numbers would not likely be indicative of ridership of the complete service.

The MRU campus is still growing, as are the surrounding areas in Currie Barracks and ATCO Park, which will result in continuing increased demand for transit services.

60. Has the road over the dam to avoid congestion at Glenmore and Crowchild been considered?

This is an alternative that was explored in the early concept development for the Southwest BRT, but was not pursued due to several factors:

- The deck width of the Glenmore dam is 6.1 metres or approximately 20 feet, and currently would not be considered wide enough to accommodate two lanes for bus traffic without an expansion to the bridge deck.
- Currently situated on the bridge deck is a 1,500mm water feeder main that takes up a third of the deck space and is the major supply line to the area south of the Glenmore Plant. The other two-thirds of the deck accommodates the regional pathway system.
- In addition, there are stop logs (control elements to adjust water level and flow rate in the reservoir) that need to be maintained and adjusted on a regular basis by means of a 'log lifting vehicle' that accesses the bridge.

Based on these factors, the Glenmore dam is not suitable as an alternate for the BRT alignment.

61. Will running shuttle buses to the LRT be faster?

Travel times will depend on the desired destination. In nearly all cases, running shuttle buses would be slower. It should be considered that with a BRT system, the dedicated infrastructure provide a significant measure of time savings and reliability improvements due to removing any risks associated with general traffic. Shuttle buses run in general traffic and are susceptible to any delays associated with the general traffic road. As indicated in the table below, for most trips it is anticipated there will be travel time savings of 10-28 minutes, compared to current transit travel times.

The tables outline the travel times from station to station with the BRT network. Green numbers indicate travel time savings, while red indicates travel time loss. The top number represents the estimated travel time on the Southwest BRT. The bottom number represents the difference in travel time between existing transit service and the new Southwest BRT.

Southwest BRT estimated station-to-station travel times

North Inbound

	Woodbine North	Cedarbrae/Braeside	Oakridge	Southland Leisure Centre	Glenmore Landing	Heritage Drive	Rockyview Hospital	54th Avenue	Mount Royal University	Currie Barracks	Marda Loop	17th Avenue	Downtown West	Downtown
Woodbine South	2 / 8	7 / 6	9 / 7	11 / 7	16 / 21	17 / 24	19 / 27	25 / 26	30 / 24	33 / 28	37 / 24	40 / 24	48 / 12	51 / 3
Woodbine North		5 / -2	7 / -1	9 / -1	14 / 13	15 / 16	17 / 19	23 / 20	28 / 19	31 / 20	35 / 16	38 / 16	46 / 4	49 / -5
Cedarbrae/Braeside			2 / 1	4 / 1	9 / 12	10 / 15	12 / 21	18 / 22	23 / 21	26 / 22	30 / 18	33 / 18	41 / 9	44 / -3
Oakridge				2 / 0	7 / 16	8 / 19	10 / 26	16 / 22	21 / 25	24 / 27	28 / 23	31 / 23	39 / 12	42 / 0
Southland Leisure Centre					5 / 24	6 / 24	8 / 25	14 / 22	19 / 24	22 / 26	26 / 22	29 / 22	37 / 12	40 / 0
Glenmore Landing						1 / 3	3 / 16	9 / 9	14 / 16	17 / 14	21 / 10	24 / 10	32 / 16	35 / 4
Heritage Drive							2 / 5	8 / 3	13 / 5	16 / 6	20 / 2	23 / 2	31 / 9	34 / 1
Rockyview Hospital								6 / 3	11 / 2	14 / 3	18 / -1	21 / -1	29 / 3	32 / 9
54th Avenue									5 / -1	8 / 0	12 / -4	15 / -4	23 / -7	26 / -4
Mount Royal University										3 / 3	7 / -1	10 / -1	18 / 0	21 / 5
Currie Barracks											4 / -3	7 / -4	15 / -3	18 / 2
Marda Loop												3 / 0	11 / 0	14 / 5
17th Avenue													8 / -3	11 / 0
Downtown West														3 / 3

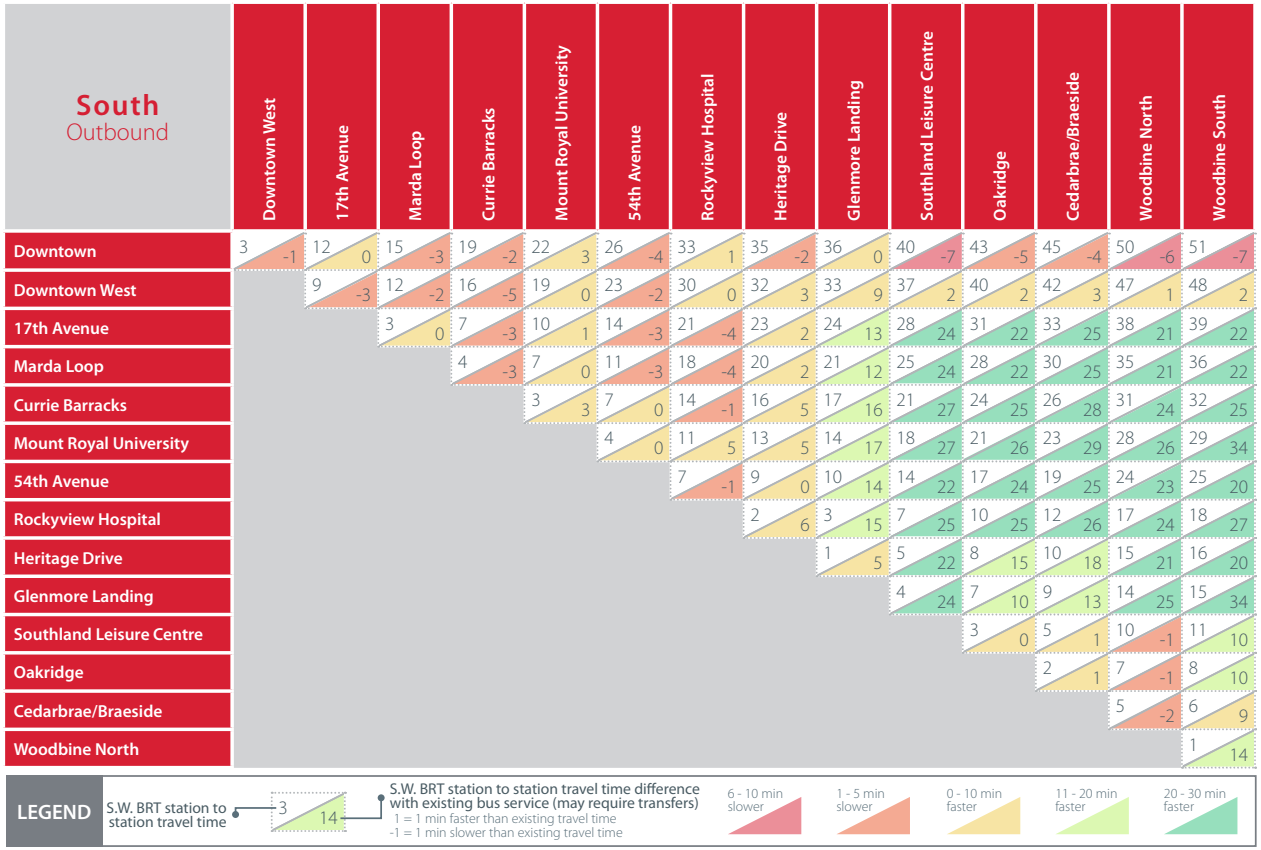
LEGEND

S.W. BRT station to station travel time (3 / 14)

S.W. BRT station to station travel time difference with existing bus service (may require transfers)
1 = 1 min faster than existing travel time
-1 = 1 min slower than existing travel time

6 - 10 min slower | 1 - 5 min slower | 0 - 10 min faster | 11 - 20 min faster | 20 - 30 min faster

Southwest BRT estimated station to station travel times

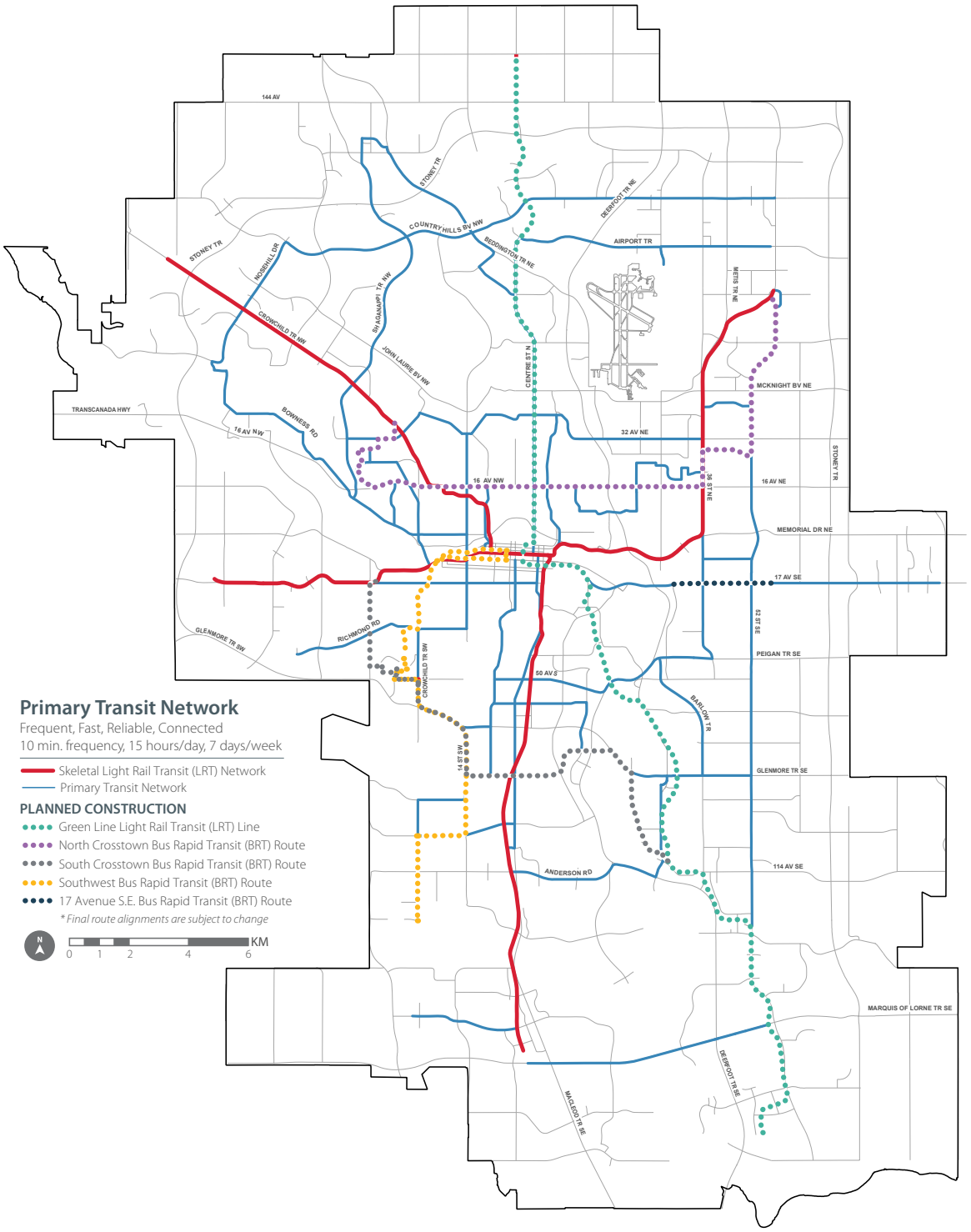


62. Can't transit service existing nodes instead of creating new ones?

Calgary Transit has historically been a radially-oriented network with a focus on getting into and out of downtown. RouteAhead, our 30-year public transit plan states, "we are evolving from being a uni-centric city, where most transit users live in suburban residential communities and work downtown, to a more polycentric city, where there are a multitude of high-density hubs of activity. In response to this pattern, The City is changing how it invests in the future transit network." *(RouteAhead, p.18).*

Trip patterns evolve over time. Most trips in Calgary today now occur between suburban communities rather than into and out of the core. Improved transit services along these desire lines of travel are critical in reducing the level of reliance on private automobiles for travel.

The Southwest BRT is not creating any new nodes. Locations where BRT stations are being proposed are already nodes of activity, with higher densities, commercial, institutional or recreational activity. BRT will result in the eventual intensification of these activity areas having a reduced traffic impact, both locally and in the quadrant. The Southwest BRT project provides a new link to make it easier for Calgarians to travel to these nodes. New nodes, like Lincoln Park or Currie Barracks, are already approved and underway, and improved transit service plays a critical role in supporting these projects.



New nodes, like Lincoln Park or Currie Barracks, are already approved and underway, and improved transit service plays a critical role in supporting these projects.

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For more information contact 311 or visit calgary.ca