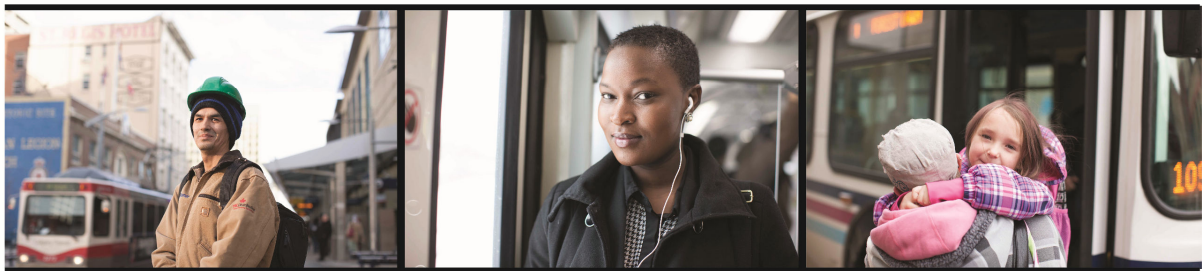


Centre City Transit Improvements - Phase One Analysis



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THE CITY OF
CALGARY

1.0 Introduction

Calgary's Centre City is where 35,000 Calgarians live, about 160,000 Calgarians work and over 6,000 businesses operate. Over the next 30 years it is expected that 40,000 new residents and 60,000 new jobs will be added to the Centre City. To support The City's mobility goals and attain the goals of the Municipal Development Plan, Calgary Transportation Plan, RouteAhead and the Centre City Plan public transit in the Centre City and surrounding areas will have to evolve.

The Centre City and surrounding communities are currently served by two light rail transit lines, including the 7th Avenue Free Fare Zone, 23 bus rapid transit, mainline bus and community shuttle routes and 18 express bus routes. In recent years improvements to the transit system have been implemented to improve passenger capacity (new light rail vehicles, ongoing work to expand LRT platforms), increase safety, security and cleanliness and improve the customer experience.

This study was approved as a two-phase response to Council direction. This report is the response to phase one, which includes reporting back to Council with estimates of operating and capital budget impacts and providing Council and citizens with high-level opportunities, benefits and costs of providing transit-priority infrastructure in the Centre City

Phase two will provide functional planning level estimates of infrastructure costs and will broaden the scope of public engagement to include additional stakeholders. Phase two will return to Council no later than 2015 December.

This study provides insight on a number of aspects of Centre City Mobility. The study:

- identifies issues with existing service in the Centre City and options to address the issues;
- identifies the capital and operating costs of providing a downtown circulator service; and
- recommends further study of transit priority infrastructure in the Centre City and further study of a bus-based downtown circulator.

2.0 Vision

The project charter states the vision is to produce creative, implementable solutions to improve mobility in the Centre City.

3.0 Background

RouteAhead, the 30-year strategic plan for Calgary Transit, presented a vision to make transit the preferred choice of many Calgarians. RouteAhead acknowledged the importance of special areas in Calgary that required further study in order to fully understand the issues - the Centre City was one of these areas. When the RouteAhead plan was brought to the Standing Policy Committee on Transportation and Transit in 2013 February, Councillor John Mar moved the motion to investigate an urban transit loop. Calgary Transit responded to the motion by expanding the project scope to investigate improvements to the existing Centre City transit services, in addition to investigating an urban transit loop.

4.0 RouteAhead

RouteAhead provides a plan to reach the 30-year vision for public transit in Calgary. The vision was developed with input from customers, citizens and Calgary Transit employees. The plan focuses on key three areas: customer experience; network planning and financing transit (see Figure 1 below).

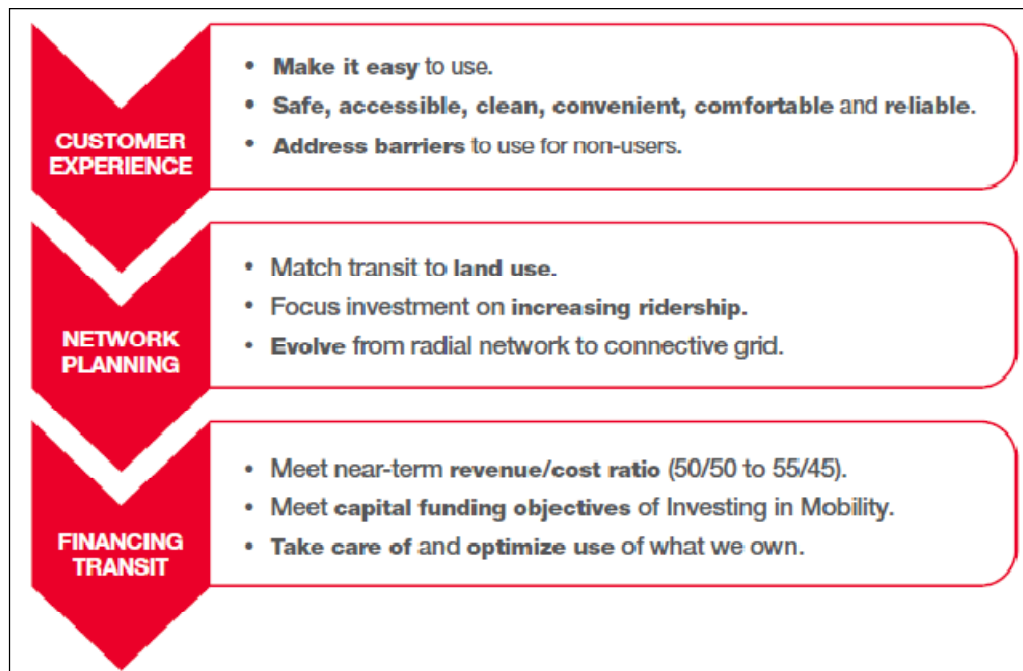


Figure 1 - from RouteAhead, Section 2

RouteAhead adopted and highlighted concepts from Jarrett Walker's book, *Human Transit: How Clearer Thinking About Public Transit Can Enrich Our Communities and Our Lives*. RouteAhead showed that we should move towards a public transit network that:

- evolves from peak oriented service to all day service (to serve a wider range of trips);
- evolves from a focus on coverage to a focus on ridership (to meet customer demand);
- evolves to a grid network; and
- improves frequency, reliability and speed.

The options for Centre City transit improvements presented in this report address each of the points shared above and help Calgary Transit to move towards the goals outlined in the RouteAhead plan.

5.0 Issues Affecting Transit Services in the Centre City

Calgary Transit has recognized the Centre City as a chokepoint for transit services for many years. One of the reasons for choosing an LRT system in the 1970s was to address the amount of bus traffic entering downtown. A bus-based rapid transit system would not be able to move the volume of people the LRT does without getting bogged down in the Centre City. Congestion levels in the Centre City change over time, and can even change from day to day depending on weather, collisions and special events.

The impact of traffic congestion is magnified for transit customers. A transit customer has to wait at a station or stop for their vehicle to show up. Until real-time information is available to Calgary Transit customers in 2014 they will be waiting for a vehicle that may be stuck in traffic. Providing transit priority will help transit vehicles to operate on time, reduce operating costs and improve the customer experience.

More than half of all downtown workers get to their job on Calgary Transit bus and CTrain services. Currently, Calgary Transit has one dedicated avenue in the Centre City. The 7th

Avenue transitway allows the CTrain and buses to travel through downtown with minimal disruption. The avenue does not have full pre-emption, rather the signals are on a fixed time that assist with the passage of the CTrains, while allowing north-south traffic to travel through the Centre City.

While collecting data for this study a number of issues with existing bus transit services were documented in the Centre City:

- travel time can be unpredictable;
- schedule adherence is variable; and
- some routes experience capacity issues within the Centre City.

Operating costs are affected by the issues stated above, but detailed analysis was not performed as part of this investigation. In general, as travel time increases due to congestion and other factors additional transit vehicles are required to provide the same level of service, thereby increasing operating costs.

Reliability is also affected by traffic congestion. Changing traffic conditions affect the speed of travel of transit vehicles and can disrupt scheduled arrival times. A reliable service improves the customer experience and builds confidence in the transit system.

Dedicated transit lanes and transitways can improve travel time by reducing the amount of time buses are stuck in congestion, reduce operating costs because fewer buses will be required to provide the same level of service/capacity and improve the customer experience because buses will be closer to scheduled time.

6.0 Centre City Circulator

This report recommends further investigation of a Centre City circulator. A circulator has been identified in a number of plans, including the Centre City Plan. A circulator would provide local transit service for workers and residents in downtown and the Beltline. One of the issues identified by stakeholders is that during the peak periods transit services can be at capacity by the time they reach the Centre City, making it difficult for Centre City residents to use those services. A circulator may overcome this issue by providing a very localized service.

To be effective the circulator would need to operate in two directions, be frequent and be direct. A circulator would not have to be provided with streetcars and this report recommends further investigation of a bus-based Centre City circulator once there is certainty regarding the alignment of the North Central LRT.

7.0 Centre City Transit Priority

The primary reasons why The City of Calgary implements transit-only lanes are to reduce delay and improve reliability for customers. Bus-based transit-only lanes are relatively inexpensive compared to LRT, for example, but can significantly reduce delays and improve on-time schedule performance.

Transit-only lanes are often perceived by motorists as "empty". Some assume that a bus lane that is not lined with buses isn't productive. In fact – quite the opposite - only a blocked transit-only lane appears to be full of buses. The lanes give travel speed advantage to the high number of people in the transit vehicle, and to make the most of the public investment in transit operating funds. The greater the travel time advantage, the more likely the bus is to be busy, and the less time it will spend dwelling in the lane. The less time a bus is there, the better the lane is working!

-from RouteAhead, Section 4

Calgary Transit has identified Fourth Street SW, from 4 Avenue South to 12 Avenue South, as a candidate for transit priority measures. Additional analysis, design and public consultation will have to be undertaken before Administration returns to Council for final approval.

Fourth Street SW has been identified as a corridor for transit priority because it carries Calgary Transit's most frequent, highest ridership bus service, Route 3 – Elbow Drive/Sandstone. Route 3 operates at primary transit levels of service, with buses arriving every ten minutes or better for 15 hours per day, seven days per week. Route 3 carries over 135,000 passengers per week in and out of the Centre City. Route 3 travels south on Fifth Street SW, a southbound one-way street. By combining Route 3 on Fourth Street SW and implementing transit priority measures it is expected that travel time will be reduced, schedule adherence will be improved and customer satisfaction will increase. Calgary Transit will investigate the benefits and impacts further and will engage local businesses and stakeholders to further refine the transit priority measures.

In addition, Route 3 has the highest allocation of service hours of all Calgary Transit bus routes because of the high frequency of the route. Approximately 1,500 times per day a bus travels north on Fourth Street or south on Fifth Street SW. Providing transit priority on Fourth Street and consolidating these routes on to the corridor with transit priority is expected to have a positive impact on transit travel times.

This corridor is also being investigated for use by the Green Line bus-based transitway for travel from 10 Avenue South, through downtown to connect the Southeast and North Central corridors. Figure 2 shows key transit gateways and corridors in the Centre City, including the future Green Line.

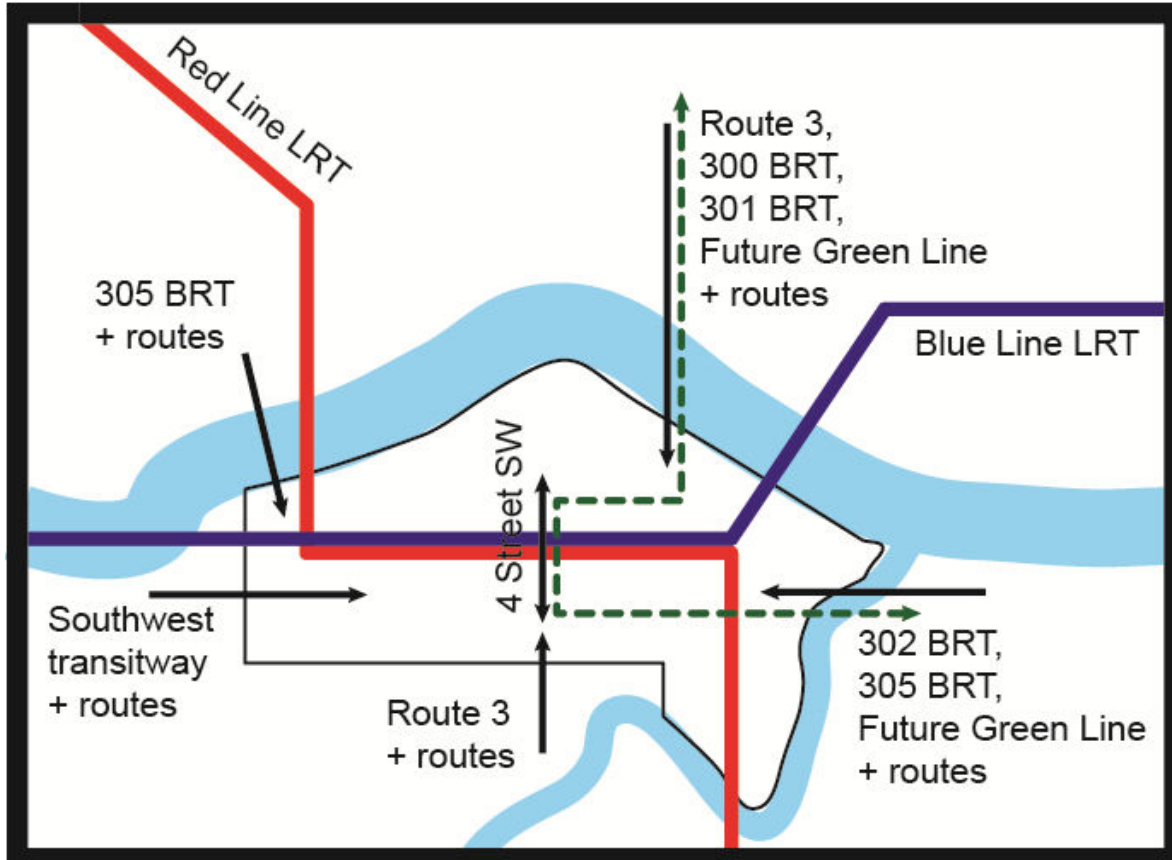


Figure 2 – Existing and future Centre City transit service map

Administration has identified a network of Centre City streets and avenues that may be considered for additional transit priority measures in the future to address issues of schedule adherence, operating cost and the customer experience. The network is in line with previous plans, such as the Southeast LRT Functional Planning Study and the West Village Master Plan.

7.1 Schedule Adherence Data

Data that has been collected for this study indicates a wide variation in travel times for buses in the Centre City. For example, during the data collection period in September 2013, a southbound Route 3, in the morning rush, can take anywhere from six minutes and 30 seconds up to 13 minutes and 40 seconds to travel 1.3 kilometres – a distance that can be travelled in three minutes without traffic.

A simplified analysis of the Route 3 in the Centre City indicates that over \$800,000 per year in operating funds can be saved by reducing travel times for each trip through the Centre City by five minutes. This cost does not include capital/fleet savings.

7.2 Workshops

Calgary Transit held a workshop for staff on 2013 November 13, to identify issues and opportunities for transit service in the Centre City. Working through a number of exercise, staff identified the following priorities:

- there is a need for transit priority measures to improve travel time/schedule adherence
- improve the customer experience in the Centre City

- identified Fourth Street SW as a major artery for improvement

On 2013 December 4, a meeting was held with members of the Technical Advisory Committee (TAC) of the North Central LRT Concept Study. The TAC is comprised of City staff from a wide range of business units, including Land Use Planning and Policy, Roads, Water, Office of Sustainability and more. The TAC's role is to provide expert views on the North Central LRT project and related issues that arise as it moves forward. During this meeting there were five groups working independently on a vision for the North Central LRT alignment in the Centre City. Each of the five groups produced a similar response: the LRT should be a quick, direct line through the Centre City and Calgary Transit should have a different technology, or combination of routes, to provide mobility to people in the downtown and beltline.

8.0 Conclusion

Calgary Transit will investigate the benefits and impacts of Centre City transit priority infrastructure and engage local businesses and stakeholders to further refine the transit priority measures to improve transit operations mobility and the customer experience.