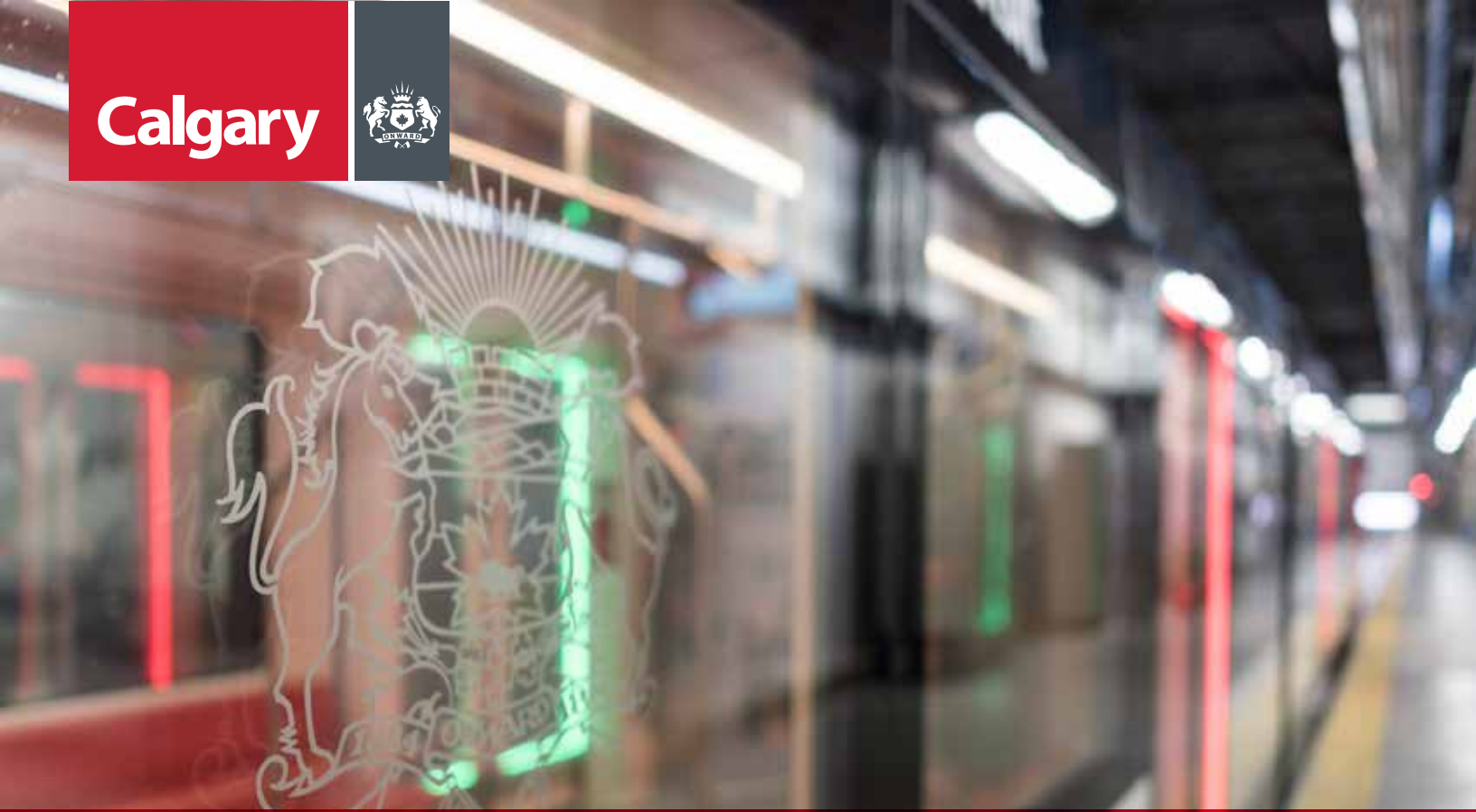


Calgary



# RouteAhead

Calgary Transit's 30-Year Strategic Plan



The RouteAhead plan delivers an over-arching document to guide Council's and Calgary Transit's strategic decision-making for the next 30 years.

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The maps within this document represent conceptual transportation networks for the city as a whole. No representation is made herein that a particular site use or City investment, as represented on these maps, will be made. Site specific assessments, including environmental contamination and the future financial capacities of The City of Calgary, must be considered before any land use or City investment decisions are made.





# Land acknowledgement

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The Calgary area, where the Bow and Elbow rivers meet, is a place of confluence where the sharing of resources, ideas and opportunities naturally come together. Indigenous peoples have their own names for this area that have been in use long before Scottish settlers named this place Calgary.

In the Blackfoot language, they call this place, Moh-kins-tsis. The Îethka Nakoda Wicastabi First Nations refer to the Calgary area as Wicispa Oyade and the people of the Tsuut'ina nation call this area Guts-ists-i. The Métis call the Calgary area Otos-kwunee.

**“We acknowledge all Indigenous people who have made Calgary their home.”**

We would like to take this opportunity to appreciate and acknowledge that we are gathered on the ancestral territory of the Blackfoot Confederacy, made up of the Siksika, Piikani, Amskaapipiikani and Kainai First Nations; and the traditional territories of Îethka Nakoda Wicastabi First Nations, comprised of the Chiniki, Bearspaw, and Goodstoney First Nations; and the Tsuut'ina First Nation. The city of Calgary is also homeland to the historic Northwest Métis and to Métis Nation of Alberta, Region 3.

We acknowledge all Indigenous people who have made Calgary their home.





# Message from the General Manager

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**Since 2013, RouteAhead has been guiding the way we plan, implement and maintain transit service in Calgary. Everything we do at Calgary Transit has been influenced by this long-range strategy.**

In 2022, we began the process of updating RouteAhead, to ensure it continues to address the needs of Calgarians as their priorities, travel habits, and preferences evolve. We reviewed every aspect of the current RouteAhead plan along with other municipal and regional planning documents, to see how they influence and complement each other. We collaborated with experts throughout The City of Calgary; consulted the public, special interest and advocacy groups; and involved regional partners to make sure we were able to develop a thorough picture of what transit service Calgarians and visitors need and expect over the next 30 years, and a plan for how to meet those needs and expectations.

To ensure a strong transit system, it's vital that all City services, infrastructure, and mobility planning work together to enable Calgarians and visitors to access and connect with communities and with the city as a whole.

The updated RouteAhead plan provides City and external partners with a roadmap for planning and investing in a way that maximizes the benefits that public transportation provides.

This roadmap includes guidance on Calgary Transit's overall approach to transit planning and the customer experience, and it outlines important capital projects that will carry us into the future. It provides clear direction for where investments should be focused in order to get us there. It also introduces a shift in focus to building a more frequent network, in order to improve connections and travel time. Our goal is that this work will help Calgary Transit continue to provide service to Calgarians that is safe, accessible, easy to use, and that continues to reduce environmental impacts.

I am very proud of all that we've achieved since RouteAhead was originally created in 2013, and look forward to where it will lead us over the next 30 years.

**Doug Morgan,**  
**General Manager**  
**Operational Services**





# Message from the Director

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When we developed RouteAhead in 2013, we conducted extensive engagement with citizens, customers, employees and other groups, to ensure we were getting our priorities right, as we made plans for transit for the next 30 years. Even then we knew that the needs of Calgarians were fluid and would change over time, which was why we built in a 10-year review. It was, and is, important to us that we are able to see, understand and meet the needs of our customers and communities, and that we adapt along with them.

In the past, our priority was to provide coverage in as much of the city as possible, even if that meant sacrificing frequency or service span. Through conversations with Council, customers, community groups and local businesses, we've learned that our focus needs to shift, and that frequency and reliability are more important factors when choosing whether or not to use transit.

Since RouteAhead was originally launched, the mobility landscape of our city has changed. Calgarians have embraced micromobility options like shared e-scooters and e-bikes; rideshare services; and alternative transit options like On Demand.

We've learned that Calgarians want to see more options for accessing transit and for their overall travel. Transit is no longer a one-size-fits all service, but must provide multiple options as the backbone of an integrated transportation system to get Calgarians where they need to go.

This brings us to how we have developed the update of RouteAhead and the changes we're making. We're still focused on ensuring that our service is safe, accessible, and easy to use, and that our infrastructure and fleet are carefully planned to create important connections throughout the city.

What's changing is our approach to planning our service, in order to prioritize the Primary Transit Network. The Primary Transit Network is an approach to delivering service that will connect major corridors throughout the city, with service running every 10 minutes or better, at least 15 hours a day, seven days a week. It will help us develop a more frequent, predictable, reliable transit service, which is what our customers have told us they expect.

This change in focus is a major shift from the way we currently do things at Calgary Transit.

It will create a lot of change in how Calgarians make their way around the city, and how they access and use transit and other mobility options. It doesn't mean immediate changes in transit service, but is part of our planning for the future to ensure we are meeting the evolving needs of our customers. Calgarians will have more access to transit service, making it a more convenient option for existing and future customers. I am optimistic that in making this shift, we will grow into a service that Calgarians can count on, in every way that they choose to use transit.

**Sharon Fleming**

**Director,  
Calgary Transit**

**“We've learned that Calgarians want to see more options for accessing transit and for their overall travel.”**



## Section 1

# Vision for public transit in Calgary

## 1.1 Vision statement

Transit is the backbone of Calgary's best future. Calgary Transit integrates movement and land use by creating an intuitive, safe, accessible, and welcoming system that is convenient to use for Calgarians and visitors.

## 1.2 Mission statement

As leaders in the industry, Calgary Transit's mission is to move people of all ages and abilities safely and conveniently, by building the Primary Transit Network using sustainable travel modes and technologies that harmonize destinations and movement.

## 1.3 Core principles for public transit

To guide the long-term plan for Calgary Transit, core principles for public transit in Calgary were created using feedback received from Council, Administration, and the public. Implementing the visions, directions, and strategies under each core principle will encourage, strengthen, and sustain transit ridership today and tomorrow, making transit a viable first choice for how Calgarians move around their city.

### Customer experience



- a. Make it easy to use public transit by supporting a variety of options for customers as they plan trips; access and pay for service; wait for and ride transit; and connect to their destination.
- b. Be responsive to attributes of safety, accessibility, cleanliness, convenience, comfort and reliability.
- c. Proactively adapt to changing customer needs and emerging technologies to support current and future customers.

### Network planning



- a. Match transit with land use by supporting activity centres (areas with a high concentration of jobs and population) and main streets, enhancing Primary Transit Network connectivity, and supporting intensification of population and employment along these corridors and in surrounding communities.
- b. Focus investment on frequency to increase ridership by continuing to build the Primary Transit Network.
- c. Design the network for a connective grid, by evolving from a radial network focused on the downtown, to a connective grid that facilitates travel between activity centres in all areas of the city.

### Financing transit



- a. Measure the success of transit service using a suite of key performance indicators.
- b. Align coordinated capital investment portfolios and One Calgary business planning with RouteAhead, to build projects that expand the Primary Transit Network, and ensure operating investments meet RouteAhead goals.
- c. Optimize service performance through safety and reliability focused asset management to maintain a state of good repair.

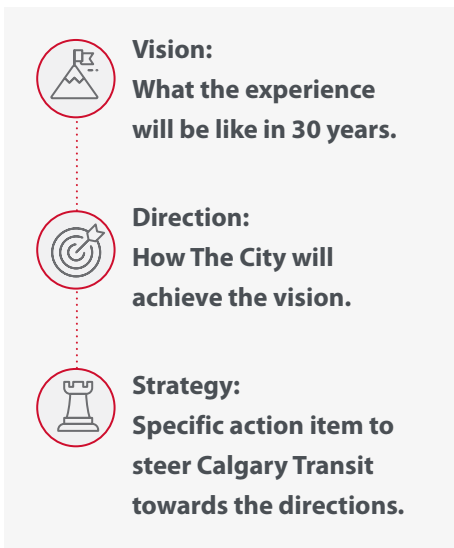
### 1.3.1 Navigating RouteAhead

Sections 3, 4, and 5 contain background information, followed by a comprehensive list of visions, directions, and strategies under each core principle: customer experience, network planning, and financing transit. The visions, directions, and strategies were developed with the view that Calgary Transit will be Calgarians' preferred choice for mobility.

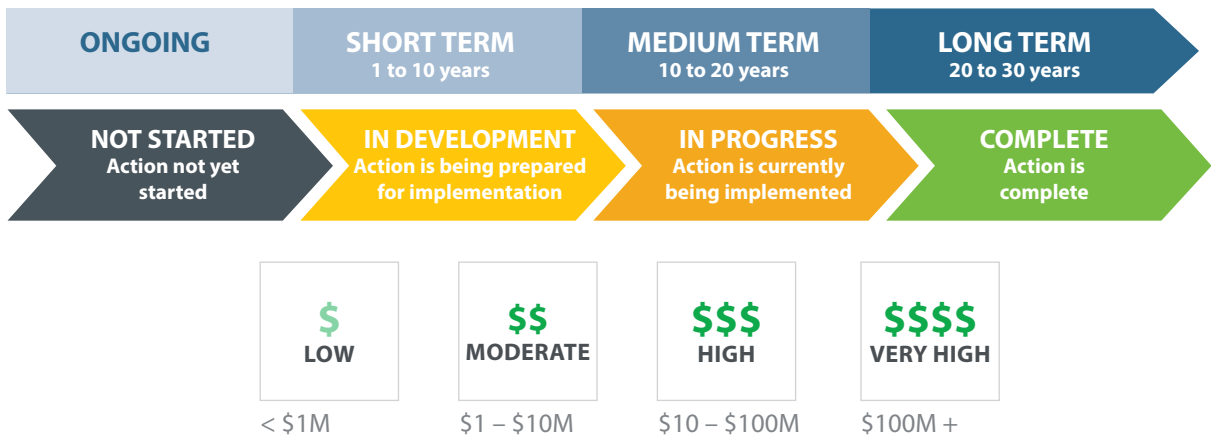
Figure 1-A shows that for each strategy, the current status is identified as: not started; in development; in progress; or complete. The timeframe to complete each strategy is identified as short-term (1-10 years), medium-term (10-20 years), long-term (20-30 years), or ongoing for continuous strategies. Each strategy also has a high-level estimate of the budget required for full implementation.

**“The visions, directions, and strategies were developed with the view that Calgary Transit would be Calgarians’ preferred choice for mobility.”**

The budget estimates are provided to guide an understanding of the approximate scale of investment. Further work to refine estimates is required as each strategy is implemented over the lifetime of RouteAhead.



**Figure 1-A: Strategy implementation tracking**



Strategy implementation tracking shows the status at the time of publishing and will be updated with RouteAhead annual reporting. As of publishing none of the strategies are complete.

# 1.4 Guiding documents

## 1.4.1. RouteAhead plan hierarchy

RouteAhead is a long-term plan to guide Calgary Transit over the next 30 years. It aligns with other forward-looking plans and strategies produced by The City of Calgary and regional partners.

### Calgary Metropolitan Region Board Growth Plan and Servicing Plan

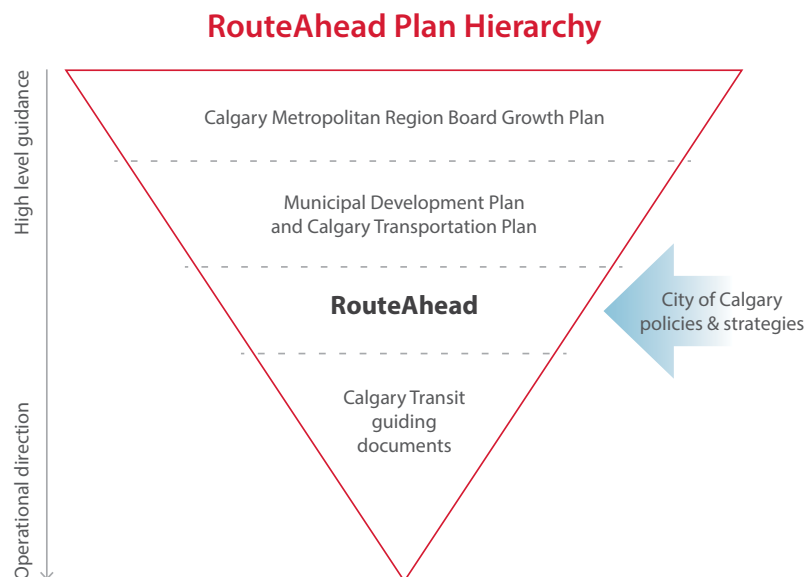
The Calgary Metropolitan Region Board Growth Plan and Servicing Plan came into effect in August 2022, following approval by the Government of Alberta. The Growth Plan provides a policy framework for managing population and employment growth across the Calgary Metropolitan Region, to accommodate approximately one million new residents over the next 25 to 30 years. The Calgary Metropolitan Region Board Servicing Plan outlines how planning and coordination of regional servicing will support implementation of the Growth Plan.

The Growth Plan contains a comprehensive regional land use plan that includes growth areas and land supply, transportation corridors, and intermunicipal transit. It also addresses the coordination of infrastructure planning and development among all member municipalities.

The Growth Plan is consistent with the Land Stewardship Act and the South Saskatchewan Regional Plan. All municipal statutory plans, such as Calgary's Municipal Development Plan, must be consistent with the Calgary Metropolitan Region's Growth Plan.



Figure 1-B: Calgary's planning policy hierarchy



## **Municipal Development Plan and Calgary Transportation Plan**

As required by the Municipal Government Act, Calgary's Municipal Development Plan provides the long-term strategic framework for growth and development in Calgary. The most recent update of the Municipal Development Plan was approved by Council in February 2021. It identifies future land uses within City of Calgary boundaries; growth management processes; transportation networks; and the provision of municipal services and facilities.

The Calgary Transportation Plan is a statutory volume of the Municipal Development Plan. A key goal is to enable transit to be a preferred mobility choice. The Calgary Transportation Plan emphasizes transit operational safety, reliability, and speed, relative to other modes. The Calgary Transportation Plan outlines multiple transportation options, including the Primary Transit Network, which will enable all Calgarians to travel safely and conveniently. It also contains policies to reduce environmental impacts from private vehicle transportation and improve access for all Calgarians, regardless of income or ability.

The Municipal Development Plan and Calgary Transportation Plan include several citywide policies integrating land use and mobility, to guide growth and change in Calgary. A key aspect to building a prosperous city is linking land use and transportation to realize mutual goals and benefits. Linking land use and transportation means thoughtfully planning and locating areas of growth and connecting them with frequent and high-quality transit service outlined in the Primary Transit Network map. The Primary Transit Network outlines key transit corridors with fast and frequent service, linking activity centres throughout the city with transit hubs in activity centres where major corridors intersect.

The City will be working to bring the Municipal Development Plan and Calgary Transportation Plan into an integrated document, which will strengthen and set the standard for the implementation of RouteAhead.

**“Calgary’s Municipal Development Plan provides the long-term strategic framework for growth and development in Calgary.”**



## City of Calgary policies and strategies

Transit is a key link to achieving social, economic, and climate resilience. The below City strategies highlight how Calgary's commitments to downtown revitalization, equity, and climate action drive the need for improved transit service, and how transit complements and helps achieve other City goals and strategies.

### Calgary's Climate Strategy

One strategy of critical importance to RouteAhead is Calgary Climate Strategy: Pathways to 2050 and related action plans. The City will accelerate the pace and scale of climate action needed to achieve our goal of net zero emissions by 2050. Net zero refers to a state in which greenhouse gas emissions emitted into the atmosphere are balanced by the removal of greenhouse gases out of the atmosphere. The City's mandate comes from the Municipal Government Act, Calgary's City Charter, and builds on the 2021 Climate Emergency Declaration. The Climate Strategy contains actions to reduce greenhouse gas emissions, including increased emphasis on transit and other low-carbon modes of transportation. It also identifies current and future climate hazards that Calgary Transit will need to address to minimize service disruptions.

### Social Wellbeing Policy

Another key policy is the Social Wellbeing Policy that guides The City in the provision of equitable services. This includes removing barriers to access and inclusion; advancing the shared process of Truth and Reconciliation; creating opportunities to grow culture in Calgary; and taking a preventative approach. The customer experience section of RouteAhead helps contribute to the Social Wellbeing Policy, specifically by removing barriers to access and inclusion, by creating a transit system that is safe, reliable, helpful, informative, easy to use, and clean for all customers.

### Greater Downtown Plan

Calgary's Greater Downtown Plan outlines a vision, roadmap, and commitment to build a thriving and future-focused downtown. Calgary Transit plays a key part in building a downtown that is Calgary's bustling centre of commerce; a place where people choose to live; and a 24/7 destination. Calgary's future success relies on downtown being a place where people want to live, visit, and set up businesses.

## Calgary Transit guiding documents

Calgary Transit has a variety of guiding documents that support the implementation of RouteAhead by outlining design expectations and operating procedures to help achieve the visions, directions, and strategies of the plan. Topics covered in these guiding documents include: transit-oriented development, bus stop design, and transit service standards.

**“Calgary's future success relies on downtown being a place where people want to live, visit, and set up businesses.”**



## Section 2

# About RouteAhead



## 2.1 About Calgary Transit

Calgary Transit operates as a municipal department of The City of Calgary, which has been providing public transit service since July 1909 when passengers boarded the first streetcar and providing specialized transit since 2001.

Calgary Transit has a rich history of moving people safely, quickly, and efficiently. Calgary Transit has evolved from the days of the streetcar to gasoline, diesel, compressed natural gas and electric buses, and light rail trains.

## 2.2 History of RouteAhead

Council first approved RouteAhead, a 30-year strategic plan for Calgary Transit, in 2013. In February 2022, Council directed Administration to conduct a 10-year update of the plan

to ensure it continues to effectively guide transit service delivery for the next 30 years. RouteAhead provides a vision and strategic direction for transit; identifies the investment to

achieve the vision; and will be used to develop the future business plans and budgets for the Public Transit and Specialized Transit services.

### 2.2.1 What we have done since 2013

Since RouteAhead's approval in 2013, it has been used as a key guidance and decision-making document for Calgary Transit to successfully deliver multiple projects that achieve the plan's core principles. Highlights since initial adoption of RouteAhead are provided below.

#### Customer experience

##### Accessibility

Many initiatives have been completed since 2013 to improve transit accessibility. Through the planned replacement program for Calgary Transit's fleet, 100% of buses are now equipped with front-entry ramps. The buses offer designated spots for people using mobility aids, or who require additional space. Additionally, all doors on the newest CTrains are accessible with no vertical poles in the doorway.

In lieu of ramps, doorways have a slightly sloped floor surface, making it easier for those with mobility impairments. All CTrain stations are equipped with clearly marked elevators, ramps, or ground-level accessibility. Audible and visual stop and station announcements have also been added on all buses and CTrains, making it easier for customers to know when their stop is coming up.

Calgary Transit has also worked to make CTrain crossings safer by installing automatic gate arms, upgrading warning lights, and improving accessibility at crossings throughout Calgary. While these initiatives have made accessing Calgary Transit easier and more convenient for many customers, there is still more work required to ensure we continuously improve accessibility.

**"Many initiatives have been completed since 2013 to improve transit accessibility."**



### Low-income transit pass

In 2017, Calgary Transit updated its low-income transit pass program to use a sliding scale that adjusts the price based on an applicant's household income. This created a more equitable model that has increased access to transit services for more low-income Calgarians who previously could not afford a transit pass. It helps eliminate financial barriers for low-income Calgarians so they can more fully participate in the community.

Equitable access to transit has been shown to increase employment opportunities by providing a reliable and affordable transportation option. It also reduces healthcare costs for low-income individuals and their families by reducing the time and cost for social support agencies to provide other forms of transportation.



### New technology

Calgary Transit has made multiple technological advances to simplify and streamline service for its customers.

In 2014, Calgary Transit modernized its services through the introduction of a real-time bus arrival information system. The information is available through multiple channels, including Calgary Transit's website, mobile app, teleride and teletext, and digital screens at some bus stops. Onboard audio-visual announcements for upcoming stops are also provided on buses.

In 2020, the MyFare app was introduced, allowing customers to buy and display their fare on their smartphone. All fare options are easily accessible, including low-income transit passes, senior's annual passes, and the UPass for post-secondary students. Roll-out of the MyFare app also involved deployment of over 1000 onboard bus validators and 100 mobile inspection validators.

In 2022, a new trip planning app, called *Transit*, was also launched. This app is fully integrated with the MyFare and RideCo apps, the latter providing access to On Demand transit services. As a full mobility as a service app, Transit allows customers to find multiple options to reach their destination, including transit and shared mobility (e.g., scooters, carshare).

**"Equitable access to transit has been shown to increase employment opportunities."**

## Network planning

### The MAX network

The MAX bus rapid transit network launched in 2018, providing four new cross-town lines – MAX Purple, MAX Teal, MAX Orange, and MAX Yellow. The network provides enhanced service to major destinations while requiring fewer transfers, due to optimized connections with the rest of the transit system. A mix of dedicated bus lanes, signal priority, and queue jumps also provide faster travel times along the MAX corridors. Heated shelters, real-time information displays, and security cameras provide enhanced comfort, convenience, and security for riders.

The MAX network represents a significant move towards the Primary Transit Network envisioned in the Municipal Development Plan and Calgary Transportation Plan, bringing more people closer to frequent and convenient transit services.

### Calgary Transit's MAX system encompasses three main focuses:

- **MAX comfort:** Heated shelters, larger platforms, and real-time displays provide customers with a new level of comfort, accessibility, and safety around the transit system.
- **MAX convenience:** The priority given to MAX routes allows customers to bypass traffic and have fewer stops.
- **MAX connections:** With fewer transfers and better connections to major destinations, the MAX service allows customers to reach high activity areas easily.

### Green Line funding and planning

Active planning for the new light rail transit line has been underway since 2011, shortly before RouteAhead's original approval.

In 2020, Council approved Stage 1 of the Green Line, from Shepard in the southeast to 16 Avenue north, and following provincial and federal reviews, was approved by all funding partners in 2021. Stage 1 represents the single largest infrastructure investment in Calgary's history with \$5.5B in funding commitments from the Government of Canada, Government of Alberta, and The City of Calgary. It will build the first 20 kilometres of the full 46 kilometre vision, constructing the most technically complex component of the project, and connect into the existing Red and Blue Lines and four MAX lines.

Stage 1 includes a wide range of benefits, including job creation and improved connections to destinations, reduced transportation emissions, improved greenspaces along the route, and opportunities for community revitalization around the new stations.

**"The Green Line light rail transit project represents the single largest infrastructure investment in Calgary's history."**

### Regional transit service to Chestermere

In 2021, Calgary Transit began providing the first-ever fixed route service to a neighbouring municipality – the City of Chestermere. The MAX Purple line provides two round-trips to Chestermere twice a day during peak hours. The service is fully paid for by the City of Chestermere. In addition to representing a new level of regional collaboration on transit service, this helps to reduce greenhouse gas emissions, commuter congestion and parking demand, while adding a new mobility option.

Calgary Transit also collaborates with other service providers in the region on stop locations in Calgary, wayfinding, and co-promoting all transit services throughout the region.



"Investments to renovate older light rail transit stations extend their service life reducing long-term cost to maintain them, while providing improved safety and comfort."

## Financing transit

### Stoney Transit Facility

In 2019, Calgary Transit opened the largest indoor compressed natural gas transit maintenance facility in North America. The Stoney Transit Facility in north Calgary was delivered through a public-private partnership (using federal funding identified specifically for public-private partnership projects), providing an affordable and low-risk approach to construct and maintain the facility for the coming decades.

The Stoney Transit Facility accommodates 420 standard buses (compressed natural gas and diesel) and is equipped with 36 maintenance bays. It has also been accredited as a LEED v4 GOLD<sup>1</sup> facility and incorporates adjacent wetlands and environmental reserve into the site.

### CTrain station renovations

Since 2016, Calgary Transit has allocated funding to renovate 10 older CTrain stations along the Red and Blue Lines. This included concrete repairs to stairs, ramps, and pedestrian bridges to increase durability and eliminate trip hazards. Roof leakages during rainstorms have been addressed to improve customer comfort and safety. Lighting upgrades, backup power, station layout improvements, new or upgraded elevators, and improved wayfinding also enhanced safety and accessibility. In addition to these updates, Calgary Transit also completed a variety of aesthetic improvements to modernize the stations.

These investments to renovate older CTrain stations will extend their service life, reducing the long-term costs to maintain them, while providing improved safety and comfort to Calgary Transit's customers.

<sup>1</sup> LEED v4 GOLD LEED-certified buildings save money, improve efficiency, lower carbon emissions and create healthier places for people. They are critical to addressing climate change and meeting ESG goals, enhancing resilience, and supporting more equitable communities.

## Navigating disruptions

In addition to advancing RouteAhead's core principles, Calgary Transit has continued to provide service to Calgarians through significant disruptions over the last decade.

### 2013 flood

During the 2013 flood, Calgary Transit maintained constant CTrain and bus service to all areas of the city not directly impacted by the floods. Transit service continued despite flooding of the Victoria Park Garage near the confluence of the Bow and Elbow Rivers, and the closure of the CTrain tracks downtown. The City was also able to rapidly repair substantial damage to the Red Line within two weeks of the flood event, allowing Calgary Transit to quickly restore service, and even support the 2013 Calgary Stampede.

### Local economic downturn (2015-2019)

A decline in transit revenues associated with reduced travel demand due to the local economic downturn necessitated adjustments to planned growth in service hours. Disruption to City finances due to downtown office vacancies resulted in the need to reduce City expenditures in 2018-2019, resulting in further reductions to Calgary Transit service levels.

### COVID-19 pandemic

From 2020 through 2022, the COVID-19 pandemic severely disrupted the ability of transit agencies around the world to provide service to customers. While Calgary Transit did adjust its service levels to compensate for reduced ridership, they were able to maintain a robust system, providing crucial service for customers who relied on transit to access work and their daily needs throughout the pandemic.

Calgary Transit quickly responded to evolving COVID-19 restrictions and health recommendations to maximize the safety of both transit customers and staff. Recognizing that many essential workers still relied on transit every day to get where they needed to go, Calgary Transit took steps to ensure they still had access to safe, reliable service. This included implementing new health and security measures, such as rear-door boarding, onboard signage, mask mandates, and increased security at transit facilities. The MyFare app also helped to address social distancing requirements by minimizing the need for in-person ticket purchases. After the low of 14 per cent of pre-pandemic ridership during the early days of the pandemic, by late 2022 Calgary Transit ridership recovered to over 80 per cent of pre-pandemic levels, demonstrating the resiliency of the system and importance of public transit service to Calgarians.



## 2.3 Engagement

RouteAhead was originally developed through extensive consultation with Calgarians, identifying their priorities and values, and using them to inform every part of the plan.

Engagement for the 10-year update focused on confirming Calgarians' transit priorities to make sure RouteAhead is moving in the right direction for the next 30 years. Feedback collected for the 10-year update was used to inform updates to the visions, directions, and strategies in RouteAhead.

Public engagement occurred online through the City of Calgary Engage portal. Respondents could provide feedback in three ways: completing a survey with questions for Calgarians; completing a survey with questions for organizations and businesses; and adding 'sticky notes' to provide feedback on what Calgary Transit is currently doing well and what they can improve.

**There were 7,325 visits to the Engage portal and more than 2,500 contributions made.**

- **Questions for Calgarians:**  
1,996 participants
- **Organizations and business:**  
17 participants
- **'Sticky notes':**  
522 notes posted

Response to engagement showed a personal investment in Calgary Transit as an important part of participants' current routine. Most participants are regular public transit users (93%) and take Calgary Transit either daily or a few days a week (81%).

The most common reasons for not taking transit more often are safety and it being faster to drive. Their top personal priorities for Calgary Transit, shown in Figure 2-B, are having buses and trains being more reliable, more frequent, and riders feeling safe.

**For each time horizon, shown in Figure 2-A, their top priorities are:**

- frequency and safety for the next five years;
- network design for the next 10 years; and
- network design and taking care of the environment for the next 30 years.



"Although many of the comments overall suggested improvements, there was also praise for the Transit app, MAX lines, and recent fare promotions."

Throughout people's comments about their own experience, the most common themes were:

- social disorder around CTrain stations;
- needing more stops that are accessible;
- schedule changes such as frequency and earlier/later hours of operation; and
- long waits to make connections, especially if the location makes them uncomfortable.

Some described concerns that specific communities, like industrial areas or parts of the northeast, were getting less service than others, making it difficult for people without a car to get to work.

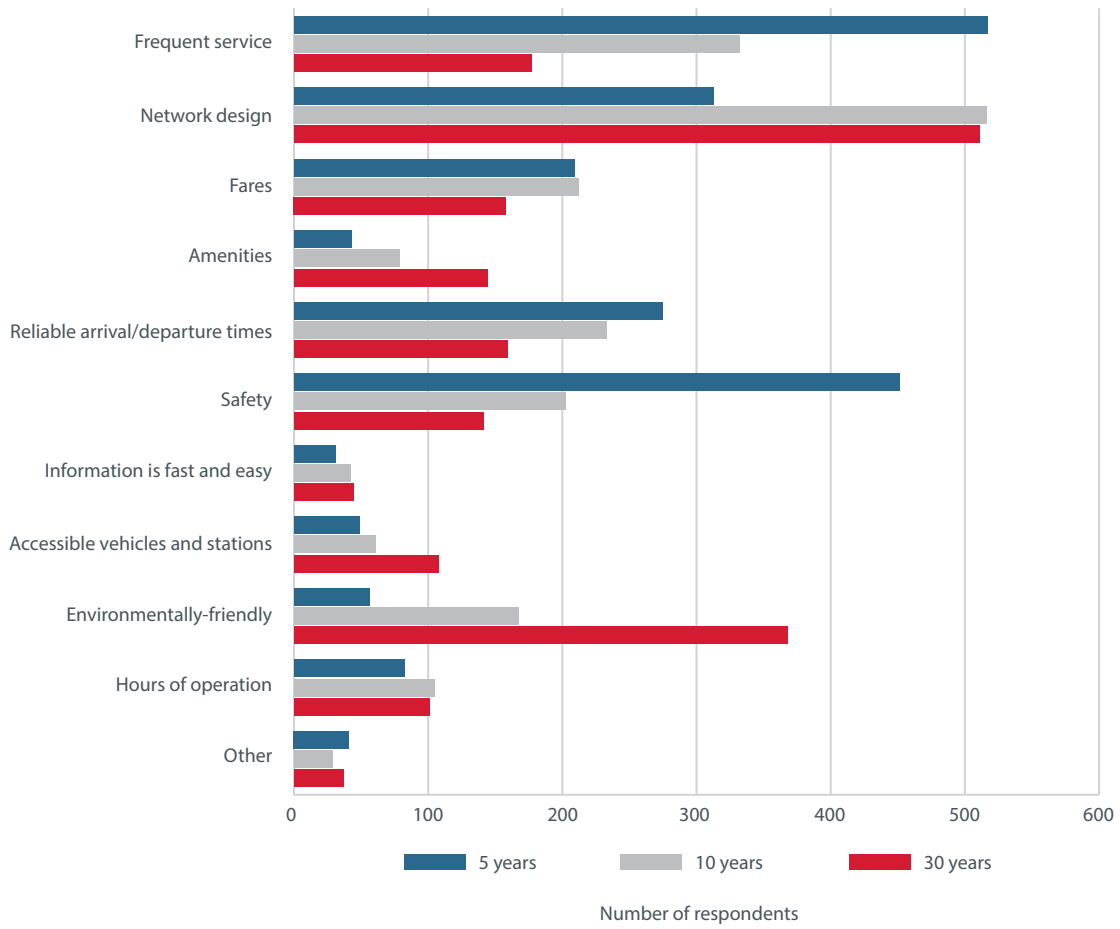
Similarly, comments from people representing businesses and organizations showed concern for the accessibility and safety of their members and customers in going to and from their location.

Although many of the comments overall suggested improvements, there was also praise for the *Transit* app, MAX lines, and recent fare promotions.

Respondents also asked for cross-town routes that don't require going downtown, and for more communities to be connected to light rail transit in the future. There were some concerns that older communities may lose neighbourhood routes as a trade-off for bus service in newer communities, making it more difficult to get to local amenities and shops.

**Figure 2-A: Engagement responses about preferences for Calgary Transit's priorities over the life of RouteAhead**

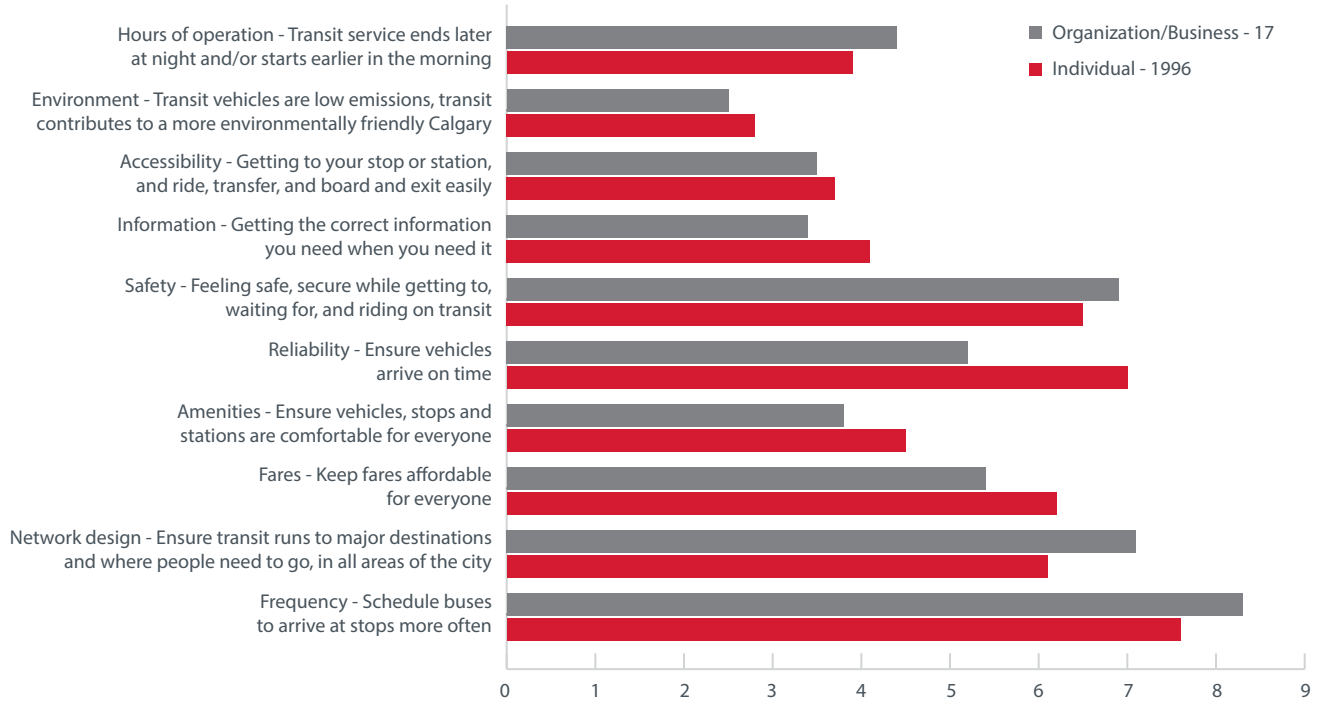
**Which one should Calgary Transit prioritize over each time frame?**





**Figure 2-B: Engagement responses about what elements of transit service are important to respondents**

**What elements of transit service are important to you?**



This figure shows how often participants ranked each value the highest on a scale from 1 - 10.



## Section 3

# The RouteAhead for the customer experience

## 3.1 The customer commitment

Calgary Transit’s customer commitment is our promise to deliver the six qualities of service that customers and employees identify as the most important.

Calgary Transit invests in projects and initiatives that positively impact the customer experience in these areas. Customers rate Calgary Transit’s performance in the six qualities of service four times a year.

Delivering on the customer commitment contributes to the RouteAhead vision and mission of moving people of all ages and abilities safely and conveniently and creating a welcoming system for all Calgarians and visitors.

**“Customers rate Calgary Transit’s performance in the six qualities of service four times a year.”**

Safe	Reliable	Helpful
We’ll plan, design and operate a safe transit system. We know that it’s critical to help our customers feel secure and safe while using the system. In our safety, security and cleanliness survey, customers rate how safe they feel while using our services.	We’ll provide a dependable transit service by minimizing delays. Customers depend on Calgary Transit to get them to their destinations on time. We do our best to minimize delays; however some circumstances are beyond our control, such as inclement weather, traffic and road conditions, police and medical emergencies. Our reliability results are based on real-time transit system information.	We’ll provide a service that is friendly and helpful. When a customer doesn’t have that service experience, their trust and respect for us erodes. Our customer satisfaction survey captures general perceptions of helpfulness as well as perceptions of transit staff during a recent trip.
our Q1 2023 rating <b>75%</b>	our Q1 2023 rating <b>87%</b>	our Q1 2023 rating <b>79%</b>

Informative	Easy to Use	Clean
We’ll provide customers accurate, consistent and timely information. This helps our customers make decisions. They want to know about possible disruptions that impact their commute — but also about future plans, fare changes and service changes. Our customer satisfaction survey captures general perceptions of the information we provide as well as perceptions of information quality.	We’ll make it easy to get around Calgary. Success requires a combination of factors such as frequent buses and CTrains, reasonable travel times, direct trips, convenient ways to purchase fares, and minimal crowding. Our customer satisfaction survey captures general perceptions of ease-of-use, as well as trip-based perceptions of accessibility, park and ride, transfers, length of a trip and information sources.	We’ll keep our vehicles, stops and stations clean. Cleanliness is important to customers and instills confidence in our transit system. Adequate cleanliness also affects perceptions of safety. Our safety, security and cleanliness survey captures general perceptions of cleanliness as well as customer experiences with cleanliness at bus stops, stations and in transit vehicles during their most recent trip.
our Q1 2023 rating <b>76%</b>	our Q1 2023 rating <b>69%</b>	our Q1 2023 rating <b>71%</b>

## 3.2 The customer's transit journey

Calgary Transit will continue to monitor and adapt to changing customer needs and expectations. This includes ensuring transit is safe, reliable, helpful, informative, easy to use, and clean throughout a customer's entire trip.

We will also identify ways to leverage emerging technology to improve the convenience and accessibility of transit facilities and services.

Providing a great customer experience is important to meet the visions outlined in the Municipal Development Plan and Calgary Transportation Plan. It helps make public transit an attractive option for riders, and retains customers who have access to other options.

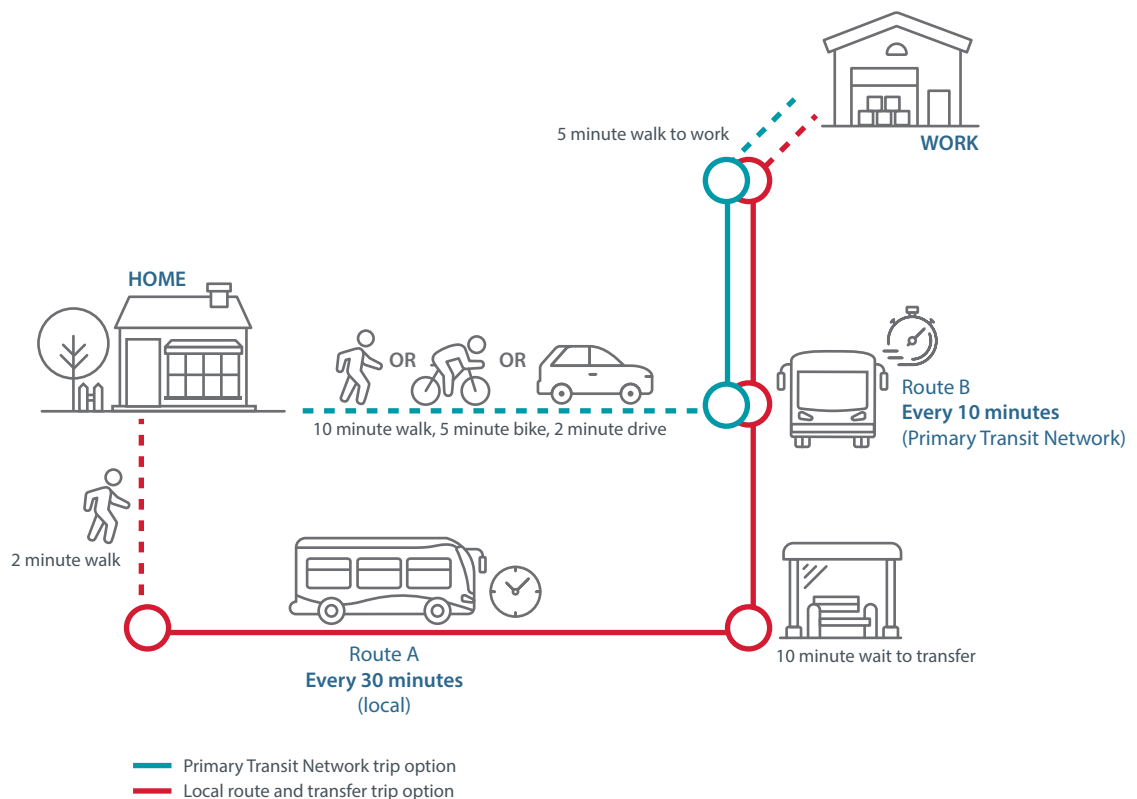
Expanded transit service – more buses and trains coming more frequently – will improve the customer experience. However, Calgary Transit recognizes providing a great transit service goes beyond providing frequent service and must address everything from accessibility to a comfortable ride.

RouteAhead addresses each element of the customer experience, including all steps of the transit journey.

### The steps are:

- understanding the transit system;
- accessing a stop, station, or platform;
- paying to use the transit service;
- waiting for a bus or train; and
- riding to the destination.

**Figure 3-A: Example of travel options provided by regular transit service and the Primary Transit Network**



### 3.3 Supporting the customer experience

Delivering a transit service — whether by fixed route, On Demand, or specialized transit for people with disabilities — requires a skilled workforce to ensure service is safe, clean, reliable, helpful, informative, and easy to use.

#### This is done through many stages of planning and implementing a transit network.

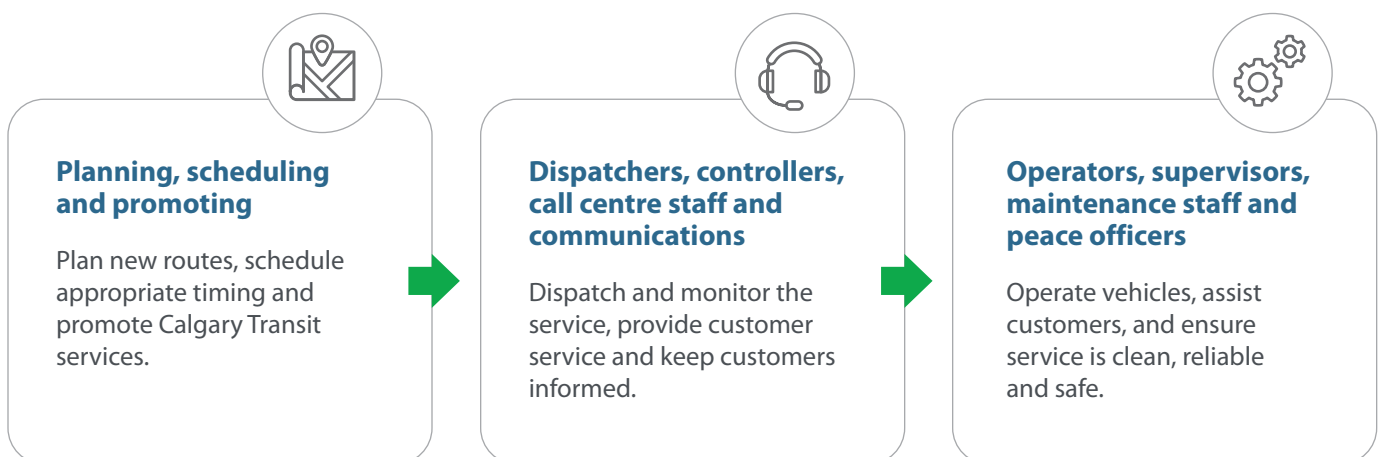
Calgary Transit currently employs over 3,000 people and almost 2,000 are front-line transit operators. Calgary Transit operators are the face of Calgary Transit, the people seen every day by our customers. With ridership and customer priorities increasing, staffing is focused on additional front-line operators and enforcement staff to ensure transit services are keeping up with demand. Improvements in resources around recruitment, retention, and attainment are required to be prepared for the increased need for transit service.

Supporting the customer experience is enhanced through amenities and technology offered to customers. Improvements to amenities such as shelters, pedestrian lighting, and benches contribute to increased feelings of safety and comfort. Continual improvements to technology help deliver a more customer-focused service. For example, real-time information provides accurate information on the location and arrival times of the bus or CTrain. Improved reliability results in consistent riders and a transit service that is easier to use and understand.

The introduction of electronic fare collection offers a more convenient way to pay for fares, and provides flexible payment methods. These improvements and technologies will generate data to improve schedule adherence, connections, routing, and service expansion. Creating multi-modal mobility hubs will provide physical as well as digital integration. These hubs place various transportation options in proximity, along with other services such as parcel lockers, making it easy to transfer from one mode to another. Integrating these hubs with existing community spaces further improves customer convenience.

“Continual improvements to technology help deliver a more customer-focused service.”

Figure 3-B: How Calgary Transit supports the customer experience



## 3.4 Vision, directions and strategies

The visions, directions and strategies that support the customer’s transit journey outline the improvements that will be explored and implemented over the next 30 years.

Each aspect of the customer’s journey is unique and so are the steps Calgary Transit will take to make those improvements.

### Understanding

**Vision:** People travelling by Calgary Transit and Calgary Transit Access can easily find and access the information they need for a positive travel experience.

This means that customers can get the information they need to go where they want to go. Planning a trip is intuitive, trip options are clear, and real-time information is reliable. It is easy for new, occasional, frequent users, and visitors, to understand and use the system.

### Accessing

**Vision:** Calgary Transit and Calgary Transit Access can be easily accessed and used by customers of all ages and abilities all year.

Regardless of the season, all customers can easily and safely access stops and stations whether walking, wheeling, or driving. Customers can show up at a stop or station on the Primary Transit Network and not need a schedule as service is frequent and reliable, connections are simple and convenient, and it is easy to find the next bus or train. Calgary Transit Access provides user-friendly, reliable options for those unable to use conventional Calgary Transit service.

### Paying

**Vision:** Customers can easily and seamlessly pay for their transit trip.

The payment structure is transparent, affordable, fair, and customers receive value for their money. Payment options are clear, convenient, and integrated with other services, events, and programs throughout Calgary, enabling easier access to programs and facilities.

### Waiting

**Vision:** Customers have short wait times at a safe, comfortable, and clean transit stop or station.

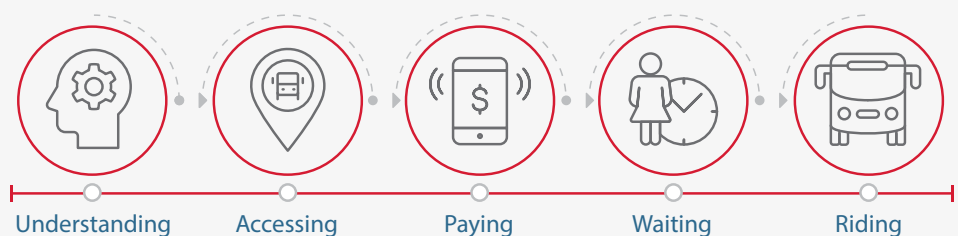
Amenities like shelters and benches are available at busier stops and stations. Transit stops and station designs reflect the community’s unique identity which allows customers to share a sense of ownership and pride in their stops and stations.

### Riding

**Vision:** All customers have a safe, reliable, comfortable, accessible, and affordable trip on transit.

Transit vehicles have safety and accessibility features to improve the customer experience for riders of all ages and abilities. Customers are part of a social transit community onboard a fast, efficient, and environmentally sustainable transit service.

Figure 3-C: The steps within the customer journey on transit



**Direction C1 – Make it easier for customers to quickly get the information they need in a variety of formats.**

No.	Strategies	Timeline and progress	Cost
C1.1	Promote the Primary Transit Network through identification on maps, signage and other customer information.		<p><b>\$\$</b> MODERATE</p>
C1.2	Continually improve the availability, timeliness and helpfulness of customer information in-person, on mobile devices, at major stops and stations, over the phone, on the web, via social media and through new technologies as they evolve.		<p><b>\$\$</b> MODERATE</p>
C1.3	Continue to develop and improve processes and technologies to keep customers informed about delays in a consistent and reliable fashion using real-time information.		<p><b>\$\$</b> MODERATE</p>
C1.4	Improve signage for temporary closures of bus stops due to construction, and clearly identify alternative stops. Ensure information is available early through websites, public announcements, social media platforms and communication with community groups.		<p><b>\$</b> LOW</p>
C1.5	Frequently monitor and address gaps in visual and audible communication of station closures and other planned or unplanned disruptions on the CTrain system.		<p><b>\$</b> LOW</p>
C1.6	Deliver messaging through collaboration with businesses, organizations and community groups to ensure customers are adequately informed of upcoming closures, detours and service delays.		<p><b>\$</b> LOW</p>
C1.7	Ensure technology is equitable and provide education and support for customers using digital tools in support of digital equity for all transit users.		<p><b>\$</b> LOW</p>
C1.8	Improve Calgary Transit's online content to promote future plans for transit service, current initiatives, and past accomplishments by enabling broad engagement to ensure Calgarians are informed.		<p><b>\$\$</b> MODERATE</p>

## Direction C2 – Make it easier for customers—including new users, occasional users, and visitors—to understand and use the system.

No.	Strategies	Timeline and progress	Cost
C2.1	Develop a new map design for the Primary Transit Network and communicate it to customers, focusing on future capital investments.	<p>MEDIUM TERM</p> <p>NOT STARTED</p>	\$ LOW
C2.2	Continuously review bus route design to simplify routes and improve understanding of the system.	<p>ONGOING</p> <p>IN PROGRESS</p>	\$ LOW
C2.3	Provide different customer segments with specific and helpful information (e.g., maps, tactile maps, customer information, station area wayfinding, etc.) about types of transit service.	<p>SHORT TERM</p> <p>IN PROGRESS</p>	\$ LOW
C2.4	Create and implement system-wide wayfinding and signage standards.	<p>MEDIUM TERM</p> <p>IN DEVELOPMENT</p>	\$\$\$ HIGH

## Direction C3 – Increase access to clear and accurate real-time information.

No.	Strategies	Timeline and progress	Cost
C3.1	Improve real-time arrival information on CTrain platforms and at major transit stops.	<p>SHORT TERM</p> <p>IN PROGRESS</p>	\$\$\$ HIGH
C3.2	Improve the Calgary Transit website and third-party mobile applications to develop a more accessible, customer-focused design, layout, and navigation system.	<p>SHORT TERM</p> <p>IN DEVELOPMENT</p>	\$\$ MODERATE
C3.3	Continue developing and integrating mobile applications and mobility as a service to enhance communicating accurate real-time information.	<p>SHORT TERM</p> <p>IN PROGRESS</p>	\$\$ MODERATE



**Direction C4 – Ensure the eligibility process for Calgary Transit Access, low-income transit passes, and other current and future Calgary Transit programs is easy, transparent, and accessible for all applicants.**

No.	Strategies	Timeline and progress	Cost
C4.1	Ensure the common eligibility criteria used to apply for special programs or services are equitable and inclusive through engagement with equity deserving groups.		\$ LOW
C4.2	Keep online content for Calgary Transit programs up-to-date to ensure information is clear, accurate, and easily navigable for all customers.		\$ LOW

**Direction C5 – Make it easier for customers to find the next bus or train they are connecting with.**

No.	Strategies	Timeline and progress	Cost
C5.1	Enable customer connections between Calgary Transit Access and other Calgary Transit services through universal design enhancements.		\$\$\$ HIGH
C5.2	Improve wayfinding system-wide with uniform signage and frequent, large, clear signage with high contrast.		\$\$ MODERATE
C5.3	Schedule local bus routes to arrive at major transit connection points at the same time to facilitate easier connections for customers.		\$\$ MODERATE

## Direction C6 – Make it easier and safer to get to transit stops and stations.

No.	Strategies	Timeline and progress	Cost
C6.1	Integrate multi-modal mobility hubs in future transit-oriented developments to improve walking and wheeling access.		<b>\$\$\$</b> HIGH
C6.2	Identify and implement improvements for bicycle parking at stops and stations.		<b>\$\$\$</b> HIGH
C6.3	Encourage linked transit and cycling trips by installing bike racks on all buses and allowing bikes on the CTrain.		<b>\$\$\$</b> HIGH
C6.4	Promote park and ride opportunities as a key connection for regional transit. Consider shared parking opportunities in mixed-use nodes, that may facilitate or enhance future commuter transit routes when exploring the layout and composition of new communities in the regional context.		<b>\$\$</b> MODERATE
C6.5	Explore shared parking opportunities when planning new developments at future transit stations.		<b>\$\$</b> MODERATE
C6.6	Incorporate universal accessibility improvements when upgrading existing infrastructure, and ensure accessibility standards are met in the design of new Calgary Transit facilities.		<b>\$\$\$</b> HIGH
C6.7	Strategically manage parking at transit stations by providing an adequate amount of park and ride spaces to complement the surrounding land uses.		<b>\$\$</b> MODERATE
C6.8	Increase travel training opportunities for Calgary Transit Access customers through Train the Trainer programs and by encouraging use of other Calgary Transit services for some trips.		<b>\$</b> LOW
C6.9	Actively engage third party researchers to thoroughly review public transit accessibility best practices.		<b>\$</b> LOW
C6.10	Frequently review and improve snow clearing and ice removal strategies and prioritization at and around all transit facilities, stops, and stations.		<b>\$\$\$</b> HIGH
C6.11	Develop and implement strategies to improve safety at rail crossings.		<b>\$\$\$\$</b> VERY HIGH
C6.12	Improve connections between the Plus 15 network and CTrain stations in support of the Greater Downtown Plan.		<b>\$\$</b> MODERATE

## Direction C7 – Integrate Calgary Transit Access with other Calgary Transit services.

No.	Strategies	Timeline and progress	Cost
C7.1	Continue to improve accessibility of conventional Calgary Transit services to remove barriers to access; provide customers greater travel choice and dignity; and free up Calgary Transit Access resources to address the aging population and people most in need of specialized service.	<p>ONGOING IN PROGRESS</p>	<p>\$\$\$ HIGH</p>
C7.2	Promote transit services specifically offered through Calgary Transit Access.	<p>SHORT TERM IN PROGRESS</p>	<p>\$ LOW</p>
C7.3	Evaluate software solutions to optimize travel connections for people with disabilities who are using a combination of Calgary Transit Access and other Calgary Transit services.	<p>SHORT TERM IN PROGRESS</p>	<p>\$\$ MODERATE</p>

## Direction C8 – Integrate connecting services to improve first-mile and last-mile connections to transit.

No.	Strategies	Timeline and progress	Cost
C8.1	Explore and experiment with emerging transportation technologies to provide first-mile and last-mile solutions.	<p>MEDIUM TERM IN DEVELOPMENT</p>	<p>\$\$ MODERATE</p>
C8.2	Explore opportunities for customers to use Calgary Transit Access for part of their trip and connect to conventional Calgary Transit services for the other part of their trip.	<p>SHORT TERM IN PROGRESS</p>	<p>\$ LOW</p>
C8.3	Enhance trip planning and payment options by expanding mobility as a service in partnership with the private sector.	<p>MEDIUM TERM IN DEVELOPMENT</p>	<p>\$\$ MODERATE</p>
C8.4	Coordinate Always Available for All Ages and Abilities network enhancement projects with access to transit stops and stations.	<p>ONGOING IN DEVELOPMENT</p>	<p>\$\$\$ HIGH</p>

## Direction C9 – Make it easier to pay to ride Calgary Transit.

No.	Strategies	Timeline and progress	Cost
C9.1	Investigate the benefits and costs of all-door boarding and pre-board fare payment.	<p>MEDIUM TERM</p> <p>NOT STARTED</p>	<p>\$\$\$</p> <p>HIGH</p>
C9.2	Improve the reliability of electronic fare payment on buses and CTrains.	<p>MEDIUM TERM</p> <p>IN DEVELOPMENT</p>	<p>\$\$</p> <p>MODERATE</p>
C9.3	Expand electronic fare collection to Calgary Transit Access and integrate with payment for other civic services.	<p>MEDIUM TERM</p> <p>IN PROGRESS</p>	<p>\$</p> <p>LOW</p>
C9.4	Continue to expand payment options for customers with emerging technology, while ensuring cash payment is available for those who need it.	<p>ONGOING</p> <p>IN PROGRESS</p>	<p>\$\$</p> <p>MODERATE</p>
C9.5	Explore partnerships with sports, entertainment, and tourist venues to include transit fares in event tickets.	<p>MEDIUM TERM</p> <p>NOT STARTED</p>	<p>\$</p> <p>LOW</p>

## Direction C10 – Ensure the Calgary Transit payment structure is transparent and equitable.

No.	Strategies	Timeline and progress	Cost
C10.1	Work with the Calgary Metropolitan Region Board and neighbouring municipalities to develop a regional fare strategy.	<p>MEDIUM TERM</p> <p>NOT STARTED</p>	<p>\$\$</p> <p>MODERATE</p>
C10.2	Communicate the value public transit contributes to all Calgarians through promotion, specifically during budget planning.	<p>MEDIUM TERM</p> <p>IN PROGRESS</p>	<p>\$</p> <p>LOW</p>
C10.3	Ensure paying for Calgary Transit is safe and secure for all customers, regardless of the payment method used.	<p>MEDIUM TERM</p> <p>IN PROGRESS</p>	<p>\$\$</p> <p>MODERATE</p>







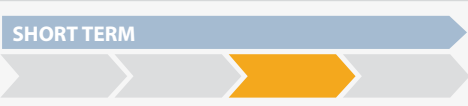

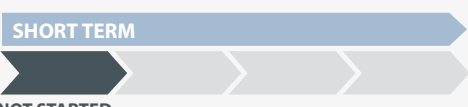
## Direction C11 – Ensure Calgary Transit stops and stations are attractive, clean, and comfortable.

No.	Strategies	Timeline and progress	Cost
C11.1	Increase the availability and quality of shelters and benches on the Primary Transit Network.		<b>\$\$</b> <b>MODERATE</b>
C11.2	Expand station cleaning programs to meet future demand on station platforms, adapting to changes in operational demands.		<b>\$</b> <b>LOW</b>
C11.3	Ensure sufficient lighting and security cameras are in place at station areas, and sufficient streetlighting is provided at bus stops.		<b>\$\$\$</b> <b>HIGH</b>

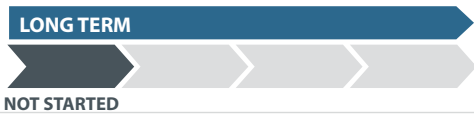

## Direction C12 – Enhance transit stops and stations so they are attractive and welcoming public spaces and vibrant community nodes.

No.	Strategies	Timeline and progress	Cost
C12.1	Explore strategies to integrate transit stations and plazas into communities, encouraging other community uses and activities, while preserving the importance for mobility.		<b>\$</b> <b>LOW</b>
C12.2	Conduct Crime Prevention Through Environmental Design assessment of transit station areas and explore initiatives to reduce vandalism and crime by creating attractive, welcoming public spaces.		<b>\$\$</b> <b>MODERATE</b>




## Direction C13 – Enhance safety and security for customers.

No.	Strategies	Timeline and progress	Cost
C13.1	Continue to partner with local authorities, social outreach programs, and other agencies to promote safety for all customers, with a focus on helping vulnerable populations.	 <p>Timeline: SHORT TERM Progress: IN PROGRESS</p>	<p>\$\$ MODERATE</p>
C13.2	Review monthly statistics to identify changes in social disorder with a focus on types and locations where additional support is required.	 <p>Timeline: SHORT TERM Progress: IN PROGRESS</p>	<p>\$ LOW</p>
C13.3	Increase and enhance closed circuit television coverage in areas of frequent social disorder events to improve system safety and safety response times.	 <p>Timeline: MEDIUM TERM Progress: IN DEVELOPMENT</p>	<p>\$\$ MODERATE</p>
C13.4	Increase enforcement presence by Calgary Transit peace officers, transit security guards, local authorities and other Calgary Transit staff by strategically deploying personnel where needed on the system, to enhance comfort of customers while using transit.	 <p>Timeline: SHORT TERM Progress: IN DEVELOPMENT</p>	<p>\$\$\$ HIGH</p>
C13.5	Build the Primary Transit Network to create a fast, frequent, and reliable system that minimizes waiting and transfer times.	 <p>Timeline: LONG TERM Progress: IN PROGRESS</p>	<p>\$\$\$\$ VERY HIGH</p>
C13.6	Highlight the role of peace officers and how they help customers.	 <p>Timeline: SHORT TERM Progress: NOT STARTED</p>	<p>\$ LOW</p>
C13.7	Increase the presence of Calgary Transit staff on the system to provide assistance to customers.	 <p>Timeline: SHORT TERM Progress: IN PROGRESS</p>	<p>\$\$\$ HIGH</p>
C13.8	Work collaboratively with local authorities to ensure the presence of peace officers, police, and security guards is maintained.	 <p>Timeline: SHORT TERM Progress: IN PROGRESS</p>	<p>\$\$ MODERATE</p>
C13.9	Upgrade closed circuit television monitoring systems to add cameras and features to detect incidents automatically and alert security personnel, to improve dispatch times.	 <p>Timeline: SHORT TERM Progress: NOT STARTED</p>	<p>\$\$ MODERATE</p>

## Direction C14 – Improve the experience of riding in Calgary Transit vehicles.

No.	Strategies	Timeline and progress	Cost
C14.1	Review the benefits and costs of incorporating additional amenities into vehicles, as reflected in customer surveys and expectations.	 <p>LONG TERM NOT STARTED</p>	<p>\$\$ MODERATE</p>
C14.2	Consider seating arrangements, seat types, accessibility features, heating, air conditioning, and windows to maximize passenger safety and comfort when buying new vehicles.	 <p>SHORT TERM IN DEVELOPMENT</p>	<p>\$\$\$ HIGH</p>

## Direction C15 – Make connections more convenient and ensure transfer locations are welcoming.

No.	Strategies	Timeline and progress	Cost
C15.1	Use real-time information to fine-tune schedules to improve connections.	 <p>MEDIUM TERM IN PROGRESS</p>	<p>\$\$ MODERATE</p>
C15.2	Review feedback, passenger counts, and other data to identify key locations where customers have challenging connections and identify improvements to address concerns.	 <p>ONGOING IN PROGRESS</p>	<p>\$\$ MODERATE</p>
C15.3	Improve feeder bus timing during evenings and weekends to facilitate better connections to the Primary Transit Network.	 <p>SHORT TERM IN PROGRESS</p>	<p>\$\$ MODERATE</p>

## Direction C16 – Improve reliability of service through technology in order to minimize delays.

No.	Strategies	Timeline and progress	Cost
C16.1	Develop priorities for service improvements on the transit network through analysis of travel times, delays, operational data, and customer feedback.	<p>ONGOING IN DEVELOPMENT</p>	<p>\$\$ MODERATE</p>
C16.2	Improve response to disruptions and delays through real-time information, current technology, and communication among staff.	<p>SHORT TERM IN PROGRESS</p>	<p>\$\$ MODERATE</p>
C16.3	Expand the use of light rail transit system investigative equipment to proactively locate areas requiring immediate repair.	<p>SHORT TERM IN PROGRESS</p>	<p>\$\$ MODERATE</p>

## Direction C17 – Monitor, report on, and improve on-time performance.

No.	Strategies	Timeline and progress	Cost
C17.1	Develop an action plan to address on-time performance issues, including service hours, fleet, maintenance strategies, and facilities.	<p>SHORT TERM IN DEVELOPMENT</p>	<p>\$\$\$ HIGH</p>
C17.2	Reduce risks of service disruptions through proactive repairs, lifecycle maintenance, and infrastructure upgrades.	<p>ONGOING IN PROGRESS</p>	<p>\$\$\$ HIGH</p>
C17.3	Adapt infrastructure to withstand climate change and extreme weather events.	<p>MEDIUM TERM IN PROGRESS</p>	<p>\$\$\$ HIGH</p>
C17.4	Conduct repairs and lifecycle maintenance of CTrain facilities and systems using scheduled maintenance windows.	<p>ONGOING IN PROGRESS</p>	<p>\$\$ MODERATE</p>
C17.5	Develop robust asset management systems to mitigate the risk of asset failure and unplanned service disruptions.	<p>SHORT TERM IN PROGRESS</p>	<p>\$\$\$\$ VERY HIGH</p>



## Direction C18 – Continuously improve customer service.

No.	Strategies	Timeline and progress	Cost
C18.1	Set supervisor-to-operator ratio standards to maintain an appropriate level of oversight and supervision to ensure service levels are optimized and safety is prioritized.		<b>\$\$</b> <b>MODERATE</b>
C18.2	Evaluate the potential for additional technology and tools to better enable operators to assist customers and report problems with vehicles and facilities.		<b>\$\$</b> <b>MODERATE</b>
C18.3	Modernize onboard technologies that will help improve CTrain on-time performance reporting and real-time location tracking of trains for customers.		<b>\$\$</b> <b>MODERATE</b>
C18.4	Continue to build and develop the Transit Ambassador group to help support customers on the system.		<b>\$\$</b> <b>MODERATE</b>
C18.5	Explore new online tools to help customers get transit information faster and easier, without the need to call in.		<b>\$\$</b> <b>MODERATE</b>
C18.6	Consider all steps of the customer transit journey and each customer's unique transit experience when developing new plans, projects, and initiatives.		<b>\$</b> <b>LOW</b>



## Section 4

# The RouteAhead for Calgary Transit's network

## Calgary Transit's network will continue to grow to accommodate geographical expansion and keep pace with our growing city.

Investments in the existing network are required to expand the Primary Transit Network; address growth and capacity issues; and improve the quality of transit service; in order for Calgary Transit to become a preferred travel choice. Supporting a good state of repair for existing infrastructure is also necessary to maintain reliability and support the growing network, additional transit service, an expanding fleet, and increased staff numbers.

Calgary Transit will also need to prepare for increasing disruptions and damage caused by climate change and extreme weather

events. This may include temporary or extended impacts from heat waves; severe storms and localized flooding; pandemics; and supply chain disruptions after severe storm events. Calgary Transit will contribute to reducing global greenhouse gas emissions by growing ridership to reduce automobile trips; and the continued adoption of low-carbon fuels such as renewable natural gas, biodiesel, and electric buses.

Land use and transit decisions need to be linked to ensure the urban form, through density, diversity, design, and distance, supports quality transit service. In turn, quality transit service

is provided in a way that supports land use intensification around transit areas. One core element of the Calgary Transportation Plan is to upgrade major transit corridors to Primary Transit Network levels, leading development and stimulating land use intensification at activity centres, along main streets, and within adjacent communities.

A focus on transit investments in areas that support high ridership routes and key connections today encourages growth that maximizes benefit and leads to achieving a robust Primary Transit Network.

## 4.1 Designing the transit network

In the past, Calgary's transit system placed significant focus on serving the downtown as a central hub, with spokes of service extending out to communities. MAX service and other changes have started to create more direct connections between different parts of the city, providing faster connections between destinations like universities, hospitals, and industrial areas. Customers want direct, frequent, and reliable service throughout the entire day. This type of service means transit customers can "show up and go" without looking at a schedule, making transit convenient and giving customers travel freedom.

RouteAhead guides how Calgary will plan its transit network to improve frequency, reliability, and travel speeds; find the right balance within the context of each community; and evolve to meet future goals within the constraints of available budgets. Planning the network requires prioritizing some elements over others, recognizing that the degree to which each or any are prioritized will have impacts on the design of the network, including how convenient or attractive transit may be for different customers.

**"Customers want direct, frequent, and reliable service throughout the entire day."**

### 4.1.1 The frequency and coverage spectrum

In a coverage-oriented network buses come less often because there are more routes; customers have a shorter walk to a bus stop; and the bus travels slower with extra stops. In a frequency-oriented network, buses are distributed over fewer routes making travel time faster with fewer stops. In this network, some customers may have a longer walk, but most will have a walk of less than five minutes.

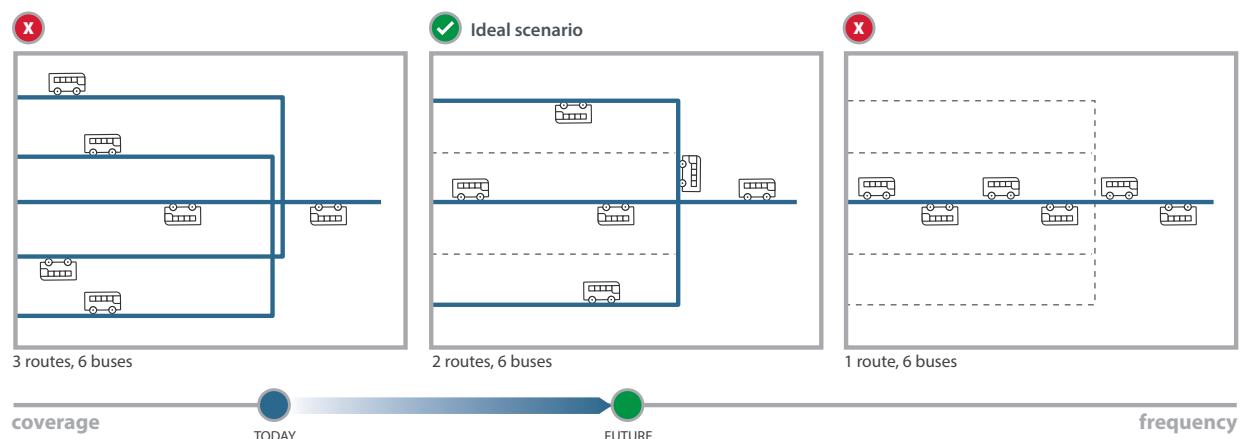
Today, Calgary's transit network leans closer to the coverage side of the spectrum, spreading our limited resources thin, with buses running infrequently on many roads in the city. After 2013, there were efforts to increase Primary Transit Network frequencies and shift this balance. However, reductions required in response to the economic downturn, followed by the impacts of the COVID-19 pandemic, reversed all progress.

By implementing RouteAhead, Calgary Transit will shift more towards the frequency side of the spectrum to to build ridership and achieve Municipal Development Plan and Climate Strategy goals. Calgary's goal in the Municipal Development Plan and Calgary Transportation Plan is to increase the number of people living or working in or near activity centres and main streets, resulting in higher-density mixed-use areas to support enhanced transit service. Updated local area plans will also provide direction on growth and change throughout communities.

Future service standards will provide further clarity on implementing the balance between frequency and coverage goals, through transit network design and resource allocation. Implementing the Primary Transit Network starts to shift the balance by providing a robust, citywide network of frequent all-day service.

**"By implementing RouteAhead, Calgary will shift more towards frequency to build ridership and achieve Municipal Development Plan and Climate Strategy goals."**

**Figure 4-A: How Calgary Transit will shift towards an ideal balance of frequency and coverage**

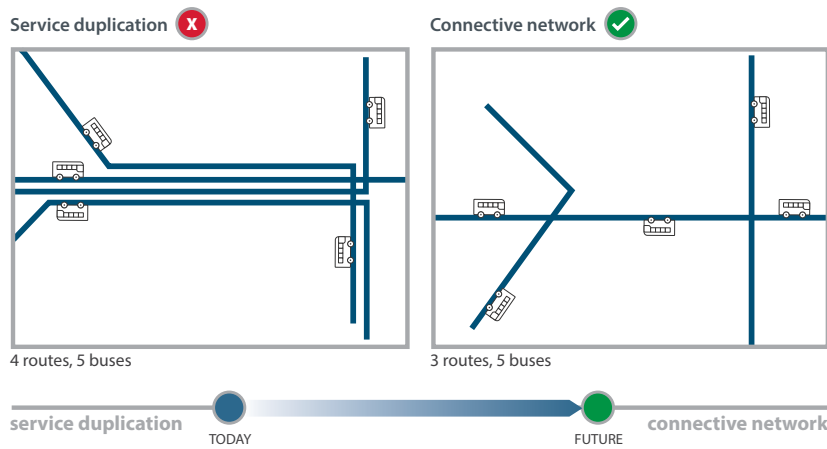


### 4.1.2 The service duplication and connective network spectrum

Service duplication spreads buses out over more routes, leading to lower frequency. The buses are not distributed evenly, and do not necessarily provide direct connections to major destinations. A connective transit network has buses operating more frequently on fewer routes, allowing buses to be scheduled more evenly with fewer gaps in service. A well-connected network allows customers to connect to other services and routes that are not competing against each other.

A connective grid results in an easier-to-understand network that allows greater frequency of service for the same budget. As RouteAhead is implemented, Calgary Transit will shift more towards the connective transit network side of the spectrum. Transit service reviews will endeavour to reduce service duplication, to enable greater frequency through efficiency and a simpler network for customers to understand.

**Figure 4-B: How Calgary Transit plans to move from service duplication to a network where services and routes are not competing**



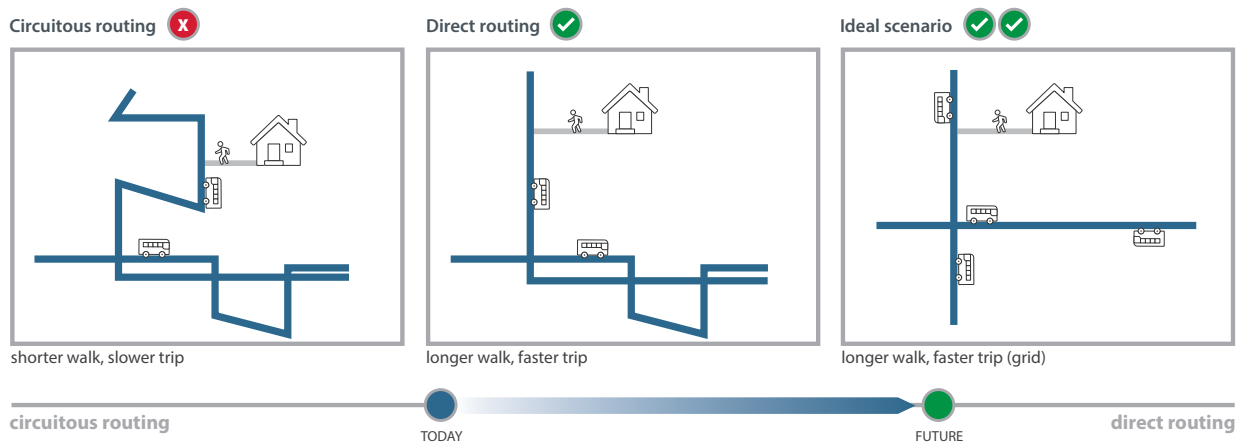
### 4.1.3 The circuitous routing and direct routing spectrum

Circuitous bus routes are longer and operate less frequently but provide shorter travel distances to a bus stop. Direct routing means the route is shorter, so buses can come more frequently. While some customers may have to travel slightly further to a stop with direct routing, most stops are still within a reasonable distance.

As Calgary Transit implements RouteAhead, in addition to continuing to serve downtown, the transit network needs to evolve to connect residential areas, activity centres, industrial areas, and the downtown through a direct routing grid on the Primary Transit Network.

The local area planning program will support this principle by encouraging a connected grid street network and locating major destinations at key intersections to build up the Primary Transit Network.

**Figure 4-C: How Calgary Transit plans to move towards a direct connected grid on the Primary Transit Network**





"RouteAhead calls for Calgary Transit to shift to an all-day network."

#### 4.1.4 The peak service and all-day service spectrum

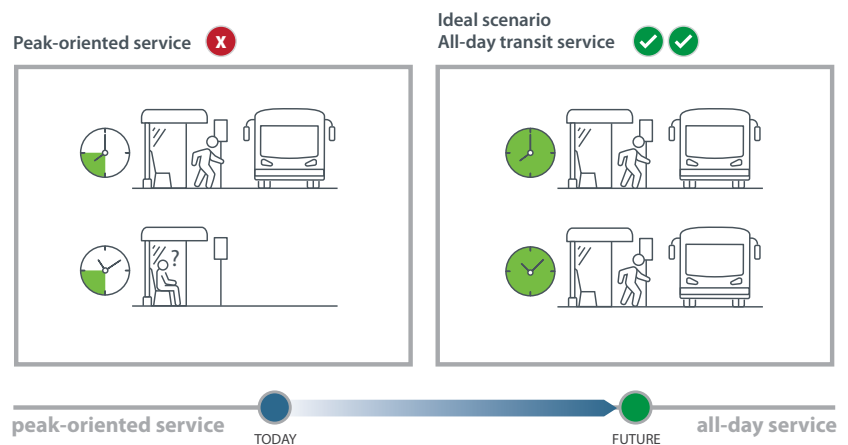
A peak-oriented service is available to customers who travel during rush hour. Outside of peak times there may only be limited service on fewer routes operating at lower frequency. With this type of service, cars and other types of transportation are required for trips outside of peak times. An all-day network provides relatively high frequency to customers travelling at most times of the day, allowing a more diverse range of trips, and reducing the dependence on personal vehicles, making transit a more attractive travel option.

Today, Calgary's transit network is closer to the peak-oriented side of the spectrum. RouteAhead calls for Calgary Transit to shift to an all-day network by implementing the Primary Transit Network to achieve Municipal Development Plan goals.

The Primary Transit Network will see key corridors with service running at least every 10 minutes, 15 hours a day, seven days a week, and service better than every 10 minutes in peak times where warranted.

A city that has more people living or working in key growth areas, like those identified in the Municipal Development Plan, helps support all-day service by creating destinations in all areas of the city.

**Figure 4-D: How Calgary Transit will shift from peak-oriented service to all-day transit service on the Primary Transit Network**



## 4.2 Service levels

Calgary Transit provides different levels of service, which together form the complete transit network.

The core of Calgary's transit service is the Primary Transit Network, which connects communities and activity centres throughout Calgary, with service running every 10 minutes or better, at least 15 hours a day, seven days a week.

The Municipal Development Plan outlines The City's goal to provide a safe, accessible, and customer-focused public transit service that can become the preferred mobility choice of Calgarians. Calgary Transit continues to work toward this goal by evolving service levels as the city grows, and investing in transit operating hours to meet service level targets.

The intensity of service and transit vehicle technology along a corridor or route may evolve over time to meet changing ridership demand; land use and land development; and expectations of customers and residents. Future service standards will provide further guidance on the desired characteristics of each service level.



**This section describes the different service levels:**

- Primary Transit Network
- Frequent transit routes
- Base transit service
- Introductory service

**Figure 4-E: Transit wait times on base transit service and the Primary Transit Network**

### Maximum wait time





## 4.2.1 Primary Transit Network

The frequency of transit is the greatest factor in allowing people to travel spontaneously, and has a large effect on whether people choose transit. Being able to show up at a transit station or stop knowing the bus or train will be there soon, without needing to look at a schedule, is what makes transit feel truly convenient and empowering, it is what enables transit to be a preferred travel choice. The Primary Transit Network addresses what citizens valued most during RouteAhead engagement – frequency.

The Primary Transit Network is defined by level of service, not by vehicle type. It is comprised of a permanent network of high-frequency corridors that have transit services operating every 10 minutes or less at least 15 hours a day, seven days a week. The Primary Transit Network forms the foundation of the transit system and incorporates the highest standards regarding the level of service, operating speed, connectivity, and amenities to attract and retain customers.

Since the Primary Transit Network is corridor-based, it will be implemented through frequent transit routes, providing service along the Primary Transit Network corridors.

The Primary Transit Network will continue to develop in phases over the next 30 years and will be monitored closely based on five key measures of transit service quality:

- **Frequency:** during core operating periods, service frequency will be every 10 minutes or better. This level of service will enable seamless connections between transit services, and make it possible for people living near these services to make spontaneous trips along transit corridors without the need to consult a schedule.
- **Span of service:** core operating periods on the Primary Transit Network will be at least 15 hours a day, seven days a week. Less frequent service will continue to be provided outside the core operating period. This ensures that all types of trips, for school, work, appointments, recreation, and social gatherings, can be accommodated on the Primary Transit Network at all times of day, not just during rush hour.
- **Speed and directness:** route directness and operating speed are critical to the success of the Primary Transit Network since most travellers will choose the fastest travel choice when planning their trips. A range of transit priority

measures will be implemented with a “transit first” philosophy along Primary Transit Network corridors that ensures transit is the prioritized type of transport.

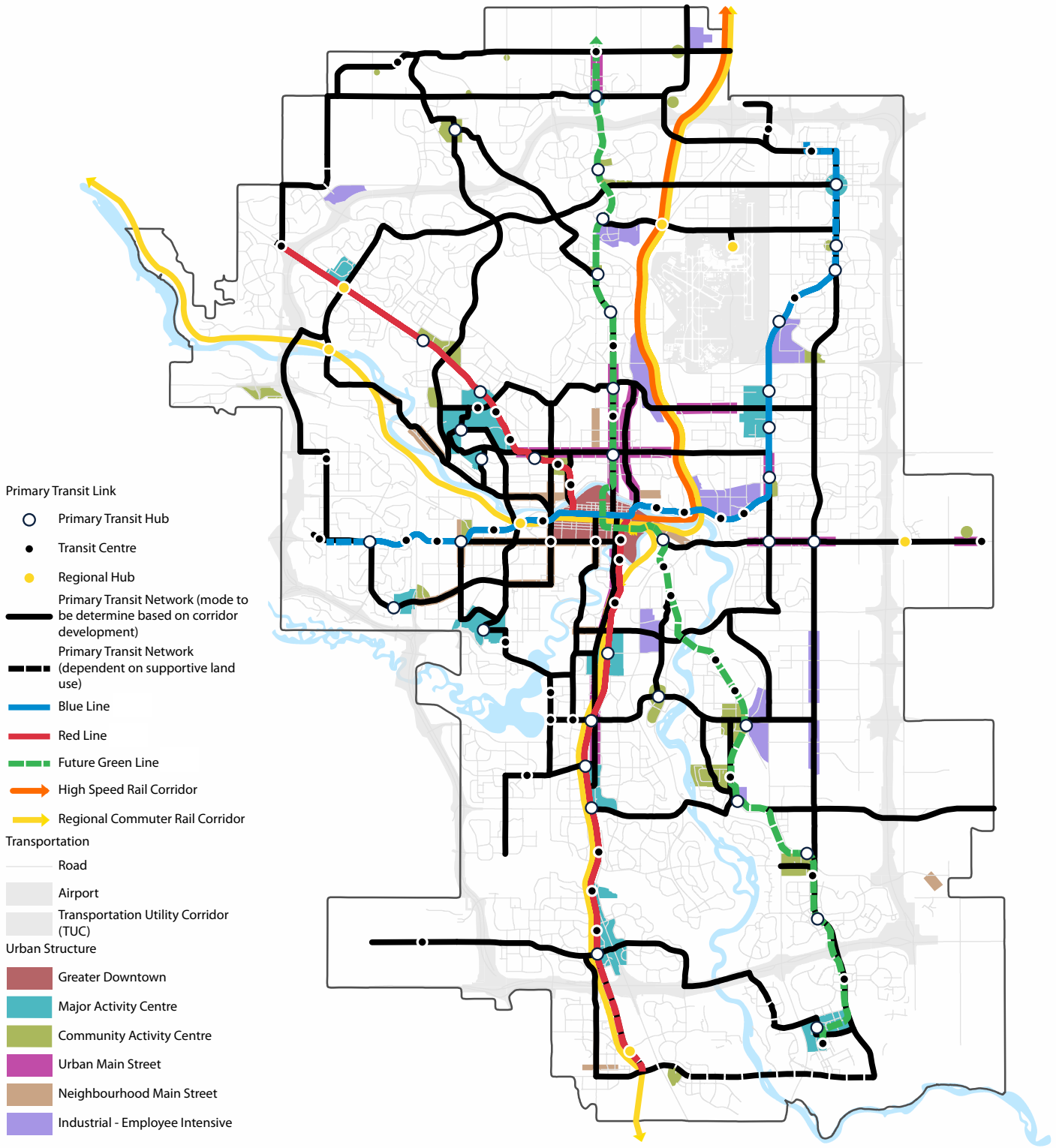
- **Service reliability:** customers can expect the Primary Transit Network to operate on a reliable schedule to minimize wait times. All primary transit services should arrive within three minutes of the scheduled time.
- **Increased transit capacity:** the Primary Transit Network will be closely monitored to ensure that sufficient capacity is available to accommodate ridership demand. Improved frequencies and selection of appropriate transit vehicles is necessary to provide adequate capacity for a comfortable ride. Strategically located activity centres and main streets also support more efficient use of transit service with balanced, two-way trips between destinations throughout the Primary Transit Network, as opposed to one-way trips in and out of the downtown.

The Primary Transit Network requires both operating funding for service delivery to meet frequency and span of service goals, and capital infrastructure investments for service enhancements to increase speed and directness, reliability, and capacity.

**Figure 4-F: The five key measures of transit service quality on the Primary Transit Network**



Figure 4-G: The Primary Transit Network



Proposed Primary Transit Network concept plan, Map 2 in Part 8 of Calgary's 2020 Municipal Development Plan.



#### 4.2.1.1 Frequent transit routes

Frequent transit routes are how Calgary Transit implements the Primary Transit Network in practice. Through service planning, Calgary Transit will create frequent transit routes that run along Primary Transit Network corridors. All Primary Transit Network corridors will be served by at least one frequent transit route coming at least every 15 minutes in the short-term, with the ultimate goal of 10-minute service, 15 hours a day, seven days a week. Frequent transit routes will be provided on high ridership routes along priority nodes and between activity centres identified in the Municipal Development Plan as Calgary Transit works to build the Primary Transit Network.

#### 4.2.2 Base transit service

Base transit service provides a comfortable and safe travel environment, integrated with the Primary Transit Network to enable convenient connections. Communities, main streets, activity centres, employment centres, and industrial areas served by base transit service have a sufficient intensity of population and employment to support fixed-route service. The minimum level of service for base transit is every 30 minutes, with additional frequency where warranted. In order to support the immediate implementation of higher frequency on the Primary Transit Network, it is proposed that investments in base transit to meet this level of service are long term priorities.

Base transit service includes a range of community-based transit services that support the Primary Transit Network by providing comprehensive community coverage. It also supplements the Primary Transit Network by meeting additional needs such as cross-town travel and local circulator services around activity centres and main streets that create high ridership, but not necessarily at Primary Transit Network levels of service.

### 4.2.3 Introductory service

Introducing transit early and aligning the build-out of new communities with transit can build transit-supportive travel habits. Since road networks, transit routes, bus stop locations, and walkways are determined during the community planning process, building transit-supportive communities starts early. Planning for transit must consider access to community services including schools, shopping centres, and main streets, as well as other activity centres and industrial areas beyond the community.

A new residential community can usually sustain transit service upon reaching 300 to 400 occupied dwellings. However, the viability of new service also depends on the speed and density of development, availability of a continuous and accessible road network, and the ability to extend service on an existing route, versus the need for a new independent route.

#### **Implementing service in a new community requires:**

- adequate population or job intensity to support transit; and
- road network connectivity to allow efficient transit routing.

If these requirements are met, the introduction of new service is prioritized through the Council budget process, balancing between the needs of other new communities, existing routes that require additional capacity, and service to employment centres and other new amenities.

Ideally, peak-period transit service is introduced in new communities as soon as possible when the above criteria are met. As the community continues to build out and ridership increases, transit service and frequency increases to match the growing community.

This phased approach allows Calgary Transit to meet the growing transit demands of developing communities while managing operating costs.

#### **The introduction of transit service is typically phased-in following this sequence:**

- Weekday peak period service
- Weekday midday service
- Saturday service
- Evening service
- Sunday service

There is a growing gap between service level goals for new communities and Calgary Transit's ability to meet transit demand in new communities.

From 1997 to 2014 it took an average of 2.6 years to introduce transit service (peak period service) in an actively developing community. On average, service was introduced when the community reached 670 dwellings. Between 2015 and 2017 the timespan grew to 6.2 years on average to introduce service in new communities. On average, service was introduced when there were 1810 dwellings.

With more new communities approved and the city expanding outwards, the length of time to reach full service in new communities is expected to increase further. Without transit investment in new communities and new community plans supporting transit, a growing number of Calgarians will be without access to transit service.



"On Demand can be used to introduce transit service into new communities as a first step in the progression to fixed-route services."

A method to introduce transit service into new areas is On Demand service. Calgary Transit has piloted On Demand service and an early adoption of this service type resulted in relatively high productivity. The On Demand service enables customers to book trips in the On Demand zones using an app or calling the Calgary Transit call centre. This type of service works well in specific contexts, such as new and developing communities, industrial employment areas and areas with low ridership.

On Demand can be used to introduce transit service into new communities as a first step in the progression to fixed-route services.

With funding, On Demand can lead to new communities getting public transit services sooner because On Demand can be more cost-effective, responsive, and has lower greenhouse gas emissions, when compared to some fixed-route services. This newly proven tool allows transit service to grow in new ways; become a leading service line in new community development; and connect more Calgarians and visitors to the transit network.

## 4.3 Services and mode integration

### 4.3.1 Calgary Transit Access

Calgary Transit Access (CTA) provides transportation services for Calgarians who are not able to use conventional Calgary Transit service. CTA offers a shared-ride, door-to-door service within the Calgary city limit. Its services are integrated with Calgary Transit's regular service and transit tickets and monthly passes can be used as fare payment for CTA services.

CTA delivers safe, responsive, and courteous transportation services through partnerships with private bus service providers and taxi companies. Service is provided with specialized buses, accessible taxis, sedans, and minivans.

Travel training and educational materials are provided to seniors and people with disabilities to enable self-confidence and independence when using Calgary Transit services.

CTA provides over one million trips each year to nearly 14,000 Calgarians with disabilities. Making the entire transit system accessible including stations, vehicles, and information is a priority to ensure all Calgarians are able to use public transit. Through its eligibility process, CTA creates an equitable and integrated system to meet customers' needs based on a range of accessible transportation services available in the community.

**"Travel training and educational materials are provided to seniors and people with disabilities to enable self-confidence and independence when using Calgary Transit services."**



### 4.3.2 Station area access

As of 2023, there are more than 100 transit stations served by bus rapid transit and light rail transit across Calgary. The thoughtful integration of each station with the land surrounding it (the station area) is important to provide Calgarians with safe and convenient station area access, support transit ridership and help achieve The City's strategic goals.

Station area integration can be supported by encouraging and supporting transit-oriented development (TOD) on the land closest to the station (within approximately 600 metres) and by enhancing the 'first/last mile' connections between nearby communities and the station area, with improved services and infrastructure. Both approaches are important contributors to station area access and should be considered when planning and developing a station area.

TOD is encouraged within most station areas through City policies and processes. Some of Calgary's best future TOD opportunities may be redeveloping select park and ride facilities (or portions of them). Currently, Calgary Transit provides more than 17,500 spaces in 33 park and ride facilities – significantly more than other Canadian cities.

While there are benefits of providing park and ride facilities, there are also significant costs required to maintain and operate them. Recent changes to the way people work have reduced parking demand at some stations, providing an opportunity for redevelopment that better aligns with The City's strategic goals.

Despite long-standing policy support, Calgary has only a few examples of successful TOD. This is due in part, to restrictive park and ride policies that have made TOD on City-owned land infeasible.

**The following principles address these challenges by better supporting opportunities for TOD while ensuring Calgarians have safe and convenient station area access by a variety of modes:**

- Prioritize access to transit stations through safe and convenient transit, walking, and wheeling connections.
- Enable transit-oriented development on City-owned land to support Calgary's economic, social, and climate resilience.
- Sustain an adequate amount of parking, to complement other modes of station access and maximize ridership, at stations beyond five kilometres of downtown.

In addition to TOD, The City can focus on improving how customers access station areas. This includes a combination of additional capital investments to enhance streetscapes and pathways, and operational investments to enhance bus and micromobility services, that connect transit to residents and businesses in surrounding communities. Specific needs will vary from station to station and can be explored with communities, through local area planning or transit service review processes. The City can also explore alternative parking solutions like shared parking or lease agreements on privately-owned land to free up land adjacent to the station for TOD and improve the customer experience for those wheeling or on foot.

Through a combination of approaches to improve station area access, such as supporting opportunities for TOD; investing in enhanced infrastructure and transit service; and leveraging new technologies and partnerships, The City will continue to strive to provide Calgarians with safe and convenient ways to live, work and play in their own neighbourhood and across the city.

**"it is important to provide Calgarians with safe and convenient station area access..."**





"To provide convenient alternatives to personal vehicle travel..."

### 4.3.3 Mobility as a Service

To provide convenient alternatives to personal vehicle travel, increasing effort is being placed on the integration of public and shared transportation modes. This is referred to as mobility as a service (MaaS). MaaS is defined by the American Public Transportation Association (2019) "as the integration of a full range of mobility options in one single digital mobility platform offering, with public transportation as the backbone."

MaaS can provide Calgarians with integrated trip-planning and fare payment for seamless travel using the mode that is best suited for the trip, based on travel time, distance, cost, accessibility, or other factors. MaaS can integrate all available mobility services, providing a single application interface that brings together public transportation; accessible transportation services; regional transit; pedestrian and cycle networks; transportation network companies; taxi; car share; bike share; scooter share; and car rental. In addition to integrating fare payments across all these transportation options, some MaaS

providers have incorporated access to other municipal services like recreation centres and even retail shopping through their payment systems, though this is complex and onerous at this time. Calgary offers MaaS through the integration of fare payments and multimodal trip planning in Calgary Transit's official trip planning app, *Transit*. Equitable access is important to consider when using app-based technologies since not all customers have access to a smartphone. Technology must also include accessibility features, such as voiceovers/readers, and high contrast colour themes.



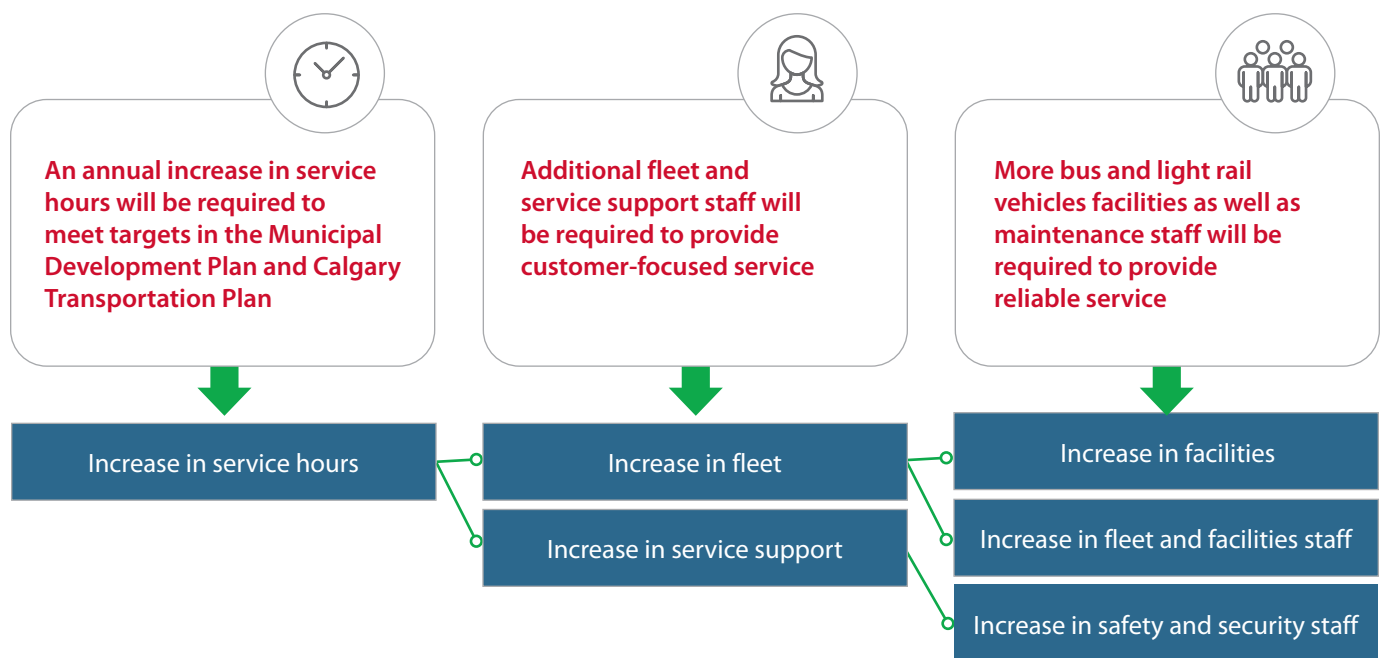
## 4.4 Scaling our operations and state of good repair

Supporting the delivery of the transit network, Calgary Transit fleet and facilities require maintenance, upgrades, and growth to match future expansion of the Primary Transit Network and Calgary's transit network as a whole.

Some parts of the transit system are nearly 50 years old and state of good repair and asset management programs are crucial to maintaining the transit system.

Maintaining state of good repair improves reliability, as well as customer accessibility, experience, and safety. Given the current age and state of Calgary Transit's assets in 2023, best practices recommend allocating five per cent of capital funding towards state of good repair.

**Figure 4-H: How Calgary Transit plans to scale operations and maintain a state of good repair on the transit network to match expansion of the Primary Transit Network**



### 4.4.1 Fleet

Calgary Transit is committed to maintaining fleet to ensure safe and reliable transit operations. A bus replacement program is in place for current Calgary Transit fleet, but reduced investment in asset management has resulted in buses and light rail vehicles operating longer than originally planned.

This is not ideal, as older vehicles are more difficult to maintain and find replacement parts for, affecting service reliability. Purchasing new vehicles to replace older ones will increase the reliability of Calgary Transit service; provide added features for customers; and reduce Calgary Transit’s environmental footprint.

In 2019 The City of Calgary received \$7 million in grant funding to pilot battery electric shuttle buses and associated charging infrastructure, the first pilot of electric shuttle buses in Canada. The pilot aims to test electric bus technology and evaluate the operational, economic, and environmental benefits of using electric vehicles. 14 battery electric shuttle buses will be used in the pilot program once service is launched. Vehicle delivery is expected in spring 2023.






In 2022, Calgary Transit committed to purchasing up to 259 electric buses by 2027 through a loan from the Canada Infrastructure Bank and federal funding.

The Canada Infrastructure Bank will invest \$165 million to support the higher upfront capital costs of the bus purchases. The buses will be one-for-one replacements of diesel buses and will help accelerate the zero-emission transition of Calgary Transit’s fleet.

**"In 2022, Calgary Transit committed to purchasing up to 259 electric buses by 2027."**

Calgary Transit uses a variety of different buses to right-size vehicles to each route, meeting customer needs and ridership demand:

**Figure 4-I: Calgary Transit vehicle statistics**

Vehicle	Length	Fuel	Fleet size	Lifespan	Average age in 2023:
Standard bus 	40 feet	Diesel, CNG, electric (future)	750	16 years	10 years
Articulated bus 	60 feet	Diesel	93	22 years	12.3 years
Community shuttle bus 	< 30 feet	Diesel, gasoline electric (future)	182	5 years	5.5 years
Calgary Transit Access bus 	< 30 feet	Diesel, gasoline	81	7 years	9 years
Light rail vehicle 	79-85 feet	Electric	217	30 years	16.5 years

## 4.4.2 Facilities

Calgary Transit facilities include maintenance garages, traction power substations, CTrain stations, MAX stations, tunnels, bridges, utility buildings, administration buildings, light rail vehicle (LRV) and bus storage facilities. All Calgary transit facilities support the growth of Calgary's transit network and fleet. Investment in the Primary Transit Network will focus on increased bus service hours requiring an expansion of fleet with a corresponding need for additional maintenance and storage capacity.

The conditions and capacities of maintenance facilities are an important part of transit service delivery. If maintenance cannot be done effectively or in a timely manner, service reliability and fleet availability will be impacted.

### Calgary Transit has eight vehicle storage and maintenance facilities:

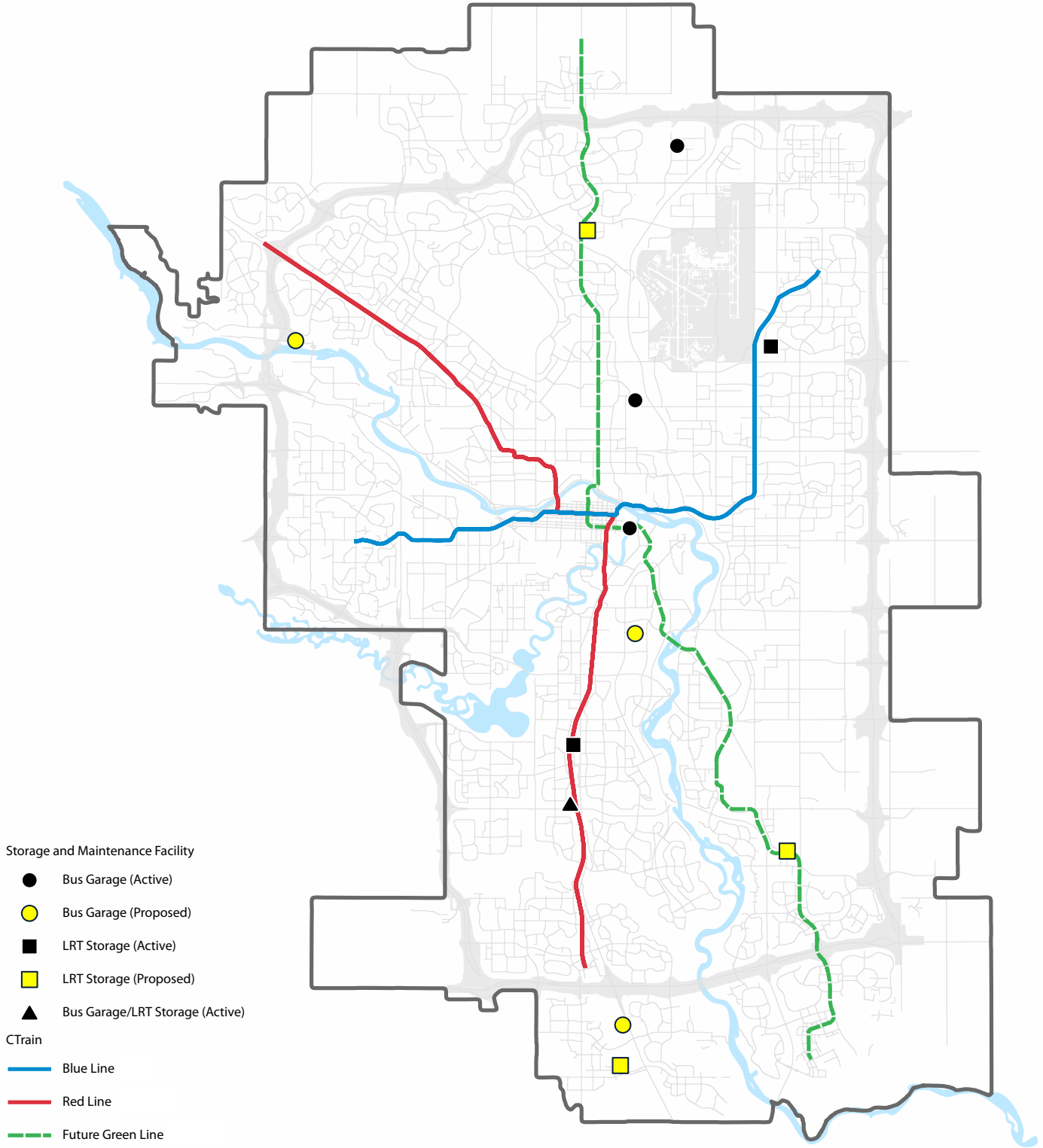
- **Calgary Transit Access Garage:** Formerly the Calgary HandiBus Association facility, it houses and maintains 81 wheelchair accessible vans for Calgary Transit Access. This site has been in operation since the early 1980's.
- **Spring Gardens Garage:** Calgary Transit's oldest facility, opened in 1975 and is used to store standard buses and community shuttle buses. It has had several expansions to support the growing Calgary Transit fleet. In 2023, charging stations were added to Spring Gardens to support the electric bus shuttle pilot.
- **Victoria Park Garage:** This facility opened in 1983 and provides maintenance and storage for standard and articulated buses. There are plans to move this facility, based on Council approved statutory policy and the Beltline Area Redevelopment Plan.
- **Stoney Transit Facility:** Calgary Transit's newest facility, opened in 2019 and provides storage to standard and articulated buses. It added much-needed maintenance and storage capacity allowing the other garages to begin operating at less than full capacity. It provides 15 years of surplus capacity for bus fleet expansion and enables buses to be fuelled by compressed natural gas.
- **Anderson Garage:** Calgary Transit's oldest LRV garage, opened in 1978, and provides full maintenance and storage functions for both LRVs and buses. It has been modified to enable Calgary Transit's four-car train operation.
- **Haysboro Storage Facility:** This facility is solely used to store LRVs. It opened in 1984 and has the capacity to store 60 LRVs with only 30 stored indoors, which impacts the LRVs' lifespan. From a service efficiency and reliability perspective, it is not ideal to store the LRVs outdoors and plans are in place to increase the indoor storage.
- **Oliver Bowen Maintenance Facility (OBMF):** The facility opened in 2009 and is used for the maintenance and storage of LRVs with a capacity of 108 vehicles.

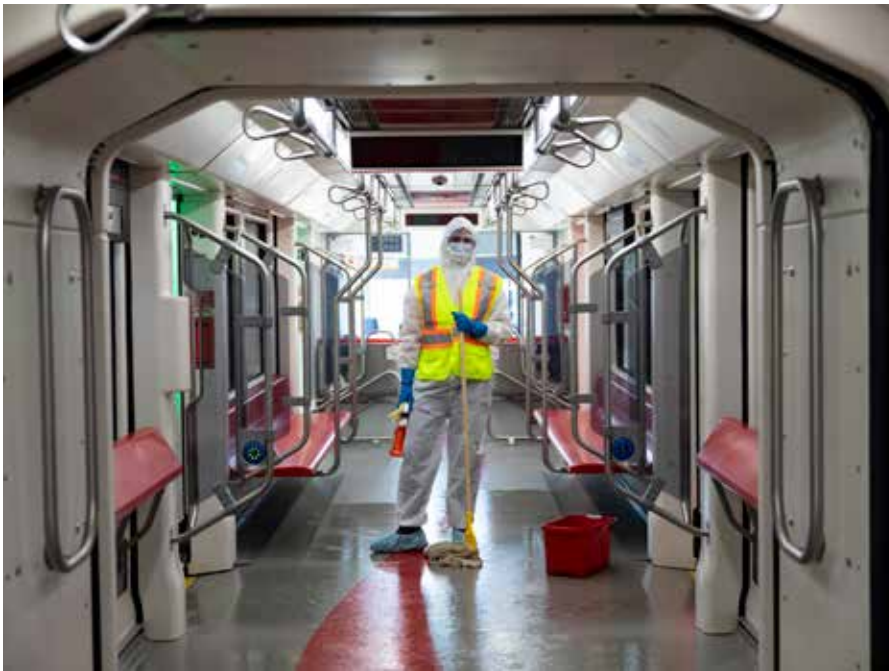
As of 2023, all bus facilities are running under capacity, and projected data indicates that in 10 years, bus maintenance and storage facilities will be running at 80 per cent capacity based on network and fleet growth.

Since 2008, Calgary Transit has been planning for additional vehicle maintenance and storage facilities to keep up with the pace of the city's growth. The location of storage and maintenance sites has a significant, long term operating cost impact and must be chosen with many considerations in mind. The City has identified four future bus and LRV maintenance and storage sites and two Green Line LRV maintenance and storage sites. With the current capacity provided by Calgary Transit's facilities and bus projections, additional bus garages will not be required until 2030. New fueling technologies may trigger the need to invest in a new facility sooner than capacity constraints, avoiding the need to retrofit existing facilities.

Design considerations for future garages should include the capability of storing, maintaining, and fueling buses powered by a variety of fuel types as Calgary Transit moves forward with its plan for a greener fleet.

Figure 4-J: Calgary Transit storage and maintenance facilities





"Through regular maintenance and renewal programs, Calgary Transit ensures the light rail transit system is in a state of good repair."

#### 4.4.3 Light Rail Transit infrastructure

Light rail transit infrastructure includes the track, bridges, tunnels, garages, and rail systems (traction power, communications systems and signals). Calgary Transit focuses on minimizing unplanned disruption to service due to infrastructure failure, while improving operation flexibility. Through regular maintenance and renewal programs, Calgary Transit ensures the light rail transit system is in a state of good repair. When in good repair the physical assets, both individually and as a system, are performing at a level equal to the current technical specifications. It also satisfies safety, reliability, and customer value performance target requirements.

Calgary Transit assesses assets to determine the condition of major components and asset assemblies. This process allows Calgary Transit to identify critical repairs, retrofit and renewal projects while establishing risk mitigation strategies for unfunded projects. Risk mitigation strategies minimize unplanned disruptions to service due to infrastructure failures, while improving operation flexibility.

## 4.5 Primary Transit Network capital projects

The capital projects are a sub-set of the future Primary Transit Network designated for limited-stop transit service offering high capacity, reliability, and a faster way to travel. These lines consist of future-planned light rail transit, bus rapid transit, bus-only lanes or high occupancy vehicle lanes, and transitways. This limited stop service is distinguished by a higher investment in capital infrastructure, a high level of transit priority, and greater customer capacity. The overall delay for transit vehicles is affected by stop spacing. This is why the capital projects focus on more widely spaced stops to reduce travel time delay and increase the average speed of a transit trip.

Bus rapid transit is a type of limited stop bus service that relies on technology and infrastructure improvements to reduce travel time. A bus rapid transit line combines transportation systems technology, priority for transit, rapid and convenient fare collection, and integration with land use policy to upgrade bus system performance.

Transit is given priority at traffic signals, transit-only lanes at key locations or queue jumps, to reduce bus delays caused by congestion or traffic signals.

Transitways are another tool to provide transit priority. They can be transit-only lanes separated from regular roadways, separate lanes or shoulders on existing roadways, or a combination. In each case transitway lanes are for the exclusive use of transit and emergency services vehicles.

Bus rapid transit routes are oriented toward longer distance or cross-town service. In 2018 Calgary Transit introduced MAX service linking customers to major destinations on four lines: MAX Orange, MAX Teal, MAX Purple, and MAX Yellow.





"Light rail transit is effective at generating ridership with high capacity and high frequency while inducing higher density development around stations."

Light rail transit is a mode of public transportation that primarily uses separated rights-of-way with electrically powered vehicles operating on rails. Light rail infrastructure (rail, stations, vehicles) generally costs less than heavy rail, but it needs a higher investment than bus rapid transit systems. Light rail transit is effective at generating ridership with high capacity and high frequency while inducing higher density development around stations.

The existing light rail transit system in Calgary has two lines, designated as the Red Line and the Blue Line. Over the years, extensions to each line have been completed to meet the city's growth and demand for service in communities with increased population. Further extensions to the Red and Blue Lines are included in the Primary Transit Network capital projects list.

Updates and upgrades are also required to refurbish aging stations and accommodate longer trains for increased capacity.

The newest planned light rail transit line is the Green Line. Stage 1 will build the first 20 kilometre core of the full 46 kilometres, a significant expansion to Calgary's Primary Transit Network. Calgarians will have fast, frequent, and reliable transit service to communities; activity centres; main streets; tourist destinations; and essential services.

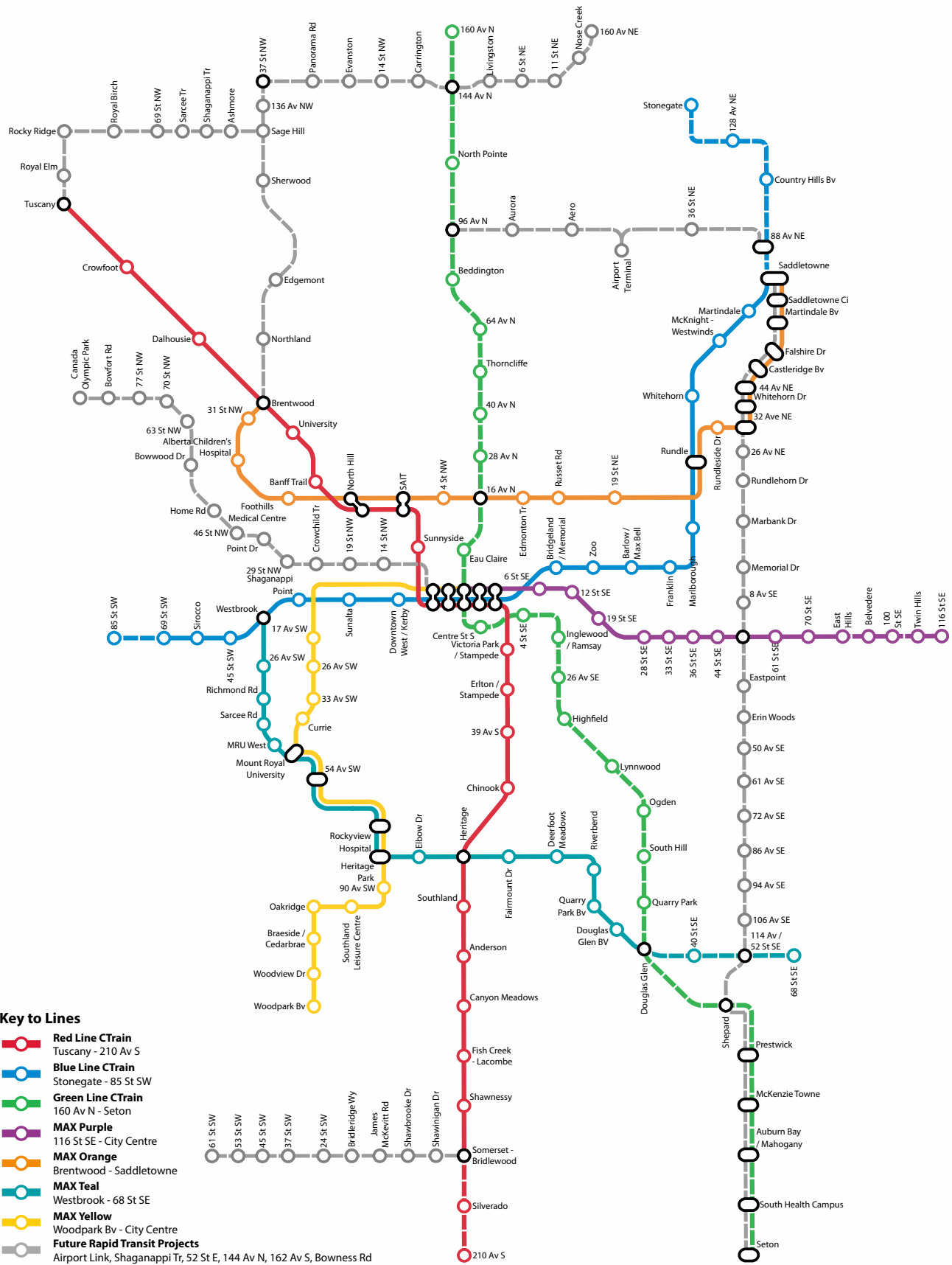
## 4.5.1 Capital project list

Calgary Transit worked with technical experts and the public to identify the Council-approved capital project list below to grow the Primary Transit Network. This allows for incremental expansion based on operational and customer requirements, funding, and consistency with the success of previous Calgary Transit network expansions. This does not preclude multiple projects from being constructed together if funding is available. Further project details can be found in the Appendix.

Light rail transit programs	
Airport transit connection	Blue Line to Airport and Green Line to Airport
Blue Line Northeast extension	Saddletowne to Stonegate
Blue Line West extension	69 St Southwest to 85 St Southwest
Green Line North and South extensions	16 Ave North to 160 Ave North and Shepard to Seton
Red Line South extension	Somerset-Bridlewood to 210 Ave South
Westbrook to Mount Royal University transit connection	Connection from Westbrook to Mount Royal University and Currie Barracks
8 Ave subway	Red Line and Blue Line separation in downtown
Bus rapid transit programs	
MAX 301 North	Improvements to upgrade Route 301 North to MAX level of service
MAX 302 Southeast	Improvements to upgrade Route 302 Southeast to MAX level of service
MAX Purple extension	Transitway extension from 52 St Southeast to city limit and downtown/Green Line tie-in
MAX Teal extension	Douglas Glen to 68 St Southeast
144 Ave North BRT	New MAX route connecting Tuscany station to Nose Creek
Northwest Hub	New and improved wheel-based transit service
West Bow BRT	Improvements to upgrade the West Bow corridor
Shaganappi HOV	High occupancy vehicle lanes from Bowness Rd to Stoney Tr
52 St BRT	Improvements to upgrade Route 23 to MAX level of service
162 Ave Southwest transitway	New transitway route from Somerset-Bridlewood to Providence



Figure 4-K: Primary Transit Network capital projects map



### 4.5.1.1 Revising the capital project list

New projects may have to be identified outside of the existing list as Calgary grows and changes, and new communities are planned. New and emerging projects may change priorities over time. For example, projects previously identified as 'beyond' the RouteAhead 30-year timeframe in 2013 are now captured on the list. Additionally, a project currently on the list may be deemed not necessary in the future.

As Calgary grows and develops under the guidance of the Municipal Development Plan, Calgary Transportation Plan and local area plans, unforeseen new projects may emerge. Occasionally there may be a need to evaluate novel or emerging projects, or reevaluate the existing list to confirm if all projects are relevant.

**Removing, adding, or otherwise revising the capital project list should consider the following criteria:**

- Alignment with the Calgary Metropolitan Region Board regional plans and the Municipal Development Plan and Calgary Transportation Plan
- Alignment with new growth, industrial areas, activity centres, and main streets in local area plans
- Generates sufficient net new ridership to meet trip targets
- Directly connects two or more activity centres
- Environmentally feasible
- Does not conflict with or duplicate other projects
- Full operating cost impacts can be accommodated in the budget

If a project meets the intention of the criteria, it may be added to the list and evaluated.

**"New and emerging projects may change priorities over time."**



## 4.5.2 Capital project evaluation

The project evaluation uses a Council-approved methodology based on Green Line analysis and the original RouteAhead project list and criteria to ensure consistency. Project benefits were analyzed using five weighted categories and subcategories.

The criteria weighting focuses on maximizing benefits for the most customers, and highlights associated positive outcomes from projects.

Project benefits were projected to the year 2048 to allow for fair comparisons of all projects.

The 2048 time horizon assumes buildout of communities that are currently new and developing, eliminating any bias against transit projects in communities with lower population and job numbers today.

Additional considerations such as high ridership corridors; transit-oriented development; and coordination with other City departments and key City strategies were incorporated from a qualitative perspective to account for project readiness.

Figure 4-L: List of projected benefits – criteria and weighting




	Weighting %	Criteria	Metric	
Benefits	30	Ridership	Passengers per average weekday	
	20	Customer experience	Increases travel time advantage	Minutes/trip
			Overcomes issues of reliability and delay	On time performance
			Increases passenger capacity	Capacity/corridor
	20	Economic	Population opening day	# population in 800 metre radius
			Population future	# population in 800 metre radius
			Jobs opening day	# jobs in 800 metre radius
			Jobs future	# jobs in 800 metre radius
	20	Social	Community services	# of services in one kilometre radius
			Affordable housing units	# of affordable housing units in 600 metre radius
Low income population served			Total # of low income population in 600 metre radius	
10	Environmental	Greenhouse gas emissions reductions	Tonne CO2/year	
		Proximity to Municipal Development Plan activity centres and corridors	# stations within corridor in 800 metre	

### 4.5.3 Capital project evaluation results

The table at right shows results of the benefit analysis, along with ridership, relative costs, and project readiness. Readiness describes how quickly a project could be build based on an infrastructure readiness perspective. It includes the following qualitative considerations: functional planning study completion; size, scale, and level of complexity; required land acquisition; infrastructure sequencing dependencies; and removal of project risks.

Results in the table, including benefits score and readiness descriptions, are meant to be used as a starting point for project prioritization. Actual prioritization may be influenced by other factors. The list is nimble, to ensure flexibility to shift with updated Council priorities and leverage available funding opportunities from the provincial and federal governments. The goal is to advance all projects on the list to a green state of readiness. Further project details can be found in the Appendix.

#### Readiness

-  **Green = Highest state of readiness.** Functional planning study completed, or minimal updates required; land mostly acquired; most risks removed; can proceed to preliminary and detailed design.
-  **Yellow = Medium state of readiness.** Need to update an out-of-date functional planning study or new functional planning study required building on existing conceptual plan; some risks still to resolve; some land acquisition required; engagement required.
-  **Red = Lowest state of readiness.** Project identified in a statutory plan or through Council priority; conceptual plan or other high-level plan may exist, but routing and details to be determined; highly complex in size and scale requiring more planning to proceed; project located in a new or actively developing area therefore unlikely to be built soon or progress planning ahead of other projects; major land acquisition required.

**Figure 4-M: Primary Transit Network capital project evaluation results**

Project	Benefits score	Weekday ridership*	Capital costs**	Net operating costs***	Readiness
Airport transit connection	74	22,500	\$\$\$\$\$	\$\$\$\$	Proceed with updating previous functional planning study.
Blue Line Northeast extension	71	16,900	\$\$\$\$\$	\$\$\$	Proceed to preliminary engineering and detailed design.
Blue Line West extension	31	1,500	\$\$\$\$	\$\$\$	Functional planning study required.
Green Line North and South extensions	99	58,100	\$\$\$\$\$	\$\$\$\$\$	Functional planning study not completed for full project.
Red Line South extension	54	14,700	\$\$\$\$\$	\$\$\$\$	Conceptual plan stage, with land in place. Functional planning study required.
Westbrook to Mount Royal University transit connection	75	9,400	\$\$\$\$	\$\$\$\$\$	Conceptual plan stage, with streetcar technology confirmed.
MAX 301 North	83	12,500	\$\$\$\$	\$	Initial North Central BRT Functional Planning Study completed. Proceed to preliminary engineering and detailed design.
MAX 302 Southeast	51	6,400	\$	\$	Enhanced functional planning study and detailed design work to be completed in coordination with Green Line LRT.
MAX Purple extension	59	7,500	\$\$\$\$	\$	Functional planning study required.
MAX Teal extension	26	1,500	\$	\$\$	No functional planning study required. Proceed to preliminary engineering and detailed design.
144 Ave North BRT	76	10,800	\$\$	\$\$\$\$\$	Functional planning study to begin in 2023.
Northwest Hub	57	4,200	\$	\$\$	Triggered by population and job growth in the area.
Shaganappi HOV	65	8,000	\$\$\$	\$\$\$\$	Corridor study complete.
52 St BRT	92	20,500	\$\$\$	\$\$\$\$\$	Additional functional planning study work required.
162 Ave Southwest transitway	48	6,500	\$\$\$	\$\$\$	Functional planning study required.
West Bow BRT	63	6,700	\$\$	\$\$\$\$	Functional planning study required.

\*Weekday ridership estimates developed using Regional Transportation Model, using 2048 assumptions about population and jobs and assumed full level of Primary Transit Network service achieved.

\*\*Capital costs represent high level relative costs compared to other projects on the list. For example, bus rapid transit projects generally have a lower relative capital cost than light rail transit projects.

\*\*\*Operating costs represent high level relative net operating costs compared to other projects on the list. Relative net operating cost is affected by: the gap to reach 2048 Primary Transit Network service levels, project length, feeder bus efficiencies, and forecasted fare revenues.

#### 4.5.4 Projects beyond the RouteAhead timeline

Some identified projects are likely to be constructed outside of the 30-year timeframe for RouteAhead.

**8 Ave subway:** The subway under 8 Ave South to separate the Red Line and Blue Line was removed from project prioritization analysis, since it was determined to be a long-term project, likely beyond the 30-year timeframe of RouteAhead. The need for the subway is driven by the need for extra capacity on Red Line South.

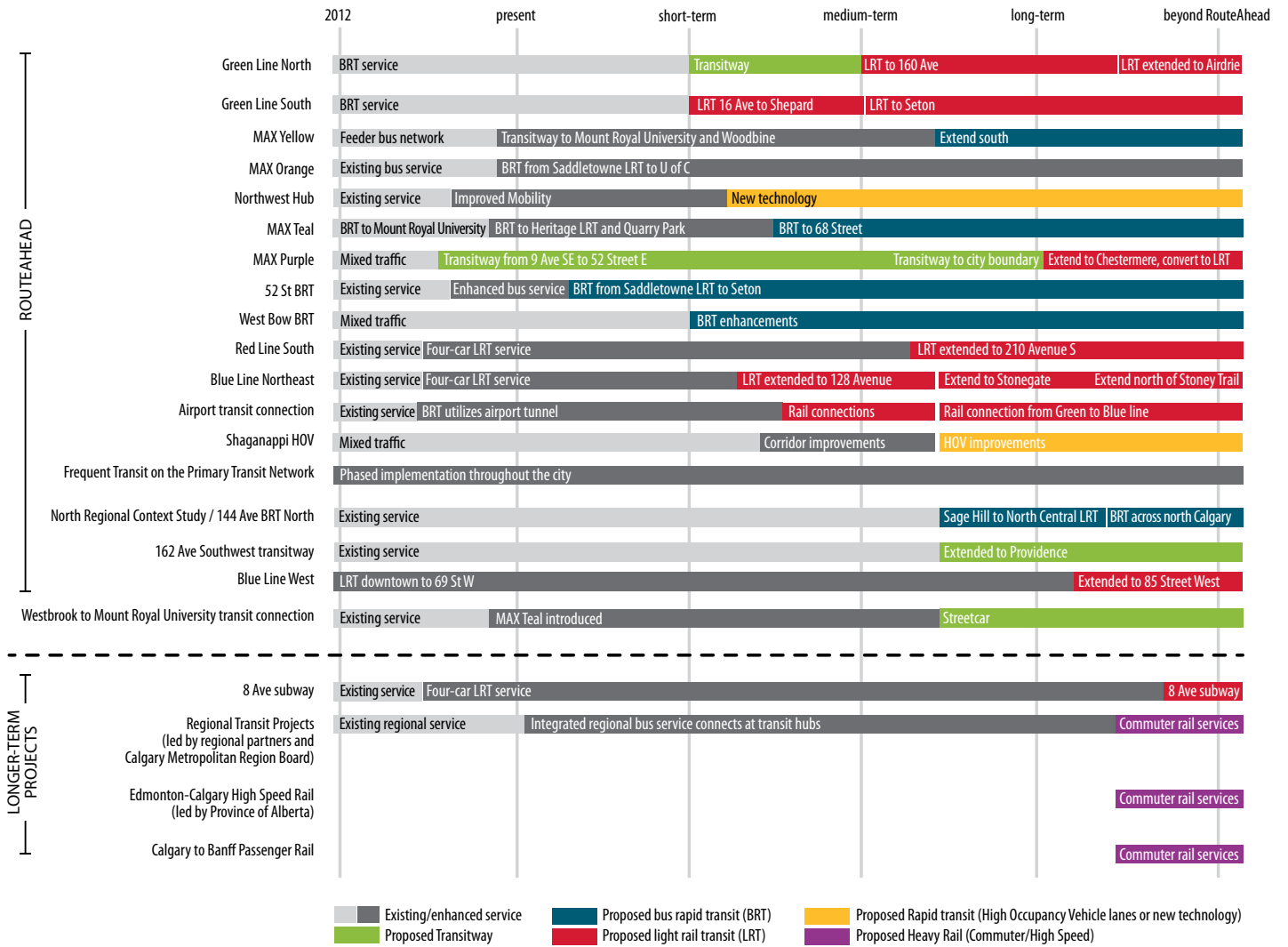
Construction of Green Line Stage 1 is expected to create extra capacity on Red Line South, diminishing the need for the 8 Ave subway over the 2048 timeframe considered in RouteAhead project prioritization.

The subway is still a critical project to city-building and will be prioritized by its own merits, ensuring alignment to the Greater Downtown Plan and revitalization, and coordination with other capital and infrastructure investments in Calgary's downtown.

**Figure 4-N illustrates the mode progression in several significant corridors beyond the timeframe of RouteAhead.**

**"The subway is still a critical project to city-building and will be prioritized by its own merits, ensuring alignment to the Greater Downtown Plan..."**

**Figure 4-N: Mode progression along transit corridors from 2012 to beyond RouteAhead**



The figure represents high-level anticipated mode progression along transit corridors. Exact timing and build-out of capital projects is subject to change based on funding availability, rate of population growth and development, progressing projects to a shovel-ready state, and current priorities.

## 4.5.5 Alignment with City investment

The current Council identified transit as a focus area for their 2023–2026 Strategic Direction, directing Administration to ensure priority transit projects rankings are input into the City’s Service Plan and Budget process for strategic alignment of Calgary Transit projects with citywide investments. The capital investment planning process considers transit projects along with other City projects, creating coordinated and sequenced capital programs to maximize investment opportunities and benefits to Calgarians in industrial areas, new communities, and established areas.

These capital projects will move Calgary towards the transportation goals outlined in the Calgary Transportation Plan, such as aligning transportation planning and infrastructure investment (transportation goal #1); providing affordable mobility (transportation goal #3); and enabling public transit, walking, and cycling as the preferred transportation choices for more people (transportation goal #4).

The Municipal Development Plan and Calgary Transportation Plan direct redevelopment and intensification to activity centres and main streets, to make efficient use of land plus existing and future infrastructure, including transit. Given funding constraints, there is more demand for development than available funding; therefore, we must strategically invest in the transit system by building the Primary Transit Network. When major travel generators, such as denser population and jobs, are intentionally situated next to high-quality transit service, there is an increase in off-peak and counter-peak ridership, which uses the infrastructure more efficiently. Focusing investment on the Primary Transit Network capital projects encourages the reciprocal growth of ridership and land use intensification to specific areas throughout Calgary.

While funding new projects is important to the growth of the transit system, there remains critical asset replacement and renewal needs to sustain existing service, adapt to the growing impacts of climate change, and keep up with current ridership demand. Capital programs that maintain the state of good repair of public transit and support system optimization and efficiency will be essential.

Ongoing capital lifecycle maintenance funding ensures that Calgary Transit continues providing reliable, efficient, and safe service. Assets in this category include fleet vehicles, buildings, tracks and related equipment, electrical systems, fare systems, and other technology. Any reduction in capital funding for lifecycle maintenance increases the risk of service disruptions and failures of these assets, which will negatively impact system reliability.

While new transit capital investments are important to enhance and extend service, appropriate funding is also needed to keep existing infrastructure in a state of good repair to ensure safe and reliable transit service. Approximately 5 per cent of total capital spending should be allocated to maintenance, given the current state of assets in 2023. Significant portions of the Red Line and Blue Line are more than 40 years old and any reductions in capital funding for regular maintenance and lifecycle replacement will increase the likelihood of failures and extended unplanned reactive maintenance. These requirements need to be considered within the overall City capital investment planning process.

**"While funding new projects is important to the growth of the transit system, there remains critical asset replacement and renewal needs to sustain existing service..."**



## 4.6 Special cases for transit service

The following projects are potential opportunities but require Council direction, further study, enhanced collaboration, or a combination of the above, to determine feasibility and work towards implementation.

**Infill CTrain stations:** A 2017 report identified three potential locations for ‘infill’ light rail transit stations – new stations along longer stretches of existing track. Since infill stations are not part of the Council-approved capital project list, their future feasibility will be determined on an opportunity basis, and should be approved by Council. They will likely require private investment and should be accompanied by transit-oriented development to maximize the use of a new station. In evaluating potential infill stations, The City must consider how existing growth areas, activity centres, City finances, and other City services may be affected by the addition of new stations and surrounding development. As of 2023, The City is reviewing a proposal from a developer to fund and construct one of the identified infill stations at Fisher Park on the Red Line South.

**Greater Downtown:** Calgary Transit’s service has largely converged in the downtown, given its importance as a primary employment centre in Calgary. As Calgary’s transit system shifts from a radial to a cross-town network, downtown will continue to be a key destination. A number of projects will contribute to downtown revitalization, including a proposed tunnel under 8 Ave South to separate the Red Line and Blue Line; Green Line construction; regional rail; and future proposed MAX lines. Calgary’s Greater Downtown Plan establishes a short-to-medium-term action to transform the existing light rail transit corridor into an interesting and interactive place with rich visual experiences. The implementation of the Greater Downtown Plan will require continued transit planning and network design as Calgary Transit refines service in the downtown to support increasing population and jobs, without the need to increase road capacity. In particular, the Culture + Entertainment District is going through an evolution with many new large public and private capital investments, using a portfolio approach to capital spending by integrating service lines and projects.

**Calgary International Airport:** Enhanced transit service to the airport, particularly rail based, is often viewed as a catalyst to becoming a world-class city. A functional study for an Airport transit connection that would connect Calgary International Airport to the Green Line and Blue Line was completed in 2021. Future progress and implementation of the Airport transit connection and other improvements will require thoughtful work, coordination of plans, and special access agreements between the landowner (the Government of Canada), the tenants (Calgary Airport Authority), and The City of Calgary.



**University of Calgary/University District/Alberta Children's Hospital/Foothills Medical Centre:**

Construction and development of the new Calgary Cancer Centre and University District has created a significant activity centre in northwest Calgary. Transit service is hampered by a circuitous road network making the area difficult to serve. The Northwest Hub report, jointly prepared by The City of Calgary, University of Calgary, and Alberta Health Services, proposes bus route solutions in this area. Improving transit service to this area will require access agreements and a high degree of coordination with the University of Calgary and Alberta Health Services.

**Regional transit:** The City continues to work with the Calgary Metropolitan Region Board and other transit providers to improve regional transit services. As the region develops and adjacent communities expand their transit service, a full range of activities from governance, transit planning, marketing, land use and policy development will continue with the Calgary Metropolitan Region Board. Regional projects will be considered and evaluated as they are proposed. Regional service extensions are expected to be based on a cost recovery model.

**Edmonton to Calgary high speed rail:** The Province of Alberta has identified downtown Calgary as a key station location for future high speed rail service. The Province continues to review private sector proposals and The City continues to plan land use and transportation services based on approved long term plans for Calgary's Primary Transit Network.

**Calgary to Banff passenger rail:**

The Province of Alberta is continuing to review private sector proposals exploring the feasibility of a passenger rail connection between the Calgary International Airport, downtown Calgary and the Bow Valley. The City is planning future transit, transportation and land use while coordinating with the Province of Alberta on these private sector proposals.



**"As the region develops and adjacent communities expand their transit service, a full range of activities from governance, transit planning, marketing, land use and policy development will continue with the Calgary Metropolitan Region Board."**

## 4.7 Vision, directions and strategies

The vision, directions and strategies support changes and investments in Calgary Transit's network that will be explored and implemented over the next 30 years.

Continuing to support the build-out of the Primary Transit Network will be a focus of the changes and investments. These will ensure Calgarians of all ages and abilities will have the option to use transit all year, regardless of where they live, work or play.

**Vision:** The Primary Transit Network will provide service to accommodate the growing population, and connect communities in all areas of Calgary along activity centres and main streets.

Investments in the Primary Transit Network will allow for transit service to run 15 hours a day, seven days a week, with a frequency of 10 minutes.

Calgary Transit will proactively address the city's rapid growth through different levels of transit service.

The Primary Transit Network capital projects will provide reliable connections to the Primary Transit Network, while expansions to base service will support smaller activity centres and new communities.

Investments and resources dedicated to multi-modal services will enhance the success of mobility as a service and decrease the reliance on personal vehicles.

Calgary Transit will have stronger connections to the Calgary International Airport, continue to play a key role in the Calgary Metropolitan Region, and enhance its relationship with regional transit partners.

"These will ensure Calgarians of all ages and abilities will have the option to use transit all year, regardless of where they live, work or play."

## Direction N1 – Increase frequent transit routes to build the Primary Transit Network.

No.	Strategies	Timeline and progress	Cost
N1.1	Increase operational investment to reach the 10-minute service, 15 hours a day, seven days a week goal of the Primary Transit Network through frequent transit routes.	<p>LONG TERM IN DEVELOPMENT</p>	<p>\$\$\$\$ VERY HIGH</p>
N1.2	Prioritize operational investments first on the CTrain lines, MAX lines, and significant cross-town routes to create a skeletal network.	<p>SHORT TERM IN DEVELOPMENT</p>	<p>\$\$\$ HIGH</p>
N1.3	Revise existing routes and design future routes to better align with Primary Transit Network corridors during transit service reviews.	<p>MEDIUM TERM NOT STARTED</p>	<p>\$\$ MODERATE</p>
N1.4	Promote integration of transit and land use by focusing investment on corridors that support high ridership routes, key connections, main streets, and activity centres, to achieve Municipal Development Plan and Calgary Transportation Plan goals.	<p>ONGOING NOT STARTED</p>	<p>\$\$\$ HIGH</p>
N1.5	Invest in cross-town routes to link all quadrants and communities of the city for a reliable and connected service.	<p>ONGOING NOT STARTED</p>	<p>\$\$\$\$ VERY HIGH</p>

## Direction N2 – Shift the citywide transit network towards a frequency-oriented, all-day, connected grid.

No.	Strategies	Timeline and progress	Cost
N2.1	Redesign routes to focus on frequency, directness, and connective grids during transit service reviews.	<p>ONGOING</p> <p>IN PROGRESS</p>	<p>\$\$</p> <p>MODERATE</p>
N2.2	Engage customers during transit service reviews to develop community-specific first-mile and last-mile solutions to maintain and improve transit accessibility.	<p>ONGOING</p> <p>IN PROGRESS</p>	<p>\$\$</p> <p>MODERATE</p>
N2.3	Consider a variety of existing and emerging opportunities to improve access to the Primary Transit Network, such as micromobility, Calgary Transit Access, and On Demand.	<p>ONGOING</p> <p>IN PROGRESS</p>	<p>\$\$</p> <p>MODERATE</p>
N2.4	Establish service standards, based on frequency targets, for introductory, base, frequent and Primary Transit Network service.	<p>SHORT TERM</p> <p>NOT STARTED</p>	<p>\$</p> <p>LOW</p>
N2.5	Implement a pilot project to investigate the benefits and costs of late-night transit service on key corridors.	<p>MEDIUM TERM</p> <p>IN PROGRESS</p>	<p>\$\$\$</p> <p>HIGH</p>
N2.6	Establish a frequency of at least 30 minutes on the base transit network to support connection to the Primary Transit Network.	<p>LONG TERM</p> <p>IN DEVELOPMENT</p>	<p>\$\$\$\$</p> <p>VERY HIGH</p>
N2.7	Enhance mobility as a service, through investments in On Demand service, bicycle storage at transit stations, establishing station access, and integrating with other complementary travel modes.	<p>LONG TERM</p> <p>IN PROGRESS</p>	<p>\$\$\$</p> <p>HIGH</p>
N2.8	Develop a station area access policy to enhance access for all customers and guide improvement of potential transit-oriented development areas.	<p>MEDIUM TERM</p> <p>NOT STARTED</p>	<p>\$\$</p> <p>MODERATE</p>

## Direction N3 – Enhance transit priority measures throughout the entire transit network to improve reliability.

No.	Strategies	Timeline and progress	Cost
N3.1	Evaluate every Primary Transit Network capital project for opportunities to implement transit priority improvements.	<p>ONGOING</p> <p>IN PROGRESS</p>	<p>\$\$</p> <p>MODERATE</p>
N3.2	Communicate and promote the effectiveness of transit priority measures such as transit-only lanes, queue jumps, transit signal priority and other transit priority techniques to Calgarians.	<p>SHORT TERM</p> <p>IN PROGRESS</p>	<p>\$</p> <p>LOW</p>
N3.3	Analyze problem intersections and street segments throughout the entire transit network, and prioritize and invest in spot treatments to improve service reliability and travel speed.	<p>ONGOING</p> <p>IN DEVELOPMENT</p>	<p>\$\$</p> <p>MODERATE</p>
N3.4	Review the feasibility of upgrading the light rail transit signal system to improve frequency and reliability on existing and future CTrain lines.	<p>MEDIUM TERM</p> <p>NOT STARTED</p>	<p>\$\$</p> <p>MODERATE</p>
N3.5	Implement transit-only lanes on key corridors in the downtown and along key Primary Transit Network corridors.	<p>MEDIUM TERM</p> <p>NOT STARTED</p>	<p>\$\$</p> <p>MODERATE</p>
N3.6	Educate Calgarians on the benefits of yielding to buses and the need to reserve the use of transit-only lanes with improved enforcement.	<p>SHORT TERM</p> <p>NOT STARTED</p>	<p>\$</p> <p>LOW</p>
N3.7	Ensure all Primary Transit Network corridors have first priority snow clearing.	<p>SHORT TERM</p> <p>IN DEVELOPMENT</p>	<p>\$</p> <p>LOW</p>
N3.8	Pilot bus stop consolidation, using bus boarding and unloading data, to improve bus travel time.	<p>SHORT TERM</p> <p>IN DEVELOPMENT</p>	<p>\$</p> <p>LOW</p>

## Direction N4 – Progress capital projects to improve and expand the existing and future network.

No.	Strategies	Timeline and progress	Cost
N4.1	Conduct functional planning studies for all Primary Transit Network capital projects to identify initial costs and service benefits and advance all projects to a green state of readiness.		<b>\$\$</b> <b>MODERATE</b>
N4.2	Align Primary Transit Network capital projects with citywide project evaluation and investment programs to progress high priority, short-term transit projects.		<b>\$</b> <b>LOW</b>
N4.3	Initiate preliminary design for high priority, short-term Primary Transit Network capital projects to further project readiness and increase funding opportunities.		<b>\$\$</b> <b>MODERATE</b>
N4.4	Investigate maintenance and storage needs to build new facilities in strategic locations throughout the city as required.		<b>\$\$\$</b> <b>HIGH</b>
N4.5	Create a plan to identify, prioritize, package, and fund smaller-scale capital projects crucial to support operations (i.e. bus loops, transit-only lanes, customer amenities, operator safety and convenience improvements).		<b>\$</b> <b>LOW</b>

## Direction N5 – Scale operations to support the existing and future network.

No.	Strategies	Timeline and progress	Cost
N5.1	Procure more buses through the fleet replacement program, to address future growth in ridership and city development.		<b>\$\$\$</b> <b>HIGH</b>
N5.2	Prioritize ongoing lifecycle and state of good repair investments in the existing network to improve service reliability, passenger safety, and comfort.		<b>\$\$\$</b> <b>HIGH</b>
N5.3	Evaluate capacity and resourcing required to sustain rail systems and support current and future service changes.		<b>\$\$\$</b> <b>HIGH</b>

**Direction N6 – Collaborate with partners to support the continuation and expansion of a family of transit services in the region.**

No.	Strategies	Timeline and progress	Cost
N6.1	Integrate with other transit service providers in the region to support regional, conventional and specialized transit services by expanding the Primary Transit Network to key regional transit hubs.		\$ LOW
N6.2	Promote growth in transit service in the region by connecting with regional partners to collaborate on initiatives and share expertise.		\$ LOW
N6.3	Create policy guidance to respond to future requests to extend transit service outside the Calgary city limits.		\$ LOW
N6.4	Collaborate with regional partners, the private sector, and other levels of government on long-term conceptual regional transit connections, including identifying and protecting right of way requirements for regional and commuter rail and bus service.		\$ MODERATE



## Direction N7 – Contribute to long-range planning to ensure alignment with City and regional plans.

No.	Strategies	Timeline and progress	Cost
N7.1	Work with the Calgary Metropolitan Region Board to develop and implement the Regional Transportation and Transit Master Plan and Regional Growth and Servicing Plans.	<p>LONG TERM IN DEVELOPMENT</p>	\$ LOW
N7.2	Ensure RouteAhead aligns with the Municipal Development Plan, Calgary Transportation Plan and local area plans, and that transit network growth and infrastructure aligns with The City's Growth Management Strategy.	<p>SHORT TERM IN DEVELOPMENT</p>	\$ LOW
N7.3	Ensure local area plans in new and established communities focus on increased density and grid street networks, enabling transit to be a leading service line.	<p>LONG TERM IN PROGRESS</p>	\$\$ MODERATE
N7.4	Review and update the Primary Transit Network capital project list as Calgary grows, changes, completes planned projects, and approves local area plans.	<p>LONG TERM NOT STARTED</p>	\$ LOW
N7.5	Review the Primary Transit Network for alignment with future Municipal Development Plan, Calgary Metropolitan Region Board Growth Plan, regional rail projects, and adjacent municipalities' land use plans.	<p>LONG TERM IN DEVELOPMENT</p>	\$ LOW
N7.6	Explore increasing density and establishing grid street networks within efficient neighbourhood catchments, that could facilitate or enhance future commuter transit routes when considering the layout and composition of new communities in the regional context.	<p>LONG TERM IN DEVELOPMENT</p>	\$ LOW
N7.7	Work with the development community to ensure land use planning, street design, and outline plans create transit-supportive communities.	<p>ONGOING IN DEVELOPMENT</p>	\$\$ MODERATE

## Direction N8 – Support Calgary's transition to net-zero by 2050.

No.	Strategies	Timeline and progress	Cost
N8.1	Include the latest best practices for carbon mitigation and adaptation performance measures into future revisions of the capital project list evaluation.	<p>LONG TERM NOT STARTED</p>	\$ LOW
N8.2	Develop a framework to screen projects at conceptual and functional design stages for climate mitigation potential, which would inform the project decision-making process.	<p>LONG TERM NOT STARTED</p>	\$ LOW
N8.3	Explore opportunities to work towards achieving net-zero transit infrastructure emissions for stations and shelters.	<p>MEDIUM TERM IN DEVELOPMENT</p>	\$\$\$ HIGH
N8.4	Evaluate and incorporate low and zero emissions vehicle technology for buses.	<p>LONG TERM IN PROGRESS</p>	\$\$\$ HIGH



## Section 5

# The RouteAhead for our finances

RouteAhead includes strategies to provide safe and reliable transit service, with more frequency on an expanded transit network. This section identifies the investment needed to implement these strategies.

One of The City's challenges is responding to Calgarians' needs within finite budgets. Customer service improvements and network expansions require funding, and both Calgarians and Calgary Transit customers will continue to share the

costs of improvement. Sustainable funding is required to build the Primary Transit Network and improve the customer experience to build back ridership.

## 5.1 Investing in the Primary Transit Network

### 5.1.1 Improving the customer experience

Improvements to the customer experience such as timely and accurate information, improved safety, cleanliness, reliability, and comfort of the system often have considerable capital and operating costs. While important for improving the quality of service, they require operating and capital funding, which may take resources away from service expansion. While these types of improvements help attract more riders and are important to Calgarians, they do not usually attract as many new riders as increased bus and train service.

Calgary Transit Access provides a critical transportation option for Calgarians with disabilities which limit their ability to use regular transit services for some or all of their trips. Door-to-door service is much more expensive than regular transit.

In 2022, the cost per trip for Calgary Transit Access was \$9.76 and \$6.85 for regular transit. Increases in population and changing demographics will result in additional demand for Calgary Transit Access service. While some customers will always require door-to-door service, Calgary Transit is working to improve accessibility on the entire system to make it easier for all customers to use Calgary Transit services and reduce reliance on Calgary Transit Access. For example, a pilot project underway called Calgary Transit Access LINK is a flexible service model that blends the Calgary Transit Access services with regular transit services. Customers take part of their trip with Calgary Transit Access and connect to the CTrain or a MAX line. This pilot frees resources to respond to the aging population and forecasted increase in demand for specialized transit services.

**"While some customers will always require door-to-door service, Calgary Transit is working to improve accessibility on the entire system to make it easier for all customers to use Calgary Transit services and reduce reliance on Calgary Transit Access."**

## 5.1.2 Cost of improving the network

In order to make progress on Municipal Development Plan, Calgary Transportation Plan and climate goals, Calgary Transit must focus on investing in the Primary Transit Network where service will have a frequency of 10 minutes or better, at least 15 hours a day, seven days a week over the short-and-medium-term. While added service hours will focus on the Primary Transit Network, there will be improvements to the base network, and service introduction to new communities as well. Reaching base transit service goals is a longer-term priority.

Increases to service identified in the RouteAhead plan will begin during mid-cycle adjustments of the 2023-2026 One Calgary business planning cycle. In order to achieve the service level goals of the Primary Transit Network for the next 30 years, Calgary Transit must add a net total of 1.3 million service hours to Primary Transit Network service.

These hours will be added to the Primary Transit Network mostly through new investments in transit, but redistributing existing hours will

also occur as efficiencies are found through transit service reviews. The added operating funds are needed to make public transit a more attractive mobility choice and reduce the demands on the overall transportation system, by increasing frequency so more people can choose transit.

**Figure 5-A outlines hypothetical investment scenarios to achieve Primary Transit Network levels of service on the entire Primary Transit Network over the lifespan of RouteAhead, including investing service into the capital projects listed in Section 4.5.**

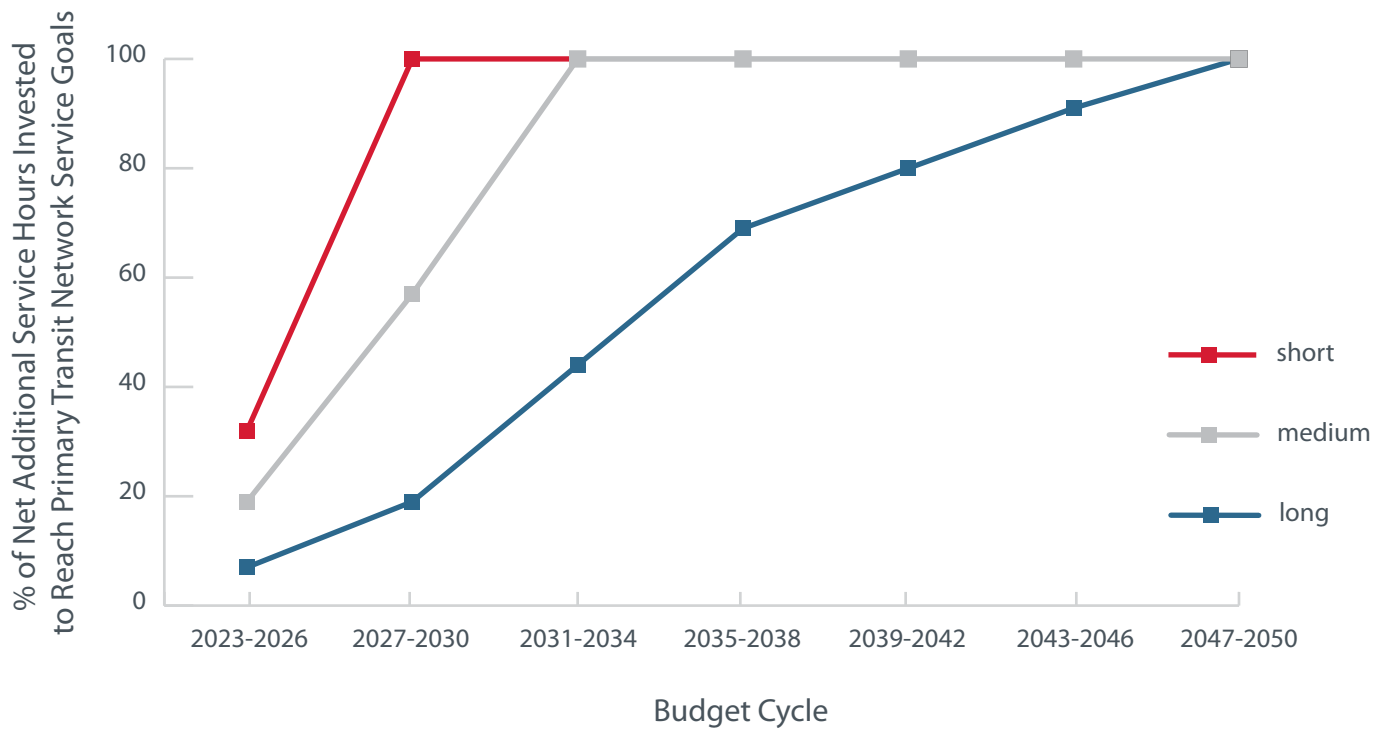
Achieving the Primary Transit Network, as it exists today in 2023, could be possible in the short-term, by 2030, with aggressive investment in transit operating hours. Increased reliance on the tax base and additional revenue sources are likely required to achieve the Primary Transit Network by 2030. The medium-term scenario sees the Primary Transit Network achieved by 2034.

This timeline aligns with the Calgary Climate Strategy, and is crucial to achieving climate mitigation and adaptation targets.

The long-term scenario is business as usual, with gradual investment over time, seeing the Primary Transit Network achieved over the entire 30-year lifespan of the RouteAhead plan.

**"The medium-term scenario sees the Primary Transit Network achieved by 2034. This timeline aligns with the Calgary Climate Strategy, and is crucial to achieving climate mitigation and adaptation targets."**

**Figure 5-A: Potential investment plan options for achieving the Primary Transit Network**



Potential investment scenarios to reach Primary Transit Network service goals. 100% represents the additional service hours needed to achieve service of at least every 10 minutes, 15 hours a day, 7 days a week on designated corridors. Progress to achieving Primary Transit Network service goals depends on level of transit operating investment.



"Significant investment in vehicles and facilities are required as part of the future network..."

### 5.1.2.1 Capital costs

To achieve the vision of RouteAhead, capital funds are required to purchase additional fleet, maintain current infrastructure and assets, and build new transit lines. While a large portion of capital funding for transit network expansion projects comes from provincial and federal government support, vehicle replacement and ongoing maintenance is largely funded through the City of Calgary budget.

It is important to have a robust capital plan and maintenance strategy to advocate for capital funding from other orders of government, and ensure infrastructure and assets are kept in a state of good repair for service delivery.

Significant investment in vehicles and facilities are required as part of the future network to support Primary Transit Network service, in addition to the Primary Transit Network capital projects outlined in Section 4. Calgary Transit requires 400-600 additional buses (a mix of standard and articulated buses) and 40-60 light rail vehicles (not including the 28 delivered as part of the Green Line).

These additional vehicles will require one additional bus maintenance/storage facility and one additional light rail transit maintenance/storage facility, above and beyond the light rail vehicle facility delivered by the Green Line. This does not include additional transit priority measures, MAX/CTrain infrastructure, nor state of good repair projects to ensure the safe and reliable operation of this network.

### 5.1.2.2 Reliability: maintaining and improving what we own

Calgarians have clearly indicated a desire for improved reliability. **The following investments are required to enhance and maintain system reliability:**

**Transit priority:** Transit priority improvements such as bus lanes, queue jumps and signal priority range in cost and can be relatively inexpensive when combined with other projects. They provide tremendous benefits to customers like shorter transit travel times and more reliable service. The travel time improvements also allow Calgary Transit to deliver service at a lower cost.

**Vehicle replacement:** It is important to maintain an optimal vehicle age. Keeping buses and light rail vehicles in service for too long will increase maintenance costs and negatively affect reliability, due to increased time vehicles are out of service for mechanical reasons.

**Facilities:** Storing vehicles indoors is critical for reliability in winter. With additional procurement of vehicles for the Primary Transit Network and expansion of service for new communities, additional storage capacity for buses and light rail vehicles will be required.

**Equipment and staffing:** To minimize the impact on customers when disruptions occur, having the right resources on hand enables Calgary Transit to dispatch vehicles to respond to a service disruption. Additional crossovers on CTrain lines allows trains to divert around stopped trains and avoid a complete track closure.

**"Calgarians have clearly indicated a desire for improved reliability."**

**Light rail transit infrastructure maintenance:** By addressing the performance of track, signals, overhead power systems and communication systems, Calgary Transit can ensure that CTrains run on time with fewer disruptions due to equipment failures.

**Climate change:** To adapt to climate change and severe weather events, funds are required to retrofit and upgrade existing infrastructure to ensure safety, reliability, and an enhanced customer experience.



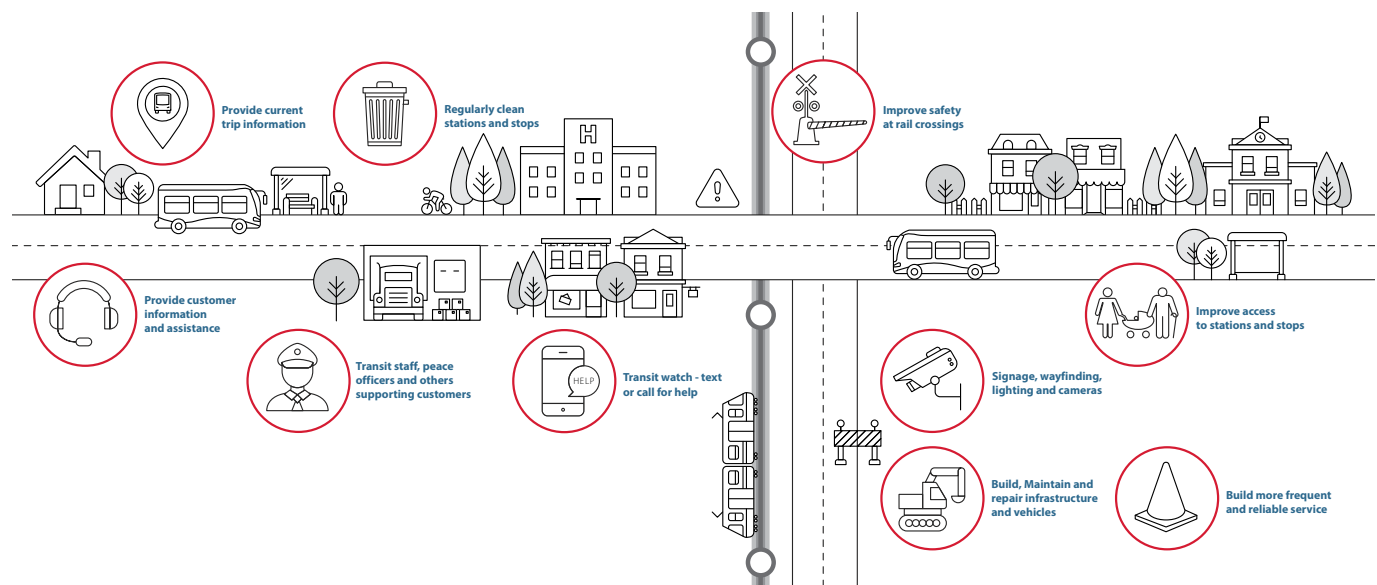
### 5.1.3 Total investment

Calgarians and visitors took almost 60 million transit trips in 2022, a year where ridership was still recovering from the COVID-19 pandemic. In March 2023 alone, there were nearly 7.5 million transit trips. This demonstrates transit's important role in moving people around Calgary. Over the 30-year lifespan of RouteAhead, Calgary's population is forecasted to grow to over two million people, and transit service and investments are necessary to meet the travel demand of a growing population and growing customer base. More transit riders leads to increased revenue, creating a positive feedback loop that enables further investment in the transit system and stabilizes transit finances.

As Calgary grows and we work towards achieving RouteAhead, the City, in partnership with the provincial and federal governments, will need to invest an additional \$300 (2022 dollars) per Calgarian per year to achieve the Primary Transit Network. This investment includes increases to transit service to get to 10 minute frequencies, purchasing new transit vehicles, building new Primary Transit Network capital projects and vehicle storage facilities, maintaining state of good repair, and improving customer amenities. The estimate is based on assumptions about Calgary's population and transit revenue. Investment in transit comes from municipal, provincial, and federal governments, as well as revenue from transit fares.

The benefits of this \$300 per Calgarian per year are far-reaching and impact every Calgarian, regardless if they take transit or not. Investing in transit contributes to building a world-class city by providing greater transportation choice and reducing greenhouse gas emissions and air pollution. It also works towards building a more equitable city by increasing access to jobs, activities, and social life. It's vital to a vibrant downtown and elevating the City's global position and reputation. For people who continue to choose to drive, investments in transit lead to less road congestion. For transit customers, this investment offers frequent service providing greater freedom and access, and value for their money compared to car ownership.

**Figure 5-B: Investments along every part of the customer's transit journey**





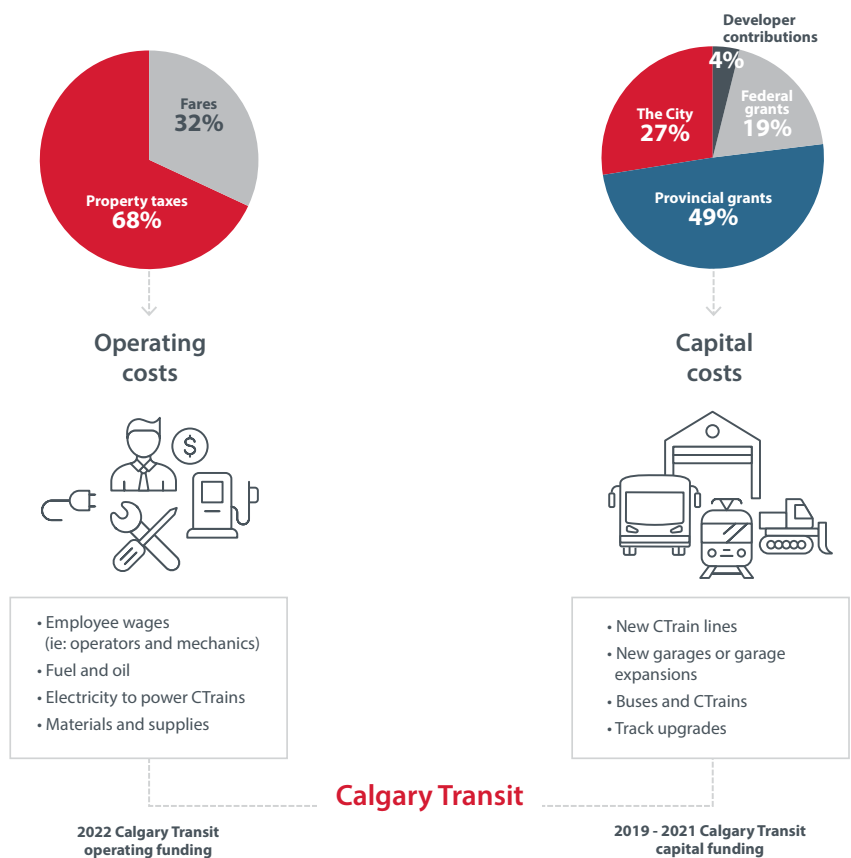
# 5.2 Funding

## 5.2.1 Current funding

Calgary Transit relies on two types of funding; operating and capital, to provide and sustain service delivery. Operating funds are used to run the day-to-day business including wages and maintenance. Capital funds are allocated for new infrastructure, systems, vehicles, and for the lifecycle refurbishment of existing infrastructure, systems, and fleet. Capital funds are usually provided by the federal or provincial governments for a specific purpose and are a one-time source of funding. These funds cannot be used for operations.

Capital and operating funds co-exist, though their sources and intended purposes are distinctly separate. Capital investments require an operating investment in operators, maintenance staff, peace officers, station cleaners and others. Calgary Transit requires both types of funding to provide and sustain transit service.

**Figure 5-C: Calgary Transit's recent operating and capital funding sources**



### 5.2.1.1 Operating funds

Operating funds come from property taxes, fares, and other revenue.

A small but significant percentage of operating revenue (approximately four per cent) comes from advertising, parking, fines, and other sources.

Advertising revenues are generated through a contract with agencies that sell advertising in ways that maximize revenue return to The City. Mindful of sensitivities around advertising, Calgary Transit approves as much creative advertising as possible to increase non-fare revenue. Currently, the operational costs to manage and administer parking and enforcement are close to revenue neutral, but the recent integration of Calgary Parking Authority into The City of Calgary may present opportunities for parking revenue.

The City's User Fee and Subsidies Policy emphasizes that when use of a service benefits society as a whole, all citizens should pay for the societal benefit. While this principle is reflected in the fact that transit is partially-funded from the tax base, fares are still required to cover a significant portion of transit operating costs. Large fare increases put excessive financial burden on customers without recognizing the significant benefits of transit to all Calgarians.

In 2019, fares covered approximately 38 per cent of Calgary Transit's operating costs. During the COVID-19 pandemic, fares contributed only about 19 per cent of the operating costs. Unpredictable and decreased fare revenue makes it difficult to commit funding for new service. This in turn makes it difficult to reliably supply service in new communities, or expand service in existing communities. Since 2013 (excluding the pandemic outliers) the average cost of providing a transit trip has risen 22 per cent while the average fare paid by transit customers has only increased one per cent.

Periodic fare increases are necessary to keep pace with rising operating costs and a growing city. As a public service provided by the municipality, Calgary Transit must balance goals of providing good service and low-cost fares while maintaining fiscal responsibility. One way to balance the goals and help achieve The City's Social Well-Being Policy is framing fare discounts around the ability to pay, rather than other non-income related factors like age. Calgary Transit's three-band Low-income Transit Pass Program, partially funded by the Government of Alberta, exemplifies a best practice by providing the greatest discounts to those with the lowest incomes.



"Large fare increases put excessive financial burden on customers without recognizing the significant benefits of transit to all Calgarians."

Ongoing funding support from the provincial government and municipal tax base for the Low-income Transit Pass program is critical to reduce financial barriers. The Low-income Transit Pass supports customers by providing affordable mobility, which promotes participation in the labour force, education system, and enables daily activities.

A fare strategy is required to strike the right balance of how much each customer segment should contribute to the overall fare revenue. The City of Calgary sets the adult cash fare only and all other fares are derived using the discount approved in the fare strategy approved by Council each business cycle. Over time, The City increases fares to match the rising cost of providing service and strives to keep fares affordable, and comparable to fares in other municipalities across Canada.

Municipal property taxes cover the remainder of the operating costs. **Funding transit service from the tax base reflects the social, environmental, and economic benefits to all Calgarians such as:**

- revitalization, redevelopment, and private sector investment in the city;
- improved public health through better air quality, increased physical activity, and reduced stress from driving in traffic;
- reduced congestion, greenhouse gas emissions, land and energy consumption and
- the provision of low-cost mobility for those who cannot or choose not to drive.

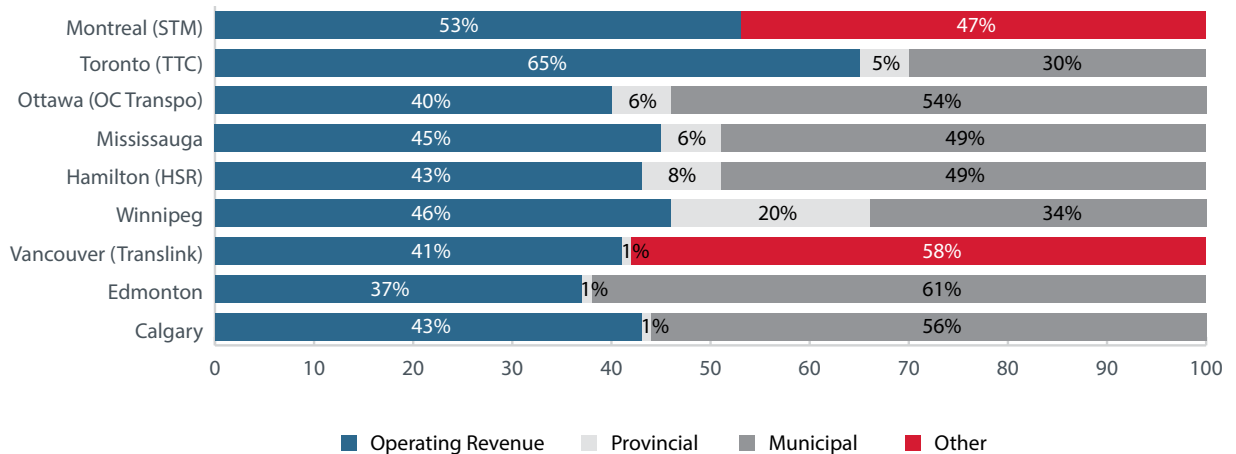
Providing additional transit service to address demand requires a corresponding increase in municipal funding. Although ridership grows when service increases, the fare revenue covers only a portion of the costs.

**Factors contributing to the higher costs to provide transit service and the need for increased transit support from the tax base and new funding for transit include:**

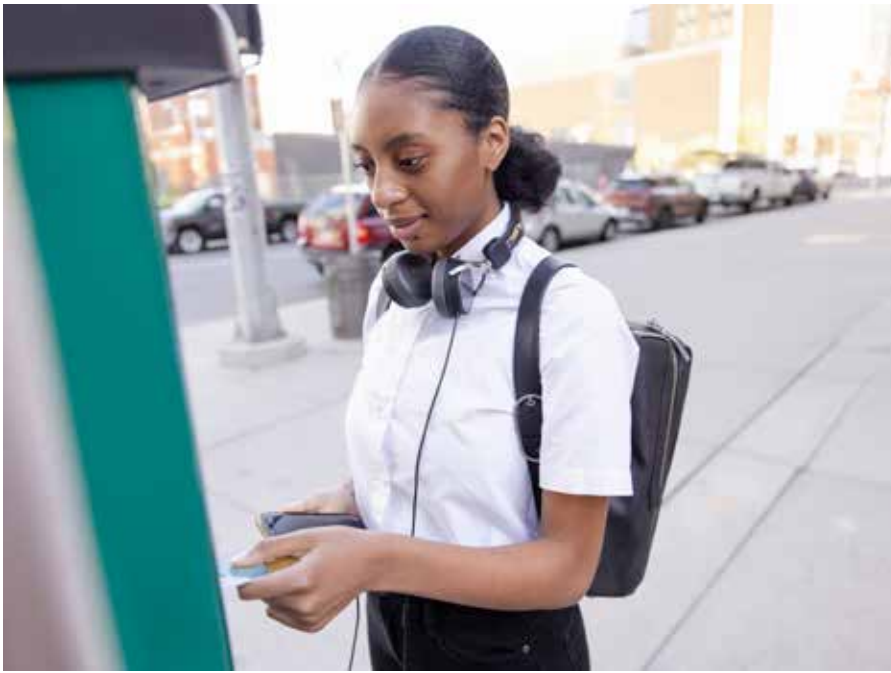
- the level of discounts provided for certain fare types and services (i.e. senior’s pass discount);
- the high cost of introductory service in new communities before significant fare revenue can be generated;
- the operation of new capital infrastructure;
- the increased costs for labour, fuel, parts and materials;
- the increased cost to provide higher quality services (safety, security, cleaning, information and maintenance);
- the increased maintenance and repairs of aging assets and
- the additional costs to adapt transit infrastructure to climate change.

The percentage of Calgary Transit’s operating budget that comes from fares, advertising, parking, and other internal revenue (shown in chart below) is similar to many other major Canadian cities. The Toronto Transit Commission (TTC) achieves a notably higher ratio because Toronto’s urban density is among the highest in North America. Land use changes in Calgary could lead to higher operating revenue to fund expansion of the Primary Transit Network.

**Figure 5-D: Transit operating funding by source for large Canadian municipalities (2019)**



Source: Canadian Urban Transit Association



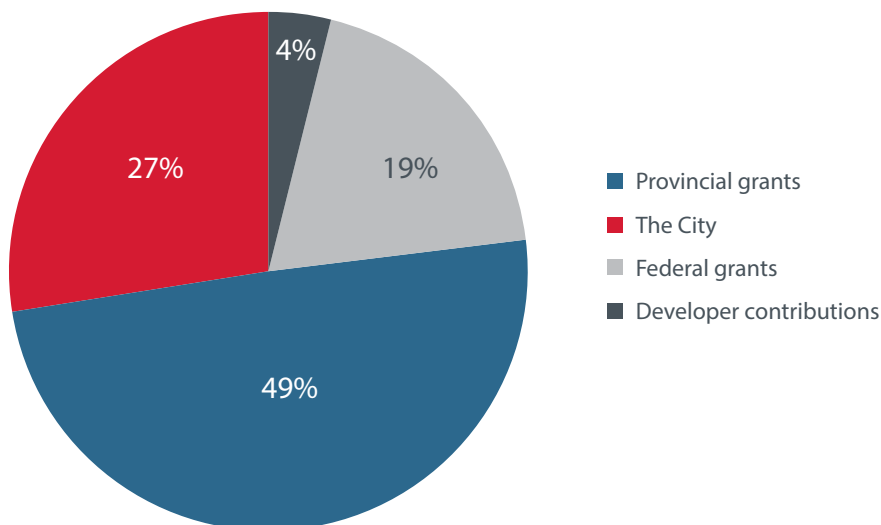
"Capital funds are also crucial to maintaining a state of good repair for current infrastructure and facilities."

### 5.2.1.2 Capital funds

The federal and provincial governments provide most of Calgary Transit's capital budget, with the remainder coming from The City and the development industry.

Steady and predictable capital funds are necessary to ensure Calgary's transit network continues to expand to provide the desired level of service in all areas of the city. Capital funds are also crucial to maintaining a state of good repair for current infrastructure and facilities.

Figure 5-E: Sources of Calgary Transit capital funding (2019-2021)



## 5.2.2 Predictable and consistent funding

Transit service hours and operating costs must increase to meet the goals of RouteAhead and to implement the Primary Transit Network with fast and frequent transit service that comes at least every 10 minutes, 15 hours a day, seven days a week. When there are persistent fluctuations in funding, the lack of certainty leaves The City with little opportunity to increase service, and ensure the right mix of employees and resources are in place to implement changes. Reductions in service can negatively impact customers' experience and are often perceived as poor transit reliability, leading to a downward spiral of ridership, revenue, then service. Calgary Transit customer surveys consistently point to frequency being one of the biggest reasons to ride or not, and operating funding is needed to increase frequency.

Increasing service levels by building the Primary Transit Network will lead to increased ridership and increased fare revenue. However, it takes time to grow ridership after service improvements, as Calgarians become aware of, try out, and consistently use service. Therefore, fare revenue can't always be relied on to cover operating costs, and The City must find other sources of funding.

In the longer term, when frequency increases and travel behavior and land use patterns change, ridership will increase and corresponding fare revenue will grow. This will help contribute to a positive feedback loop and financial sustainability for transit service. A denser land use pattern will also make high frequency transit more efficient.

Consistent operating funding positively affects the customer experience as well. RouteAhead's customer experience strategies address safety, security, cleanliness, information, and customer amenities. Some of the improvements requested by customers do not result in an increase to fare revenue as much as basic increases in transit service. However, these improvements are still important to ensure customer safety, accessibility, and to increase overall usefulness and satisfaction with the public transit system. Robust funding sources must be identified to ensure that investments in both service level improvements and customer experience can be funded.

Predictable and assured sources of funding make it easier to plan and implement capital projects. In order to expand transit service, capital investments in new vehicles and facilities are required. Without a guarantee of when future funding will arrive, the design and public engagement on projects might be initiated long before the funds for construction become available. It can take years to develop specifications, evaluate potential suppliers, receive bids and finally, acquire vehicles. Without a consistent stream of capital funds, shovel-ready projects and associated plans will need to change; vehicle purchases will have to be made in smaller batches; and The City will lose the ability to leverage volume pricing. As result sufficient capital funding needs to be identified and allocated long before new service is implemented.

**"In the longer term, when frequency increases and travel behavior and land use patterns change, ridership will increase and corresponding fare revenue will grow."**

### 5.2.3 Alternative funding sources

The City must consider alternative sources of funding to ensure predictable and consistent funding to implement RouteAhead. **Below are potential funding tools Calgary may explore in the future.**

The City of Calgary is discussing a broad range of issues, including funding, with the provincial and federal governments. The Government of Canada’s recently announced Permanent Transit Fund will include \$3 billion per year for Canadian communities in permanent, predictable federal transit funding, which will be available to support solutions beginning in 2026-2027.

Today, transit agencies are faced with the challenge of doing more with less while offering affordable fares and meeting acceptable service levels. A solution is to generate new stable revenues that will enable the required system expansion. No single revenue source will be able to support all of transit’s future operating and capital needs. A mix of tools will offer stronger performance and resiliency against unexpected changes in The City’s financial outlook. A successful funding approach involves a layered strategy to find efficiencies with current operations and maintenance; optimize existing fare revenues;

increase and stabilize capital support from other levels of government; and identify and implement new revenue sources. Additionally, transit service must be priced appropriately against the costs of transportation alternatives, and fare discounts should not erode fare revenues and service levels. Regardless of the source, it is important that Calgary Transit’s funding be sufficient, predictable, and consistent to sustain current assets in a state of good repair and respond to Primary Transit Network growth and improvements to the customer experience.

**Figure 5-F: Best practice examples of potential new transit funding tools**

Category	Description	Examples	Benefits	Drawbacks
<b>Transportation and mobility revenue sources</b>	Tolls, fees, or charges for using various transportation infrastructure or car ownership. Generally consistent with the user-pay principle, people targeted by the charges are also those responsible for causing adverse impacts to the community like congestion, collisions and air pollution.	<ul style="list-style-type: none"> <li>Road/bridge toll</li> <li>High occupancy toll</li> <li>Fuel tax</li> <li>Vehicle registration fee</li> </ul>	<ul style="list-style-type: none"> <li>Encouraging efficient travel choices</li> <li>Positive effects on regional competitiveness and productivity</li> <li>Sustainable revenues to fund operations</li> <li>Vehicle registration fees are less intensive to implement</li> </ul>	<ul style="list-style-type: none"> <li>High implementation costs for road tolls, significant infrastructure requirements and time to plan and test</li> <li>Road tolls, vehicle registration fees and fuel tax funding require changes to provincial legislation or coordination with the province and regional partners</li> <li>Less revenue potential</li> <li>Potential equity challenges</li> </ul>
<b>Land and real estate development tools</b>	Targets properties and developments in the vicinity of existing or potential public transit facilities to capture a portion of benefits realized. Generally consistent with the user-pay principle as users of potential or improved public transit facilities carry the costs of funding, or land-based charges impose costs on properties irrespective of their proximity to transit services.	<ul style="list-style-type: none"> <li>Property tax</li> <li>Development charges</li> <li>Land value capture</li> <li>Parking space levy</li> </ul>	<ul style="list-style-type: none"> <li>Some tools can be applied at the municipal level</li> <li>Encourages transit-oriented development and transit travel choices</li> </ul>	<ul style="list-style-type: none"> <li>Some tools require provincial legislative changes</li> <li>Implementation challenges due to need to negotiate with developers</li> <li>Not necessarily sustainable or steady sources, however, due to the cyclical nature, some like parking may be more suitable to operational funding</li> </ul>

## 5.3 Vision, directions and strategies

The vision, directions and strategies support the financial sustainability of transit service for all Calgarians. The directions and strategies outline the ways that Calgary Transit plans to optimize funding, find financial efficiencies and identify ways to support economic resilience for transit.

**Vision:** Calgary Transit will continue to optimize operating and capital funding to increase stability, predictability and contribute to Calgary’s economic resilience.

Through the implementation of RouteAhead, Calgary Transit will continue to find efficiencies in service delivery to maximize the return on investment by Calgarians.

Transit-supportive land use results in increasing ridership and revenue, allowing The City to offer affordable public transit fares in line with other Canadian cities.

New or additional sustainable funding sources, including partnerships, will be identified and used to support continued efforts to build and improve the Primary Transit Network.

Direction F1 – Protect and maintain existing funding sources.			
No.	Strategies	Timeline and progress	Cost
F1.1	Review the use of fare discounts by continuing to transition to an ability to pay model.		N/A
F1.2	Update the Fare and Revenue Strategy in alignment with The City’s User Fees and Subsidies Policy.		N/A
F1.3	Monitor the revenue/cost ratio to respond to unique funding challenges and to enable service improvements and growth.		N/A
F1.4	Direct revenues from ridership to fund additional transit service and system growth.		N/A



## Direction F2 – Increase the efficiency of service delivery.

No.	Strategies	Timeline and progress	Cost
F2.1	Consider operating costs when evaluating capital projects, to ensure there is capacity to operate new services.		N/A
F2.2	Optimize service on low-performing routes by focusing on frequency for efficient use of funds, enabling other improvements throughout the system.		\$ LOW
F2.3	Optimize service delivery by considering vehicle type and efficient allocation of staff across the system.		N/A
F2.4	Manage demand for peak period capacity through travel demand management by incentivizing off-peak travel.		\$ LOW
F2.5	Review the current challenges, cost and demand for Calgary Transit Access service and identify future growth and budget requirements.		\$ LOW
F2.6	Review asset management plans and allocate adequate funding for lifecycle maintenance, repairs and replacements of all Calgary Transit assets.		\$\$\$\$ VERY HIGH
F2.7	Regularly review service delivery by applying service standards and adjust routes that do not meet service standards to ensure cost-effectiveness.		\$ LOW

**Direction F3 – Ensure supporting facilities and resources are scaled sustainably to match future projects and service investments.**

No.	Strategies	Timeline and progress	Cost
F3.1	Address the deficit between the Calgary Transportation Plan targets and current annual investment levels, by implementing a minimum annual addition of service.	<p>SHORT TERM</p> <p>NOT STARTED</p>	<p>\$\$</p> <p>MODERATE</p>
F3.2	Increase service support behind the scenes to enable service delivery, by developing a standard package of vehicles, staff, training, tools, and equipment required for every added kilometre of light rail transit track, and hour of bus service.	<p>MEDIUM TERM</p> <p>NOT STARTED</p>	<p>\$\$</p> <p>MODERATE</p>
F3.3	Implement a new operator recruitment model to meet increases in service and offset operator turnover.	<p>SHORT TERM</p> <p>NOT STARTED</p>	<p>\$</p> <p>LOW</p>
F3.4	Review approaches used by other agencies regarding maintenance facility efficiency (e.g. centralized body shop, size of facilities) and implement best practices.	<p>SHORT TERM</p> <p>NOT STARTED</p>	<p>\$\$</p> <p>MODERATE</p>
F3.5	Test and adopt new light rail transit track, signals, traction power, and vehicle technology through pilot projects and in-field testing, using scheduled maintenance windows.	<p>MEDIUM TERM</p> <p>NOT STARTED</p>	<p>\$\$</p> <p>MODERATE</p>
F3.6	Review operator training practices and introduce greater use of technology (e.g. e-learning and simulators).	<p>MEDIUM TERM</p> <p>NOT STARTED</p>	<p>\$</p> <p>LOW</p>
F3.7	Identify cost-effective means of introducing alternative fuels for vehicles to help meet The City's emissions targets by reducing greenhouse gas emissions from public transit.	<p>MEDIUM TERM</p> <p>IN DEVELOPMENT</p>	<p>\$\$</p> <p>MODERATE</p>

## Direction F4 – Promote services to increase ridership.

No.	Strategies	Timeline and progress	Cost
F4.1	Promote new projects, services, and customer experience improvements to increase ridership on the transit network.		<b>\$\$</b> <b>MODERATE</b>
F4.2	Support travel demand management programs to increase ridership; reduce traffic congestion; optimize use of the existing transportation network; and improve Calgary's environment.		<b>\$\$</b> <b>MODERATE</b>
F4.3	Continue cooperative relationships with other City services whose efforts lead to transit-supportive land use, sustainable development patterns, and higher ridership.		<b>\$</b> <b>LOW</b>
F4.4	Invest service hours in the Primary Transit Network to realize high ridership and return on investment.		<b>\$\$\$\$</b> <b>VERY HIGH</b>

**Direction F5 – Achieve mutually-beneficial financing arrangements for service improvements.**

No.	Strategies	Timeline and progress	Cost
F5.1	Strengthen the role of comprehensive land use planning and transit-oriented development as part of Primary Transit Network capital projects to maximize economic, social, and environmental benefit of The City’s land assets.		<p><b>\$\$</b> MODERATE</p>
F5.2	Partner with organizations such as special event facilities, care centres, schools, and employment centres that benefit directly from service improvements.		<p><b>\$</b> LOW</p>
F5.3	Partner with post-secondary institutions to provide transit fare options such as the UPass.		<p><b>\$</b> LOW</p>
F5.4	Investigate the potential for fares based on frequency of use, distance, zones, or other criteria.		<p><b>\$\$</b> MODERATE</p>

## Direction F6 – Pursue flexible, sustained, future funding sources for both operating and capital objectives.

No.	Strategies	Timeline and progress	Cost
F6.1	Advocate to the province for cities to be able to use funding sources other than property and business tax.		\$ LOW
F6.2	Advocate for permanent transit operating funding to the provincial and federal governments to ensure transit service levels can be maintained and improved.		\$ LOW
F6.3	Identify opportunities to fund the operating gap to implement the Primary Transit Network.		\$ LOW
F6.4	Convey the benefits of public transit to inform Calgarians of the value of their investment, and to foster support for public transit.		\$ LOW
F6.5	Explore implementation of a benefit area tax based on residential properties' access to transit service.		\$ LOW
F6.6	Investigate collection of a tax on paid parking to fund transit service.		N/A
F6.7	Explore implementation of an alternate capital funding source, which could include dedicated transit funding from a dedicated portion of general property tax revenue, or an additional transit surtax.		\$ LOW
F6.8	Explore additional operational funding opportunities implemented through partnerships with other levels of government.		N/A
F6.9	Explore opportunities for private sponsorship to contribute to operating funds.		\$ LOW



## Section 6

# What's next for RouteAhead?

# 6.1 Implementation plan

The strategies outlined in each of the customer experience, network, and financing sections will be assigned to various teams across the public transit and specialized transit services for short, medium, and long-term delivery through an internal implementation plan. The Transit Service Governance Committee is responsible for ensuring implementation of the visions, directions, and strategies by cross-corporate teams, who each have a responsibility to achieve the goals of RouteAhead, and alignment with broader Municipal Development Plan objectives, climate targets, social well-being principles, and downtown revitalization goals.

**At a high level, implementing RouteAhead should follow the priority sequence below to support building the Primary Transit Network:**

1. Expand service on the existing Primary Transit Network.
2. Conduct transit service reviews to align with the Primary Transit Network.
3. Align new transit service frequency investments with growth priorities.
4. Procure additional fleet to support frequency increases.
5. Maintain a state of good repair for existing assets and infrastructure.
6. Market and promote transit service improvements.
7. Advance planning, design, and construction for new and extended Primary Transit Network capital projects.

## 6.1.1 Promoting the Primary Transit Network

Working towards a Primary Transit Network means Calgary Transit will educate existing riders, prospective riders, Calgarians, and organizations on the benefits, staged implementation, and permanency of the Primary Transit Network. The Primary Transit Network provides transit choice, encourages community building, and benefits Calgarians who do not use transit with reduced congestion; reduced demand for limited parking; and less chauffeuring of dependents who are unable to drive. Promoting the Primary Transit Network is one of Calgary Transit's next steps, and will focus on the benefits to everyone, helping position Calgary Transit in becoming the preferred transportation choice in Calgary.

Land use and transit decisions need to be linked to create a positive feedback loop where the urban form, through density, diversity, design and distance, supports quality transit service. In turn, quality transit service is provided in a way that supports land use intensification around transit areas.

One of the core elements of the Calgary Transportation Plan is to begin upgrading major transit corridors to Primary Transit Network service levels to lead development and stimulate growth around activity centres and main streets.

Focusing on corridors that support high ridership routes and other key connections linked with activity centres will lead to achieving the Primary Transit Network. Updated local area plans also provide further detailed direction on growth and change throughout communities, including in transit station areas.



"The Primary Transit Network provides transit choice, encourages community building, and benefits Calgarians who do not use transit with reduced congestion..."

**The Primary Transit Network offers the following benefits to existing transit customers:**

- **Easy** - It will be easy to identify frequent transit routes that contribute to the Primary Transit Network.
- **Short wait times** - Short wait times for buses and trains makes connections easy.
- **Schedules** - Customers do not need to consult a schedule because a bus or train will arrive within 10 minutes.
- **Shorter travel times** - Travel time is reduced because waiting times are short.
- **Convenient** - Transit is more convenient to use.

**Benefits to non-customers:**

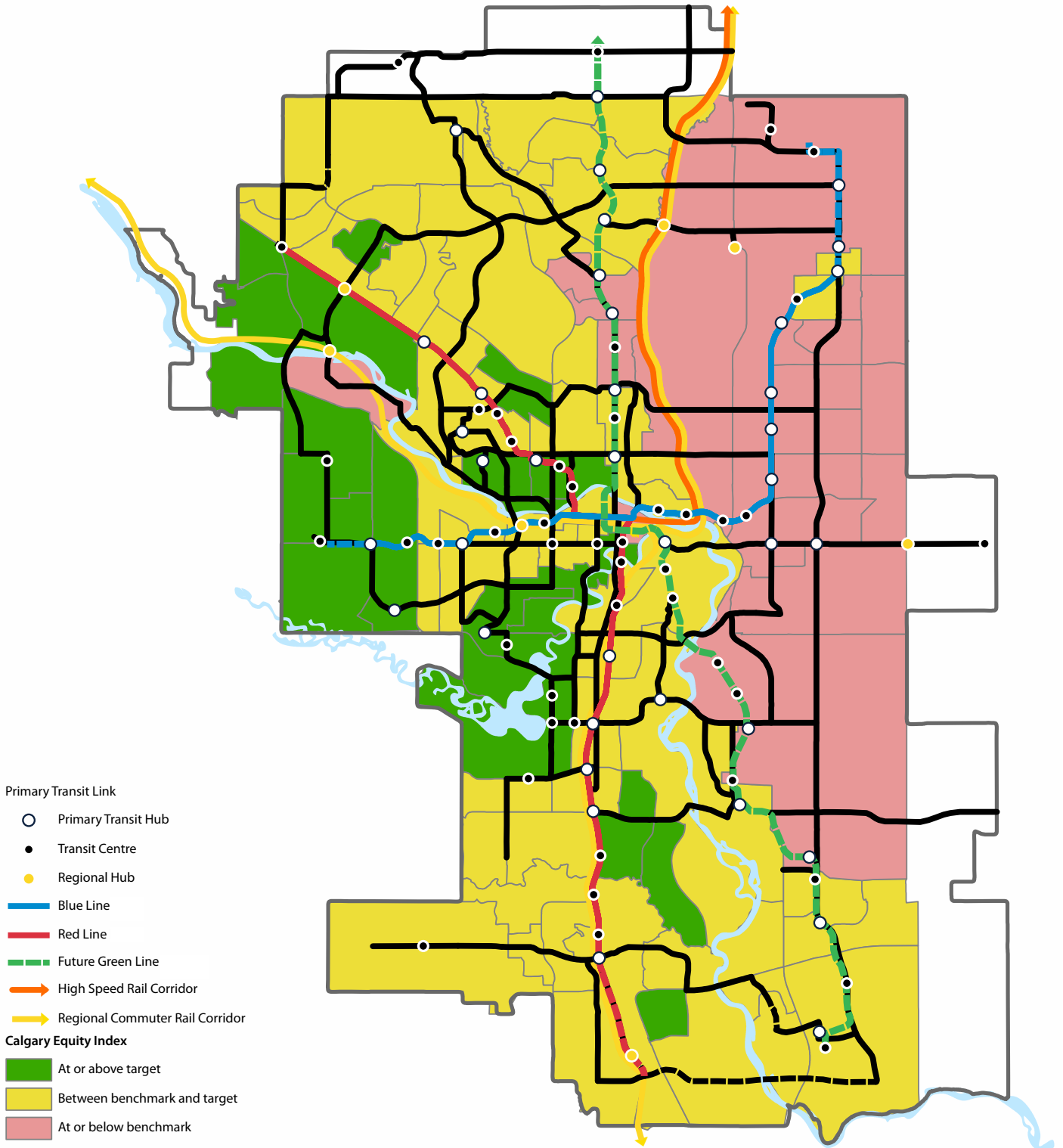
- **Shorter wait times** - Easier connections and added convenience will entice more Calgarians to ride transit.
- **Improved service** - Making transit more convenient will take more personal vehicles off the road, reducing congestion for drivers.
- **Incentivized development** - Increasing transit service on the Primary Transit Network incentivizes infill development at main streets and activity centres, creating an economic driver for developers and their employees.

**Benefits to Calgarians:**

- **Increased value** - Homes and businesses with excellent transit access are more marketable.
- **Access** - Connections between people and places are improved with frequent transit.
- **Information** - Available to Calgarians who want to find out if their home or job is near frequent service.



**Figure 6-A: The Primary Transit Network and the Calgary Equity Index**



## 6.1.2 Phasing and delivering Primary Transit Network capital projects

In the past, The City has not typically proceeded with pre-design and detailed design of transit capital projects until funding was approved for construction. This approach is tied to the uncertainty of capital funding streams. It reduced the risk of revisiting designs that were completed years before funding was available to build the project, allowing funds to be spent on other priorities.

A new approach identified in RouteAhead is to advance the pre-design to approximately the 30 per cent level for projects that are immediate priorities, but are not yet fully funded. This approach reduces the time between funding approval and construction. Typically, economic stimulus funds are available for shovel-ready projects only. This approach will bring high-priority transit projects to the shovel-ready stage, allowing The City to move more quickly on future funding opportunities. This approach makes it easier for The City to move ahead with projects under uncertain funding conditions. Typically, the process to progress a capital project consists of the following stages:

**Pre-functional planning** involves preliminary work and conceptual planning usually quite far in advance, to identify project alignment and estimated right-of-way requirements, so transit is considered at the very start of the community planning process.

**Functional planning** studies are preliminary studies to determine if the proposed project is feasible, and to provide preliminary estimates of capital and operating costs; land requirements; infrastructure requirements and community impacts.

**Pre-design studies** include engineering analysis and plans that refine the information provided in the functional plan and create “30 per cent” design plans to be used for land acquisition, quantities, detailed cost estimates and construction phasing.

**Detailed design** involves the preparation of engineering plans and specifications used for construction.

It is important to note the analysis provided by the capital project evaluation in RouteAhead provides a baseline project ranking. Project priorities must also consider qualitative factors, such as funding availability, corporate priorities, functional planning, community build-out, land acquisition, and other readiness factors to provide the full picture of whether a project should be prioritized. Funding and advocacy are required to advance concept planning, functional planning, pre-design, and land acquisition for the projects.

The City will develop transit projects into corporate capital programs, ensuring agile delivery of projects as funding becomes available, and delivering high priority capital projects in tandem. Transit capital projects will be aligned with community investment portfolios to maximize benefits. RouteAhead identifies a programmatic approach to efficiently package and deliver capital projects.

RouteAhead developed a set of criteria to rank capital projects and provided a process to periodically update the list of projects. Projects on the list will be prioritized and constructed on a corporate basis that considers other City projects. There are many other variables to be accounted for when deciding which projects are to be constructed such as Council priorities, community readiness, availability of capital and operating funds, and political support.

There is positive support for additional transit projects to relieve crowding, increase frequency, improve reliability, reduce travel times, and improve the customer experience and safety. The City relies on other levels of government to fund large capital projects. Securing stable, long-term capital funding will help The City plan the phasing of transit capital projects.

## 6.2 Regional transit governance

The Calgary Metropolitan Regional Board (CMRB) was established in 2018. It is a not-for-profit government corporation made up of elected officials from the region's eight member municipalities (City of Airdrie, City of Calgary, City of Chestermere, Town of Cochrane, Foothills County, Town of High River, Town of Okotoks, and Rocky View County). **CMRB's mandate is to support the long-term sustainability of the Calgary Metropolitan Region by:**

- ensuring environmentally responsible land-use planning, growth management and efficient use of land;
- developing policies regarding the coordination of regional infrastructure investment and service delivery;
- promoting the economic wellbeing and competitiveness of the Calgary Metropolitan Region; and
- developing policies outlining how CMRB shall engage the public in consultation.

The CMRB emphasizes transit as a fundamental aspect of the Growth and Servicing Plans. The regional Growth and Servicing Plans recognize that regardless of income or living situation, transit is a sustainable way to connect people to jobs, appointments, community services, retail opportunities, friends and family. Promoting the movement of people and goods throughout the region promotes business and employment, resulting in increased economic potential. The Growth Plan focuses development into preferred growth areas using preferred placetypes, resulting in a growth management approach and enabling the region to provide diverse mobility and housing options for current and future residents.

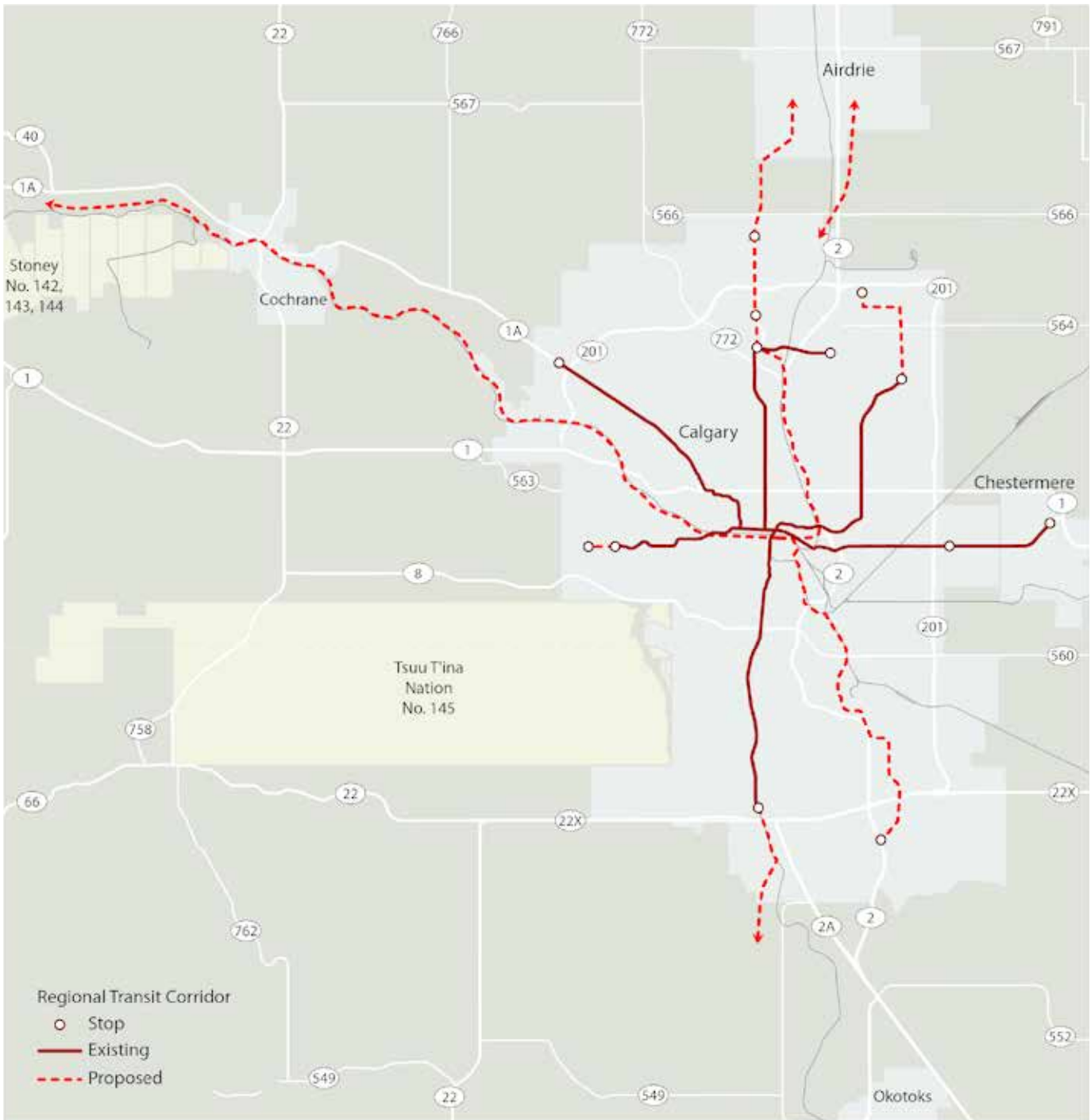
The City of Calgary will work closely with the CMRB and surrounding municipal transit providers on the coordination of transit systems in the Calgary region. This includes fares, service expansion, and the development of the Regional Transit and Transportation Master Plan. Calgary Transit will also continue to support the introduction of transit service by other regional municipalities.

As Calgary and adjacent communities mature, a more regional approach to governance may provide the best approach in the future to improve transit service delivery and advance the region's economic competitiveness. With the continued growth of Calgary and adjacent communities over the next 30 years, there will be opportunities to work together to address regional transit issues. This may include a regional fare strategy and integration; regional transit marketing and branding; service standards; vehicle types; and community engagement on service plans.



**"As Calgary and adjacent communities mature, a more regional approach to governance may provide the best approach in the future."**

Figure 6-B: Calgary Metropolitan Region transit corridors



Source: Calgary Metropolitan Region Board Growth Plan.

Proposed transit and transportation corridors are intended to provide a general idea of future corridors. They are preliminary and subject to change based on the results of further study and planning by the CMRB, individual municipalities, intermunicipal partnerships or the Province.

## 6.3 RouteAhead annual reporting

Council will receive an annual report on RouteAhead and progress towards achieving the three core principles of RouteAhead – customer experience, transit network, and financing transit. **Each annual report should include, but is not limited to:**

- key indicators;
- transit system ridership;
- customer research program findings;
- financial outlook;
- progress made to advance Primary Transit Network capital projects; and
- proposed updates or changes to the Primary Transit Network capital project list.


The key indicators used to monitor progress on the core principles will demonstrate how RouteAhead aligns with Council’s strategic direction. The key indicators are focused on economic, social, and climate resilience. RouteAhead annual reporting should include updated performance indicators to monitor progress.

**"The key indicators used to monitor progress on the core principles will demonstrate how RouteAhead aligns with Council’s strategic direction."**



## Figure 6-C: RouteAhead annual reporting customer experience measures


The customer experience is the basis of public transit service. Keeping customers safe and satisfied helps justify the investment in supplementary parts of transit service that are in addition to vehicles traveling on routes, such as security, fare apps, and real time information systems.

Principle	Indicator	2022 Figure	Target (2032, 2042, 2052)	Relevance	Description
<b>Customer experience</b> 	Ridership	56.9 million trips	Benchmark	Measures the size of the customer base and how many trips are made by transit.	Total annual number of conventional transit trips, includes CTrain, bus, On Demand.
	Customer satisfaction	78%	85%, 87%, 90%	Are customers satisfied with the service? Keeps choice riders and supports equity for non-choice riders.	Most recent quarterly survey results.
	Reliability <sup>1</sup>	87%	90%, 93%, 95%	Can customers count on their bus or train to arrive on time? Reliability is one of the most frequently-mentioned values for customers.	On-time performance.
	Safety <sup>1</sup>	72%	80%, 85%, 90%	The perception of safety is just as important as statistics on physical safety. Safety is a critical way to increase the number of equity-deserving populations on transit.	Most recent quarterly survey results.

<sup>1</sup> Public transit service line One Calgary performance measure.

## Figure 6-D: RouteAhead annual reporting network measures


Measuring the progress towards the future state of the transit network helps direct transit system investments and related land use decisions. Continuing to invest proportionally as Calgary grows is important to serving Calgarians. Development of the Primary Transit Network is crucial to meeting land use goals and making transit the preferred way of travelling for more Calgarians.

Principle	Indicator	2022 Figure	Target (2032, 2042, 2052)	Relevance	Description
<b>Network</b> 	Access to Primary Transit Network <sup>1</sup>	47%	50%, 55%, 60%	Directing growth in areas of the city with access to the Primary Transit Network supports equity for non-drivers and helps measure the progress of land use decisions.	Percentage of population residing within 400 metres of the future Primary Transit Network.
	Bus service hours to fulfill Primary Transit Network	45%	90%, 100%, 100%	Progress on this measure will show when transit service hours are allocated to build up the Primary Transit Network.	Percentage of service hours allocated to Primary Transit Network bus service over total number of service hours required.
	CTrain service hours to fulfill Primary Transit Network	85%	100%, 100%, 100%	The CTrain hours are measured separately from the bus route hours to avoid over-shadowing the progress on the bus routes.	Percentage of service hours allocated to Primary Transit Network CTrain service over total number of service hours required.
	Greenhouse gas emissions <sup>1</sup>	1172	Benchmark	Transit is utilizing different engine types to reduce The City's greenhouse gas emissions in commitment to the Climate Strategy.	Kilograms CO2 per 1000 kilometres of bus service
	Service hours/capita	1.73	Benchmark	This measure shows whether or not transit is growing in proportion to the population growth and is a useful benchmark to other transit systems.	Total annual number of transit service hours, includes CTrain, bus, On Demand divided by the current population of Calgary.

<sup>1</sup> Public transit service line One Calgary performance measure.

## Figure 6-D: RouteAhead annual reporting financing transit measures

Financial indicators help determine if the operating funds are being used efficiently; show the value of the service to Calgarians; and demonstrate the subsidy provided for the service.

Principle	Indicator	2022 Figure	Target (2032, 2042, 2052)	Relevance	Description
<b>Financing transit</b>  	Trips/service hour	24.4	Benchmark	This is a measure of the quality of route planning and density near transit service.	Total annual transit trips over total annual service hours.
	Operating cost/trip <sup>1</sup>	\$6.85	Benchmark	This measure shows the value each customer gets from their fare.	Total operating expenditures over total annual trips.
	Municipal tax/capita	\$196.35	Benchmark	This measure shows how much property tax Calgarians pay to have transit service available to them. This cost benefits non-customers by reducing automobile use, greenhouse gas emissions, and road congestion.	Total operating expenditures less total revenue over total population.
	Revenue cost ratio	32%	Benchmark	Helps tell the story of financial health in terms of self-sufficiency. The revenue/cost ratio recognizes municipal tax support for funding transit operations, showing the value of transit service. As well, it helps to quantify the social, environmental, and economic benefits transit provides.	Portion of the total operating expenditures recovered by revenue, compared to the portion covered by taxes.



## 6.4 Calgary Transit's ongoing engagement

Public engagement will continue as part of Calgary Transit's long-term planning functions. Calgary Transit will continue to use a variety of methods for public engagement on projects identified in this plan.

Social media is frequently used with success to interact with, and inform Calgarians. Calgary Transit's website, [www.CalgaryTransit.com](http://www.CalgaryTransit.com), is an effective way to share information about Calgary Transit's process, and progress with implementing RouteAhead.

**Continual engagement included in our customer research program includes:**

- monthly tracker surveys of 200+ customers regarding the experience of their last trip;
- occasional usage and attitudes surveys;
- choice modelling studies;
- use of occasional focus groups and ad hoc surveys, including targeted engagement with equity-deserving groups; and
- regular meetings and engagement with Calgary Transit's customer advisory group.

Although there is a cost to this level of engagement, it is valuable to have ongoing conversations with Calgarians and customers to keep them informed regarding the future of Calgary Transit.



**"...it is valuable to have ongoing conversations with Calgarians and customers to keep them informed regarding the future of Calgary Transit."**

## 6.5 Monitoring emerging trends

The City of Calgary continuously monitor emerging trends that may influence how transit service is delivered. Change is happening at an increasingly rapid pace, including evolving customer needs and expectations; the development of advanced technologies; new environmental considerations; and a diversifying economy.

RouteAhead addresses how some current trends are already being incorporated into transit operations, such as new travel apps and the move to fully-accessible vehicles. Below are five rapidly-evolving areas that Calgary Transit will continue to monitor and address over the coming years.

### **Hybrid/remote work**

An analysis conducted by The City in 2020 found an average of two days remote work per week for eligible office staff could result in a 10 per cent reduction in all-day, citywide transit ridership. Similarly, an average of one day per week could result in a 5 per cent reduction. The impact is more pronounced downtown, given the high concentration of office workers. An average of two days remote work per week could potentially cause a 30 per cent reduction in transit commuting to the core.

Changes in downtown parking price and availability also impact transit ridership recovery. The introduction of new flexible parking options may encourage more hybrid workers who have access to a vehicle to drive rather than take transit on the days that they commute.

This could indicate a shift in ridership away from downtown centric travel. It is unclear whether hybrid work will also result in higher demand for local transit service in and around residential communities. Regular monitoring of evolving hybrid work patterns is needed.

## Decarbonization

The City of Calgary has developed plans to reduce greenhouse gas emissions and achieve net-zero emissions by 2050. Work is underway for the transit fleet to transition to low carbon fuels. While the CTrain has been powered entirely by electricity from renewable sources since 2007, plans are underway to grow the compressed natural gas fleet, pilot electric shuttle buses, and purchase full-sized electric buses.

Bus manufacturers are rapidly adopting new fuel technologies to meet demand from cities globally. Electric engines appear to be the preferred technology. Prior to the pandemic, Bloomberg New Energy Finance estimated that 84 per cent of bus sales globally will be electric by 2030.

Electric vehicles operating on Alberta's grid in 2022 produce roughly half the emissions of equivalent gasoline vehicles, and The City of Calgary's energy contract offsets emissions to provide zero-emission electricity to electric buses. Experience from other Canadian pilots suggests that additional buses will be required to maintain service levels due to the need to charge at times through the day. Electric buses should offer lower maintenance costs, and battery ranges will continue to improve over time.

Calgary Transit is growing its fleet of compressed natural gas buses. compressed natural gas significantly reduces particulate emissions (smog) and noise, but compressed natural gas is roughly equal to diesel in terms of greenhouse gas emissions, according to the US Department of Energy. Biofuels provide another way to immediately reduce emissions from existing diesel buses and The City already uses B20 biodiesel to reduce emissions in spring and summer conditions. Renewable natural gas derived from landfill gas or other waste products can also provide significant greenhouse gas reductions.

Many companies are also developing hydrogen fuel-cell buses. However, where hydrogen is sourced from has a significant impact on potential greenhouse gas reductions. Green hydrogen produced from water electrolysis and renewable energy can provide zero-emission energy, and global production may scale up this decade to reduce the current high costs. Blue hydrogen, made from natural gas while using carbon-capture, may produce more lifecycle greenhouse gas emissions than compressed natural gas engines, based on a study conducted by the European Union. Additional research and development are required to understand whether this technology is a viable alternative to diesel engines.



**"The City of Calgary has developed plans to reduce greenhouse gas emissions and achieve net-zero emissions by 2050."**



"In addition to reducing greenhouse gas emissions, The City will need to adapt its infrastructure and services to the growing impacts of climate change and extreme weather events."

### **Climate change adaptation and resiliency**

In addition to reducing greenhouse gas emissions, The City will need to adapt its infrastructure and services to the growing impacts of climate change and extreme weather events. Severe storms and localized flooding present year-round risks to service reliability for Calgary Transit. The reliability of electrical power could impact transit service delivery due to potential power outages, brownouts, and electricity shortages. Redundancy therefore needs to be built into the transportation system to provide options when individual routes or corridors are temporarily closed.

Heat waves, which will become increasingly common in Calgary, present a growing risk to transit infrastructure. Further analysis of the precise impacts from extreme heat on Calgary's infrastructure is required, but several recent examples from other jurisdictions illustrate potential impacts. High temperatures can cause rail tracks to lengthen and warp, as was the case when AMTRAK was forced to institute temporary speed restrictions between New York and Philadelphia in 2022. The city of Portland, Oregon, had to contend with melting overhead wires during a heat wave in 2021.

Extreme heat can also cause asphalt roadways to fail, creating ruts and poor driving conditions for buses and other transportation modes. In addition to infrastructure impacts from heat waves, the customer experience will also need consideration of increasing shade, air conditioning systems, and other comforts.

## **Transit for goods movement**

The potential exists for Calgary Transit to expand its services and revenue generation beyond passengers and advertising. Many private bus carriers provide package and small goods movement delivery services within or between urban centres. Neighbourhood logistics hubs, which centralize parcel drop-off and pick-up from courier companies, could also be integrated into transit stations. One example is the partnership between GO Transit in Ontario and Purolator, offering a mix of quick stop trucks, kiosks, and parcel lockers at multiple GO Transit stations.

Looking to the future, a study by Stanford University concluded that the most effective way to extend the range of aerial delivery drones would be to allow them to land on the roof of in-service buses. This would quadruple the range of the drones while allowing deliveries throughout urban areas in one to two hours. Even if aerial drone operations continue to be constrained in urban areas, similar possibilities may exist with ground-based drones. Further work and regulation are required for any integration of goods movement with existing transit operations.

## **Urban air mobility**

Urban air mobility encompasses a variety of new aerial vehicles to move passengers and goods within or between urban areas. This includes aerial drones and electric vertical take-off and landing (eVTOL) vehicles. Some eVTOLs will require human pilots, but many are being developed to be fully autonomous aircraft. There are over 20 different companies developing eVTOL craft, with support in the United States from both the Federal Aviation Administration and NASA. The goal of urban air mobility companies is to provide trips at rates competitive with upscale taxi services.

Urban air mobility will likely begin in the mid-2020s in larger, more congested cities such as New York or Beijing. However, medium-sized cities such as Calgary should begin considering how these services will impact the transportation system and urban land uses. The City should consider how urban air mobility services and 'vertiports' would be integrated into mobility as a service systems and sensitively incorporated into surrounding land uses, rather than operating as stand-alone services.



"The RouteAhead plan delivers an overarching document to guide Council's and Calgary Transit's strategic decision-making for the next 30 years."

## 6.6 Review of RouteAhead

The RouteAhead plan delivers an over-arching document to guide Council's and Calgary Transit's strategic decision-making for the next 30 years. There are assumptions and forecasts in the plan based on land use plans and data available today. Over time, new information will arise from project plans and new route alignments and updated cost/benefit information will become available.

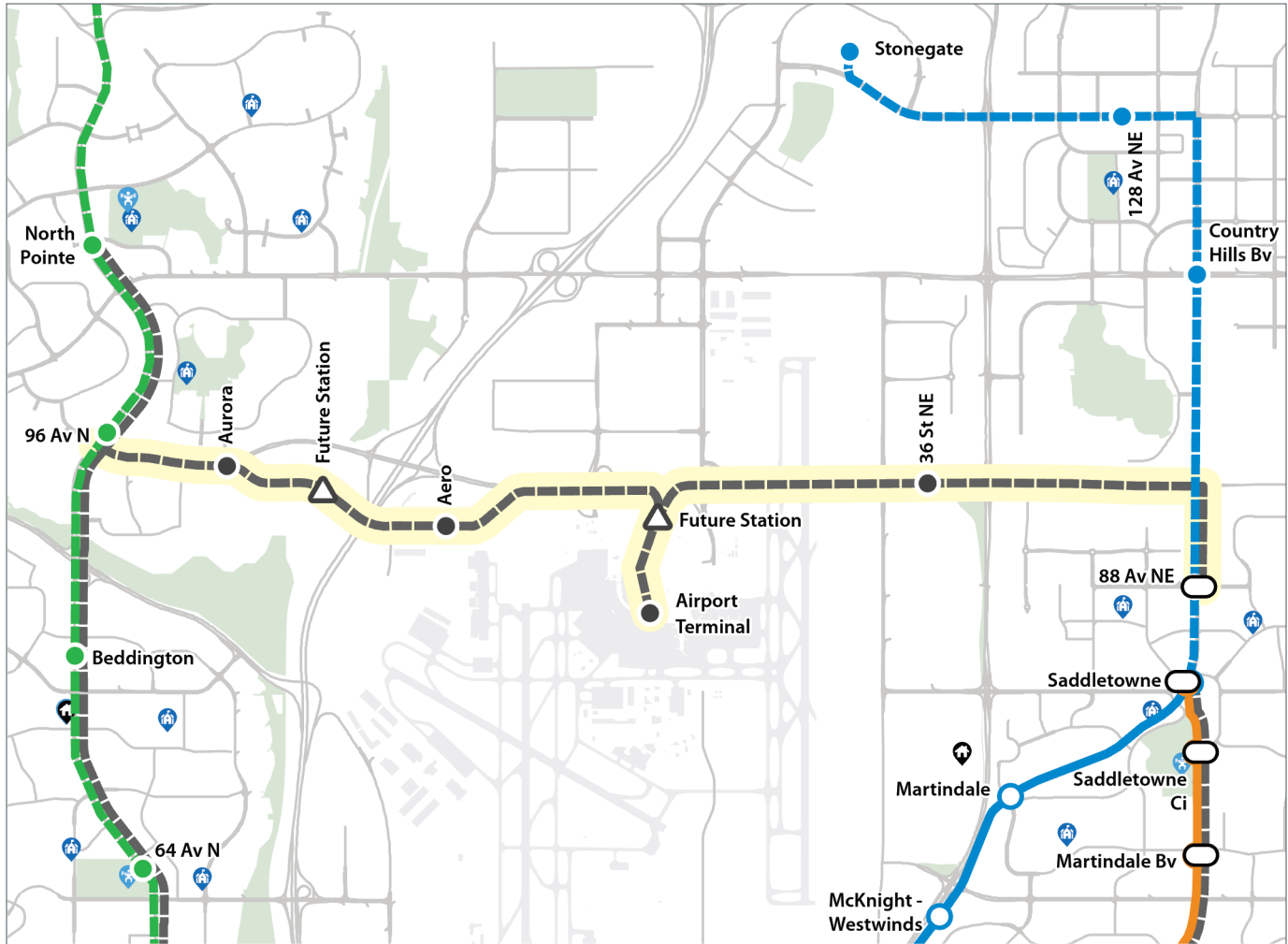
The RouteAhead plan should be reviewed and updated approximately every five years to make sure it remains current and practical for decision makers. It should also be updated in conjunction with future updates to the Municipal Development Plan and Calgary Transportation Plan to ensure these documents remain in alignment.



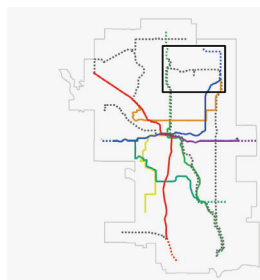
# Section 7

## Appendix

## Airport transit connection



Alignment and station locations based on information available at time of publishing. Detailed alignment and station locations will be confirmed as project planning progresses through functional studies and detailed design and engineering. Station names are for display purposes and subject to change.



### Points of interest

- Community Centre
- Leisure Centre
- School
- Existing station
- Planned future station
- Future airport connection station

### Benefit score: 74/100

2048 Weekday ridership: 22,500  
 Capital cost: \$\$\$\$\$  
 Net annual operating cost: \$\$\$\$

### Readiness:

Proceed with updating previous functional planning study.

### Project description

Providing a connection to the Calgary International Airport from Green Line in the west at 96 Ave NE, to Blue Line in the east at 88 Ave NE, this project brings travelers and employees to and from the Calgary International Airport, with key stops in the surrounding industrial areas.

Dependent on extending Blue Line Northeast LRT to 88 Ave NE Station.

Potentially dependent on Green Line extension to 96 Ave NE for infrastructure phasing.

Coordination required with Airport Trail NE interchanges, Blue Line Northeast extension, Green Line, Aurora Business Park planning and development, and Calgary International Airport master planning and infrastructure investments.

Current Airport demand is met by Routes 100 and 300. Future travel demand forecasts increase support for mode progression to a higher capacity rapid transit connection.

Supports Calgary's economy by connecting rapid transit lines and

enhancing access between the downtown, airport, and the region.

### Status

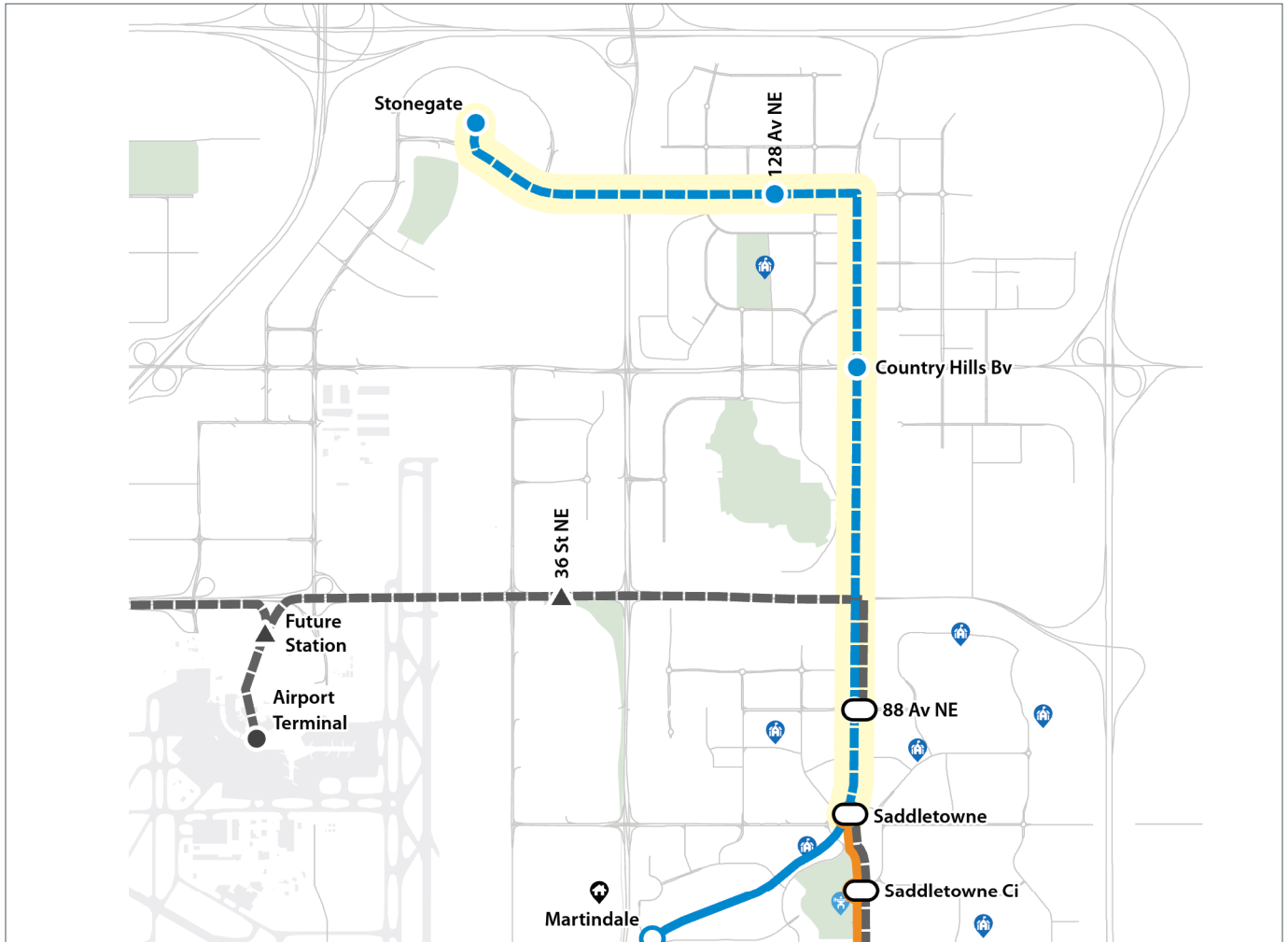
Functional planning study approved in 2020.

Infrastructure phasing dependent on Blue Line Northeast extension to 88 Ave NE to construct eastern segment.

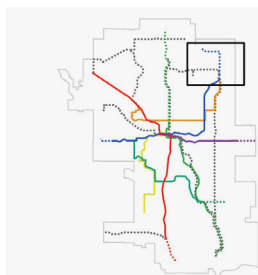
Infrastructure phasing potentially dependent on Green Line North extension to 96 Ave NE.



## Blue Line Northeast extension



Alignment and station locations based on information available at time of publishing. Detailed alignment and station locations will be confirmed as project planning progresses through functional studies and detailed design and engineering. Station names are for display purposes and subject to change.



### Points of interest

- Community Centre
- Leisure Centre
- School
- Existing station
- Planned future station
- Conceptual future station, need and location to be determined

### Benefit score: 71/100

2048 Weekday ridership: 16,900

Capital cost: \$\$\$\$\$

Net annual operating cost: \$\$\$

### Readiness:

Proceed to preliminary engineering and detailed design.

### Project description

Extending the Blue Line Northeast LRT by four stations from Saddletowne to Stonegate, this project provides light rail transit service to high-density established and developing northeast Calgary communities, as well as industrial areas.

Enables the eastern segment of the Airport transit connector via the extension to 88 Ave NE.

Requires coordination with the Airport transit connector, specifically the transfer station connecting the two services at 88 Ave NE.

Potential for a phased infrastructure approach to realize the vision of Blue Line Northeast LRT in multiple segments over time, as the extension to Stonegate is dependent on community build-out.

Presents logical mode progression from feeder bus network to light rail transit.

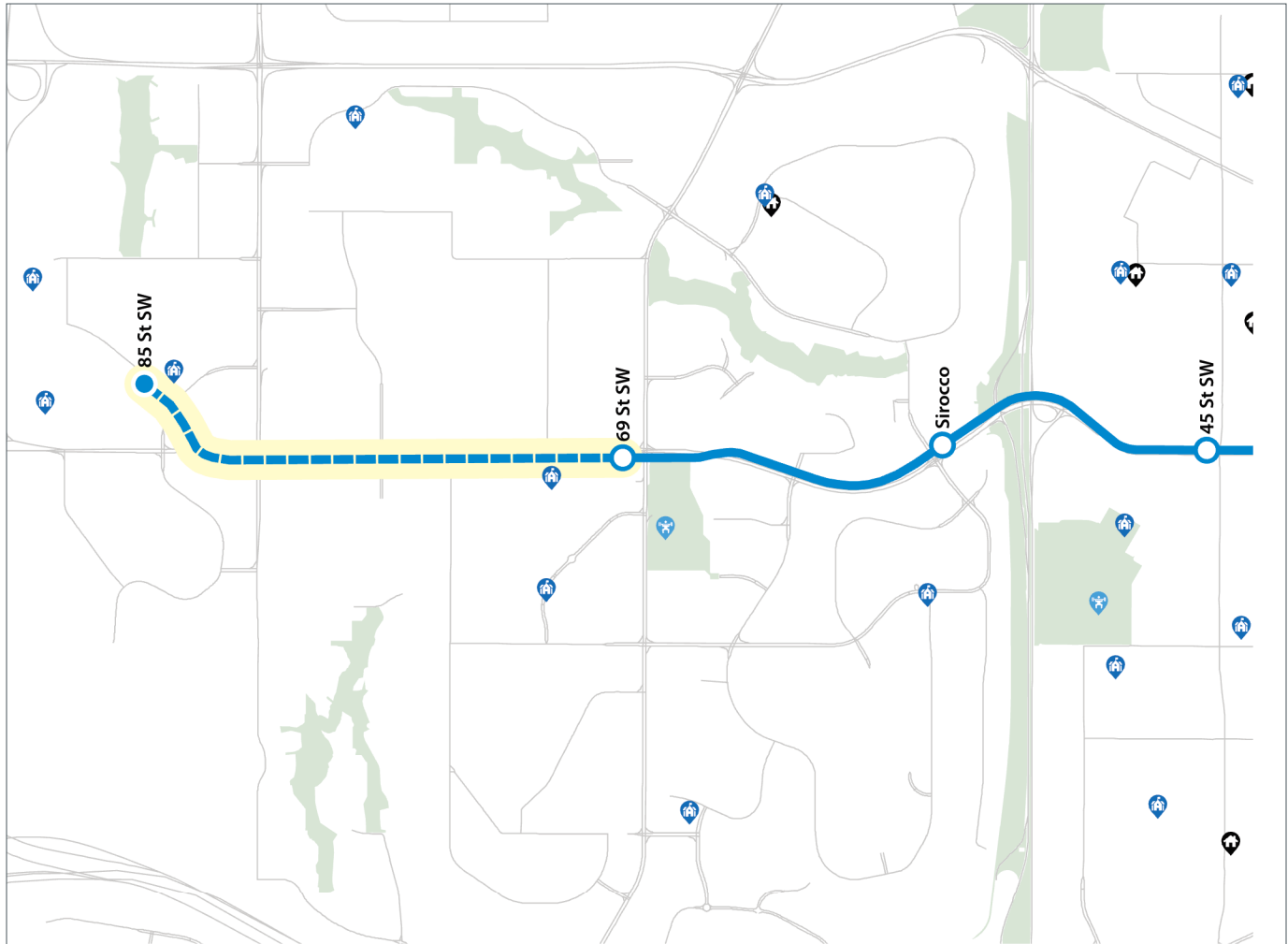
### Status

Functional planning study from Saddletowne to 128 Ave NE approved in 2012.

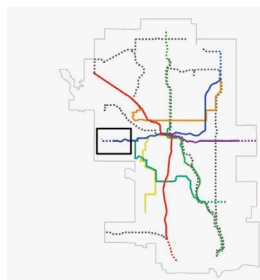
Land acquisition almost complete for the extension to 128 Ave NE.

No functional planning study exists for 128 Ave NE to Stonegate. This future functional planning study must address Blue Line Northeast terminus/future extensions.





## Blue Line West extension



Alignment and station locations based on information available at time of publishing. Detailed alignment and station locations will be confirmed as project planning progresses through functional studies and detailed design and engineering. Station names are for display purposes and subject to change.



### Points of interest

-  Community Centre
-  Leisure Centre
-  School
-  Planned future station

### Benefit score: 31/100

2048 Weekday ridership: 1,500

Capital cost: \$\$\$\$

Net annual operating cost: \$\$\$

### Readiness:

Functional planning study required.

### Project description

By extending the existing Blue Line West LRT by one station to 85 St W, this project provides light rail transit service to existing communities in West Calgary.

The current Blue Line West terminus, 69 St SW Station, has the highest ridership on the line, likely due to a combination of adjacent institutional and recreational land uses and feeder bus service to the station.

A new station at 85 St W may transfer some of this high ridership to the new terminus.

Future light rail transit right-of-way has been reserved during the early stages of community planning.

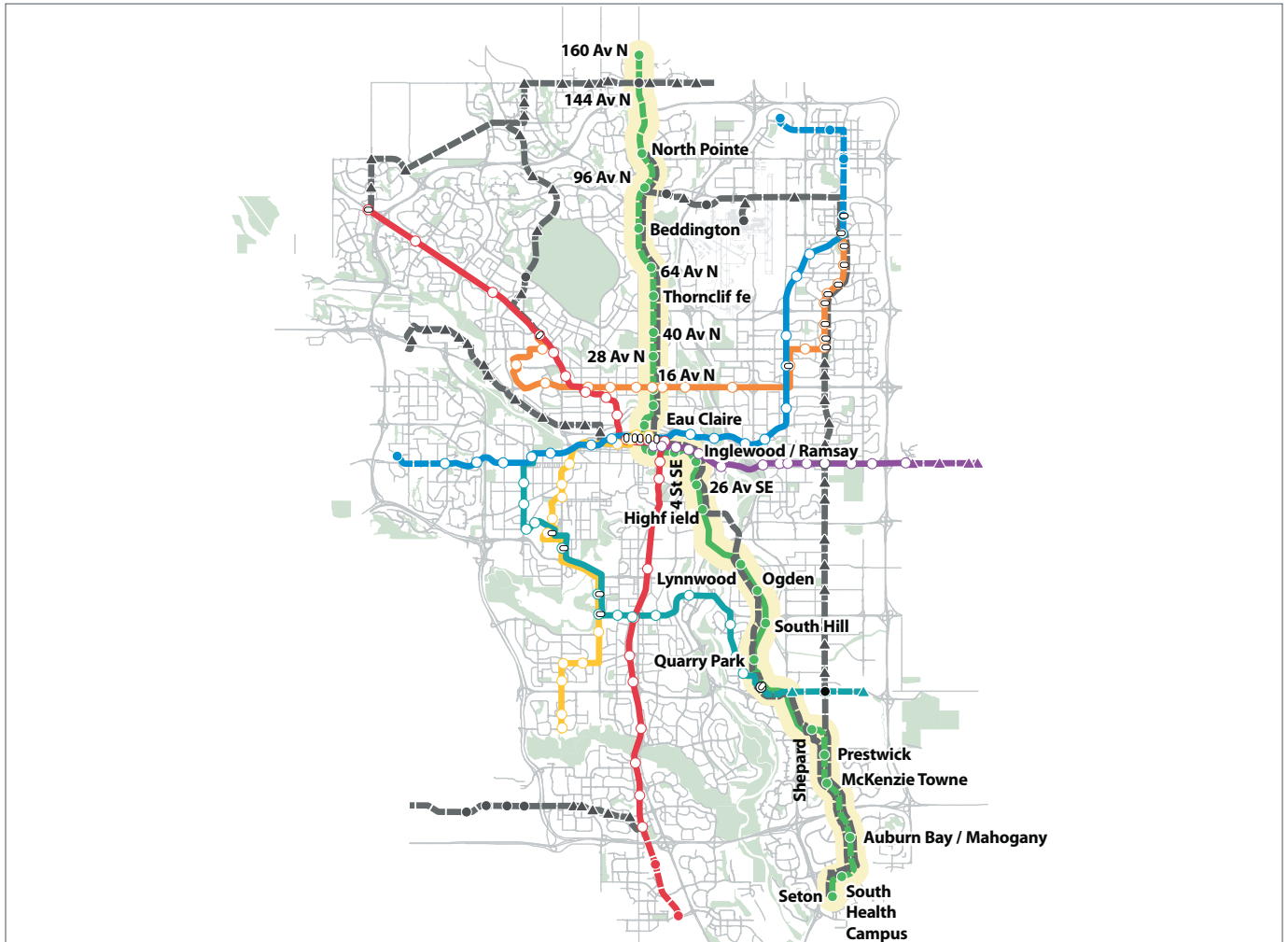
### Status

Conceptual plan and most right-of-way set aside.

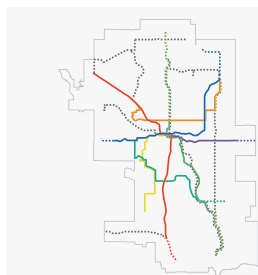
Functional planning study required.

Functional planning study must address Blue Line West terminus/future extensions.

## Green Line North and South extensions



Alignment and station locations based on information available at time of publishing. Detailed alignment and station locations will be confirmed as project planning progresses through functional studies and detailed design and engineering. Station names are for display purposes and subject to change.



### Points of interest

- Existing station
- Planned future station
- ▲ Conceptual future station, need and location to be determined

### Benefit score: 99/100

2048 Weekday ridership: 58,100  
 Capital cost: \$\$\$\$\$  
 Net annual operating cost: \$\$\$\$\$

### Readiness:

Functional planning study not completed for full project.

### Project description

With Green Line Stage 1 from Shepard to 16 Ave N approved, funded, and underway, this project will realize the full 46km vision by extending Green Line north to 160 Ave N and south to Seton.

The Green Line will expand Calgary's rapid transit network, providing seamless connections to the Red and Blue LRT Lines, and the four MAX BRT lines.

The full 46km vision of Green Line serves 27 communities, builds 29 new light rail transit stations, connects 250,000 transit riders living within 10 minutes of a station, and facilitates 200,000-240,000 trips per day.

Due to the size and cost of the full project, the Green Line will be built in stages as funding becomes available.

### Status

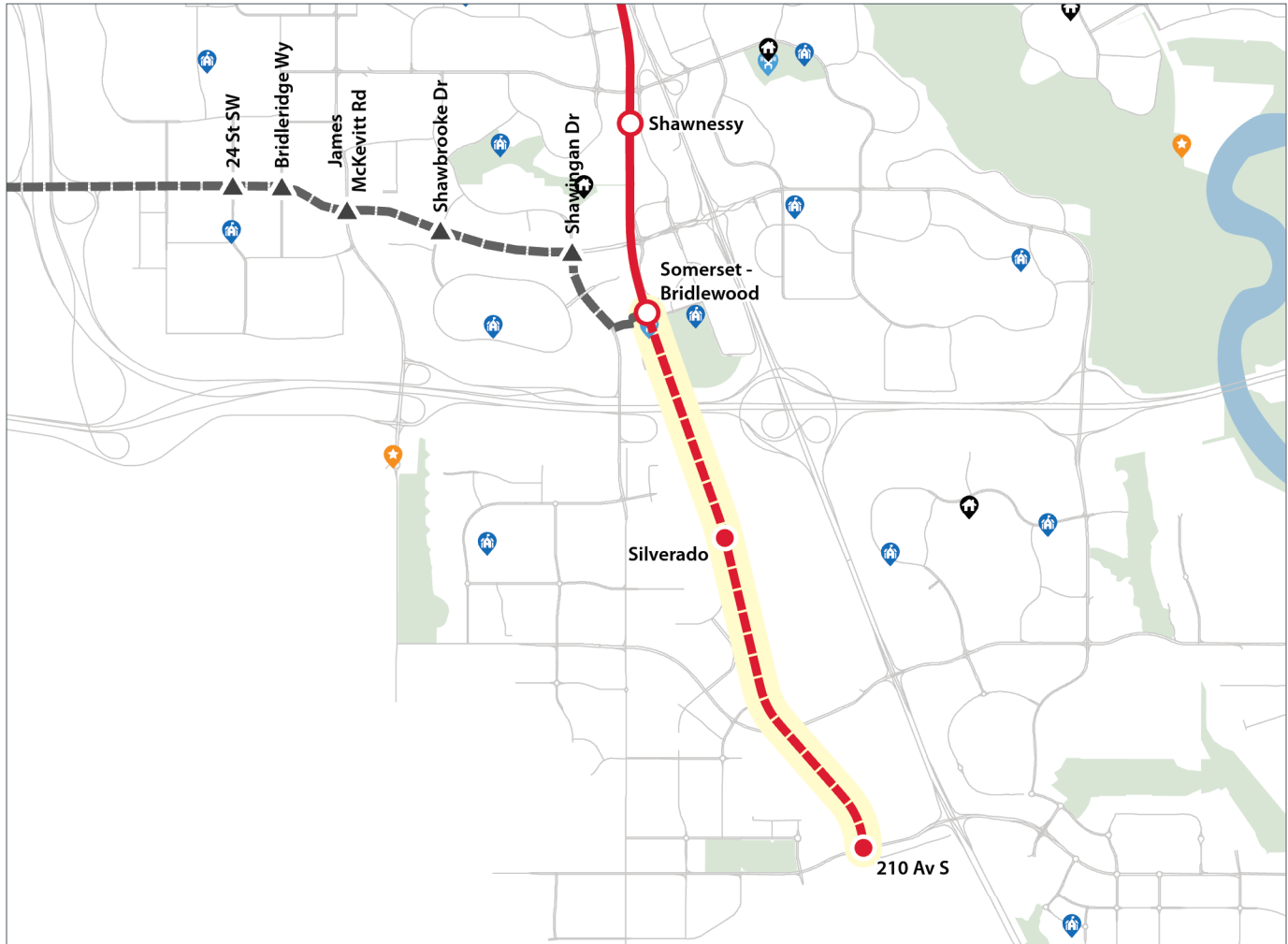
Stage 1 of Green Line, from Shepard to 16 Ave N has been approved by Council

and funded by The City, Government of Alberta and Government of Canada.

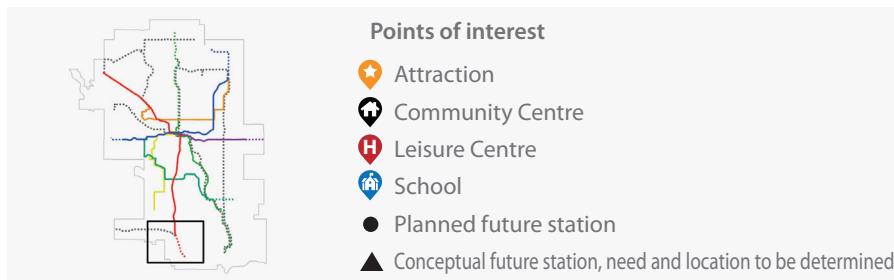
Phase 1 of Stage 1, from Shepard to Eau Claire, is currently in procurement to select the team that will design, build and finance the project. This initial 18kms will construct the most technically complex section of the project and allow for future expansion, north or south, as funding allows.

Land acquisition is required for Eau Claire to 16 Ave N and all future phases.

## Red Line South extension



Alignment and station locations based on information available at time of publishing. Detailed alignment and station locations will be confirmed as project planning progresses through functional studies and detailed design and engineering. Station names are for display purposes and subject to change.



### Benefit score: 54/100

2048 Weekday ridership: 14,700

Capital cost: \$\$\$\$\$

Net annual operating cost: \$\$\$\$

### Readiness:

Conceptual plan stage, with land in place.

Functional planning study required.

### Project description

By extending the existing Red Line South LRT by two stations to 210 Ave S, this project provides light rail transit service to new and developing residential communities.

Potential to increase capacity issues during peak periods as additional riders will be attracted to the system.

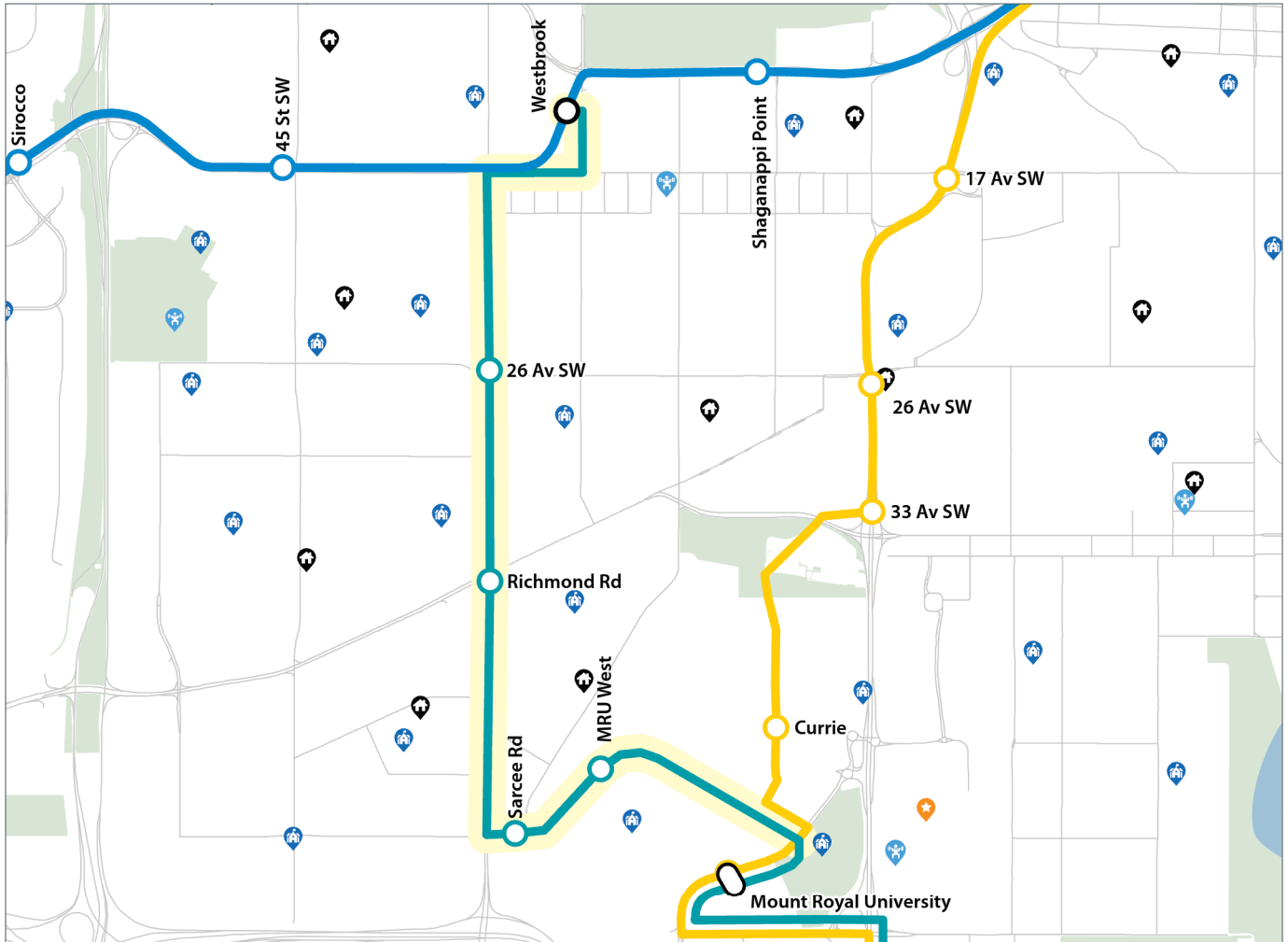
Project is paired with a storage and maintenance facility to expand Calgary Transit's ability to store and maintain light rail vehicles to ensure maximum lifecycle from this investment.

### Status

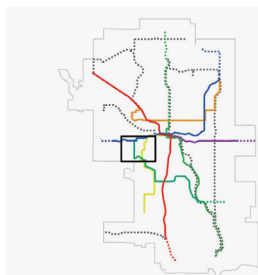
Functional planning study required to understand project details and interface with adjacent development.

Land and right-of-way in place.

## Westbrook to Mount Royal University Transit Connection



Alignment and station locations based on information available at time of publishing. Detailed alignment and station locations will be confirmed as project planning progresses through functional studies and detailed design and engineering. Station names are for display purposes and subject to change.



### Points of interest

- Attraction
- Community Centre
- Leisure Centre
- School
- Existing station

### Benefit score: 75/100

2048 Weekday ridership: 9,400

Capital cost: \$\$\$\$

Net annual operating cost: \$\$\$\$\$

### Readiness:

Conceptual plan stage, with streetcar technology confirmed.

### Project description

Providing a connection in southwest Calgary between Westbrook Station to Mount Royal University and Currie, this project proposes streetcar technology to serve the 37 Ave SW corridor.

Contributes to mode progression since MAX Teal already serves this area using the same routing and currently has capacity.

This project will likely result in a shortened MAX Teal line.

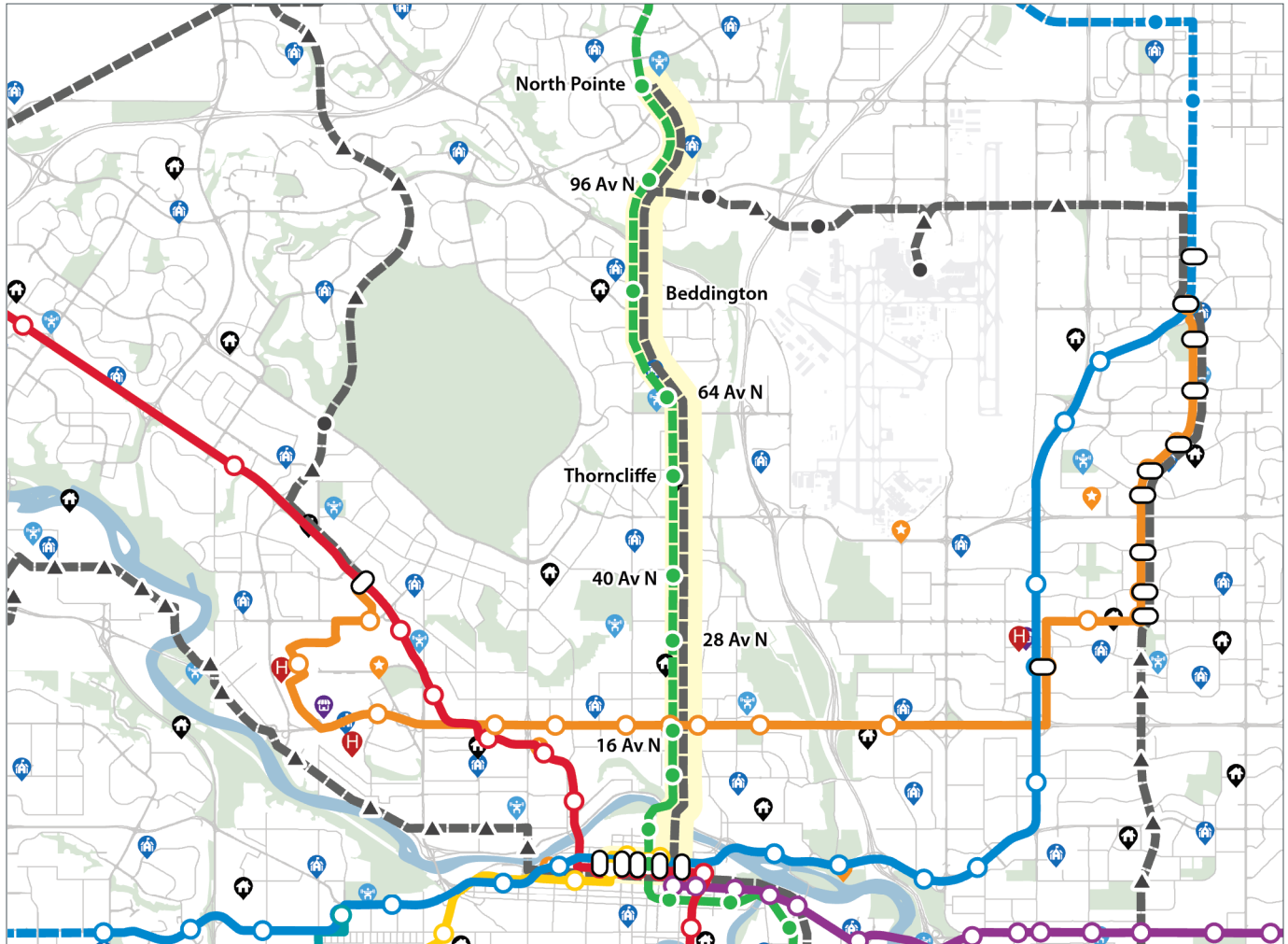
There are potential benefits and risks of introducing new streetcar technology to the existing transit system.

### Status

Since MAX Teal was recently introduced there is no current requirement for this project.

Dependent on future need for increased capacity, ridership growth, and land development.

## Max 301 North



Alignment and station locations based on information available at time of publishing. Detailed alignment and station locations will be confirmed as project planning progresses through functional studies and detailed design and engineering. Station names are for display purposes and subject to change.

**Points of interest**

- Attraction
- Community Centre
- Hospital
- Library
- Leisure Centre
- School

- Existing station
- Planned future station
- Conceptual future station, need and location to be determined

### Benefit score: 83/100

2048 Weekday ridership: 12,500

Capital cost: \$\$\$\$

Net annual operating cost: \$

### Readiness:

Initial North Central bus rapid transit Functional Planning Study completed. Proceed to preliminary engineering and detailed design.

### Project description

Upgrading the current Route 301 to reflect a MAX level service, this project aims to improve travel times and transit service along the Centre St north corridor via in-street improvements to existing route (i.e., queue jumps, transitways).

Contributes to mode progression and increased transit service along the future Green Line North corridor.

Requires coordination with Green Line Stage 1 construction and future tie-ins.

North Pointe is expected to be the terminus in the short-term, with future extensions to 144 Ave and 160 Ave north, and tie-ins to the future 144 Ave North BRT dependent on community build-out.

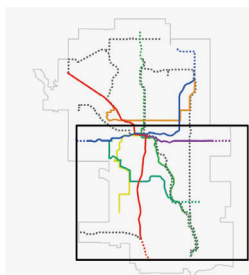
### Status

While \$50 M in funding from Green Line is secured to complete short and medium term MAX 301 corridor improvements, preliminary engineering and detailed design is required to complete MAX 301 improvements along the entire corridor.

## Max 302 Southeast



Alignment and station locations based on information available at time of publishing. Detailed alignment and station locations will be confirmed as project planning progresses through functional studies and detailed design and engineering. Station names are for display purposes and subject to change.



### Points of interest

- Attraction
- Community Centre
- Hospital
- Library
- Leisure Centre
- School
- Existing station
- Planned future station
- Conceptual future station, need and location to be determined

### Benefit score: 51/100

2048 Weekday ridership: 6,400  
Capital cost: \$  
Net annual operating cost: \$

### Readiness:

Enhanced functional planning study and detailed design work to be completed in coordination with the Green Line.

### Project description

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

Contributes to mode progression and improved transit service along the Green Line South corridor.

Requires coordination with Green Line Stage 1 construction and future tie-ins.

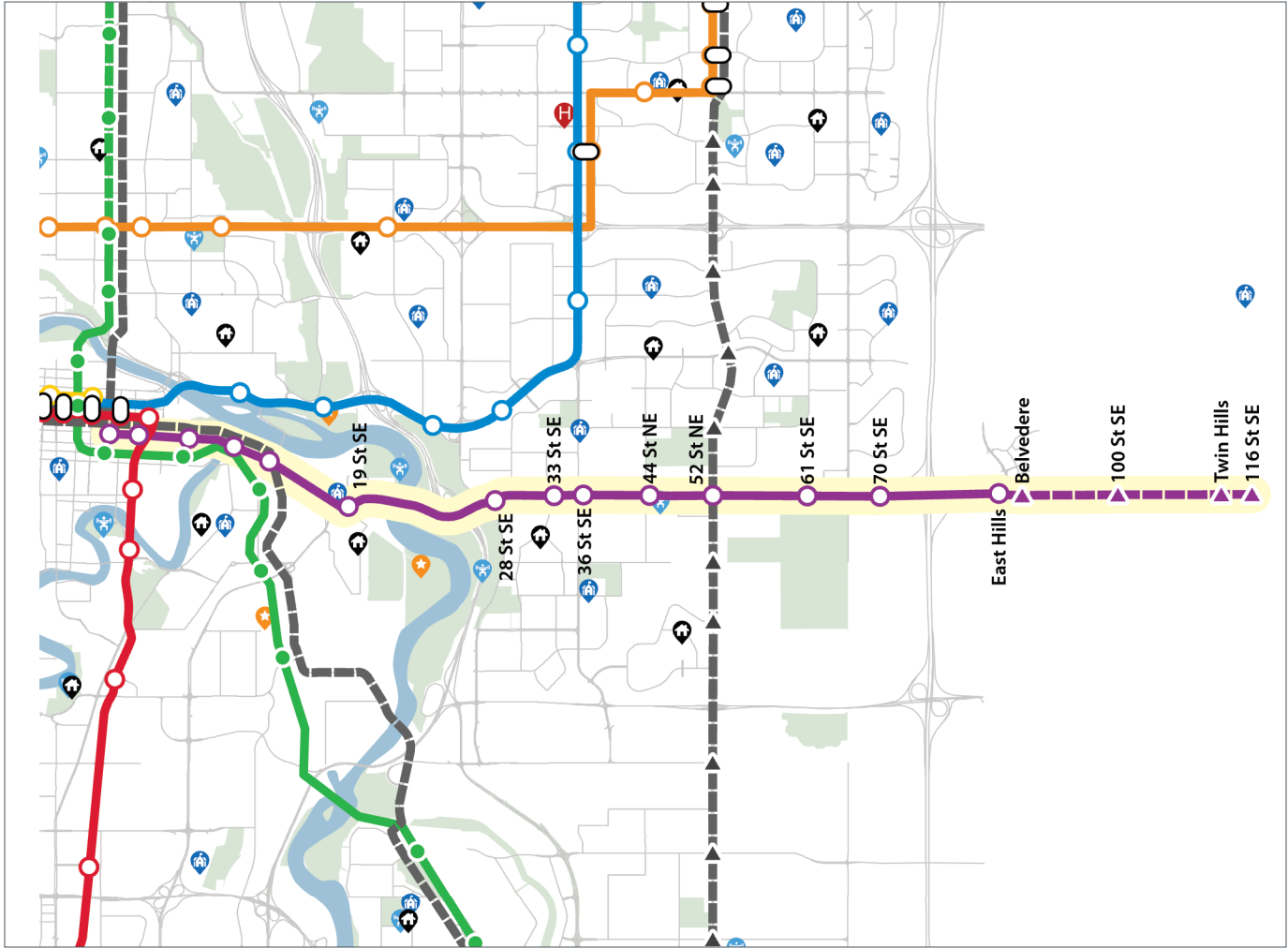
Project sequencing considerations required as improvements on the southern portion of the corridor also benefit 52 St East BRT.

Opportunities for capital cost efficiencies as the project shares stops with 52 St East BRT.

### Status

Some corridor upgrades completed in 2022 with 52 St East improvements.

## Max Purple extension



Alignment and station locations based on information available at time of publishing. Detailed alignment and station locations will be confirmed as project planning progresses through functional studies and detailed design and engineering. Station names are for display purposes and subject to change.

**Points of interest**

- Attraction
- Community Centre
- Leisure Centre
- School
- Existing station
- Planned future station
- Conceptual future station, need and location to be determined

### Benefit score: 59/100

2048 Weekday ridership: 7,500

Capital cost: \$\$\$\$

Net annual operating cost: \$

### Readiness:

Functional planning study required.

### Project description

Extending the existing MAX Purple transitway improves travel time and efficiency by providing enhanced bus rapid transit service. The project will extend the transitway eastward from its current end point at 52 St E to the east city boundary. It will also extend westward from its current end point at 9 Ave SE to downtown and tie-in with Green Line.

Contributes to development along 17 Ave SE, connects established and developing communities in east Calgary to downtown

and East Hills, and promotes potential future regional transit connections.

Timing of the extension east to the city boundary largely depends on the rate of development in east Calgary.

Improvements on the western portion from downtown to 9 Ave SE represent long-term mode progression on the MAX Purple corridor, and a high degree of complexity, due to the need to determine technology and alignment requiring high level of coordination with Green Line.

### Status

Conceptual study completed for west portion to determine integration with Green Line, not downtown; therefore, further work required.

Conceptual plan and right-of-way set aside for eastern portion.



## Max Teal extension



Alignment and station locations based on information available at time of publishing. Detailed alignment and station locations will be confirmed as project planning progresses through functional studies and detailed design and engineering. Station names are for display purposes and subject to change.

**Points of interest**

- Community Centre
- Leisure Centre
- School
- Existing station
- Planned future station
- Conceptual future station, need and location to be determined

### Benefit score: 26/100

2048 Weekday ridership: 1,500  
 Capital cost: \$  
 Net annual operating cost: \$\$

### Readiness:

No functional planning study required. Proceed to preliminary engineering and detailed design.

### Project description

Extending the existing MAX Teal line in-street further east to 68 St SE, this project provides bus rapid transit service to Calgary's largest industrial and employment area.

Provides additional connections to the MAX Teal line which currently serves Westbrook, Mount Royal University, and Rockyview General Hospital.

Tie-in and coordination with the Westbrook to Mount Royal University transit connection is required.

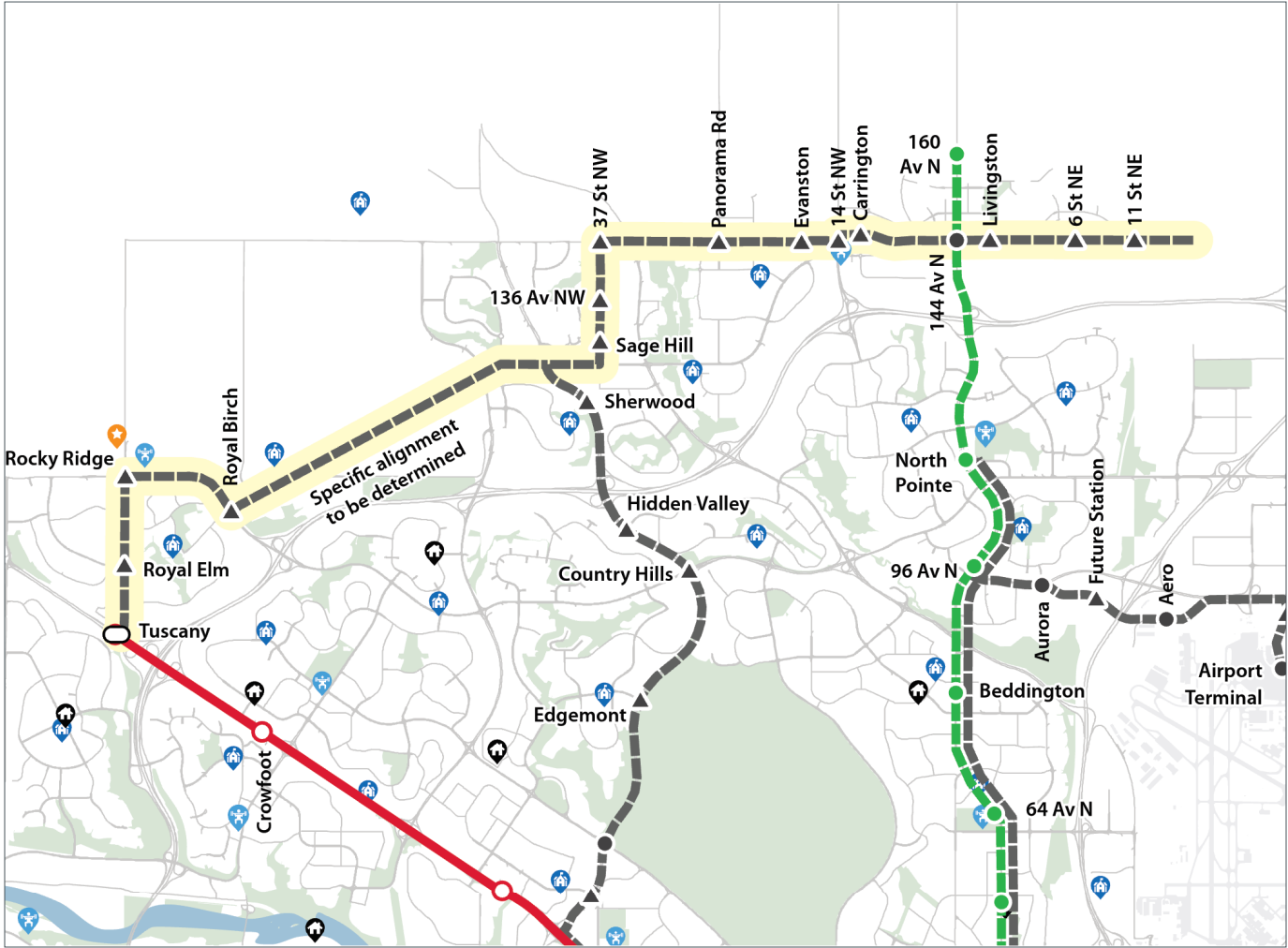
Potential to extend to 52 St E in the interim to provide connection to 52 St East BRT, in advance of extending all the way to 68 St SE.

### Status

Full functional planning study not required due to small size and scale of project.

Minimal land acquisition (if at all) required.

# 144 Ave North BRT



Alignment and station locations based on information available at time of publishing. Detailed alignment and station locations will be confirmed as project planning progresses through functional studies and detailed design and engineering. Station names are for display purposes and subject to change.

**Points of interest**

- Attraction
- Community Centre
- School
- Leisure Centre

- Existing station
- Conceptual future station, need and location to be determined
- Planned future station

**Benefit score: 76/100**

2048 Weekday ridership: 10,800

Capital cost: \$\$

Net annual operating cost: \$\$\$\$\$

**Readiness:**

Functional planning study to begin in 2023.

**Project description**

Providing a new in-street bus rapid transit line across north Calgary along 144 Ave N, this project serves new and developing residential communities.

Project timing largely depends on the rate of development in north Calgary.

Provides a significant crosstown connection in the north between Red Line and Green Line LRT.

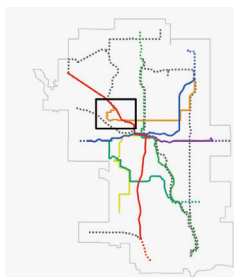
**Status**

High level concept in Glacier Ridge Area Structure Plan, but exact routing to be determined through functional planning study.








## Northwest Hub



Alignment and station locations based on information available at time of publishing. Detailed alignment and station locations will be confirmed as project planning progresses through functional studies and detailed design and engineering. Station names are for display purposes and subject to change.




### Points of interest

-  Attraction
-  Community Centre
-  Hospital
-  Library
-  Leisure Centre
-  School
-  Existing station

### Benefit score: 57/100

2048 Weekday ridership: 4,200  
 Capital cost: \$  
 Net annual operating cost: \$\$

### Readiness:

 Triggered by population and job growth in the area.

### Project description

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

MAX Orange introduction in 2018 improved service.

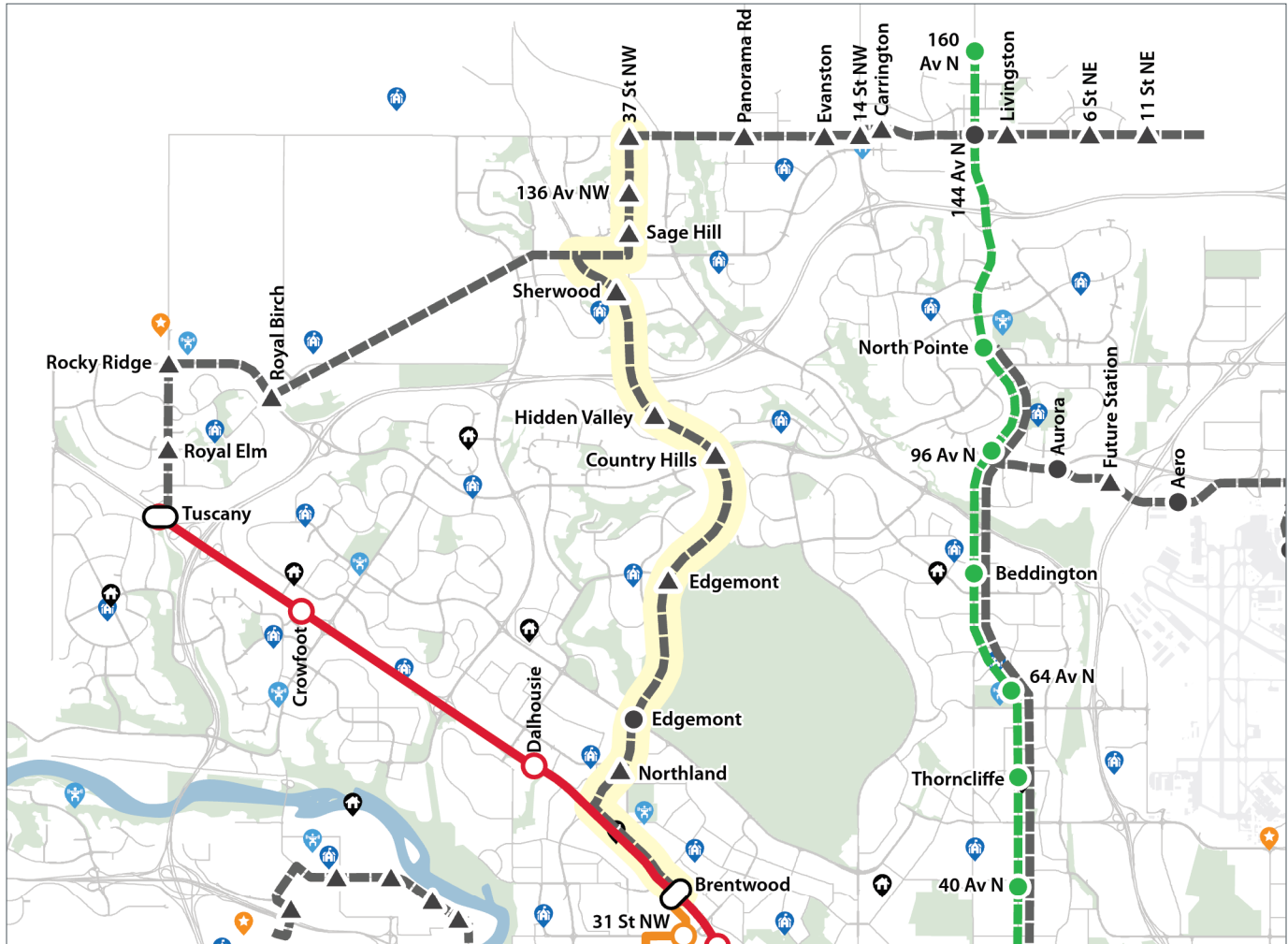
Further improvements to wheel-based transit service will be triggered by increases in population and jobs (i.e., Calgary Cancer Centre completion).

### Status

NW HUB conceptual study complete in 2019.

Functional planning study required to determine project details, including land required for customer amenity improvements.

# Shaganappi HOV



Alignment and station locations based on information available at time of publishing. Detailed alignment and station locations will be confirmed as project planning progresses through functional studies and detailed design and engineering. Station names are for display purposes and subject to change.

**Points of interest**

- Attraction
- Community Centre
- Leisure Centre
- School
- Existing station
- Planned future station
- Conceptual future station, need and location to be determined

**Benefit score: 65/100**  
 2048 Weekday ridership: 8,000  
 Capital cost: \$\$\$  
 Net annual operating cost: \$\$\$\$

**Readiness:**   
 Corridor study complete.

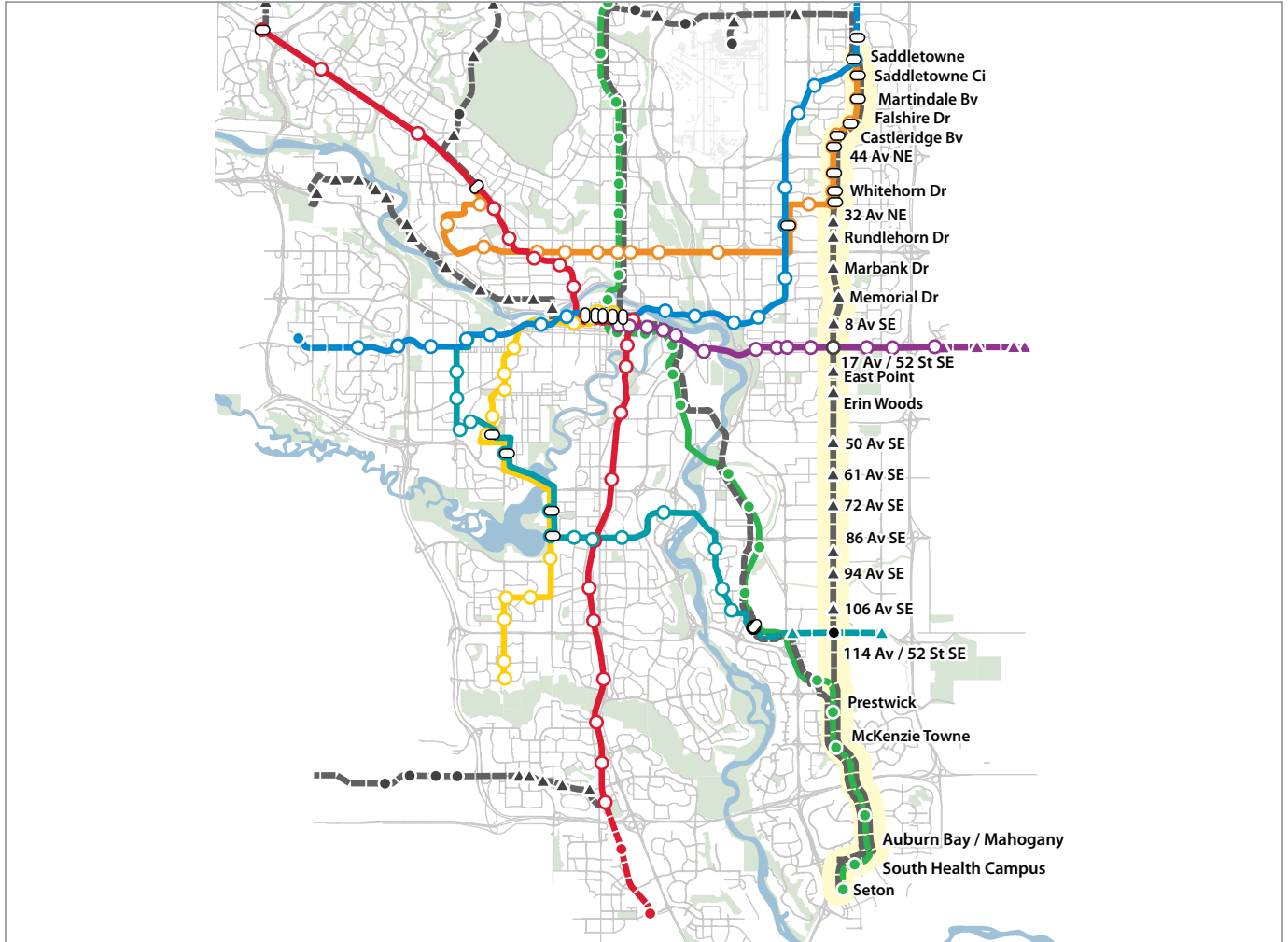
**Project description**  
 Enhancing transit service in established communities in northwest Calgary along Shaganappi Trail through high occupancy vehicle lanes.

Project requires coordination with Shaganappi Trail work, as it depends on traffic and congestion triggering the need for upgrades which include high occupancy vehicle lanes to be used by transit.

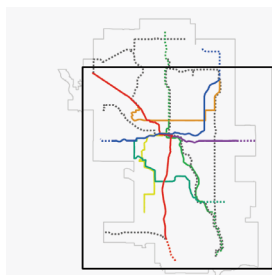
Potential for in-street corridor improvements (i.e., queue jumps, transit priority measures) in the short-term as a precursor to high occupancy vehicle lanes.

**Status**  
 Shaganappi Trail Corridor Study approved in 2015.  
 Integrated with Shaganappi Trail upgrades.  
 As north Calgary builds out, capacity is required on this corridor to improve transit reliability.

# 52 St BRT



Alignment and station locations based on information available at time of publishing. Detailed alignment and station locations will be confirmed as project planning progresses through functional studies and detailed design and engineering. Station names are for display purposes and subject to change.



### Points of interest

- Existing station
- Planned future station
- ▲ Conceptual future station, need and location to be determined

### Benefit score: 92/100

2048 Weekday ridership: 20,500  
 Capital cost: \$\$\$  
 Net annual operating cost: \$\$\$\$\$

### Readiness:

Additional functional planning study work required.

### Project description

Enhancing transit service with an in-street north to south crosstown line in east Calgary, this project connects new and established residential communities from Saddletowne in the north to the southeast industrial area and Seton in the south.

Route 23, which currently serves a portion of the 52 St corridor, is at or near capacity.

Improvements on the southern portion of the corridor also benefit MAX 302.

Project sequencing considerations required to tie-in to MAX 302 and Green Line South.

Opportunities for capital cost efficiencies as the project shares stops with MAX 302 south.

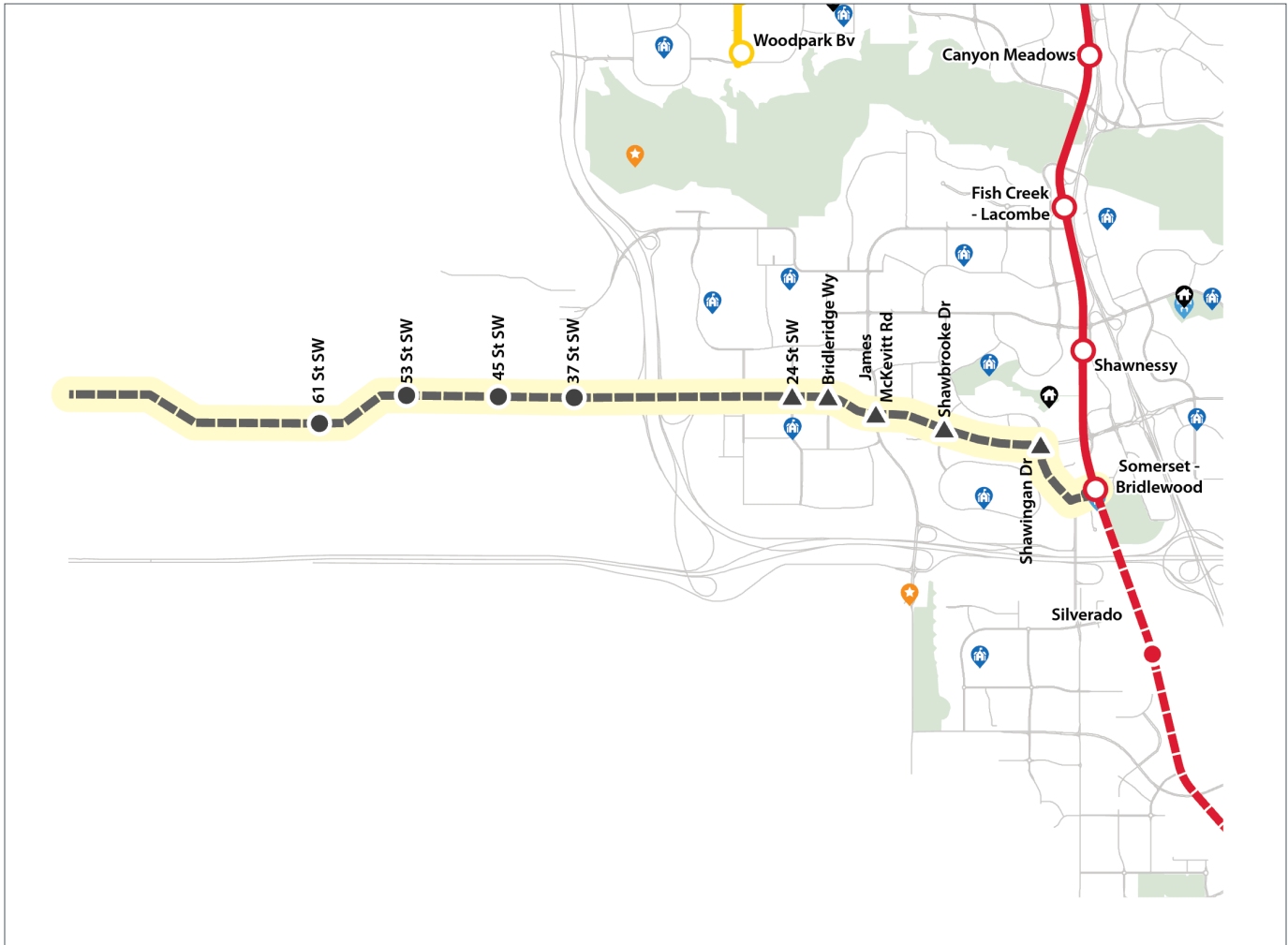
### Status

Some corridor upgrades completed in 2022 (i.e., queue jumps).

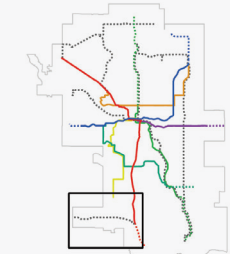
Additional work required to complete project vision as full bus rapid transit level service.

Preliminary and detailed design required to complete entire corridor.

# 162 Ave Southwest Transitway



Alignment and station locations based on information available at time of publishing. Detailed alignment and station locations will be confirmed as project planning progresses through functional studies and detailed design and engineering. Station names are for display purposes and subject to change.



**Points of interest**

- ★ Attraction
- 🏠 Community Centre
- 🎓 Leisure Centre
- 🎓 School
- Planned future station
- ▲ Conceptual future station, need and location to be determined

**Benefit score: 48/100**  
 2048 Weekday ridership: 6,500  
 Capital cost: \$\$\$  
 Net annual operating cost: \$\$\$  
**Readiness:**   
 Functional planning study required.

**Project description**  
 Providing a new transit line in southwest Calgary, this project serves newly developing residential communities with bus rapid transit level transit service along a transitway.  
 Project timeline largely depends on buildout of new communities in the southwest Providence area.

Transitway right-of-way has been protected and considered during the new community planning process.  
 Future project phases may extend east of Somerset towards Seton, enhancing the east-west crosstown connection.

**Status**  
 Concept included in Providence Area Structure Plan, project details to be determined through functional planning study.  
 Functional planning study critical to understand project details and interface with adjacent development as outline plans are proposed along 162 Ave SW.

## West Bow BRT



Alignment and station locations based on information available at time of publishing. Detailed alignment and station locations will be confirmed as project planning progresses through functional studies and detailed design and engineering. Station names are for display purposes and subject to change.

**Points of interest**

- ★ Attraction
- Ⓜ Community Centre
- H Hospital
- 📖 Library
- 🏞️ Leisure Centre
- 🎓 School

○ Existing station

### Benefit score: 63/100

2048 Weekday ridership: 6,700  
 Capital cost: \$\$  
 Net annual operating cost: \$\$\$\$

### Readiness:

Functional planning study required.

### Project description

Providing a new transit line along the West Bow corridor, this project improves transit service between new and developed residential communities in northwest Calgary and downtown.

Currently, Route 305 operates as peak-only service and Route 1 provides all-day service along the corridor. Capacity exists along both routes.

### Status

Exact routing to be determined through functional planning study.

Functional planning study required to determine mode progression based on capacity, ridership growth, and land development.