



Report to: Development Services Committee

Meeting Date: September 11, 2023

SUBJECT: Overview and Status of Micro-Mobility Use in Markham (City-wide)
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RECOMMENDATION:

1. That the staff report titled “Overview and Status of Micro-Mobility Use in Markham (City-wide)” be received for information.

PURPOSE:

This report provides an overview of the current regulatory requirements surrounding the use of micro-mobility devices, specifically e-bikes and e-scooters, in the Province of Ontario. Further, the benefits, risks and considerations of permitting the operation of e-scooters are also discussed. This report also references the Markham and Vaughan Auto Mobility Demonstration Zone report, which will provide an opportunity to pilot a shared micro-mobility service in Markham.

BACKGROUND:

Micro-mobility is a general transportation concept for short-distance travel using light-weight vehicles, such as conventional bicycles, electric bicycles, and electric kick-scooters. This concept continues to expand and evolve as new electric personal devices come to market and are used in urban cities. These devices, particularly electric bicycles and electric kick-scooters, are growing in popularity and are increasingly being used as a viable transportation option, whether it be for the daily commute or for recreational purposes, particularly for short trips and first/last-km connections with public transit.

Electric bicycles (e-bikes)

As defined in Ontario Highway Traffic Act (HTA) Regulation 369/09, e-bikes are power-assisted bicycles, equipped with a motor, steering handlebars and pedals, and are capable of being propelled by muscular power. E-bikes must not weigh more than 120 kg and have a maximum speed not exceeding 32 km/h.

E-bikes look like conventional bicycles and are equipped with an electric powered motor that requires pedaling for propulsion (i.e. power is cut to the motor when the rider stops pedaling). Per the City’s municipal by-law, pedal-assisted bicycles fall under the definition of a conventional bicycle (wheels must be over 60 centimetres in diameter).

Bikes that are capable of being propelled solely by their electric motor and do not require pedaling for propulsion are defined in the HTA as a “motorcycle”, and therefore are permitted only on public highways.

Figure 1 illustrates a conventional-style (power-assisted) e-bike and scooter-style (motor-assisted) e-bike.



Figure 1: Conventional-style e-bike



Scooter-style e-bike

Electric kick-scooters (e-scooters)

E-scooters are a two-wheeled battery-powered device, with a narrow board that the user stands on and steers using a handle stick and a throttle for acceleration. Ministry of Transportation of Ontario (MTO) regulation does not permit the use of e-scooters within public spaces, unless the municipality has opted in to the Province's five-year e-scooter pilot project. The City of Markham has not opted in yet. Figure 2 illustrates a typical e-scooter.



Figure 2: Typical electric kick-scooter (e-scooter)

On November 27, 2019, the Province passed Ontario Highway Traffic Act (HTA) Regulation 389/19, to launch a 5-year pilot framework to permit municipalities to regulate the use of e-scooters (defined as "Electric Kick-Scooters"). The pilot started on January 1, 2020 and will end on January 1, 2025. Key operating parameters outlined in the HTA for the vehicle include:

- Two wheels (one at the front of the kick-scooter and one at the rear);
- No seat, no pedals, no enclosure, no basket;
- No carrying goods/items/cargo, no towing;
- Maximum 500 watts and maximum 24 km/h speed;
- Must have lights and bell or horn;
- Maximum wheel diameter of 17 inches;
- Maximum weight of 45 kilograms;
- No provincial vehicle permit or driver's license required;

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- Minimum age of 16 to operate an e-scooter, helmets required for those under 18;
 - Must be used in bicycle lanes, where they exist; and
 - Must be stopped for pedestrians at crosswalks and pedestrian crossings.

The objective of the pilot project is to inform the Province about the long-term viability of permitting and regulating the use of e-scooters. In order to allow operation of e-scooters in a municipality, the HTA regulation requires that municipalities enact by-laws, defining where they are permitted to operate, such as on streets or cycling facilities, as well as collecting data on collisions, injuries and fatalities, and submitting reports to MTO.

Due to the multiple pilot regulations for various micro-mobility technologies, MTO is currently proposing to regulate them under one consolidated pilot regulation. These other pilot programs include low-speed vehicles, golf carts, cargo power-assisted bicycles and large quadricycles. If this new consolidated pilot regulation is adopted, MTO will be able to align the expiry periods for all of these micro-mobility pilot vehicles (2023 – 2028), collect more consistent data, and better communicate the rules for these vehicles to municipalities and the public.

OPTIONS/ DISCUSSION:

Popularity of e-bikes and e-scooters as a micro-mobility option rose sharply during the pandemic

The popularity of e-scooters, and e-bikes in particular, rose sharply around the world during the COVID-19 pandemic. Their increase in use were partly driven by the lack of public transit options during the first year of the pandemic and then by commuters wanting to avoid being on public transit with other commuters when transit services started returning back to more normal levels.

Benefits of e-bikes and e-scooters as a micro-mobility option are significant

While they started out as recreational devices, e-bikes and e-scooters have become useful as commuting options for short and medium distance work, school and discretionary trips. They reduce the need for physical exertion to operate compared to human-powered scooters and bicycles, and allow for travel over greater distances than on foot. The small, portable nature of e-scooters generally allows them to be folded and carried onto public transit for longer distance trips. Therefore, e-bikes and e-scooters provide a potential alternative to short, single-occupant automobile trips and first/last-kilometre connections to public transit.

E-scooters present public safety and enforcement challenges

Prior to allowing the use of e-scooters, there are considerations that need to be evaluated by municipalities, including where they are permitted to operate, liability and insurance requirements, regulation and enforcement, operating parameters and enhancing connectivity with other multi-modal systems.

Concerns surrounding the risk to public safety, accessibility and municipal liability of e-scooter use are prevalent throughout many North American jurisdictions. While there are

few studies available at this time to draw definitive conclusions, there is emerging evidence that e-scooters do create adverse impacts to public safety if not properly regulated and enforced. As such, the existing Provincial regulations prohibiting the use of e-scooters in public spaces is appropriate. Specific concerns commonly cited relate to the experience of the user, stability of the e-scooters on various surfaces and pavement conditions, permitted infrastructure types where they may operate (i.e. sidewalks, trails, traffic lanes), potential conflicts with pedestrians and motorized vehicles, and the sustained level of enforcement effort necessary to ensure compliance with Provincial regulation and local by-laws. Further, the permitted sale of these devices can cause confusion among the public about where they can be used.

Shared e-scooter services are an emerging industry

Several e-scooter companies have approached the City about initiating a pilot program to provide a shared e-scooter service. These services would allow users to rent an e-scooter through a mobile phone application, with the shared e-scooters being available at stations within a specified geographic area, or City-wide. Across Canada and North America, shared e-scooter services have been piloted in many cities and jurisdictions and some have been extended or been made permanent, most notably Calgary, Hamilton and Ottawa. On the other hand, some of these pilots have been canceled. For instance, Montreal had piloted a shared e-scooter service in 2019, but banned their use in 2020, citing safety and accessibility issues.

Shared e-scooter services are also available in multiple U.S. cities. However, in U.S. cities such as Boulder, Honolulu, and Houston, they have ceased services and/or banned the use of e-scooters due to public safety concerns, municipal litigation due to injuries, vandalism, and devices being abandoned in public spaces, thereby creating a hazard for pedestrians and those with accessibility needs.

Coordination of a strategic approach between York Region and local municipalities is necessary

On November 5, 2020, York Region Council approved Regional staff's recommendation to update its lane designation by-law, permitting the use of e-scooters on select bicycle lanes, bicycle tracks and High Occupancy Vehicle (HOV) lanes within the Regional Road network.

Within Markham, e-scooters are permitted in the buffered bicycle lanes on Highway 7, between South Park Road (east of Bayview Avenue) and South Town Centre Boulevard as this is under the jurisdiction of the Region; however, the boulevard bicycle track on Highway 7, east of South Town Centre Boulevard, does not allow them as it is under City jurisdiction. Future amendments to the Region's bylaws to permit e-scooter use are anticipated to incorporate additional Regional cycling facilities and traffic lanes within the Regional road network and any subsequent amendments to the MTO regulation. As a requirement of the Province's five-year pilot, York Region will be monitoring and evaluating the operation of e-scooters to determine their long-term viability for use as a feasible micro-mobility/transport option.

In 2020, York Region facilitated an e-scooter coordinating committee with local municipal staff to discuss the MTO e-scooter regulation, its potential applicability within the Region, and the aforementioned benefits/risks associated with permitting the use of e-scooters. The committee's position is that a strategic Region-wide approach to permitting e-scooters is required, that it recognizes the benefits, risks and challenges, and allows for a consistent and uniform approach. At this time, none of the lower-tier York Region municipalities have opted into the Province's e-scooter pilot project.

City of Toronto currently prohibits the use of e-scooters due to safety, accessibility and liability concerns

Within Canada, the position of the City of Toronto on e-scooter use is very prominent and widely discussed. Toronto's position may present challenges to any future Markham plans for e-scooter use due to the common municipal boundary and existing and future land use and urban developments around it.

Following extensive research and consultation with the e-scooter industry, the Toronto Accessibility Advisory Committee and Toronto municipal staff submitted their findings and recommendations to Toronto's Infrastructure & Environment Committee on April 28, 2021. The Committee endorsed staff recommendation that the City not opt-in to the Provincial pilot project, thereby not permitting e-scooters within public spaces in the City of Toronto. The staff report cited accessibility barriers, safety concerns, inability to effectively enforce regulations, insurance issues for both privately owned and rental e-scooters that significantly increase liability risk to the City of Toronto, and inability for the e-scooter industry to provide satisfactory solutions to remedy such.

Prohibiting the use of e-scooters in the City of Toronto will prevent an increase in street and sidewalk-related injuries and fatalities, and aligns with their Vision Zero Road Safety goals, including consideration of impacts on pedestrians and persons living with disabilities. On May 5, 2021, Toronto City Council adopted the staff recommendation not to participate in the Province's e-scooter pilot project, thereby prohibiting the use of e-scooters in public spaces within the City.

Despite their prohibited status, on July 19, 2023, Toronto City Council directed staff to report back by end of Q1 2024 on a comprehensive Micro-Mobility Strategy, including recommendations on whether or not the City should launch micro-mobility pilot projects that:

- a. take appropriate precautions to protect pedestrians, including those with disabilities;
- b. collect detailed data on its claimed climate benefits;
- c. meet appropriate safety standards; and
- d. include appropriate liability insurance.

It should be noted that the City of Toronto operates a public bike/e-bike-share service (Bike Share Toronto) with stations located across large parts of Toronto, and the service continues to be expanded to the rest of Toronto. Due to its large network, Bike Share Toronto provides many of the same benefits that e-scooter shared services would provide.

Improved active transportation network and Provincial regulations will facilitate the safe operation of e-bikes and e-scooters in Markham's public spaces

Pedal-assist e-bikes are regulated the same way as conventional bicycles in terms of their use on sidewalks, trails and multi-use pathways, and dedicated cycling facilities, and therefore, are less of a concern.

Although Markham does not currently permit the operation of e-scooters in public spaces, including sidewalks, multi-use pathways, trails and parks, there is an opportunity to permit their use on dedicated cycling facilities within the City. At this time, however, there are significant gaps within the City's cycling network where e-scooter users would be exposed to motorized traffic or may be compelled to use sidewalks, pathways and trails, thereby sharing space with pedestrians. These same challenges currently exist with conventional bicycles and e-bikes. Moreover, the ability for local by-law and police enforcement resources to regulate the use of e-scooters throughout the City would prove extremely challenging.

The existing deficiencies in the City's cycling network must also be addressed to accommodate existing safety concerns for cyclists, while also planning for future accommodations of all forms of micro-mobility devices. The City's Active Transportation Master Plan (ATMP) was approved in 2022, and speaks to the aforementioned network deficiencies and outlines a comprehensive strategy to expand the active transportation network and improve safety for all users. Through the ATMP, the City has an opportunity to plan, protect for, and build a network that can accommodate bicycles and micro-mobility options, including e-scooters.

Increased education and awareness regarding the current use of e-scooters and e-bikes is needed

Despite the current prohibition of motorized vehicles (including e-scooters and e-bikes) within City parks and recreational trails, their use remains prevalent as many residents are not aware of their prohibited use. Due to the challenges associated with the ability to effectively enforce these regulations, further education and awareness to the public will be provided. The Engineering Department, through Corporate Communications, has an ongoing "Walking and Cycling" education campaign (www.markham.ca/walkingandcycling) and is focused on encouraging safe modes of active travel. Staff will be augmenting the existing campaign to incorporate additional messaging that addresses current municipal and Provincial regulations surrounding the use of e-scooters and e-bikes on City public spaces.

Staff are pursuing funding and partnership opportunities to pilot a shared e-bike and e-scooter service

Recognizing that the use of micro-mobility or e-mobility devices are proliferating regardless of legal status across the GTA including Markham, a proposal to conduct a shared service pilot in order to achieve further understanding of issues related to safety and use of these devices is being pursued.

In that regard, funding and partnership opportunities are also being explored by the Economic Growth, Culture and Entrepreneurship department through the Ontario Vehicle

Innovation Network (OVIN). The cities of Markham and Vaughan have successfully secured funding in the amount of \$2.5 Million over two years from OVIN to deploy the Markham and Vaughan Auto Mobility Demonstration Zone. The funding will be split evenly between the cities of Markham and Vaughan, meaning the City of Markham will receive \$1.25M towards its DZ. DZ's are dedicated physical locations for showcasing advanced automotive technologies and smart mobility solutions. One of the relevant demonstration projects being considered is a shared e-scooter service in Markham Centre.

A shared e-scooter service pilot can provide much information to help formulate a micro-mobility strategy if properly resourced

Conducting a demonstration of shared e-scooter service will allow the City to gain first-hand experience of potential issues and challenges for persons with disabilities and pedestrian safety along with ways to mitigate or correct them before they occur. The City will also be able to gain knowledge about data-sharing needs, public response to such vehicles/devices operating in public spaces, and other lessons related to private shared-mobility services. These experiences and lessons will help the City develop a more credible, robust, safe Micro-Mobility Strategy.

Based on similar pilots conducted in other jurisdictions in Ontario, dedicated staffing resources will be needed to properly define and administer such a pilot. A plan for the pilot will be undertaken as part of the Markham and Vaughan Auto Mobility Demonstration Zone initiative.

FINANCIAL CONSIDERATIONS

Not applicable.

HUMAN RESOURCES CONSIDERATIONS

Not applicable.

ALIGNMENT WITH STRATEGIC PRIORITIES:

Developing a strategy and managing micro-mobility use aligns with the strategic focus for a Safe & Sustainable Community, through the on-going management of the City's transportation network. It is also consistent with various policies in the City Official Plan on complete communities, City-building and encouraging more and safer active transportation in Markham.

BUSINESS UNITS CONSULTED AND AFFECTED:

The Engineering and Economic Growth, Culture & Entrepreneurship departments collaborated in preparing this report.

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