

## CITY OF VAUGHAN

### **EXTRACT FROM COUNCIL MEETING MINUTES OF SEPTEMBER 26, 2023**

Item 1, Report No. 35, of the Committee of the Whole (Working Session), which was adopted without amendment by the Council of the City of Vaughan on September 26, 2023.

#### **1. ACCOMMODATING MICROMOBILITY (E-BIKES AND E-SCOOTERS) AND INITIATE A SHARED PILOT**

**The Committee of the Whole (Working Session) recommends:**

- 1) That the recommendations contained in the report of the Deputy City Manager, Infrastructure Development dated September 13, 2023, be approved; and**
- 2) That the presentation by Winnie Lai, Transportation Project Manager / Transportation Engineer, and C1, presentation material, be received.**

#### **Recommendations**

1. That the proposed amendments contained in **Attachment 4** to this report be approved;
2. That a By-law be enacted giving effect to those recommendations, in a form satisfactory to the Legal Services;
3. That Council direct staff to consider accommodation of power-assisted micromobility devices in all planning, design and construction projects;
4. That Council reaffirm its support of separate cycling and pedestrian facilities to minimize conflicts;
5. That micromobility safety be incorporated into the MoveSmart Strategy; and
6. That Council endorse the initiation of a Shared Micromobility Pilot Program (either through a procurement process or a permitting process) for a period ending on the earlier of 2 years from the date on which the by-law amendments referred to in recommendation one are enacted, or the day on which the Province revokes permission to use e-scooters.

## Committee of the Whole (Working Session) Report

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**DATE:** Wednesday, September 13, 2023

**WARD(S):** ALL

**TITLE:** ACCOMMODATING MICROMOBILITY (E-BIKES AND E-SCOOTERS) AND INITIATE A SHARED PILOT

**FROM:**

Vince Musacchio, Deputy City Manager, Infrastructure Development

**ACTION:** DECISION

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### **Purpose**

To seek Council approval to enact the necessary by-laws to permit and regulate the use of e-bikes and e-scooters on designated cycling facilities and on certain roads where designated cycling facilities currently do not exist. Should Council approve the use of power-assisted micromobility devices as proposed, staff are also seeking approval to initiate a pilot project which would encourage private entities to offer shared micromobility services in Vaughan.

## **Report Highlights**

- Through surveys, residents have expressed a desire to see certain micromobility devices, namely, e-scooters and e-bikes, used in designated cycling facilities.
- Background research conducted by staff indicate that designated cycling facilities with appropriate widths can accommodate e-bikes and e-scooters.
- Designated cycling facilities such as cycle tracks, bicycle lanes and multi-use paths be defined in the City's traffic by-law as the lanes on highways or portions of highways designated as such where official signs to that effect are erected and on display.
- The enactment of by-laws will establish the appropriate parameters and regulations for the use of e-bikes and e-scooters and is also necessary for the City to participate in Provincial pilot projects for e-scooters.
- All other forms of micromobility, including mopeds, segways, electric skateboards, and electric unicycles would continue to be prohibited on public right of way in the City.

## **Recommendations**

1. That the proposed amendments contained in **Attachment 4** to this report be approved.
2. That a By-law be enacted giving effect to those recommendations, in a form satisfactory to the Legal Services.
3. That Council direct staff to consider accommodation of power-assisted micromobility devices in all planning, design and construction projects.
4. That Council reaffirm its support of separate cycling and pedestrian facilities to minimize conflicts.
5. That micromobility safety be incorporated into the MoveSmart Strategy.
6. That Council endorse the initiation of a Shared Micromobility Pilot Program (either through a procurement process or a permitting process) for a period ending on the earlier of 2 years from the date on which the by-law amendments referred to in recommendation one are enacted, or the day on which the Province revokes permission to use e-scooters.

## **Background**

**Micromobility is broadly defined as forms of travel provided by lightweight, primarily single-person vehicles which are usually used for short distance trips. This includes familiar devices such as bicycles and skateboards, as well as newer, power-assisted forms such as e-scooters**

Micromobility includes traditional human-powered devices such as bicycles, skateboards, manual scooters, etc. In recent years, the definition has been expanded to include power-assisted versions of these human-powered devices.

Power-assisted Micromobility vehicles, as [defined by the province](#), includes vehicles that are small, compact, low-speed and electrically powered. These devices include electric kick-style scooters, power-assisted bicycles, low-speed vehicles, golf carts, and large quadricycles. Other unregulated electric-powered micromobility vehicles include electric hoverboards, electric skateboards, electric unicycle, and segways.

The provincial government has proposed definitions for micromobility devices which categorizes them, in broad terms, by maximum speed, size and weight. A glossary of micromobility-related terminologies and examples of micromobility devices are provided in **Attachment 1** and a summary of rules and regulations for each in Ontario can be found [here](#).

### **Shared e-bikes and e-scooters services have become available in a number of jurisdictions across Canada alongside the availability of private micromobility devices**

While conventional bike share programs have existed for several years, the advent of micromobility together with a “sharing” model are presenting municipalities with several decisions to make when considering potential micromobility solutions to add to their menu of transportation options. While there are potential benefits to a shared micromobility system, including improved access to micromobility devices, considerations should include:

- Public or private ownership of the shared micromobility system;
- Vehicle types to offer: bikes, e-bikes, e-scooters, etc.; and
- Micromobility parking: such as docked station systems require that all vehicles be returned to a station (Hamilton and Toronto are examples) or dockless where the vehicle can be left free standing (typically in a designated area) or locked to any bike rack or street furniture.

**The Provincial e-scooter pilot was launched in December 2019. To date, the City has not participated in the Provincial e-scooter pilot or other power-assisted micromobility pilots, which is necessary for these vehicles to operate legally on public property.**

On November 27, 2019, the Province of Ontario announced a five-year e-scooter pilot (O. Reg. 389/19) that began on January 1, 2020, as part of the Open for Business Action Plan. Under the pilot, municipalities can pass local by-laws to allow e-scooters within municipal rights-of-way, along with other regulations which can be imposed on providers of shared e-scooter systems. The Regulation for the pilot program stipulates various e-scooter vehicle and operator safety criteria which must be met. Municipal considerations mentioned in the province's guideline document are geared towards management of both privately owned or shared e-scooters which can now operate in Ontario under this pilot program. The Province's regulation and its guideline document can be found [here](#).

Responding to the Provincial e-scooter pilot program, in December 2019, staff provided a communication to the Mayor and Members of Council that recommended the City not opt-into the e-scooter pilot until a framework could be developed for micromobility, and also until staff could better determine where in Vaughan these devices could be accommodated.

**In September 2021, a Micromobility Framework was developed to guide the establishment of future policy, strategy, and bylaws, pertaining to micromobility in a focused and coordinated manner**

In September 2021, Staff provided a communication to the Mayor and Members of Council ([SC4 Staff Communication CW\(1\) - September 14, 2021](#)), which presented the Micromobility Framework that focused on addressing the following five (5) key opportunities and challenges for micromobility in the City:

1. Ensuring the safety and comfort for users and other citizens;
2. Understanding how the speed, weight, and size of these devices impact safety and comfort for users of these devices and non-users on sidewalks, roadways and/or pathways etc.;
3. Understanding how these devices operate under different road conditions (road surface quality, weather conditions/elements, lighting, and visibility, etc.);
4. Understanding the financial and environmental sustainability of these devices; and
5. Understanding the economic development potential around micromobility devices.

The micromobility framework consists of three main pillars:

1. Ensure public health and safety
2. Ensure equity for all users
3. Address risk and liability

**Attachment 2** provides details on the Micromobility Framework.

**Surveys conducted show residents' desire to continue using e-bikes and e-scooters in designated cycling facilities such cycle tracks and bike lanes**

Staff provided a communication to the Mayor and Members of Council last September ([SC1 Staff Communication Council - September 28, 2022](#)) on the activities and work completed since the establishment of the micromobility framework in September 2021. It presented a summary of public education and outreach activities responding to rising public inquiries and concerns during the pandemic, and the planned micromobility initiatives in fall 2022 and early 2023.

A youth survey was conducted in November 2021, followed by an all ages in-person and online survey conducted throughout the summers of 2022 and 2023. Together, 297 responses were collected and can be summarized as follows:

- 45% of the respondents have used a motorized micromobility devices and 69% of them own the devices
- E-scooters and e-bikes are the most popular micromobility devices respondents have used and would like to continue using
- 54% of all respondents agree that motorized micromobility devices are safe to use in the city
- Respondents indicated that they would like to see these devices accommodated in designated cycling facilities separate from pedestrians and motorists
- majority of the respondents indicated bike lanes/cycle tracks/ multi-use paths would be the preferred facility for micromobility devices

Responding to the desire from residents to accommodate e-bikes and e-scooters in designated cycling facilities, staff retained a consultant to conduct research and prepare a white paper to determine whether power-assisted micromobility devices could be accommodated in designated cycling facilities. This work was completed in September 2022.

**Previous Reports/Authority**

[STAFF COMMUNICATION – September 28, 2022 Council Meeting  
MICROMOBILITY UPDATE](#)

[STAFF COMMUNICATION September 14, 2021 Committee of the Whole MICRO-MOBILITY FRAMEWORK](#)

## **Analysis and Options**

**A Micromobility white paper was completed, which researched and summarized lessons learned from other Canadian municipalities that allow the use of both private and shared e-bikes and e-scooters**

The white paper explored the types of micromobility devices and their suitability for use on designated cycling facilities in the City.

The white paper looked at e-scooter pilot programs and other motorized micromobility/micro-utility programs in Ontario and other municipalities in Canada that were operational during 2020 and 2021. In Ontario, the use of power-assisted micromobility devices is governed by the following provincial pilot programs, which provides regulations on safety requirements for riding and operating, as well as size, speed and weight restrictions:

[Low-Speed Vehicles](#) Pilot Program (2017-2027) [O. Reg. 215/17: PILOT PROJECT - LOW-SPEED VEHICLES](#)

[E-Scooter Pilot Program](#) (Jan 2020 – 2025). [O. Reg. 389/19: PILOT PROJECT - ELECTRIC KICK-SCOOTERS](#)

[Cargo Power Assisted Bicycle](#) (Cargo E-Bike) Pilot Program (March 2021-2026) [O. Reg. 141/21: PILOT PROJECT - CARGO POWER-ASSISTED BICYCLES](#)

[Golf Carts](#) Pilot Program (2021-2031) [O. Reg. 407/21: PILOT PROJECT - GOLF CARS](#)

[Large Quadricycles](#) Pilot Program (2022-2032) [O. Reg. 411/22: PILOT PROJECT - LARGE QUADRICYCLES](#)

The summary of these pilot programs is provided in **Attachment 3**, which describes the program, types of devices permitted, facility types permitted, and the successes or challenges faced during the program, including any education, outreach or marketing completed to support the program.

Key takeaways from these pilot programs done in other municipalities are:

- Most municipalities permitted e-bikes and/or e-scooters on all cycling facilities where bicycles are allowed and along roadways with posted speeds less than 50 km/h but prohibited their use on sidewalks
- In accordance with provincial regulations, most e-bikes were limited to a maximum assisted speed of 32 km/h and e-scooters at an operating speed of 24 km/h, with some municipalities further restricting e-scooter speeds to 20 km/h

- Municipalities that are participating in a shared e-scooter or e-bike pilot program also permitted their private use within city limits
- Some municipalities reduced speed limits for micromobility devices to 15 km/h in high volume pedestrian areas, such as downtown areas or on university campuses, to reduce the risk and impact of collisions or serious injury

**Research and findings from the Micromobility White Paper show that designated cycling facilities can accommodate micromobility devices in accordance with Provincial regulations**

Learning from other municipalities that allow the operations of e-bikes and e-scooters and based on the similar characteristics of bicycles and these devices, it is determined that designated cycling facilities can adequately accommodate e-bikes and e-scooters from the functional design perspective, depending on the context of the roadway.

Staff recommend that micromobility devices be:

- Permitted on designated cycling facilities such as cycle tracks, bicycle lanes and in-boulevard multi-use paths;
- As per the Pedestrian and Bicycle Master plan designated cycling facilities should be designed and implemented to a desired width of 2.0m and minimum width of 1.8m for cycle tracks and bicycle lanes and desired width of 4.0m and minimum width of 3.0m for in-boulevard multi-use paths;
- Permitted on certain roads that have speed limits of 50 km/hour or less where designated cycling facilities are not provided;
- Prohibited on sidewalks or on any roadway that prohibits pedestrians and/or bicycles; and
- Prohibited on recreational multi-use trails, parks and playground.

Staff also recommend that designated cycling facilities such as cycle tracks, bicycle lanes and in-boulevard multi-use paths be defined in the City's traffic by-law as the lanes on highways or portions of highways designated as such where official signs to that effect are erected and on display and remove the need to update the associated by-law schedule when these facilities are implemented.

As per recommendations in the 2020 Pedestrian and Bicycle Master Plan and Active Transportation Programs Annual updates to Council, the City continues to plan, design, and construct a network of sidewalks and separated cycling facilities such as cycle tracks to support pedestrian safety and to make street-level interactions a more comfortable and predictable experience for all users. Where cycling facilities are implemented on existing road with motorists or beside pedestrians, separators, buffer zones, passing zones, pavement markings, bollards, planters, or street furniture will be



considered to separate and protect vulnerable road users and enhance safety for all. Clear signage, facility maintenance and enforcement are other considerations necessary to complement active transportation facilities to ensure clarity and safety.

### **Permitting the use of e-scooter in response to the most commonly used power-assisted micromobility vehicles in the City**

From the surveys conducted at the public outreach events from 2021 to 2023, e-scooters and e-bikes are the most popular micromobility devices respondents have used and would like to continue using. Additional inquiries received through different communications channels also confirmed the need to provide clarity on the regulations for these devices. Therefore, staff recommend permitting and regulating the use of these devices by enacting the necessary by-laws.

### **Local by-law enactment is required to permit e-scooters in the City**

In order to permit the use of e-scooters the Highway Traffic Act, [Ontario Regulation 389/19](#), requires that a municipality pass a by-law to allow e-scooter use on municipal roads under the provincial pilot. The by-law would be set in compliance to the parameters of the provincial pilot requirements, which include the following:

- set the maximum speed limit to 24 km/h;
- restrict the maximum weight of the vehicle at 45kg;
- restrict the maximum power output of the vehicle at 500W;
- set the minimum operator age limit at 16 years of age;
- prohibit passengers and cargo;
- restrict baskets;
- require riders to stand at all times;
- require the use of bicycle helmets for riders under 18 years old;
- restrict pedals or seats;
- require that the vehicle has two wheels, brakes, a horn or bell, and one white light on front, one red light on rear and reflective material on sides;
- restrict the maximum wheel diameter to 17 inches;
- that all Highway Traffic Act rules of the road will apply to the operation of e-scooters like bicycles; and,
- not allow e-scooters on controlled access highways.

E-bikes are currently permitted to operate in the City under the Highway Traffic Act.

**If private e-scooters are permitted in Vaughan, the potential impacts and usage of shared e-scooters devices should also be investigated**

Through interviews with other municipalities, it was noted that shared e-scooter or e-bike systems, which allow users to rent micromobility devices on a temporary basis, have the potential to improve access to and from major destinations and transit. To assess the potential impacts and uptake of a shared e-bike/e-scooter system in the City of Vaughan, staff are seeking endorsement from Council to begin a shared e-bike and e-scooter pilot program. It is recommended that interested vendors be invited to participate in a pilot trial through a competitive procurement or permitting process. The proposed pilot would:

- define geographical test areas in the City where the shared service would be permitted;
- limit the number of vehicles permitted within a test area;
- limit the time of day that the vehicles are permitted to operate;
- collect data relating to vehicle usage/maintenance/incidents;
- help to inform a future permit or license process;
- identify operating/maintenance requirements (City and operator);
- test the individual vehicle and system features in the City; and
- gather information on parking/storage issues.

### **Financial Impact**

There is no immediate financial impact. Sufficient budget has been allocated through the budget process to establish and operate the shared micromobility pilot project under capital project IM-7221-22.

### **Operational Impact**

By-Law and Compliance, Licensing and Permit Services (BCLPS), Transportation and Fleet Management, Parks, Forestry and Horticulture Operations were consulted prior to and during the preparation of this report. Should the recommendations of this report be adopted by Council, staff from other departments in addition to the abovementioned, would work together to amend the relevant by-laws, incorporate micromobility safety into the MoveSmart Strategy and implement improvements to allow these devices to operate in Vaughan.

### **Broader Regional Impacts/Considerations**

In 2020, York Region updated their lane designation bylaw to permit the uses of e-bikes and e-scooters in designated bicycle lanes and high occupancy vehicle lanes on Regional roads through a [report to the Committee of the Whole](#) to seek Council approval. Allowing e-scooters to operate in the City would allow users to make connections from Regional facilities onto local active transportation facilities making it a more appealing sustainable mode of transportation for residents and visitors.






The use of micromobility devices is an effective way to make first and last mile connections from transit stations or stops to final destinations, indirectly promoting transit use.

## **Conclusion**

Staff recommend that Council enact all the necessary by-law revisions outlined in ATTACHMENT 4 to permit and regulate the use of personal e-scooters in the City of Vaughan. These recommendations contribute to the [Transportation and Mobility Term of Council Priority](#), with the objective of improving active and emerging modes of transportation.

The proposed by-law revisions include the following provisions to regulate where e-scooters can be operated, consistent with Provincial Regulation:

- on roads that are posted at 50 km/hour or less
- on cycle tracks, bicycle lanes and in-boulevard multi-use pathways;
- on private properties;
- prohibited on sidewalks or on any roadway that also prohibits pedestrians and/or bicycles; and
- prohibited on recreational multi-use trails, parks and playground.

	  E-bikes E-scooter		Other Power-Assisted Micromobility Vehicles    Segway E-hoverboard E-unicycle	
<b>Roadway</b>	Yes ✓	Yes ✓ ≤ 50km/hour	No ✗	✗
<b>Bike Lane</b>	Yes ✓	Yes ✓	No ✗	✗
<b>Cycle Track</b>	Yes ✓	Yes ✓	No ✗	✗
<b>In-boulevard Multi-use Path</b>	Yes ✓	Yes ✓	No ✗	✗
<b>Sidewalk</b>	No ✗	No ✗	No ✗	✗
<b>Recreational Multi-use Trail</b>	No ✗	No ✗	No ✗	✗
<b>Parks and Playgrounds</b>	No ✗	No ✗	No ✗	✗
<b>Private Property</b>	Yes ✓	Yes ✓	Yes ✓	✓

In anticipation of the by-law changes and the introduction of this new vehicle type in the City, staff will work with the MoveSmart team to incorporate micromobility into the MoveSmart strategy and collaboratively reach out to the public through corporate

communications, public events and other engagement activities to raise awareness, inform and educate the public of the requirements and regulations changes.

Lastly, in order to understand the potential impact of shared micromobility services in Vaughan, staff recommend initiating a shared micromobility pilot program which would be run for a period ending on the earlier of 2 years from the date on which the by-law amendments referred to in recommendation one are enacted or the day on which the Province revokes permission to use e-scooters. At the conclusion of the pilot program, a report to Council would be prepared, summarizing the results and findings.

**For more information**, please contact: Selma Hubjer, Director, Infrastructure Planning and Corporate Asset Management, at extension 8674 or by email [Selma.Hubjer@vaughan.ca](mailto:Selma.Hubjer@vaughan.ca)

## **Attachments**

1. Summary of Power-Assisted Micromobility Devices and Glossary of Micromobility related terminologies
2. Micromobility Framework, presented through staff communications, September 14, 2021, Committee of the Whole
3. Municipal e-scooter pilots and Micromobility Programs Summary Table
4. Proposed By-law amendments

## **Prepared by**

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## GLOSSARY

**All Ages and Abilities (AAA) Facilities:** Active Transportation facilities which are planned and designed to be comfortable, safe, and accommodate a broad array of users of all ages and abilities.

**Cargo e-bikes:** Cargo e-bikes are a type of electric-powered bike with a platform or box to carry larger items like packages and boxes for deliveries.

**Electric kick-style scooters (e-scooter):** An electric kick-scooter (e-scooter) is a vehicle that has:

- two wheels (one at the front and one at the back)
- a platform to stand on
- a handlebar for steering
- an electric motor that does not exceed 500 watts

a maximum speed of 24 km/h on a level surface

**First Mile-Last Mile:** the distance an individual must travel to and from transit stops/stations and other mobility services and their home or destination without the use of a private automobile.

**Golf Carts:** The golf cart can be either electric or gas-powered. It must have:

- two to six seats
- a steering wheel
- service brakes
- parking or emergency brakes
- a rear-view mirror
- a horn
- good-quality tires
- daytime running lights
- turn signals
- brake lights
- reflectors

**In-boulevard Multi-use Pathway (MUP):** shared space for pedestrians, cyclists and micromobility devices along a roadway, physically separated from motorists

**Low-Speed Vehicles (LSV):** electric, four-wheeled vehicles that is smaller and lighter than a regular car. Low-speed vehicles have a maximum speed of 40 km/h and meet the definition and requirements of low-speed vehicle in subsection 2 (1) and Schedule III, respectively, of the *Motor Vehicle Safety Regulations* made under the Canadian *Motor Vehicle Safety Act*.

**Limited-Speed Motorcycle (LSM):** a motorcycle that can reach a maximum speed of 70 km/h or less. These Limited-Speed Motorcycles require license, registration and insurance to operate in Ontario.

**Ontario's Highway Traffic Act, R.S.O. 1990 (HTA):** legislation in Ontario which regulates the licensing of vehicles, classification of traffic offences, administration of loads, classification of vehicles and other transport-related issues.

**Micro-users:** a person operating a micromobility device, either motorized or manual. Examples include skateboarders, e-scooter riders, e-bike riders, etc.

**Motor-assist:** An operating mode that propels a vehicle or bicycle solely by any power other than muscular power, without the need to pedal.

**Motorized Micro-Utility Device:** a small, low-speed, lightweight, motorized mobility devices for personal use or used for deliveries. Some examples include autonomous lawn mowers, autonomous sidewalk snowplows, autonomous delivery robots, etc.

**Power-assist:** An operating mode where the motor provides assistance but requires pedaling for propulsion. Once the rider ceases pedaling, the motor assistance ceases.

**Power-Assisted Bicycles (E-Bikes):** A power-assisted bicycle, also called an electric bicycle or e-bike, is a bicycle with an electric motor that has:

- a handlebar for steering
- working pedals
- two or three wheels
- an electric motor
- braking systems

E-bikes can be motor-assisted or pedal-assisted, and are generally categorized into three classes based on their speed and propulsion type:

- *Class 1 e-bikes:* low-speed (<32 km/h), pedal-assisted e-bike that requires pedaling for propulsion.
- *Class 2 e-bikes:* low-speed (<32 km/h), motor-assisted e-bikes equipped with a throttle. It does not require pedaling for propulsion.
- *Class 3 e-bikes:* pedal assisted e-bikes that can reach a maximum operating speed of 45 km/hour.

**Power-assisted Micromobility Vehicles/ Devices:** vehicles that are small, compact, low-speed, and electrically powered. These devices include electric kick-style scooters, power-assisted bicycles, low-speed vehicles, golf carts, and large quadricycles. Other unregulated and currently not included in provincial micromobility pilots include electric hover boards, electric unicycle, segways, etc.

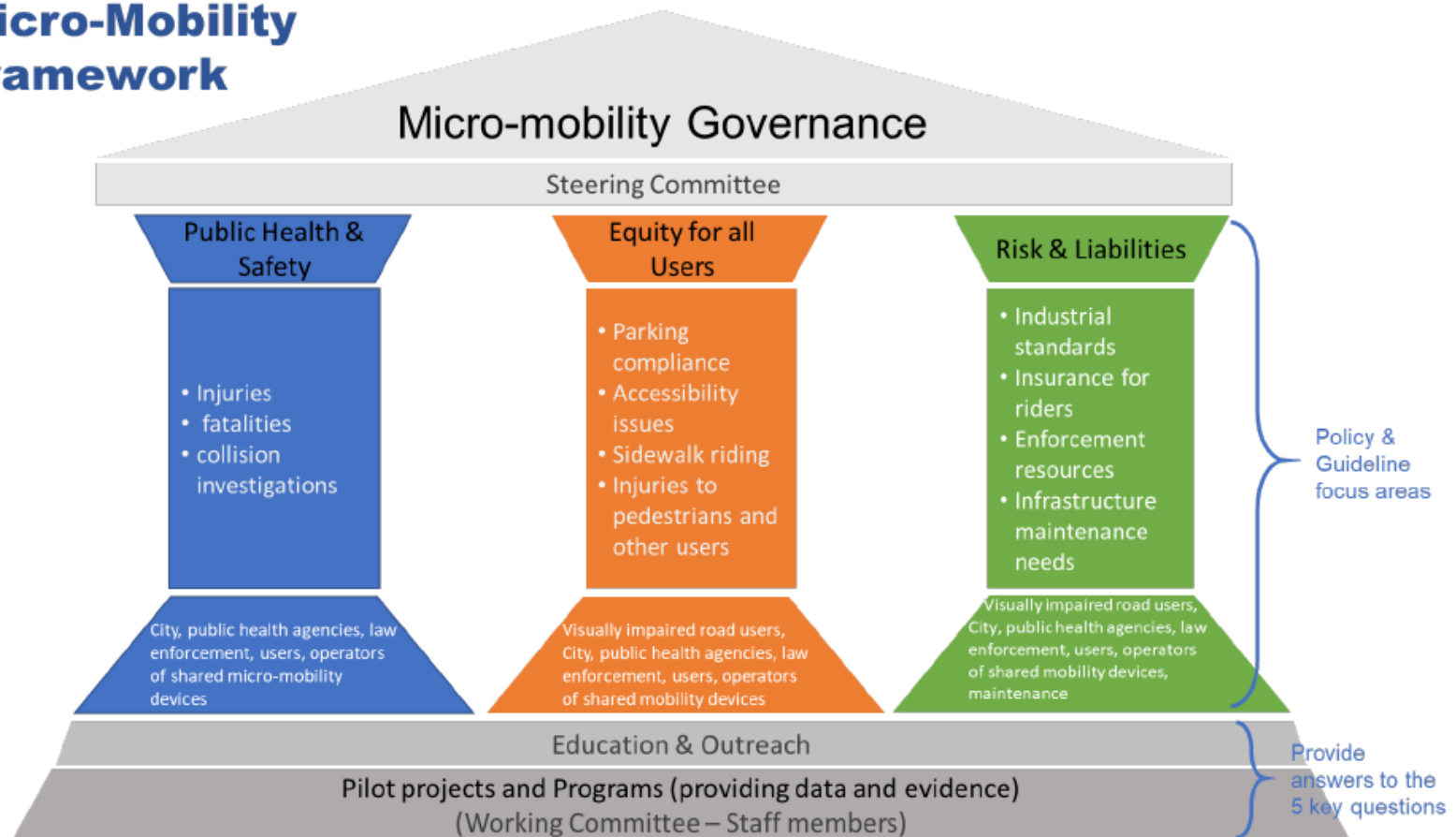
**Quadricycle:** Large quadricycles can be electric or non-electric. Large quadricycles must have:

- at least 12 seats including a driver seat
- pedals to provide propulsion power
- a steering wheel or a handlebar for steering
- working brakes

- parking or emergency brakes
- a horn
- good-quality tires
- turn signals
- brake lights
- reflectors
- Large quadricycles must not:
  - be capable of going 17 kilometres per hour or faster on a level surface
  - tow other vehicles
  - carry any combustible fuel



## Micro-Mobility Framework





Municipal e-scooter pilots and Micromobility Programs Summary Table

Program Description	Key Parameters/ Regulations (In addition to provincial requirements)	Micromobility Device Type(s)	Facility Type(s)	Key Lessons Learned		Education, Outreach, and Marketing Approaches	Additional Information
				Successes	Challenges		
SHARED PILOTS AND PROGAMS							
BIKE SHARE TORONTO E-BIKE PILOT PROGRAM (2020), TORONTO, ON							
Pedal-assisted e-bikes have been permitted on conventional, painted bike lanes in Toronto since 2014. In 2020, Canada’s Bike Share Toronto, Canada’s second largest bicycle share, launched an e-bike pilot program and added 300 pedal-assist e-bikes to their fleet and installed 10 e-bike charging stations. The program’s success resulted in e-bikes becoming a permanent component of the City’s Bike Share program. Bike Share Toronto is planning on expanding their e-bike fleet and number of charging stations within the next few years.	<ul style="list-style-type: none"><li>All e-bikes must follow the same rules of the road as bicycles.</li><li>Maximum speed of e-bikes cannot exceed 25 km/h</li></ul>	Pedal-assisted E-bikes	<p>Permitted use on:</p> <ul style="list-style-type: none"><li>Bike lanes</li><li>Roadways</li><li>MUPs</li></ul> <p>Prohibited on:</p> <ul style="list-style-type: none"><li>Sidewalks</li></ul>	<p>General Successes</p> <ul style="list-style-type: none"><li>On average, BST e-bikes take 2.5x trips than regular bikes, and travel 50% further and 10% longer than conventional bikes. These findings suggest that e-bikes have the potential to expand the service area of the program and provide access to shared micromobility in less dense areas, potentially replacing trips that would have been taken with cars.</li></ul> <p>Micromobility Policies</p> <ul style="list-style-type: none"><li>Restricting the maximum speed of e-bikes prevents users from exceeding the speed limit</li><li>Maintaining the same rules of the road as bicycles makes it easier for users to follow</li></ul> <p>Facility Design</p> <ul style="list-style-type: none"><li>Toronto has a well-established Bike Share program and continuous cycling facilities which helped in the execution of this pilot project.</li></ul>	<p>General Challenges</p> <ul style="list-style-type: none"><li>Due to popularity, it was difficult to maintain the charge of e-bikes with only a few stations equipped with chargers. BST plans on expanding its supply of e-stations, but this presents a challenge with installing the appropriate electrical infrastructure.</li></ul> <p>Micromobility Policies</p> <p>List any challenges with micromobility policies or regulations of the pilot/program and, if available, how they were or will be resolved in the future</p> <p>Facility Design</p> <p>Not Available</p>	<ul style="list-style-type: none"><li>A mobile application that provides users with real-time information about bike availability, maps, and charging stations.</li></ul>	Currently, e-bikes account for 4% of the total Bike Shae fleet, however, by 2025, it is anticipated that e-bikes will account for 20% of the fleet (approximately 2,000 e-bikes).  <a href="#">Bike Share Toronto First Quarter (Q1) 2022 Update</a>
ELECTRIC KICK-SCOOTER PILOT PROJECT (2019), TORONTO, ON							
In 2019, Toronto permitted the use of e-scooters within its Distillery District neighbourhood for a two-week pilot project. Following the project, the city decided to prohibit the use of both shared and privately-owned e-scooters and has opted out of the provincial pilot for both personal and shared e-scooters. This decision was informed by the potential impacts and implications the operation of these devices could have on pedestrians and those with accessibility needs.	Unavailable	E-scooters	<p>Permitted use on:</p> <ul style="list-style-type: none"><li>Public streets</li><li>Bike lanes</li><li>Pathways</li><li>Trails and other public spaces</li></ul> <p>Prohibited on sidewalks</p>	<p>Micromobility Policies</p> <p>Not Available</p> <p>Facility Design</p> <p>Not Available</p>	<p>Micromobility Policies</p> <ol style="list-style-type: none"><li>Concerns were reported from disability groups and residents regarding safety, especially for people living with disabilities and seniors, due to improper use, such as sidewalk riding, and poorly parked e-scooters causing trip hazards and obstructions. The city experienced challenges with enforcement to mitigate these issues.</li><li>Problems with indemnification agreements with e-scooter rental companies and liability of e-scooter riders if injured or injuring others</li><li>The decision made by the City of Toronto to opt out of the e-scooter pilot was partially justified by invoking the principles laid out by Toronto’s Vision Zero Road Safety Plan.</li></ol>	<p>Feedback was obtained from the Toronto Accessibility Advisory Committee, disability groups, residents, and City staff.</p> <p>Stakeholder consultations were completed that included both corporate entities with a vested interest in the implementation of e-scooter infrastructure in Toronto and residents and organizations.</p>	<a href="https://www.toronto.ca/news/toronto-city-council-votes-unanimously-to-support-safety-and-accessibility-by-opting-out-of-e-scooter-pilot/">https://www.toronto.ca/news/toronto-city-council-votes-unanimously-to-support-safety-and-accessibility-by-opting-out-of-e-scooter-pilot/</a>  <a href="https://www.toronto.ca/services-payments/streets-parking-transportation/cycling-in-toronto/cycling-and-the-law/electric-bicycles-e-bikes-e-scooters/">https://www.toronto.ca/services-payments/streets-parking-transportation/cycling-in-toronto/cycling-and-the-law/electric-bicycles-e-bikes-e-scooters/</a>

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					<b>Facility Design</b> <ul style="list-style-type: none"><li>There were challenges with the integration of e-scooters with pedestrians and negatively impacting accessibility as e-scooters were left along sidewalks potentially creating obstructions.</li></ul>		
SHARED E-SCOOTER PILOT PROJECT (2020-2021), OTTAWA, ON							
The 2020 shared e-scooter pilot ran from July to October and saw a fleet of 600 e-scooters deployed by Bird Canada, Lime, and Roll. During the season, more than 72,720 riders took over 238,000 separate trips throughout the central deployment area. Specific zones within the central deployment area were geofenced to prevent e-scooters from operating in them. Approximately 48% of e-scooter trips started in a BIA and 4% ended in a BIA.	<ul style="list-style-type: none"><li>Maximum operating speed of 20 km/h</li><li>E-scooters cannot operate on sidewalks, transit stations, or along NCC pathways</li><li>E-scooters are to be parked in the furniture zone, or in such a manner that does not obstruct the flow of pedestrian, vehicular or cyclist traffic</li></ul> Shared e-scooters are only available from 6 am to 11 pm	E-Scooters	<b>Permitted use on:</b> <ul style="list-style-type: none"><li>All cycling facilities</li><li>Roads with speed limits of up to 50 km/h</li><li>MUPs</li></ul> <b>Prohibited on:</b> <ul style="list-style-type: none"><li>Sidewalks</li><li>In a park, or where cycling, skateboarding or rollerblading is prohibited</li></ul>	<b>Micromobility Policies</b> <ul style="list-style-type: none"><li>The City’s bylaw sets the maximum operating speed of e-scooters to 20 km/h and lower in high pedestrian areas and to comply with speed limits on multi-use pathways to mitigate risk of injury</li><li>Operating times of shared e-scooters reduced risk of late-night operating when visibility is reduced</li></ul> <b>Facility design</b> <ul style="list-style-type: none"><li>Ottawa has an extensive network of connected cycling facilities and multi-use pathways that helped users follow program rules and stay off sidewalks.</li></ul>	<b>General Challenges</b> <ul style="list-style-type: none"><li>Lack of available scooters during high demand surges led to the city increasing its fleet size and widening its deployment area</li><li>High demand drained the batteries and made it challenging for operators to keep the fleet charged, which contributed to improper parking if riders ran out of battery while riding.</li></ul> <b>Micromobility Policies</b> <ul style="list-style-type: none"><li>Improper use like sidewalk riding and improper parking posed a hazard for pedestrians and people with mobility or visual impairments. To address this, in 2021 service providers were required to respond to improperly parked e-scooters withing an hour and enhance their communication/public outreach campaign. In 2022, the City imposed stricter regulations on e-scooter providers, including updates to the GPS precision and only allowing rides to end in designated parking zones</li></ul> <b>Facility designs</b> <ul style="list-style-type: none"><li>Riding in high pedestrian areas and along pedestrianized streets led to complaints from residents and business owners about careless riding. In response, the City reduced the speed e-scooter operated in these areas and expanded the services no-ride zones.</li></ul>	<ul style="list-style-type: none"><li>Communication and public outreach campaign, including updates project <a href="#">webpage</a>, Public Service Announcements, communications to BIAs and stakeholder groups, targeted messaging on social media, and providing key messages to Councillors and BIAs to share with their networks</li><li>In-app and in-person communications from e-scooter providers</li><li>In-app messaging while operating in specific areas with higher e-scooter ridership</li><li>Communications with local transit to ensure awareness of safety measures when sharing the road with e-scooter users</li></ul>	<a href="#">2020 Electric Kick Scooter Strategy and Pilot Report</a>
BIRD CANADA INC. E-SCOOTER AND E-BIKE SHARE PILOT PROJECT (2021), WINDSOR, ON							
In May 2021, Windsor approved a one-year (12-month) pilot project with Bird Canada Inc. providing shared e-scooter and e-bike rental services. The pilot operated within a defined service area and saw e-	<ul style="list-style-type: none"><li>E-scooters cannot exceed a speed of 24 km/h, and 15 km/h in designated slow zones (like the waterfront pathway)</li></ul>	<ul style="list-style-type: none"><li>E-scooters</li><li>E-bikes</li></ul>	<b>Permitted use on:</b> <ul style="list-style-type: none"><li>City-owned cycling facilities</li><li>Footbridges</li></ul>	<b>Micromobility Policies</b> <ul style="list-style-type: none"><li>E-scooter and e-bike geofencing allowed for the city to dictate where e-devices would operate at a slower speed (like in high pedestrian areas) or gradually stop (no ride zones).</li></ul>	<b>Micromobility Policies</b> <ul style="list-style-type: none"><li>Improper use and placement/parking of e-scooters and e-bikes is difficult to enforce. When reported, the service provider responded to</li></ul>	<ul style="list-style-type: none"><li>In-app education on how to ride and park responsibly and helmet requests</li><li>Reminder emails + in-app pop up messages and push notifications to smartphones</li></ul>	<a href="#">Link</a>

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scooters deployed first, with e-bikes deployed later in the season. Over 22,500 people took e-scooter rides during the pilot.	<ul style="list-style-type: none"><li>Users must ride on the right-hand side of the road where bike lanes are not provided</li><li>No passengers, cargo or baskets are allowed</li><li>Riders are subject to penalties and suspension for improper riding</li><li>E-scooters must be parked within the furniture zone of the sidewalk, out of the public right of way and without blocking the sidewalk, or within designated parking zones</li></ul>		<ul style="list-style-type: none"><li>Roads with speed limits of up to 50 km/h</li><li>MUPs</li></ul> <p>Prohibited on:</p> <ul style="list-style-type: none"><li>Sidewalks</li><li>Park trails (excepted Riverfront Trail)</li></ul>	<p>Facility Design</p> <p>Not Available</p>	<p>improper placement/parking of devices right away and issued warnings and suspensions if necessary.</p> <p>Facility Design</p> <p>Not Available</p>	<ul style="list-style-type: none"><li>Information and short safety video on the City's website</li><li>Service provider pop-ups offering test rides e- and education on safe and responsible riding</li><li>Service provider offered a community pricing program for low-income residents, seniors, veterans and employees of pre-approved community-based organizations (50% discount)</li></ul>	
LIME E-SCOOTER PILOT PROJECT (2018-2019), WATERLOO, ON							
In fall 2018 and spring/summer 2019, the Region of Waterloo launched Canada's first shared electric scooter pilot program. Approximately 150 e-scooters were deployed in 2019 within the designated pilot area which included a section of the Laurel Trail to the Uptown Promenade and the David Johnston Research and Technology Park of the University of Waterloo.	<ul style="list-style-type: none"><li>E-scooters cannot exceed 15 km/h on campus (high pedestrian area) and 23 km/h off campus</li><li>E-Scooters can only be operated between 7am to 9pm</li><li>E-Scooters must be parked in designated parking locations identified by blue signs</li><li>Users must possess a driver's license</li><li>E-scooters must be only used within the designated operation area</li></ul>	E-scooters	<p>Permitted use on:</p> <ul style="list-style-type: none"><li>Laurel Trail (Designated MUP)</li><li>University of Waterloo campus</li></ul>	<p>General Successes</p> <ul style="list-style-type: none"><li>Deploying the pilot project within a limited area allowed the region to have greater control on the project and easier to measure its results</li><li>The uptake of this pilot project was supported by the fact that it was implemented within a university campus where walking and cycling is common and generally trips are short distances</li></ul> <p>Micromobility Policies</p> <ul style="list-style-type: none"><li>Reducing speeds to 15 km/h in high pedestrian areas like on campus reduces the risk of collision or serious injury</li></ul> <p>Facility Design</p> <p>Not Available</p>	<p>Micromobility Policies</p> <ul style="list-style-type: none"><li>Because the e-scooters are dockless, there were improper parking issues, such as parking on private or public property like sidewalks.</li><li>Scooters did not always shut down once outside of the geofenced area, with some uses travelling well outside the geofenced area.</li></ul> <p>Facility Design</p> <p>Not Available</p>		<a href="#">Link</a>
SHARED E-BIKE AND E-SCOOTER PILOT (2018-2020), CALGARY, AB							
The City of Calgary was granted permission by Alberta to run a shared e-Bike and e-Scooter pilot between 2018-2020, which saw over 200,000 unique users take 1.9 million trips during summer months. Approximately 55% of e-scooter and e-bike trips ended in BIAs. The pilot was deemed successful, and City Council voted to make the pilot permanent.	<ul style="list-style-type: none"><li>Riders must be 18 years of age or older</li><li>Riders must yield to pedestrians</li><li>E-bikes and e-scooters must be parked out of the pedestrian right-of-way</li></ul>	<ul style="list-style-type: none"><li>E-scooters</li><li>E-bikes</li></ul>	<p>E-bikes were permitted on:</p> <ul style="list-style-type: none"><li>Bike lanes</li><li>Roads</li><li>Pathways</li></ul> <p>E-bike were prohibited on:</p> <ul style="list-style-type: none"><li>Sidewalks</li></ul>	<p>Micromobility Policies</p> <ul style="list-style-type: none"><li>Since the speed and operating location of shared services can be effectively limited and regulated, these devices have more freedom in terms of where they can travel versus personal e-scooters.</li></ul> <p>Facility Design</p> <ul style="list-style-type: none"><li>The 2020 e-scooter rider survey illustrates that users were comfortable riding along pathways,</li></ul>	<p>Micromobility Policies</p> <ul style="list-style-type: none"><li>Improper e-scooter user behaviour and reckless riding along pedestrian pathways created safety concerns. To address these concerns, the city implemented slow speed zones in areas with high pedestrian traffic, signage directing e-scooters to the bike path, and education and enforcement initiatives which resulted in improved user behaviour from 2019 to 2020. The city plans on assigning scooter ID numbers to report poor behaviour in the future.</li></ul>	<ul style="list-style-type: none"><li>Details about the pilot were communicated through social media channels, the city website, and in media interviews.</li><li>E- device providers were required to conduct education and safety events. This included pop-ups with test rides, helmet giveaways, and educational engagement</li></ul>	<ul style="list-style-type: none"><li><a href="#">Shared e-Bike and e-Scooter Final Pilot Report</a> (2020)</li><li><a href="#">Shared e-Bike and e-Scooter Data and Analysis</a> (2020)</li><li><a href="#">Rules of the Road</a> ( CBC-2019)</li></ul>

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				Successes	Challenges		
			<p>E-scooters were permitted on:</p> <ul style="list-style-type: none"><li>▪ Sidewalks (unless signed otherwise)</li><li>▪ Bike lanes</li><li>▪ Pathways</li></ul> <p>E-scooters were prohibited on:</p> <ul style="list-style-type: none"><li>▪ Roadways</li></ul>	<p>empty sidewalks, and bike lanes, which fall under permitted facilities for these devices.</p>	<ul style="list-style-type: none"><li>▪ Improper parking of e-scooters causes accessibility issues for people walking/rolling on sidewalks and pathways. To address this, parking zones were installed in high-use areas and, in collaboration with service providers, implemented a fine to users who improperly parked. The city is investigating fining private companies directly for improperly parked e-Scooters along with dedicated company funding and incentives for e-Scooter parking.</li><li>▪ Safety concerns with operating the devices. The city is proposing requiring and evaluating companies' safety plans and strategies</li></ul> <p>Facility Design</p> <ul style="list-style-type: none"><li>▪ E-scooter use on sidewalks has a greater potential to result in conflicts with pedestrians and other sidewalk users. Slow speed zones were implemented in areas with high pedestrian volumes</li><li>▪ Conflicts with pedestrians in neighbourhoods and along shared facilities led the city to recommend that e-scooters are also permitted along lower-classified roadways without road markings, which usually have lower speed limits.</li></ul>	<ul style="list-style-type: none"><li>▪ In-app education on how to ride and park responsibly</li><li>▪ A Safe Streets Patrol in specific areas with higher e-scooter ridership to educate riders on local rules</li><li>▪ The Calgary Community Standards conducted several education initiatives throughout the pilot to improve user behaviour.</li></ul>	
SHARED E-SCOOTER PROGRAM (2019-2021), EDMONTON, AB							
<p>The City of Edmonton was granted permission by Alberta to run a shared e-Scooter pilot between 2019-2021. During 2020, more than 600,000 shared e-scooter trips were recorded, with more than half starting in a BIA.</p>	<ul style="list-style-type: none"><li>▪ Riders must be 18 years of age or older</li><li>▪ E-scooters cannot exceed 20 km/h</li><li>▪ E-scooters must follow the programs specific parking guidelines which includes, but not limited to, parking in a manner that does not block travel, or not in public transit stations or LRT platforms.</li><li>▪ E-scooters cannot be taken onto public buses, but are allowed on the LRT outside of peak hours and on weekends.</li></ul>	E-scooters	<p>Permitted use on:</p> <ul style="list-style-type: none"><li>▪ All bike lanes</li><li>▪ Shared-use sidewalks and paths</li><li>▪ Roads with speed limits of up to 50 km/h</li><li>▪ Trails on Parkland</li></ul> <p>Prohibited on:</p> <ul style="list-style-type: none"><li>▪ Sidewalks (unless signed otherwise)</li><li>▪ Park trails not maintained by the city</li><li>▪ Road lanes closed for patio expansion</li></ul>	<p>Micromobility Policies</p> <ul style="list-style-type: none"><li>▪ The speed of shared services was limited to reduce risk of collision or serious injury</li></ul> <p>Facility Design</p> <p>Not Available</p>	<p>Micromobility Policies</p> <ul style="list-style-type: none"><li>▪ Survey results show that some of the top reasons respondents did not ride e-scooters in 2020 was safety concerns of operating e-scooters and not knowing regulations or how to use them.</li><li>▪ Top parking issues were e-scooters blocking the travel path, e-scooters not standing upright, and too many e-scooters in one location.</li><li>▪ Improper use, such as users riding along sidewalks, and not providing pedestrians a warning when passing caused concerns. City "peace" officers are responsible or enforcing rules on sidewalks, in parks, and along shared-se pathways while City Police provide on-street enforcement.</li></ul> <p>Facility Design</p> <p>Not Available</p>	<ul style="list-style-type: none"><li>▪ In-app education and communications on proper use</li><li>▪ E-scooter providers offered in-person rider education and communications during pop-ups, which included e-scooters test rides, free helmet giveaways, and educational engagement</li><li>▪ Collaboration with shared e-scooter providers for Safe Streets Patrol to educate riders in areas with higher e-scooter ridership</li></ul>	<p><a href="#">Edmonton's Shared Micromobility Program</a></p>



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SHARED E-SCOOTERS-MICROMOBILITY PERMIT PROGRAM (2021), KELOWNA, BC							
Kelowna’s Micromobility Permit Program regulates how shared small vehicles and devices like e-bikes, e-scooters and limited speed mopeds operate. There are multiple companies that hold permits under the program, however these are only for shared e-scooter services. Shared e-scooters were initially offered in 2019, however they were limited in where they could operate. In 2021, shared e-scooter regulations were expanded to include a number of facilities and several companies began offering their devices, making e-scooters more accessible. Under this program, e-scooters operate under the same rules as bicycles.	<ul style="list-style-type: none"><li>▪ Electric scooters cannot exceed a speed of 24 km/h</li><li>▪ E-Scooters cannot only be operated in the downtown between 10:30pm – 4am</li><li>▪ No passengers allowed on e-scooters</li></ul>	E-scooters	<p>Permitted use on:</p> <ul style="list-style-type: none"><li>▪ Shared lanes/paths</li><li>▪ Separated bike lanes/paths</li><li>▪ Two-way protected bike lanes.</li><li>▪ Roads with speed limits of up to 50 km/h</li></ul> <p>Kelowna does not have painted bike lanes.</p> <p>Prohibited on:</p> <ul style="list-style-type: none"><li>▪ Sidewalks and crosswalk (unless signed otherwise)</li></ul>	<p>Micromobility Policies</p> <ul style="list-style-type: none"><li>▪ Time restrictions for share e-scooter operation in the downtown limits intoxicated riding</li><li>▪ Further restrictions implemented during the pilot lead to injury rates falling.</li><li>▪ Slow-speed zones were implemented in areas of high pedestrian traffic by using geofencing</li><li>▪ Share e-scooters have a low-speed first-ride feature for first-time users to get accustomed to e-scooters with less risk of injury</li></ul> <p>Facility Design</p> <ul style="list-style-type: none"><li>▪ The city boasts the most extensive bicycle network in Canada for a city its size, which provides users with multiple routes to use their e-scooter.</li><li>▪ The city continues to invest in bike lanes and similar facilities to keep all users safe. The new 2040 TMP calls for new strategies to improve how these facilities operate.</li></ul>	<p>Micromobility Policies</p> <ul style="list-style-type: none"><li>▪ In response to concerns and complaints reported, Kelowna implemented 85 amendments to how shared e-scooter service is delivered since the start of the program, which reduced concerns over time.</li><li>▪ Improper parking on sidewalks caused concerns for pedestrians, older residents, and those with visual and mobility impairments. To address these concerns, service providers are required to respond to improperly parked e-scooters withing an hour, and the city set up preferred parking areas and conduct regular parking audits to monitor compliance. The audit indicate parking compliance has increased over time. E-scooter companies also issue warnings and fines directly to riders.</li><li>▪ Intoxicated driving posed a safety risk. To address this, the city banned shared e-scooter and e-bike use at night. This has reduced instances of intoxicated riding.</li><li>▪ Sidewalk riding is against regulations. To address this, the city installed signing, and e-scooters are equipped with a sidewalk riding detection feature which will warn, fine, or suspend (for repeat offences) a user if a significant amount of the trip is spend riding on the sidewalk. Data indicates instances of sidewalk riding have declined.</li></ul> <p>Facility Design</p> <ul style="list-style-type: none"><li>▪ Data from e-scooter location detection indicates sidewalk riding is most common in the downtown, especially along streets without bike facilities or where bike facilities are less protected from vehicles.</li></ul>	<ul style="list-style-type: none"><li>▪ In-app education that provides rules of the road and safety tips</li><li>▪ E-scooter companies hosting in-person safety education events every week over pilot period to become familiar with their service, test ride in a safe environment, and receive a free helmet</li><li>▪ Public Education Campaign launched late 2021 to educate the public on regulations of e-scooters</li><li>▪ Incentives and options for low-income, unbanked, and underserved residents</li></ul>	<a href="#">Micromobility Permit Program-2021 Program Evaluation Report</a>
MUNICIPALITIES PERMITTING PERSONAL USE OF MICROMOBILITY DEVICES							
MICROMOBILITY PROJECT PHASE 1 (2021), MISSISSAUGA, ON							
As part of the City’s Micro-mobility Program Development Project-Phase 1, in late 2020 Mississauga approved an <i>Interim E-scooter Strategy</i> to respond to and regulate personally owned e-scooter devices	<p>By-law amendments for e-scooters included:</p> <ul style="list-style-type: none"><li>▪ The definition of electric kick-style scooter (e-scooter) will</li></ul>	<ul style="list-style-type: none"><li>▪ E-scooters</li><li>▪ E-bikes</li></ul>	<p>E-scooter Permitted use on:</p> <ul style="list-style-type: none"><li>▪ MUPs and multi-use trails within the road ROW</li><li>▪ Cycling infrastructure</li></ul>	<p>Micromobility Policies</p> <ul style="list-style-type: none"><li>▪ The Interim E-scooter Strategy permits e-scooter use along roads under 50 km/h and prohibits its use on sidewalks</li></ul>	<p>Facility Design</p> <ul style="list-style-type: none"><li>▪ The active transportation network contains some gaps, which may pose a challenge for riders on where to operate and may force riders onto roads with speeds greater than 50 km/h</li></ul>	<ul style="list-style-type: none"><li>▪ Communication and education strategy for e-scooters is to be developed.</li><li>▪ E-bikes have been included in the cycling handbook</li></ul>	<a href="#">E-Scooter Pilot Program</a>  <a href="#">Cycling Handbook</a>





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In June 2021, Toronto City Council decided to opt-in to the province's pilot project and adopted by-laws allowing cargo e-bikes, weighing no more than 120 kg unladen, to operate along certain facilities.	Provincial regulations	E-cargo bikes	Permitted use on: <ul style="list-style-type: none"><li>▪ Bike lanes</li><li>▪ Roadways</li><li>▪ Cycle tracks</li></ul> Prohibited on: <ul style="list-style-type: none"><li>▪ Sidewalks</li></ul>				<a href="#">Electric Bicycles (E-Bikes) &amp; E-Scooters</a>
E-SCOOTERS AND E-BIKES (2021), HAMILTON, ON							
In late 2020, Hamilton's public works committee voted unanimously to allow the use of personal e-scooters. E-bike use in Hamilton follows the same regulations as conventional bicycles under their traffic bylaw.	By-law amendments for e-scooters included, but are not limited to: <ul style="list-style-type: none"><li>▪ Maximum operating speed of 25 km/h</li><li>▪ No parking along a roadway or sidewalk that causes an obstruction</li><li>▪ No cargo, passengers or towing of another device</li><li>▪ E-scooters must keep a safe distance from pedestrians and other row users, and must yield to pedestrians and cyclists</li><li>▪ E-scooters operating on a trail or in a park, or a MUP must not operate at a speed noticeably greater than the speed of nearby pedestrians</li><li>▪ E-scooters must sound their horn/bell to notify cyclists and pedestrians of their approach</li></ul>	<ul style="list-style-type: none"><li>▪ E-scooters</li><li>▪ E-bikes</li></ul>	E-bikes were permitted on: <ul style="list-style-type: none"><li>▪ roads and highways where conventional bicycles are permitted (roadways up to 50 km/h, designated trails/pathways. MUPs adjacent to the roadway)</li></ul> E-bike were prohibited on: <ul style="list-style-type: none"><li>▪ Sidewalks and pedestrian areas</li><li>▪ Most parks</li></ul> E-scooters were permitted on: <ul style="list-style-type: none"><li>▪ Municipal roads</li><li>▪ Bike lanes</li><li>▪ Pathways</li></ul> E-scooters were prohibited on: <ul style="list-style-type: none"><li>▪ Sidewalks</li><li>▪ trails and in parks</li></ul>				<a href="#">Hamilton Traffic Bylaw Amendments for E-scooters</a>
ELECTRIC KICK SCOOTER PILOT PROJECT (2020) OTTAWA, ON							
In 2020, Ottawa permitted the use of personal e-scooters along with their shared e-scooter pilot project. Most of the same rules apply for both the	<ul style="list-style-type: none"><li>▪ Maximum operating speed of 20 km/h</li></ul>	E-scooters	Permitted use on: <ul style="list-style-type: none"><li>▪ All cycling facilities</li></ul>	Micromobility Policies <ul style="list-style-type: none"><li>▪ The City's bylaw sets the maximum operating speed of e-scooters to 20 km/h and lower in</li></ul>	Micromobility Policies	<ul style="list-style-type: none"><li>▪ Communication and public outreach campaign, including updates project webpage, Public Service</li></ul>	

Program Description	Key Parameters/ Regulations (In addition to provincial requirements)	Micromobility Device Type(s)	Facility Type(s)	Key Lessons Learned		Education, Outreach, and Marketing Approaches	Additional Information
				Successes	Challenges		
shared and personally owned e-scooter pilots, except personal e-scooters can operate outside of the central deployment area at any time.	<ul style="list-style-type: none"><li>E-scooters cannot operate on sidewalks, transit stations, or along NCC pathways (unless by official sign)</li><li>E-scooters are to be parked in the furniture zone, or in such a manner that does not obstruct the flow of pedestrian, vehicular or cyclist traffic</li></ul>		<ul style="list-style-type: none"><li>Roads with speed limits of up to 50 km/h</li><li>MUPs</li></ul> <p>Prohibited on:</p> <ul style="list-style-type: none"><li>Sidewalks</li><li>In a park, or where cycling, skateboarding or rollerblading is prohibited</li></ul>	<p>high pedestrian areas and to comply with speed limits on multi-use pathways to mitigate risk of injury</p> <p>Facility design</p> <ul style="list-style-type: none"><li>Ottawa has an extensive network of connected cycling facilities and multi-use pathways that helped users follow program rules and stay off sidewalks.</li></ul>	<ul style="list-style-type: none"><li>Improper use like sidewalk riding and improper parking posed a hazard for pedestrians and people with mobility or visual impairments.</li></ul> <p>Facility designs</p> <ul style="list-style-type: none"><li>Riding in high pedestrian areas and along pedestrianized streets led to complaints from residents and business owners about careless riding. In response, the city reduced the speed e-scooter operated in these areas and expanded the services no-ride zones.</li></ul>	<p>Announcements, communications to BIAs and stakeholder groups, targeted messaging on social media, and providing key messages to Councillors and BIAs to share with their networks</p> <ul style="list-style-type: none"><li>Communications with local transit to ensure awareness of safety measures when sharing the road with e-scooter users</li></ul>	
E-CARGO BIKE PILOT (2021), OTTAWA, ON							
The City of Ottawa enacted a by-law permitting the use of e-cargo bikes in Fall 2021 under the province’s E-Cargo Bike Pilot. The by-law categorizes e-cargo bikes into personal and commercial vehicles and defines what transportation network facilities each type can and cannot operate on (see facility types). Under Ottawa’s by-law, commercial vehicles are defined as e-bikes that are “wider than 0.95 m, heavier than 120 kg or that are used in the conveyance of cargo for commercial purposes or for hire to transport people”. E-rickshaws would require a license to operate.	<ul style="list-style-type: none"><li>Commercial e-cargo bikes must have a company name or logo and an ID number</li><li>Commercial operators can park in a loading zone or no-parking zone if they purchase an annual short-term parking permit</li><li>No parking or stopping that encroaches into travel or street furniture within the road right of way is permitted</li></ul>	E-cargo bikes	<p>Permitted use on:</p> <ul style="list-style-type: none"><li>Personal e-cargo bikes: can travel anywhere a conventional bicycle can, including MUPs</li><li>Commercial e-cargo bikes: bike lanes or roads.</li></ul> <p>Prohibited on:</p> <ul style="list-style-type: none"><li>Sidewalks</li><li>Pathways with signage that prohibits bicycles</li><li>multi-use pathways (Commercial e-cargo bikes)</li></ul>	<p>The city has prepared criteria to evaluate the success of the pilot once complete. It will consider:</p> <ul style="list-style-type: none"><li>The number of commercial e-cargo bikes in use and associated decrease in truck usage by organizations;</li><li>road users, cyclists, pathway users and pedestrians Safety and comfort</li><li>Accessibility concerns for persons with disabilities;</li><li>Operational challenges for businesses;</li><li>Parking compliance and owner/operator response to parking management issues</li><li>Satisfaction of riders and residents of Ottawa as measured through 3-1-1 comments and complaints, emails to staff and the follow-up on-line e-cargo bike survey.</li></ul>		<ul style="list-style-type: none"><li>City website communicates the rules of the e-cargo bike pilot.</li></ul>	<a href="#">Ottawa Transportation Committee</a>
CARGO BIKES, VANCOUVER, BC							
In Vancouver, e-cargo bikes (pedal power with electric motor for assistance) follow similar regulations to conventional cargo bikes and have been deemed beneficial for traveling greater distances, carrying heavier loads, and assisting in challenging terrain.	Provincial regulations (similar to Ontario)	E-cargo bikes	<p>Permitted on:</p> <ul style="list-style-type: none"><li>City streets</li><li>Local street bikeway</li><li>Shared-use lanes</li><li>Painted bike lanes</li><li>Protected bike lanes</li></ul> <p>Prohibited on:</p> <ul style="list-style-type: none"><li>The seawall</li><li>Sidewalks</li></ul>				<a href="#">Cargo bike Guide</a>

Program Description	Key Parameters/ Regulations (In addition to provincial requirements)	Micromobility Device Type(s)	Facility Type(s)	Key Lessons Learned		Education, Outreach, and Marketing Approaches	Additional Information
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MICROMOBILITY PERMIT PROGRAM (2019), KELOWNA, BC							
Pedal-assisted e-bikes and e-scooters are subject to the same rules of conventional bicycles. They are allowed where cycling is already permitted in Kelowna unless signage indicates otherwise.	On level ground, the maximum speed e-bikes can operate at is 32 km/h and 24 km/h for e-scooters.	<p>Permitted devices:</p> <ul style="list-style-type: none"><li>E-scooters</li><li>E-bikes</li></ul> <p>Prohibited devices:</p> <ul style="list-style-type: none"><li>E-skateboards</li></ul>	<p>Permitted use on:</p> <ul style="list-style-type: none"><li>Shared lanes/paths</li><li>Separated bike lanes/paths</li><li>Two-way protected bike lanes.</li><li>Roads with speed limits of up to 50 km/h</li></ul> <p>Kelowna does not have painted bike lanes.</p> <p>Prohibited on:</p> <ul style="list-style-type: none"><li>Sidewalks and crosswalk (unless signed otherwise)</li></ul>	<ul style="list-style-type: none"><li>The city boasts the most extensive bicycle network in Canada for a city its size, which provides users with multiple routes to use their e-bike or e-scooter.</li></ul>			<a href="#">Kelowna Cycling Regulations</a>

### Recommended By-law Amendments

1. To amend the Parking By-law [064-2019](#) to:
  - a. add the definitions power-assisted micromobility vehicles which include specific definitions for power-assisted bicycles (as known as e-bikes) and kick-style electric scooters (as known as e-scooters)
  - b. add a provision to not allow power-assisted micromobility vehicles to park or stop on or over a sidewalk
2. To amend the Parks By-law [134-95](#) to:
  - a. add the definitions power-assisted micromobility vehicles which include specific definitions for power-assisted bicycles (as known as e-bikes) and kick-style electric scooters (as known as e-scooters)
  - b. add a provision to not allow power-assisted micromobility vehicles to park, drive or ride within parks which includes the roadways and parking areas in the parks
3. To amend Traffic by-law [284-94](#) and [051-2022](#) to:
  - a. add the definitions power-assisted micromobility vehicles which include specific definitions for power-assisted bicycles (as known as e-bikes) and kick-style electric scooters (as known as e-scooters)
  - b. add a provision to not allow e-bikes and e-scooters to travel on any sidewalk except for where official signs allowing bicycles are erected and on display
  - c. add provisions to allow e-scooters to operate in designated bicycle facilities such as bicycle lane, cycle tracks, and in-boulevard multi-use paths where bicycles are allowed.
  - d. add provision to allow an electric kick-scooter to operate on the roadway of a highway with a posted rate of speed of 50 kilometers per hour or less if the highway has no designated bicycle lane.
  - e. add provision to allow an electric kick-scooter to operate on the shoulder of a highway with a posted rate of speed of 50 kilometer per hour or less if the highway has no designated bicycle lane
  - f. add a provision to regulate the parking of e-scooters in designated bicycle parking or micromobility parking spaces
  - g. add provisions to regulate who can ride an e-scooters, what an e-scooter must be equipped with and how e-scooters should be operated in accordance with Ministry of Transportation e-scooter pilot regulations and Ontario Highway Traffic Act
  - h. add provisions to regulate safe operations of e-scooters, proper operation etiquette when sharing space with pedestrian and other users of the roadway, additional equipment on e-scooters to ensure safe operations during nighttime, and upkeep the maintenance of a privately owned e-scooters
  - i. add provision to provide clarity on consequences of violating by-law such as seizure of the e-scooter, impoundment, and penalty of cost due to violation.
  - j. Add provision to require commercial Shared Electric Kick-Scooter companies to obtain permission from the City to operate
  - k. Add provisions to clarify who will enforce the by-law and associated offences and fines
  - l. Add provision to address Severability and Conflicts of by-laws
  - m. Amend the lane designation for cycling facilities, bicycle lane, cycle track and multiuse pathway and others to be designated as such where official signs to that effect are erected and on display rather than listing each and remove Schedule H Part 1 and 2.