

Appendix 5 - Monitoring and Evaluation Framework

Introduction:

This document lays out the goals, objectives, and indicators that will be used to monitor and evaluate the City of Mississauga's Shared Micro-mobility Program. Mississauga's micro-mobility program recognized eight strategic pillars, as outlined in the report "Micro-mobility Program Update: Phase 1 - Visioning and Interim E-scooter Strategy" adopted by Council in 2020 ([GC-0358-2020](#)). These strategic pillars will form the goals of the program.



Figure 1 Micro-mobility Strategic Pillars, approved by council in 2020.

Objectives were developed under each goal to provide a comprehensive understanding of the desired outcomes for the Shared Micro-mobility Program. Indicators under each objective will be used to evaluate and monitor the program as it progresses. Currently, eight (8) goals and 33 objectives have been identified, along with their corresponding indicators.

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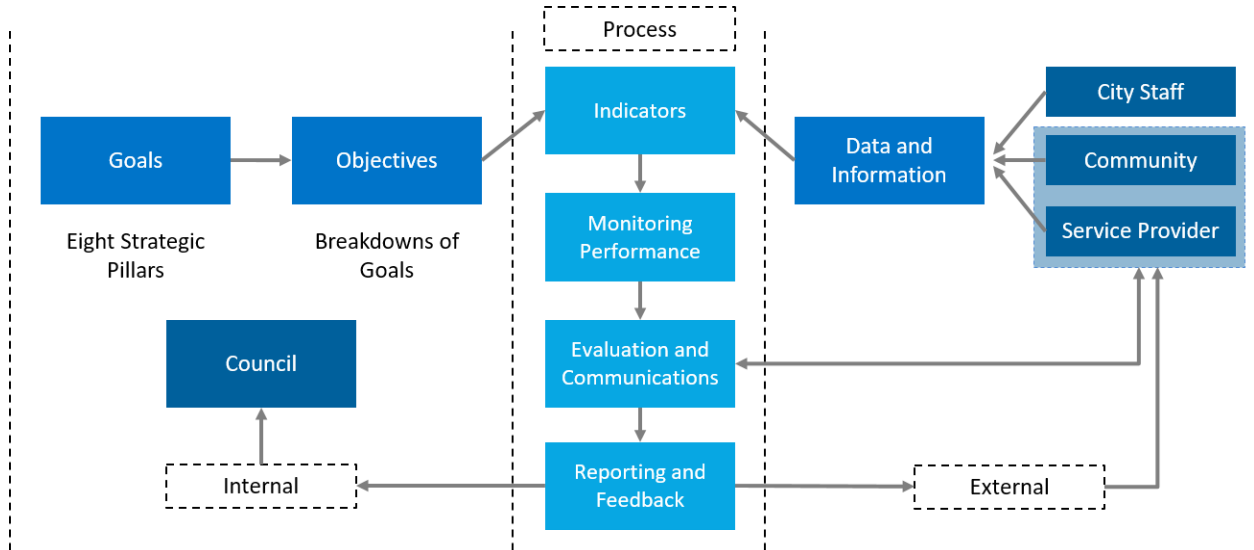


Figure 2. Structure of the Evaluation and Monitoring Framework

Indicators are categorized into three groups: short-term, medium-term, and long-term. When determining the time scale, various factors are taken into consideration, such as timelines for infrastructure construction, the time required to observe substantial behavioral changes, and the time necessary to detect significant shifts in patterns and trends. By carefully selecting indicators and aligning them with the appropriate time scale, a comprehensive evaluation can be conducted to track and measure progress effectively.

Short-term	<p>Duration : 1-2 years Evaluation Frequency: Monthly, Quarterly, Yearly Example Indicator: Micromobility devices have good riding stability and are easy to control.</p>
Medium-term	<p>Duration : 3-5 years Evaluation Frequency: Yearly Examples: Micromobility should foster vibrant and active public spaces by increasing foot traffic and micromobility activities.</p>
Long-term	<p>Duration : 5-10 years Evaluation Frequency: Yearly Examples: More types of micromobility devices are provided for the purposes of goods movement in the future.</p>

Figure 3. Time Scale of the Indicators

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Goals, Objectives and Indicators

Goal 1. Accessibility and Ease of Use

Definition¹:

Avoid creating accessibility barriers to the extent possible and ensure systems are available for use to all residents (geographically, financially, temporally, and physically).

Objectives and Indicators:

Objective 1.1: Micro-mobility provides equitable access to devices across Mississauga.

- *Indicator 1.1.1:* People in all neighbourhoods have access to a shared micro-mobility device within a walking range of 500m.
- *Indicator 1.1.2:* The minimum service level for the system boundary and the number of vehicles distributed throughout that boundary has been met.
- *Indicator 1.1.3:* The parking stations meet user demand.

Objective 1.2: Micro-mobility serves people of different ages and abilities.

- *Indicator 1.2.1:* A variety of micro-mobility devices are available.
- *Indicator 1.2.2:* Adaptive and inclusive micro-mobility devices are available and accessible to those who wish to use them.
- *Indicator 1.2.3:* Micro-mobility devices have good riding stability and are easy to control.
- *Indicator 1.3.4:* Those looking to use the system can easily understand how it works and what steps need to be taken to rent a device
- *Indicator 1.2.5:* The interface / mobile application is user friendly and accessible.

Objective 1.3: Micro-mobility is affordable to any user.

- *Indicator 1.3.1:* Discounted/subsidised fares are available.
- *Indicator 1.3.2:* Users with discounted fares / subsidies have used the system as frequently as, or more frequently than, non-subsidised users.
- *Indicator 1.3.3:* The number of trips per capita is not significantly lower in neighbourhoods with lower average incomes.

Objective 1.4: Micro-mobility does not create additional accessibility barriers.

- *Indicator 1.4.1:* Micro-mobility devices can be rented using a variety of payment methods.
- *Indicator 1.4.2:* The number of complaints regarding accessibility decrease over time.
- *Indicator 1.4.3:* Major micro-mobility traffic corridors are proactively patrolled to minimize the number of violations.
- *Indicator 1.4.4:* Up-to-date technologies are used to avoid creating additional accessibility barriers.
- *Indicator 1.4.5:* The location of parking stations and zones are carefully selected to ensure accessibility.

¹ Definition refers to the definitions of strategic pillars used in *Micro-mobility Program Update: Phase 1 – Visioning and E-scooter Strategy*.

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- *Indicator 1.4.6:* Consultation with AAC and other accessibility advocacy groups continues throughout the program to ensure the system does not reduce accessibility.
- *Indicator 1.4.7:* Suggestions and concerns from AAC and other accessibility advocacy groups are actively addressed.
- **Objectives 1.5** Micro-mobility is available any time of the day and throughout the year.
 - *Indicator 1.5.1:* Micro-mobility devices are available 24 hours a day, 7 days a week.
 - *Indicator 1.5.2:* The micro-mobility system is available year round.
 - *Indicator 1.5.3:* Micro-mobility services maintain consistent pricing even during periods of high demand

Goal 2. Addressing Climate Change

Definition:

Reduce vehicular traffic congestion/move people rather than cars and improve mode share for active transportation.

Objectives and Indicators:

Objective 2.1: Micro-mobility decreases carbon emissions by moving people rather than cars.

- *Indicator 2.1.1:* Micro-mobility trips continue to replace short-distance car trips over time.
- *Indicator 2.1.2:* The number of micro-mobility trips increases over time.
- *Indicator 2.1.3:* A systematic modelling to compute the carbon emission reduction from Micro-mobility is established.

Objective 2.2: The lifecycle carbon footprint of micro-mobility devices is minimized.

- *Indicator 2.2.1:* Environmentally friendly transportation options (including EVs, cargo e-bikes, etc.) are used to distribute/rebalance devices.
- *Indicator 2.2.2:* Clean energy is used to charge devices.
- *Indicator 2.2.3:* Maximising the lifespan of devices is prioritized.
- *Indicator 2.2.4:* Proper reuse/recycling/disposal procedures are used when devices or parts are replaced.

Objective 2.3: Micro-mobility system utilises low carbon materials

- *Indicator 2.3.1:* Low-carbon building materials are used to construct micro-mobility infrastructure.
- *Indicator 2.3.2:* Sustainability is integrated into the procurement process for micro-mobility.

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Goal 3. Building Sense of Community

Definition:

Nurture community by developing a vested interest in micro-mobility, including public art components.

Objectives and Indicators

Objective 3.1: Micro-mobility connects people to parks, services, and amenities, as well as members of their community.

- *Indicator 3.1.1:* Micro-mobility enables users to connect with their community.
- *Indicator 3.1.2:* Users have access to new amenities and services with the help of micro-mobility.

Objective 3.2: Micro-mobility improves the health of community members.

- *Indicator 3.2.1:* Micro-mobility encourages community members to be physically active on a daily basis and reduce sedentary time.
- *Indicator 3.2.2:* Micro-mobility increases the feeling of social connectedness among community members.

Objective 3.3: Micro-mobility contributes to the liveliness of the public realm.

- *Indicator 3.3.1:* Micro-mobility provides opportunities for public art installations, cultural expressions, and creative place making.
- *Indicator 3.3.2:* Micro-mobility fosters vibrant and active public spaces by encouraging increased foot traffic and micro-mobility activities.
- *Indicator 3.3.3:* Micro-mobility supports the organization of community events, activities, and programming within the public realm.

Objective 3.4: Micro-mobility is generally accepted and welcomed by community members.

- *Indicator 3.4.1:* Community members have a sense of community ownership and responsibility towards the system.
- *Indicator 3.4.2:* Community members report acts of vandalism, theft, or abandonment.
- *Indicator 3.4.3:* Community members have opportunities for meaningful engagement and participate in the implementation and improvement of micro-mobility initiatives.
- *Indicator 3.4.4:* Community members illustrate positive attitude towards the presence of shared micro-mobility.

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Goal 4. Education

Definition:

Improve residents' understanding of the rules of using micro-mobility systems.

Objectives and Indicators:

Objective 4.1: Micro-mobility users understand the rules of the road and proper trail etiquette.

- *Indicator 4.1.1:* Micro-mobility users demonstrate respect for other trail and road users.
- *Indicator 4.1.2:* Micro-mobility users avoid prohibited behaviours like misparking or sidewalk riding.
- *Indicator 4.1.3:* Education material is shared through multiple channels.

Objective 4.2: Micro-mobility users are aware of how to operate the different devices.

- *Indicator 4.2.1:* Renting - All users are introduced to the renting processes, including using the mobile app, adding a payment, unlocking devices, conducting safety inspections, and understanding beginner tutorials.
- *Indicator 4.2.2:* Operating - All users are equipped with the skills to operate the vehicles, including acceleration, deceleration, braking, turning, and signalling.
- *Indicator 4.2.3:* Returning - All users are introduced to the returning processes, including finding parking zones, locking the vehicles, parking the vehicles, and ending their trips.

Objective 4.3: Both users and non-users are encouraged to submit inquiries and complaints.

- *Indicator 4.3.1:* Multiple reporting channels are provided to the public.
- *Indicator 4.3.2:* All reporting channels are easy to locate.

Objective 4.4: Other road users know how to safely interact with micro-mobility users.

- *Indicator 4.4.1:* Messaging includes information on how other road users should safely interact and share the road with micro-mobility users.
- *Indicator 4.4.2:* Proactive education and engagement is employed to ensure other road users know how to safely interact with micro-mobility users.

Objectives 4.5: Micro-mobility users understand key risks (e.g., inexperience, riding at night, lack of helmet use, alcohol use) and know what protective measures are available to avoid them.

- *Indicator 4.5.1:* Helmet requirements meet or exceed Provincial regulations.
- *Indicator 4.5.2:* Helmet use for all riders is encouraged.
- *Indicator 4.5.3:* All micro-mobility-related education materials depict riders wearing helmets while operating the vehicles.
- *Indicator 4.5.4:* All devices have lighting and reflectivity that meet or exceed Provincial requirements.
- *Indicator 4.5.5:* Micro-mobility education materials raise awareness about the risks of riding under the influence.
- *Indicator 4.5.6:* Technology is used to prevent riding under the influence.
- *Indicator 4.5.7:* Micro-mobility mobile applications and devices provide a beginner mode for new users.

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Goal 5. Leverage and Partner with Business

Definition:

Monetize or capitalize on the presence of micro-mobility, including sponsorship and the use of micro-mobility vehicles for goods movement.

Objectives and Indicators:

Objective 5.1: Micro-mobility drives growth and innovation for the local economy.

- *Indicator 5.1.1:* Micro-mobility encourages people to visit local businesses.
- *Indicator 5.1.2:* Micro-mobility users spend as much or more money than those arriving by other modes at local businesses.
- *Indicator 5.1.3:* Micro-mobility is seen as an attracting feature for investors and businesses looking to locate in Mississauga.
- *Indicator 5.1.4:* Micro-mobility is utilized by tourists and visitors to enhance their local experiences.
- *Indicator 5.1.5:* Micro-mobility is part of Mississauga's smart city initiatives that support creating vibrant, inclusive communities with a high quality of life.

Objective 5.2: Micro-mobility creates business opportunities for the City.

- *Indicator 5.2.1:* Sponsorship opportunities are explored.

Objective 5.3: Micro-mobility enhances labour force mobility and goods movement in the city.

- *Indicator 5.3.1:* Micro-mobility improves access to employment opportunities.
- *Indicator 5.3.2:* Corporate memberships or discounts are provided.
- *Indicator 5.3.3:* Corporate memberships or discounts are utilized by companies in Mississauga, and company employees use micro-mobility devices at higher frequencies.
- *Indicator 5.3.4:* Different types of micro-mobility devices are provided to support goods movement.

Goal 6. Mobility as a Service

Definition:

Provide a wide variety of ways to move around the city, including combining modes of travel.

Objectives and Indicators:

Objective 6.1: Micro-mobility provides a positive user experience.

- *Indicator 6.1.1:* Micro-mobility devices are charged and ready to use.
- *Indicator 6.1.2:* Micro-mobility users are comfortable using the devices.
- *Indicator 6.1.3:* Micro-mobility devices and mobile applications are easy to use.

Objective 6.2: Micro-mobility inquiries and complaints are responded to promptly.

- *Indicator 6.2.1:* Inquiries are responded to within the set time limit.
- *Indicator 6.2.2:* Complaints and safety concerns are addressed within the set time limit.
- *Indicator 6.2.3:* A high customer satisfaction rate for addressing inquiries is maintained.

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- *Indicator 6.2.4:* Frequently repeating issues or reports are proactively addressed.

Objective 6.3: Micro-mobility integrates with transit systems and encourage multimodal trips.

- *Indicator 6.3.1:* Micro-mobility parking facilities are located near transit stops and stations.
- *Indicator 6.3.2:* Micro-mobility devices facilitate access to public transit.
- *Indicator 6.3.3:* There is an increased number of multimodal trips over time.
- *Indicator 6.3.4:* Micro-mobility fares are integrated with transit fares.

Objective 6.4: Micro-mobility provides people with freedom to move.

- *Indicator 6.4.1:* People make trips that would not have been made without access to micro-mobility.
- *Indicator 6.4.2:* There are more trips made in neighbourhoods previously underserved by transit and with higher no-vehicle households.

Goal 7. Safety

Definition:

Build complete streets, including separated active transportation corridors.

Objectives and Indicators:

Objective 7.1: Micro-mobility infrastructure contributes to safe and orderly system operations.

- *Indicator 7.1.1:* Number of Complaints regarding micro-mobility decreases over time.
- *Indicator 7.1.2:* Micro-mobility infrastructure is well maintained and does not lead to injuries or fatal crashes.
- *Indicator 7.1.3:* Seasonal maintenance and essential operational adjustments are made to ensure the system's suitability for winter conditions.

Objective 7.2: Micro-mobility devices meet provincial and municipal standards.

- *Indicator 7.2.1:* Emergency repairs are complete within the set time limit.
- *Indicator 7.2.2:* Devices are regularly maintained and equipped with the necessary features mandated by provincial regulations.
- *Indicator 7.2.3:* Micro-mobility devices are remotely locked and stay out of service when there is a possibility of technical failure.
- *Indicator 7.2.4:* Micro-mobility devices are equipped with the features and technology agreed to in the contract.

Objective 7.3: Micro-mobility users have access to safe infrastructure in line with the goals of Vision Zero.

- *Indicator 7.3.1:* Supporting infrastructure meets demand along major micro-mobility traffic corridors.
- *Indicator 7.3.2:* Micro-mobility supports the expansion of active transportation networks.

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Objective 7.4: There are 0 fatalities and 0 serious injuries related to the use of micro-mobility devices.

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Goal 8. Supporting Infrastructure and Policies

Definition:

Create a robust and sustainable financial model, address liability and risk.

Objectives and Indicators:

Objective 8.1: Micro-mobility regulations contribute to safe and orderly system operations.

- *Indicator 8.1.1:* Micro-mobility devices are properly parked in parking stations and parking zones.
- *Indicator 8.1.2:* Misparking behaviours are properly enforced.
- *Indicator 8.1.3:* Up to date safety-related technology is used.

Objective 8.2: Micro-mobility fees and pricing allow the City and service providers to maintain sustainable financial models.

- *Indicator 8.2.1:* The City recovers its costs for the micro-mobility program.
- *Indicator 8.2.2:* The service provider(s) can make profits under their pricing scheme and the market conditions.

Objective 8.3: Micro-mobility addresses liability and risk by establishing a comprehensive legal framework.

- *Indicator 8.3.1:* The appropriate insurance coverage is provided.
- *Indicator 8.3.2:* Monitoring and evaluation is ongoing to proactively address risk.

Objective 8.4: Micro-mobility provides insightful data for public sector improvement.

- *Indicator 8.4.1:* Data to monitor and evaluate the system is collected and available to the City and partners for analysis.
- *Indicator 8.4.2:* Select data is made publicly available to facilitate the integration of micro-mobility information with third-party trip planning applications.
- *Indicator 8.4.3:* The data provides information on the future planning of micro-mobility-related infrastructure.

Objective 8.5: Micro-mobility follows Equity Diversity & Inclusion practices.

- *Indicator 8.5.1:* Equitable hiring processes are integrated into micro-mobility operations.
- *Indicator 8.5.2:* Micro-mobility system demonstrate diversity in its leadership, workforce, and decision-making roles.
- *Indicator 8.5.3:* Micro-mobility system prioritises hiring from local communities.
- *Indicator 8.5.4:* Living wages and benefits are provided to micro-mobility operational staff.
- *Indicator 8.5.5:* Cultural norms and preferences of different communities are considered in the service design and marketing of micro-mobility.

Data Requirements

Data will be collected throughout the program to monitor the system's progress and ensure the goals and objectives are being met. The data will be collected from a number of sources including the service provider(s), system users, the public, city staff, Peel Public Health, Peel Regional Police, and other external entities as required.

Each of the indicators listed above will have a number of data points used to evaluate its success. That data includes information on system operations, customer service, communication, safety and compliance, maintenance, and equity. Each data point will be collected and evaluated at different frequencies throughout the program. This will allow staff to be proactive and identify issues before they arise by working with the service provider(s) to make ongoing changes to the program as indicators are evaluated.

Reporting

The service provider(s) will be required to provide data to staff on a monthly basis with quarterly reports summarizing the status of each indicator.

Staff will monitor, review, and update the Shared Micro-mobility Program on a regular basis to ensure continued progress towards achieving the program's goals and objectives. Staff will produce an annual report on the indicators of success identified as part of this Monitoring and Evaluation Framework.