

# Designing the Integration of Transit and Micromobility Systems

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## Abstract

The purpose of this project is to seamlessly integrate micromobility with Calgary's public transit system, enhancing overall system utility and efficiency. A shortlist of 20 LRT stations were reviewed against detailed criteria to determine a ranking of stations best-fit for transit-micromobility integration. Three station catchment areas were selected for design improvements to implement the integrated service. These improvements aimed to optimize station infrastructure and network connectivity, facilitating seamless transition between transit and micromobility modes.

The project's strategic direction was shaped by sustainability pillars and stakeholder feedback. By leveraging the strengths of transit and micromobility systems, the City of Calgary endeavors to create a sustainable and efficient transportation network that caters to the diverse needs of commuters while reducing congestion and enhancing mobility options.

## Introduction

The City of Calgary is interested in assessing the feasibility of integrating micromobility and transit systems. The **objectives** of the project are as follows:

- Review the status of integrated transit-micromobility services
- Identify LRT stations most-fit for seamless service integration.
- Develop design improvements to complement the integration of micromobility at select stations.

Integrating transit and micromobility systems provides a new option for first- and last-mile trips. This increases the connectivity between stations and station areas and improves the utility of the transit service overall.

To achieve this, we will create a ranked station list and a transit-micromobility integration implementation plan.

## Part B - Designing Integrated Station Areas

Based on the station rankings and feedback from key stakeholders, three LRT stations were selected for improvements. Improvements were comprehensive and considered the entire area that would act as the operational catchment for the shared micromobility service.

### Saddletowne – Martindale\* (Blue Line, NE)

\*Martindale station included due to proximity to Saddletowne

- **Rationale:** Ranked the highest based on integration score and upcoming 5A investment will improve integration potential
- Area is dense, equity-deserving, has high transit ridership, and is well connected by existing pathways

### Heritage (Red Line, S)

- **Rationale:** Ranked near the top 5 based on integration score, upcoming 5A investment will improve integration potential
- Area is dense, has good transit connectivity (2 BRT lines and 1 LRT line), and has an existing E-W corridor to anchor a network

### Somerset (Red Line, S)

- **Rationale:** Ranked the 2nd highest based on integration score, proximity to micromobility operators supports integration
- Great transit connectivity to the station, very high transit ridership, and is well connected by existing pathways

## Design Approach

Our approach to transit-micromobility integration focuses on strategically enhancing station infrastructure and network connectivity, to optimize the usability of micromobility and facilitate seamless transition between the two modes of transportation.

## Station Improvements

Station improvements include wayfinding enhancement, optimized parking locations, and station-network interface enhancement, which aim to streamline the user experience and promote the use of micromobility travel.

## Network Improvements

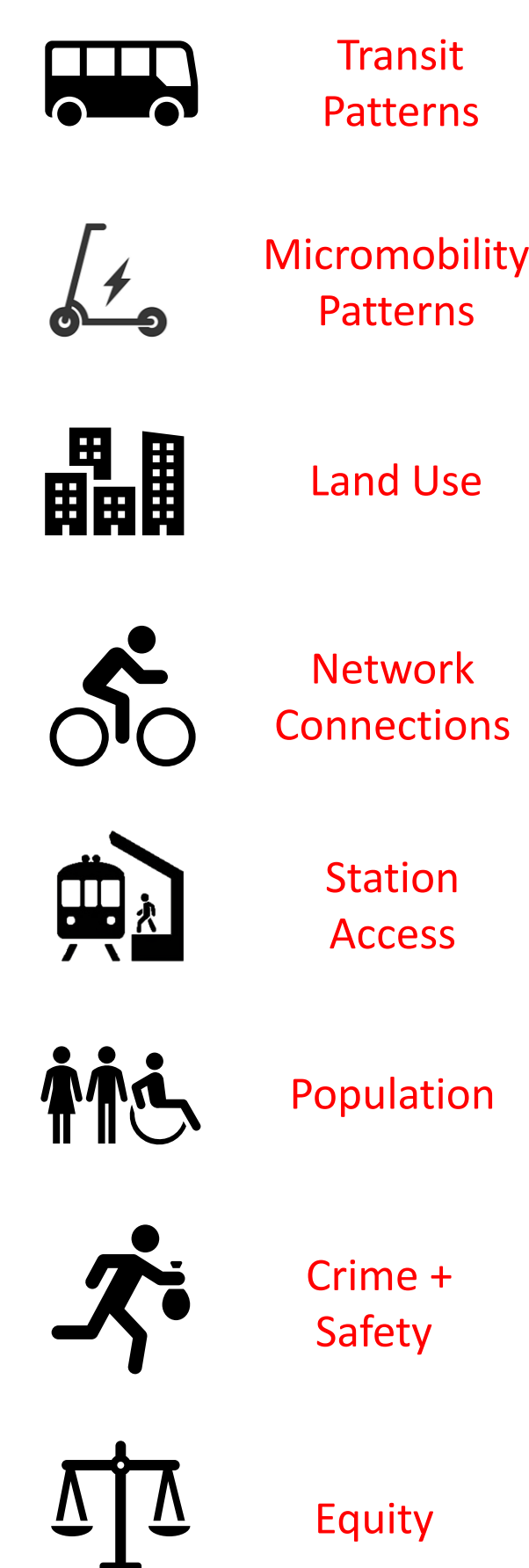
Network improvements include recommended corridor improvements and identified spot improvements like crossing upgrades to create safe routes between the station and the surrounding community.

## Part A - Identifying the Stations Best-fit for Integration

- 45 LRT stations were filtered using transit ridership and micromobility usage data to determine where integration would capture the highest potential user base and address infrastructure gaps to create new users. This resulted in a station shortlist of 20 LRT station.
- Each station on the station shortlist was reviewed and scored against a set detailed criteria to determine an "integration score" indicating how fit a station was for integration. Integration scores were used to rank the station in order of most-to-least fit for integration. Alternative criteria weighting schemes were used to create multiple rankings.

### Summary of Part A

- Throughout all the criteria weighting schemes, terminus stations regularly ranked the highest. Furthermore, there was no distinct priority between the four legs of the LRT network. Each section of the network has "good" and "bad" stations.



RANK	Even weighting		Reversed crime, double network, double station	
	Station	Score	Station	Score
1	Saddletowne	30.2	Saddletowne	39.2
2	Somerset	29.1	Somerset	34.3
3	69 St SW	26.8	69 St SW	31.3
4	Dalhousie	26.2	Victoria Park	30.6
5	Tuscany	25.6	Dalhousie	30.2
6	Heritage	25.2	McKnight	30.1
7	Rundle	23.9	Sunnyside	30.0
8	McKnight	23.9	Westbrook	29.8
9	Crowfoot	23.7	Heritage	29.2
10	Brentwood	23.7	Rundle	28.9
11	Westbrook	23.3	Crowfoot	28.7
12	Whitehorn	23.1	Tuscany	28.6
13	Sunnyside	22.0	Brentwood	27.7
14	University	20.6	SAIT/AUArts/Jubilee	26.5
15	Southland	20.5	Whitehorn	26.1
16	Victoria Park	20.1	Bridgeland	25.0
17	SAIT/AUArts/Jubilee	19.5	University	24.8
18	Chinook	19.3	Chinook	24.0
20	Anderson	18.7	Southland	23.7
20	Bridgeland	17.8	Anderson	21.9
MAX		40		50

## References

1. Neuron, "Calgary 2023 E-bike/E-scooter C-Train Station Pilot." Neuron, Calgary, Sep. 31, 2023
2. Bird Canada, "Canyon Meadows Ridership" Bird Canada, Calgary, Nov. 16, 2023

## Contact

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