

City of Mississauga Corporate Report



Date: May 27, 2022

To: Chair and Members of General Committee

From: Geoff Wright, P.Eng, MBA, Commissioner of
Transportation and Works

Originator's files:

Meeting date:
June 15, 2022

Subject

Micro-mobility Program Development Phase 1 Final Report (All Wards)

Recommendation

1. That the City of Mississauga take the steps outlined in the corporate report dated May 27, 2022 from the Commissioner of Transportation and Works entitled "Micro-mobility Program Development Phase 1 Final Report (All Wards)" to establish a shared micro-mobility service as a pilot program which:
 - Offers both electric pedal-assist bicycles and electric kick-style scooters to users;
 - Is based on a hybrid model of both docked and dockless parking systems; and
 - Is privately owned and privately operated.
2. That staff be directed to develop and seek Council approval of an Implementation Strategy for a pilot program to introduce a shared micro-mobility service and to test and refine its parameters.

Executive Summary

- "Micro-mobility" generally refers to small, lightweight human-powered or electric bicycles and electric kick-style scooters operating at speeds below 25 km/h that are ideal for trips up to 10 km. Shared micro-mobility is when a service is provided for users to rent a vehicle for a short period of time for a point-to-point trip.
- The purpose of Phase 1 of the Micro-mobility Program Development project was to assess and screen high-level shared micro-mobility options for Mississauga, with a focus on evaluating the different shared micro-mobility program alternatives including vehicle types, system models and governance models.
- A peer review of ten North American cities was conducted to identify various operational considerations related to the vehicle types, system models and governance models.

- Privately owned and operated programs are the least costly upfront and ongoing to the City, while permit fees paid to the City by operators could potentially lead to a cost-recovery model.
- Community and stakeholder consultation suggests general support for shared micro-mobility systems; however, significant concerns have been raised regarding accessibility and the risk of introducing new barriers to the public realm through the introduction of shared micro-mobility.
- A pilot program would be an effective tool to gauge level of interest, gather data, test deployments and determine the extent to which shared micro-mobility contributes to transportation and broader city-building goals.
- A combination of electric pedal-assist bicycles and electric kick-style scooters is recommended for the pilot program.
- A hybrid system model, which provides designated parking locations while allowing users to park outside of those docking stations when necessary, is recommended for the pilot program.
- A privately owned and privately operated governance model is recommended for the pilot program.
- The Implementation Strategy and permit considerations for private operators to offer their services in the City of Mississauga will be further developed and refined in Phase 2 of the Micro-mobility Program Development project.
- Existing capital budget is available in PN 20189 “Bike Share Study” to complete Phase 2.

Background

“Micro-mobility” generally refers to a family of relatively small, lightweight personal mobility devices currently available on the market, which range from human-powered to electric-assisted to fully electric powered. These include conventional bicycles, electric “pedal-assist” bicycles, electric “throttle-driven” bicycles, electric kick-style scooters, electric seated mobility scooters, and many others. This report is focused on three types of micro-mobility devices: non-assisted conventional bicycles, electric pedal-assist bicycles, and electric kick-style scooters. Shared micro-mobility is when a service is provided for users to rent a vehicle for a short period of time for a point-to-point trip.

Staff have provided two previous reports to Council regarding micro-mobility. In October 2019, a report titled “Bikes, E-bikes and E-scooters: Expanding Mississauga’s Transportation Options” from the Commissioner of Transportation and Works was received by General Committee and Council. This report provided a high-level snapshot of the state of the shared micro-mobility industry, and recommended that Mississauga move forward with establishing a framework for a phased introduction of shared micro-mobility services.

In December 2020, a report titled “Vision and Interim E-scooter Strategy” from the Commissioner of Transportation and Works was received by General Committee and Council which provided an overview of staff’s vision for shared micro-mobility services in Mississauga. The vision consists of eight strategic pillars:

- Accessibility and ease of use;
- Addressing climate change;
- Build sense of community;
- Education;
- Leverage and partner with business;
- Mobility and a service;
- Safety; and
- Supporting infrastructure and policies.

The December 2020 report also recommended that Council enact all necessary by-laws to permit personal-use electric kick-style scooters (“e-scooters”) to be operated in the City of Mississauga, in alignment with the Province of Ontario’s five-year pilot program permitting e-scooters. Subsequently, the City’s Traffic, Transit and Parks By-laws were amended in February 2021.

The City retained IBI Group in 2021 to assist staff in completing Phase 1 of the Micro-mobility Program Development Project. A copy of IBI Group’s final report is attached as Appendix 1.

Present Status

The purpose of Phase 1 of the Micro-mobility Program Development Project was to assess and screen high-level shared micro-mobility options for Mississauga, with a focus on evaluating the different shared micro-mobility program alternatives including vehicle types, system models and governance models.

The Interim E-scooter Strategy, and all accompanying by-laws, to allow personal-use e-scooters in Mississauga remains in place. Staff created and published educational materials for residents outlining the various rules and regulations for users of e-scooters, including where they may or may not be operated.

Specifically, e-scooters:

- May be ridden on roads with a posted speed limit of 50 km/h or less; on any designated bicycle lane or bicycle path, and; on multi-use trails within the road right-of-way
- May not be ridden on sidewalks; on any park pathways or off-road trails, or; on city-owned lands (e.g., transit terminals, City facilities).

Comments

Shared micro-mobility is when a service is provided for users to rent a micro-mobility vehicle for a short period of time – instead of personally owning the vehicle, they are “sharing” it with other users who also choose to rent the vehicle. There are three foundational components of a shared micro-mobility system:

1. **Vehicle types** – What micro-mobility vehicles are offered in the shared system?
2. **System models** – Where can vehicles be picked up and dropped off?
3. **Governance models** – Who owns and operates the system?

The Phase 1 study conducted a screening of the vehicle types, and system and governance models for applicability to Mississauga. For this screening, there was one evaluation framework for vehicle types and a second for system and governance models.

Peer Review of Operational Considerations

In 2020, at least 224 cities across North America had at least one bikeshare or e-scooter share system and 72 had both (“2020 State of the Industry Report”, North American Bikeshare and Scootershare Association). Ten cities were identified for an in-depth peer review: Toronto, Vancouver, Hamilton, Kelowna, Calgary, Seattle, Washington (DC), Portland, Minneapolis, and Philadelphia. These systems were selected to cover a range of vehicle types, governance models and system models currently in use in a variety of urban contexts, providing a breadth of examples to help inform the evaluation in Mississauga.

This review covered operator retention, enforcement activities, expansion approaches, level of municipal oversight required, and equitable access to services. The findings from the review helped to inform the evaluation of the vehicle type, system and governance models.

Phasing Considerations

Since Mississauga is considering the implementation of a new program, this evaluation specifically reviewed early-stage program implementation considerations, including suitability for a potential pilot program in Mississauga.

Pilots are an effective tool commonly used by peer cities for introducing shared micro-mobility programs to gauge the level of interest and uptake, gather data, test deployments, and determine the extent to which shared micro-mobility can contribute to transportation and city-building goals. Ultimately, the findings from a pilot program can help determine if a continual program is suitable and if so, can help shape what the program should look like.

Key features that are ideal for a pilot program include:

- Low upfront financial investment;
- Flexibility to adjust deployments based on feedback; and
- Easy removal if necessary, at the end of the pilot.

Effective monitoring is essential during a pilot to determine whether moving into a more continuous program is desirable.

Vehicle Types

There are three vehicle types that are commonly in use in shared micro-mobility systems described in this section:

- Conventional bicycles (bicycles);
- Electric pedal-assist bicycles (e-assist bikes); and
- Electric kick-style scooters (e-scooters).

The vehicle types were evaluated against seven factors:

- **Ease of Use – Stability** – How well does the design of the vehicle lead to a stable experience for users?
- **Ease of Use – Level of effort required by users** – How much physical effort is required by a user to operate the vehicle? While physical exertion is beneficial for good health and well-being, this can make vehicles less accessible for people of varying physical abilities;
- **Accessibility – Potential impacts on vulnerable road users** – Is this vehicle type associated with impacts on vulnerable users of the right-of-way, specifically related to sidewalk riding?
- **Maintenance required** – How much maintenance is required?
- **Enforcement required** – What level of compliance to system requirements (e.g. proper parking or riding where allowed) is typical for users of that vehicle type?
- **Cost** – How much does the vehicle typically cost?
- **Suitability for a potential pilot program** – Based on the vehicle characteristics, how suitable is the vehicle for a potential pilot program in Mississauga?

In the early stages of a shared micro-mobility program in Mississauga, a combination of the **electric pedal-assist bicycle and electric kick-style scooters** are recommended. Providing two vehicle types is becoming more common in peer municipalities across North America. Providing two vehicle types can make the shared micro-mobility program appealing to a larger number of users who can select a vehicle based on their preference and/or the characteristics of each trip (e.g. distance, purpose, time of day etc.).

Every vehicle type has associated benefits and drawbacks. Challenges exist for e-assist bikes and e-scooters relating to increased maintenance requirements, and reduced stability and potential impacts on vulnerable road users for e-scooters.

System and Governance Models

System models impact where micro-mobility vehicles can be picked up and dropped off. Most micro-mobility programs utilize one of three system models, described in this section:

- Dock-based model;
- Dockless model; and
- Hybrid Model (docked and dockless)

Governance of a shared micro-mobility program impacts the nature of the City's operational involvement including factors such as ownership of the vehicles. There are three governance models that are generally in use in the micro-mobility field including:

- Publicly owned and publicly operated;
- Privately owned and privately operated; and
- Publicly owned and privately operated.

An evaluation framework was developed to assess potential system models and governance models. Five themes form the foundation of the evaluation framework. These themes are:

- **Operational Risks:** Such as risk of not finding operators willing to adopt the business model, the risk of the service failing if an operator leaves, liability risk, financial risks, etc.;
- **Ability to Meet Performance Objectives:** This covers metrics typically associated with measuring program success, including membership growth, vehicle usage, operating costs and revenues, flexibility of service area, and vehicle trip types;
- **Level of Administrative Overhead:** Such as City staff involvement required to manage program or enforce operating requirements;
- **Accessibility and Quality of Service:** Refers to accessibility impacts to the broader community including improper parking, sidewalk riding, as well as access/accessibility for users of the program;
- **Suitability for a potential pilot program:** Based on characteristics ideal for a pilot program, how suitable are the governance and system models for a pilot project?

In the early stages of a shared micro-mobility program in Mississauga, the **Hybrid System Model** is recommended. The hybrid system model enables a broader service area with less infrastructure and offers flexibility to users, while also minimizing operational risks relating to improper parking and high enforcement requirements.

The hybrid model provides designated parking locations, limiting right-of-way encroachment, while allowing users to park outside of that docking station when necessary, typically for a small fee. This provides the most benefits to the user, pedestrians, and cyclists by offering both the structure of a docked system that leads to more organization and less encroachment concerns, and the flexibility of a dockless system that can be more convenient for users. The hybrid system model requires some vehicle parking infrastructure (e.g. bike racks or e-scooter racks), and all micro-mobility vehicles are to be equipped with a locking mechanism.

Every system model has associated benefits and drawbacks. For the hybrid system model, some challenges relating to improper parking may persist, leading to increased enforcement requirements compared to a dock-based system.

In the early stages of a shared micro-mobility program in Mississauga, the **Privately Owned and Privately Operated** governance model is recommended. This governance model significantly reduces start up costs to the City which is especially beneficial if a pilot program approach is

used. Using this model, the shared system could potentially operate on a cost-recovery model in which the City recovers its administrative costs through fees charged to the system operator.

Every governance model has associated benefits and drawbacks. For privately owned and operated systems there is a potential for challenges relating to securing and retaining a system operator, as well as in presenting a consistent user experience should multiple system operators be in service.

Strategies exist to mitigate challenges associated with the recommended vehicle type and system and governance models. For example, a potential approach is to create a permit system which enables the City to outline the requirements of a desired micro-mobility program, retaining control over various aspects of how the pilot program would operate. Such requirements could include:

- Rebalancing Requirements
- Fleet Deployment
- Inspections and Maintenance
- Customer Service Standards
- Enforcement Standards
- Sidewalk Riding Detection and Disincentives
- Support for Equity Programs
- New Rider Safety Program
- Education Programs
- Insurance and Indemnification Requirements

A more in-depth analysis will be conducted and mitigation strategies developed during the next phase of this project – Phase 2: “Implementation Strategy” – if staff are approved to proceed.

Strategic Plan

The Micro-mobility Program Development Project is aligned the City’s “Move” Strategic Pillar. It is also aligned with several other City strategic and master plans, including:

- **Transportation Master Plan (2019):** Action 22 recommends that the City investigate policy options to determine how the City can best work with and regulate micro-mobility technologies and vendors, including but not limited to bike share systems, e-bike systems, and e-scooter systems
- **Climate Change Action Plan (2019):** Action 18-1 recommends that the City encourage and enable micro-mobility systems and establish a policy framework for shared micro-mobility systems in Mississauga
- **Economic Development Strategy (2020-2025):** Priority 3, “Deliver Durable Infrastructure” recommends three Strategic Themes, including “Human Centred Development”; proactively establishing a regulatory framework for electric bicycles and scooters will help to better connect people to work or other destinations without relying on car travel.

Engagement and Consultation

Feedback received from community and stakeholder consultation suggests general support for shared micro-mobility systems, however, significant concerns have been raised regarding accessibility and the risk of introducing new barriers to the public realm through the introduction of shared micro-mobility vehicles and infrastructure. An overview of consultations is provided below, followed by a more in-depth review of accessibility concerns.

Public consultation was conducted with a *YourSay* page published on February 28, 2022, an online survey which ran from March 1 - 25, 2022, and an online public meeting held on March 8, 2022. Approximately 2,400 people have accessed the *YourSay* page to date, while 602 people completed the survey, and between 35 and 40 people attended the public meeting.

Additional stakeholder consultation was conducted through a Technical Advisory Committee (TAC) and meetings with five advisory committees of Council.

The TAC consisted of representatives from the City of Mississauga project team, other representatives from the City of Mississauga, community stakeholders, and staff representing Metrolinx, Peel Region, City of Toronto, Town of Oakville, City of Brampton, Town of Caledon, the University of Toronto, and Sheridan College.

Staff presented to the following advisory committees of Council:

- Accessibility Advisory Committee;
- Mississauga Cycling Advisory Committee;
- Road Safety Committee;
- Environmental Action Committee; and
- Traffic Safety Council.

Key takeaways across all stakeholder consultation opportunities include:

- The safety of all road users—and particularly vulnerable road users— is paramount. Operation of a shared micro-mobility program should ensure that pedestrians are safe and that penalties are in place for unsafe behaviour. Education programs can help improve safety outcomes and compliance with regulations.
- The design and implementation of any future micro-mobility system must not create any additional barriers to persons with disabilities or the broader community. Identification of a service area should consider the variety of travel markets that could potentially use the service.
- Post-secondary students, members of low-income households, new Canadians, and tourists were all specifically highlighted by stakeholders as potential users.
- The City should ensure that the operators are working in the best interest of the city through operating requirements and agreements. This could include the use of technologies, vehicles, operating regulations, and other means to ensure the system does not negatively affect travel in Mississauga.

- Micro-mobility vehicle “cluttering” was specifically articulated as a concern to be mitigated. Ongoing internal and external coordination will be crucial to ensure a successful roll-out of a shared micro-mobility system

Accessibility Concerns

The Accessibility Advisory Committee (AAC) and the broader accessibility community have raised significant concerns with the potential introduction of shared micro-mobility services in Mississauga, in particular with the introduction of shared e-scooters, but many of their concerns are also related to system and governance model options.

The project team met with AAC members at their meeting on January 17, 2022, and were also referred to the Accessible Transportation Subcommittee meeting on January 31, 2022 to discuss this project. Feedback included the following comments:

- Concerns with riding on the sidewalk and speeding (especially electric vehicles). Vehicles should only be allowed to operate in designated areas (e.g. bike lanes).
- Regardless of system model, the system should maintain access, be safe for all road users, and not create any additional barriers to the accessibility community.
- Docking stations are preferred due to the designated areas and predictability of where the vehicles are located. Areas outside of the pedestrian clear zone and off the sidewalk are preferred (e.g. parking lots).
- There should be a strong focus on education for users ensuring they are aware of the rules of the road.
- There should be penalties or fines associated with those not following the rules.
- There should be a small pilot area to evaluate how people are using the system and expand from there.
- Adding an accessibility lens to the evaluation framework is suggested, prioritizing vulnerable road users and considering the hierarchy of road users.
- Consider embedding a Vision Zero lens.

Staff also met with a coalition of Ontario-based accessibility-focused organizations in March 2022 to discuss the experiences of the accessibility community with e-scooters in other Ontario municipalities. Representatives from the Canadian National Institute of the Blind (CNIB), AODA Alliance, March of Dimes and others were present and shared their concerns.

Given the scope and scale of the concerns raised by the accessibility community, staff intend to continue to meet regularly with the Accessibility Advisory Committee and external accessibility advocacy organizations, to proactively seek input from experts and community members to help design and evaluate a shared micro-mobility pilot program, should one be established in Mississauga. An emphasis on ensuring accessibility in any future system and preventing or mitigating the introduction of any barriers into the built environment, will be a major strategic pillar for shared micro-mobility systems in Mississauga.

Financial Impact

There are no financial impacts resulting from the adoption of the recommendations in this report.

The recommended privately owned and privately operated governance model is the least expensive to implement and operate, from the City's perspective. There is significant market interest in providing this type of service in Mississauga and peer experience suggests it could be provided at no net cost to the City. Under this model, permit fees can be set to offset City expenses, potentially leading to full cost recovery. More detailed financial analysis for a pilot program will be a part of the scope of the Micro-mobility Program Development Phase 2 work.

Existing capital budget is available in PN 20189 "Bike Share Study" to complete Phase 2.

Conclusion

Shared micro-mobility systems can provide an additional transportation option for residents of Mississauga, supporting the City's strategic goals of encouraging more non-automobile trips. By moving forward with the recommended framework of a hybrid docked and dockless, privately owned and operated system of e-assist bikes and e-scooters, and by committing to ongoing collaboration with the community and stakeholders in the design and implementation of a pilot program, the City will establish itself as a leader in progressive and inclusive micro-mobility planning.

If approved to proceed, the Micromobility Program Development Project would proceed to these subsequent phases – Phase 2: Development of an Implementation Strategy; and if subsequently approved, Phase 3: Pilot Implementation.

Attachments

Appendix 1: Final Report – Micromobility Program Development Phase 1 (IBI Group)



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