

Committee of the Whole (Working Session) Report

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

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	
Roadway	Yes ✓	Yes ✓ ≤ 50km/hour	No ✗	✗
Bike Lane	Yes ✓	Yes ✓	No ✗	✗
Cycle Track	Yes ✓	Yes ✓	No ✗	✗
In-boulevard Multi-use Path	Yes ✓	Yes ✓	No ✗	✗
Sidewalk	No ✗	No ✗	No ✗	✗
Recreational Multi-use Trail	No ✗	No ✗	No ✗	✗
Parks and Playgrounds	No ✗	No ✗	No ✗	✗
Private Property	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

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

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