

Capital Line South Extension Business Case Summary

Capital Line South Extension Light Rail Transit

Business Case Summary

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LRT EXPANSION AND RENEWAL
Integrated Infrastructure Services
City of Edmonton

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Overview

The Capital Line South Extension (the Project) is an extension of the Capital Line light rail transit (LRT) system located in Edmonton, Alberta. The Project extends the Capital Line farther into the City's fastest growing area, southwest Edmonton. The extension will run south from the Century Park station (the current terminus) to the new Ellerslie station. Ellerslie station will be the centerpiece of the Heritage Valley multi-modal hub that includes a major park and ride facility and transit centre. Some of the key Project benefits include:

- **Supporting growth** by providing reliable transit to the fastest growing area of Edmonton;
- **Creating employment and economic opportunities** by providing nearly 10,000 jobs, retaining and training skilled workers, and diversifying the economy by attracting high-tech industries;
- **Contributing to a cleaner environment** by reducing greenhouse gas (GHG) emissions by nearly 78 tonnes per day by 2050;
- **Leveraging investment** by providing a rapid transit connection to the new Heritage Valley Park and Ride;
- **Facilitating future expansion and long term planning** by providing a rapid transit connection farther south toward the new South Edmonton Hospital;
- **Improving the viability of future LRT investment** by building a new operations and maintenance facility (OMF) that will service the entire Capital Line; and
- **Improving mobility and supporting sustainable, affordable growth** by catalyzing transit oriented development (TOD) in the City's fastest growing area.

The Project will include approximately 4.5 kilometers of new track, two new permanent LRT stations, a new operations and maintenance facility (OMF), 24 high-floor light rail vehicles (LRVs), and integration with and expansion of the Heritage Valley Park and Ride facility and transit centre.



Background & Context

Capital Line

The City of Edmonton’s Capital Line South Extension Project Phase 1 is an extension to the currently operating 21 kilometer Capital Line.

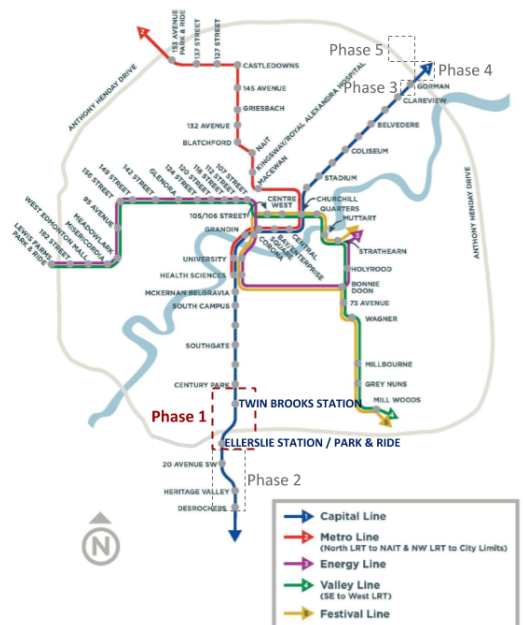
The first 7 kilometers of the Capital Line opened in 1978, and operated between Belvedere and Central stations. Between 1981 and 2010, another 14 kilometers and ten stations were added, extending the line through the downtown core, across the North Saskatchewan River, and into southwest Edmonton to its current terminus station at Century Park.

At 21 kilometers, the Capital Line represents a significant component of Edmonton’s current LRT network and in 2019, with 80,000 daily boardings, it accounted for approximately 70 percent of the total LRT system ridership.

Capital Line South Extension Phases

For the purpose of procurement and implementation, extensions to the Capital Line are planned in several phases:

1. **Phase 1 – Century Park to Ellerslie, 4.5 kilometers (the Project)**
2. Phase 2
 - a. Phase 2a – Ellerslie to Provincial Lands, 1.2 kilometers
 - b. Phase 2b – Provincial Lands to Allard/Desrochers, 2.0 kilometers
3. Phase 3 – Clareview to Gorman, 2.9 kilometers
4. Phase 4 – Gorman to Alberta hospital, 2.2 kilometers
5. Phase 5 – Alberta Hospital to Edmonton Energy and Technology Park (EETP), 3.6 kilometers



LRT Network

In 2009, the Edmonton Metropolitan Region Board, formerly known as the Capital Region Board, endorsed the Integrated Regional Transportation Plan (Master Plan); a plan designed to connect the Edmonton Metropolitan Region municipalities and set out principles to protect the environment, strengthen communities, minimize the regional footprint, and increase regional economic development and transportation choices. The Master Plan identifies the LRT network as a critical component, which delivers high quality, accessible, safe, efficient, and environmentally sustainable transportation that maximizes passenger convenience and supports transit oriented land use policies. The Capital Line is identified in the Master Plan.

Alignment Highlights

Operations and Maintenance Facility

The current LRT maintenance facility (D.L. MacDonald), located between the Belvedere and Claireview stations, is at capacity. The new Heritage Valley Operations and Maintenance Facility (OMF) will complement the existing facility by providing sufficient



additional capacity to meet the longer term requirements of an expanded network. At full buildout, the OMF will have capacity for 90 vehicles, a wash track, up to eight maintenance bays, right-of-way equipment storage, and offices. The Stage 1 buildout of this facility, proposed as part of the Project, will provide storage for up to 50 vehicles and include maintenance and office space.

Heritage Valley Park and Ride

Park and ride facilities encourage automobile users who live farther from the LRT line to make use of the system. This significantly reduces automobile traffic where it is most beneficial—in the congested parts of the transportation network. In anticipation of the Project, the City has recently completed the first stage of the Heritage Valley Park and Ride and transit centre. Ellerslie station will be the new southern terminus when the Project is complete; this station will be the centerpiece of the Heritage Valley multi-modal hub that includes the new park and ride, as well as a transit centre. With the full buildout of this facility included in the Project, the Heritage Valley Park and Ride is planned to have up to 1,900 parking stalls and up to 20 bus bays, making it the largest in the City of Edmonton. In the fastest growing sector of the City, the Project will encourage many who do not have direct access to an LRT line to make full use of the system by connecting the Capital Line to the Heritage Valley Park and Ride and transit centre.

South Edmonton Hospital and Health Campus

The future South Edmonton Hospital and health care campus, set to be completed in 2030, will provide 350 to 500 inpatient beds and a comprehensive mix of health care services. Phase 2a of the Capital Line South Extension (CLSE) is a 1.2 km extension from Ellerslie Road to the Provincial Lands (South Edmonton Hospital) that will provide rapid transit service to the future campus.

Project Benefits

The Project will result in a number of benefits that will have a positive impact on commuters, communities, residents, businesses, and the environment.

Transportation Benefits

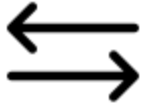
Reducing Congestion



The Project will reduce congestion by moving people out of their cars and onto transit. It is anticipated that the Project will attract approximately

9,100 daily riders in 2030, which will bring Capital Line daily ridership to **142,700**. In 2050, the Project will result in an additional **12,500** daily riders, 4,500 of which will be new to transit, and is projected to bring Capital Line daily ridership to **207,500**.

Improving Mobility



The Edmonton Metropolitan Region's population is expected to continue to grow causing longer travel times and increasing congestion. As traffic increases, the LRT will provide an alternative transportation mode, providing people with fast, frequent, and reliable service.

Operating in its own right of way, separate from single occupancy vehicles, the Project will continue to provide the same, consistent journey time well into the future.

Improving Access



The Project will create improved access to the regional transportation network by providing residents with more choices to live or work in close proximity to rapid transit. The expansion of the LRT network also enables several regional service providers to improve their connection

to the rapid transit network. In particular, regional bus routes will benefit from reduced travel time as people move from vehicles to the LRT system.

Improving Safety



Increasing transit ridership plays an important role in reducing automobile-related collisions; fewer vehicles decreases the likelihood of collisions, particularly during the peak hours of commuter travel.

Economic and Social Benefits

Employment



The Project will directly create jobs related to design, construction, management, and operations and maintenance, and will indirectly create jobs related to equipment and vehicle supply and a vast number of other services. The expenditure of wages and salaries by these

workers will support additional induced employment in a variety of goods and service industries.

The Project will create **9,530** jobs (full-time equivalents (FTEs)), and will generate **\$1.05 billion** in wages and salaries and **\$309 million** in tax revenues.

Transforming Communities



In order to maximize the effectiveness of investment in transit, the Project will use an integrated approach to land use that supports an efficient, sustainable, compact, and vibrant city. As set out by the City's Transit Oriented Development (TOD) guidelines, the Project will:

- Focus medium and higher-density residential and employment growth around LRT stations and ensure land use reflects the characteristics of surrounding areas;
- Create a system that is safe and convenient for all modes of transportation, including pedestrians and cyclists;
- Create a variety of public open spaces that will support existing and future population density and activity around LRT platforms and station areas;
- Create compact neighbourhoods that will bring together an appropriate mix of housing, jobs, shopping, and services within convenient walking distance around transit stations; and
- Create opportunities for mixed use developments that include affordable housing, encouraging a healthy labour market by attracting new workers to the City, and providing opportunities for families to prosper and remain in neighbourhoods of their choice.

Environmental Benefits



Climate change is one of the fundamental issues of our time. Light rail transit projects lead to a shift away from automobile dependencies and reduce harmful GHG emissions to provide cleaner air and a healthier

environment. The Project will support and improve quality of life and will facilitate the creation of healthy, sustainable communities in Edmonton.

The Project is expected to reduce GHG emissions by **19 tonnes per day** in 2030, and by **78 tonnes per day** in 2050.

Social and Community Benefits

Urban Realm Enhancements



The quality and aesthetics of the urban environment surrounding new rapid transit investments have value to LRT users, pedestrians, cyclists, and neighbouring areas. High quality paving materials, landscaping, and crosswalks make the corridor and station environments more enjoyable to use. There are well documented benefits to mobility, health, and safety through active and sustainable transit when proper attention is given to the urban environment. Additionally, the new infrastructure will be fully accessible and comply with the highest published accessibility standards, codes, and City bylaws to provide high levels of service to those with mobility challenges and disabilities.

Integration with Active Modes of Transportation



The Project's design ensures that the system prioritizes active modes of transportation. Users will have convenient access to the system, adjacent amenities, and pedestrian and cycling infrastructure. This integration will align with neighbourhood planning policies that emphasize pedestrian-oriented design with a multi-modal network that is easily accessible to residents.

Engagement & Consultation

Edmontonians have played an essential role in the planning and design of the Capital Line South Extension since 2008. Public experiences and perspectives have been vital to the development of the Project.

Public Engagement

Additional public engagement was conducted in 2017 and 2018. The engagement included:

- A joint public information session in fall 2017 to reintroduce the Project. A total of 395 people attended the event and 109 responses were received through the event feedback form.
- A public engagement session in summer 2018 presented potential options for grade separations and other proposed changes. A total of 400 people attended the event. In September 2018, nearly 1,700 citizens shared their feedback and indicated their preference of the options presented through an online survey.
- Two information sessions were held in fall 2018 to present the final concept plan recommendations.

The City of Edmonton will continue to engage the public throughout final design, construction, and early operations to ensure citizens continue to have a chance to inform the Project.

Indigenous Consultation

The Edmonton area resides within both Treaty 6 Territory and Region 4 of the Métis Nation of Alberta with Indigenous peoples. The City is committed to on-going engagement through meaningful and respectful dialogue to explore mutual values and interests.

As a result of the City's initial LRT Indigenous engagement program, the City facilitated four rounds of site visits for the Project during the summer of 2018. Twenty-one communities, including over 80 Indigenous community members, participated in guided site visits and provided valuable input related to the engagement process, employment, culture, and the environment. Additionally, recommendations were made by Indigenous communities regarding their interests, priorities, and involvement in the Project going forward.

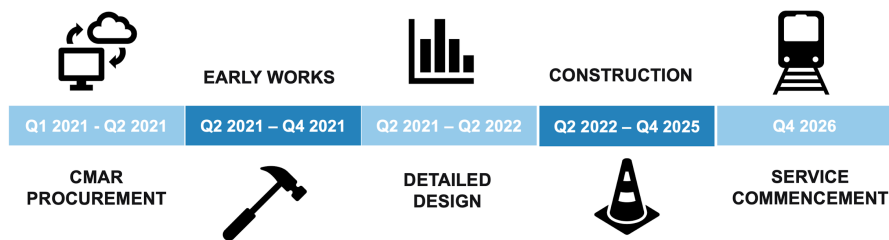
Innovation

The Project will incorporate a number of innovative strategies through the procurement, design, delivery, and operation phases.

A critical priority for the City is to design transit systems that are fully integrated with the communities they serve. Sustainable Urban Integration (SUI) was developed to focus the integration of transit into the urban environment to provide safe, accessible, and connected facilities. Building beyond just tracks and trains, the City aims to create neighbourhoods that are livable, pedestrian-friendly environments that reflect the feel and character of each community along the LRT corridor.

The Project team has adopted a number of other innovative strategies including the use of photovoltaic panels to offset electricity costs, rainwater collection to irrigate landscaped areas, embodied carbon analysis to reduce the Project's carbon footprint, and other strategies to increase energy efficiency.

Project Timeline



*Timelines subject to change.

The City of Edmonton looks forward to continuing to build the LRT network; a network that provides Edmontonians with increased access to communities and places of work, supports sustainable, affordable growth for the region, provides long-term environmental benefits, and creates job opportunities for Albertans and Canadians.