

A Micromobility Strategy for Toronto

Date: April 18, 2024

To: Infrastructure and Environment Committee

From: General Manager, Transportation Services

Wards: All

SUMMARY

Micromobility is a term for small, low speed, light weight vehicles - including bicycles, cargo bikes/trikes, folding bikes, electric two/three/four-wheeled cycles, electric kick-scooters (e-scooters), e-mopeds, and electric mini-cars. Their use/ownership may be personal/private, shared/rental, or commercial/corporate (e.g. for deliveries). In July 2023, Council requested a strategy to address growing micromobility usage and its safe operation within the city. Council also requested that staff recommend whether to opt in to additional pilot projects under the Ontario Highway Traffic Act (HTA). To inform this report, Transportation Services (TS) staff reviewed other jurisdictions and conducted extensive public engagement, and consulted internally with over 20 City Divisions, agencies, boards and commissions (ABCs).

This report outlines key policy goals for the strategy and the criteria against which new micromobility opportunities are assessed: these are safety, mobility, the environment, equity and inclusion, health and public health, economic vitality, costs and liability. Staff previously recommended, and Council adopted, participation in two HTA pilot projects: 1) cargo power-assisted bicycles (2021) that are widely applicable for family use/commuters and for parcel deliveries by companies (such as Fed Ex and Purolator) and 2) large quadricycles (2022). In 2021, based on staff recommendation, Council declined opting in to the e-scooter pilot. This report assesses the opportunities for the low-speed vehicles (LSVs) pilot, and again for e-scooters. Applying the criteria, staff recommend opting in to pilot LSVs and continuing to decline to opt in to the e-scooter pilot. Any potential benefits of an e-scooter pilot appear to be outweighed by negative impacts on injuries to riders and non-riders, costs and liability to the City, and mode shift (mostly replacing walking and public transit).

The proposed strategy emphasizes the need for a holistic approach to ensuring micromobility safety, including the importance of safe infrastructure, its design and maintenance. Public engagement and collaboration with external and internal partners will also be key to address micromobility safety and food delivery industry issues, such as safe riding and battery fire prevention. Licensing micromobility is not recommended as the City does not have the powers under the *City of Toronto Act, 2006* (COTA) to license couriers, as well as several other reasons including jurisdiction, cost,

ineffectiveness and impacts on environmental and equity goals. Key next steps are a concerted public education campaign on the rules for micromobility in Toronto; and involvement of federal and provincial governments in supporting micromobility.

RECOMMENDATIONS

The General Manager, Transportation Services recommends that:

1. City Council continue to decline the option to participate in O.Reg 389/19 – Pilot Project – Electric Kick-Scooters.
2. City Council opt in to participate in O. Reg. 215/17 Pilot Project - Low-Speed Vehicles generally as outlined in the report dated April 18, 2024 from the General Manager, Transportation Services, titled "A Micromobility Strategy for Toronto".
3. City Council amend City of Toronto Municipal Code Chapter 950, Traffic and Parking, as follows:
 - A. By inserting a new definition of "Low-Speed Vehicle" in Section 950-101B in alphabetical order, to read as follows:

"LOW-SPEED VEHICLE - means a motor vehicle as defined in Ontario Regulation 215/17 Pilot Project - Low-Speed Vehicles, as amended, made under the Highway Traffic Act. In the event that a low-speed vehicle is otherwise defined in the Highway Traffic Act and its regulations, low-speed vehicle shall then have the meaning as defined in the Highway Traffic Act and its regulation."; and
 - B. By inserting a new section 950-200F, which states, "No person shall operate or permit the operation of a low-speed vehicle on a highway unless the vehicle meets, and is operating in accordance with, the requirements in Ontario Regulation 215/17."
4. City Council amend City of Toronto Municipal Code Chapter 546, Licensing of Vehicles-For-Hire, to prohibit the use of low-speed vehicles as taxicabs, limousines, and private transportation company vehicles.
5. City Council direct the General Manager, Transportation Services to report back at the end of the provincial pilot project for low-speed vehicles in 2027, or sooner as requested, to the appropriate Committee with an evaluation of the operation of low-speed vehicles on city streets and any recommended policy and by-law changes, based on the evaluation and in consultation with relevant internal and external interested and affected parties.
6. City Council request the General Manager, Transportation Services, in consultation with relevant internal Divisions and ABCs, and external interested and affected parties, to convene a multi-partner table, including but not limited to food delivery app companies, gig workers, the Toronto Association for Business Improvement Areas (BIAs), and community groups representing persons with disabilities, pedestrians,

seniors, and cyclists, and relevant Divisions and ABCs, to collaborate on a public education campaign on the rules of the road, safe riding skills, and other initiatives to address concerns that arise, and to work collectively to address safety issues.

7. City Council request the Toronto Police Services Board to request the Chief of Police, in consultation with the General Manager, Transportation Services, to conduct an educational blitz in the summer of 2024, and in the spring and the fall beginning in 2025 to enhance public awareness of key safety issues, i.e. illegal sidewalk riding, wrong way riding in cycle tracks, illegal e-moped use in cycle tracks, and illegal parking in bike lanes.

8. City Council request the Ministry of Transportation of Ontario (MTO) to establish set fines under the Highway Traffic Act for use of micromobility vehicles which are not compliant with the definitions and/or recommendations under the Highway Traffic Act, and to communicate those set fines to police services across Ontario.

9. City Council request the Ontario Ministry of Finance and the Financial Services Regulatory Authority of Ontario to consult the insurance industry and other relevant parties on developing mandatory first and third party insurance requirements for micromobility vehicles and their operators and to establish a micromobility accident fund accessible to those who are injured in micromobility incidents where no insurance exists to respond to their claim.

10. City Council request Transport Canada to regulate micromobility vehicle safety and battery safety requirements, standards, testing and labelling, for point of sale and importation; and in creating those regulations, to consult with key interested and affected parties with expertise in micromobility vehicle design and safety, and universal accessibility.

11. City Council authorize the City Solicitor to introduce the necessary bills to give effect to City Council's decision and City Council authorize the City Solicitor to make any necessary clarifications, refinements, minor modifications, technical amendments, or by-law amendments as may be identified by the City Solicitor or General Manager, Transportation Services, in order to give effect to the adopted recommendations.

FINANCIAL IMPACT

Transportation Services confirms that there are no financial implications for this budget year resulting from the recommendations included in this report. Any financial impacts for future years' budget will be included in the 2025 Budget submission. The Chief Financial Officer and Treasurer has reviewed this report and agrees with the financial impact information.

EQUITY STATEMENT

Based on a review of other jurisdictions, there are social equity impacts of different types of micromobility and their uses. A key criterion for assessing micromobility pilot projects and policy options is to avoid a disproportionate negative impact on any one

group or groups of people. While there are several equity-related considerations for micromobility, two key ones are highlighted in this section regarding: 1) e-scooter issues, and 2) food delivery industry issues.

1) For both personal/private and shared/rental e-scooters, the design of e-scooters with their small-wheels and high centre of gravity makes them less stable than bicycles. The inherent instability of e-scooters poses risks for serious and fatal injuries to riders when encountering uneven road surfaces (e.g. potholes and streetcar tracks) and leads to sidewalk riding which endangers pedestrians. E-scooters pose a risk for serious and fatal injuries (due to collisions and/or falls) to pedestrians, seniors, and people with disabilities due to the e-scooter's maneuverability, silence and faster speeds. Cities that have allowed e-scooters have observed a high incidence of sidewalk riding by e-scooter users (both personal/private and shared/rental) whether permitted or not on sidewalks. Seniors, people with disabilities, and those with socio-economic challenges could face negative outcomes if injured in a collision or fall.

Further, shared e-scooter companies and cities that have piloted sidewalk riding prevention technologies have noted that the proposed solutions are intended as educational and are not capable of preventing the sidewalk riding from occurring on a reliable or consistent basis. While e-scooters have potential to serve areas with less access to mobility options, the experience of other cities has shown that this has not always been realized. Shared e-scooters are not an affordable first and last mile option to connect to transit, given the typical pricing of \$1 to unlock the e-scooter and a per minute fee of between \$0.30 to \$0.70, with a 15 minute trip costing over \$8. The privately operated e-scooter business model relies upon high pedestrian density and significant disposable income to be financially viable long term.

2) The proliferation of online food ordering and on-demand deliveries has led to increased use of micromobility by gig workers on the City's streets. The conditions for food couriers/gig workers are set and shaped by the food delivery industry. While there have been increased complaints by the public about micromobility users - these issues apply to both gig workers and other users of micromobility. Licensing micromobility is not recommended as the City does not have the powers under the COTA to license couriers, in addition to a number of reasons including jurisdiction, cost, ineffectiveness and impacts on environmental and equity goals. A multi-partner table is recommended to facilitate collaboration among the food delivery industry, gig workers/couriers, community groups, BIAs, as well as key City Divisions and ABCs to address improved safety, training, working conditions and other issues raised by Councillors and citizens.

DECISION HISTORY

On February 5, 2024, the Toronto Accessibility Advisory Committee (TAAC) recommended that the Infrastructure and Environment Committee (IEC) recommend that City Council direct the General Manager, Transportation Services to conduct no further electric kick-scooter (e-scooter) pilots or trials, because e-scooters: a) present a significant safety hazard; b) cause serious injuries; c) are a barrier to accessibility; and d) enforcement is untenable.

<https://secure.toronto.ca/council/agenda-item.do?item=2024.DI5.1>

On July 19, 2023, City Council requested the General Manager, Transportation Services, to consult with relevant divisions, ABCs and many various stakeholders to report back by end of Q1 2024 on a micromobility strategy including whether or not to launch micromobility pilot projects that: a) take precautions to protect pedestrians, including those with disabilities; b) claim climate benefits; c) have appropriate safety standards; and d) include liability insurance; as well as mandating helmets in any future e-scooter pilot; education and enforcement; options for identification markings on e-scooters; and to request that Transport Canada regulate micromobility vehicle safety standards.

<https://secure.toronto.ca/council/agenda-item.do?item=2023.IE5.5>

On June 28, 2023, IEC forwarded Item IE5.5 Planning for an E-Scooter Pilot to City Council without recommendations.

<https://secure.toronto.ca/council/agenda-item.do?item=2023.IE5.5>

On May 10, 2023, City Council requested the City Solicitor, in consultation with the General Manager, Municipal Licensing and Standards, the General Manager, Transportation Services and others as appropriate, to report back on options for requiring unique identifiers on motor-assisted micro-mobility vehicles (except motorized wheelchairs) used for commercial purposes on public streets; and for courier companies to educate their delivery staff on the rules of the road; and requested the City Manager to report to IEC on how to deter dangerous illegal behaviour by those who operate motorized or motor-assisted vehicles on sidewalks, including a jurisdictional scan.

<https://secure.toronto.ca/council/agenda-item.do?item=2023.DM6.3>

On May 5-6, 2021, City Council declined the option to participate in O.Reg 389/19 - Pilot Project - Electric Kick-Scooters, requesting the Ontario Government make helmets mandatory for e-scooter users, and requesting Transport Canada to regulate micromobility vehicle safety, standards, testing and labelling and to consult key stakeholders. City Council requested the Toronto Police Services Board, the General Manager, Transportation Services and the Executive Director, Municipal Licensing and Standards to consult with accessibility stakeholders on public education and enforcement of the prohibition on use of e-scooters in public spaces.

<https://secure.toronto.ca/council/agenda-item.do?item=2021.IE21.7>

On February 25, 2021, the Toronto Accessibility Advisory Committee affirmed that it does not support the use of e-scooters, including any pilot project, and requested a ban without exception. The Committee also recommended that City Council request Toronto Police Services, Transportation Services and Municipal Licensing and Standards to consult accessibility stakeholders to develop a public education campaign on existing by-laws prohibiting e-scooter use in public spaces and actively scale up enforcement.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2021.DI14.1>

On July 28-29, 2020, City Council directed the General Manager, Transportation Services, to report back on referral Item 14.10 to address issues identified by the Toronto Accessibility Advisory Committee, including insurance issues.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2020.IE14.10>

On February 3, 2020, the Toronto Accessibility Advisory Committee recommended City Council prohibit e-scooters for use in public spaces including sidewalks and roads, and directed that any City permission granted to e-scooter companies be guided by public safety, in robust consultation with persons with disabilities and related organizations. <http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2020.DI7.3>

COMMENTS

Background

What is micromobility?

Micromobility is a term for vehicles that have the following in common: they are small, low speed and lighter weight than a car. Other features that people attribute to micromobility are not inherently part of the definition, rather they are different ways to categorize micromobility. Some categories are:

- 1) *How micromobility is powered or operated* - they can be human-powered only, power-assisted with some required muscular power/peddalling, or throttle only with no use of human power;
- 2) *The use cases* - they include non-leisure (utilitarian) trips for shopping/errands/commuting, work purposes (gig work/deliveries) and leisure/recreation; and
- 3) *The ownership model* - they include personal use/privately-owned vehicles, rental or shared-use programs, or commercial use such as for parcel or food deliveries.

The above is not exhaustive but covers key aspects of micromobility for the purposes of this strategy.

Types of vehicles under the umbrella term "micromobility" include: bicycles, cargo bikes/trikes that can carry items or kids, folding bikes, electric two/three/four-wheeled cycles, e-mopeds (scooter with a step-through frame and seat), electric kick-scooters that you stand on to operate (e-scooters), LSVs, and more (refer to *Attachment 1: Photos of Micromobility*). Manual or powered mobility assistive devices are not considered micromobility; users of these devices are considered pedestrians and allowed to use sidewalks. Users of micromobility are not allowed to operate on sidewalks in Toronto for the safety of pedestrians.

Why develop a micromobility strategy?

In July 2023, City Council requested staff to develop a micromobility strategy to address the growing usage and demand for micromobility, and requested recommendations on whether the City should opt in to additional micromobility pilot projects enabled under the HTA. There is a strong benefits case for supporting micromobility because these options:

- are environmentally-friendly alternatives to driving, with lower pollution and greenhouse gas emissions,
- are lower cost transportation options that can make the cost of living more affordable,
- can provide a convenient way to get to and from public transit stations or stops,
- take up less space on streets which can help reduce traffic congestion, and enable the City's transportation system to serve a growing population within the finite road space available,
- inflict less harm in collisions because they are lighter, smaller and slower than conventional motor vehicles,
- can, with electric assist options, enable people to manage longer distances, heavier cargo, or uphill travel compared to walking or conventional bicycles, and
- can provide health and well-being benefits from physical activity.

At the same time, there are growing concerns among the public, heard through an extensive public engagement process (refer to *Attachment 3: Public Consultation Report*), about issues with illegal sidewalk riding, and with chaotic interactions on the city's streets among road users. A strategy is intended to address the opportunities and challenges of integrating micromobility into Toronto's transportation system. In addition, a strategy is needed to coordinate with other City policies, plans and initiatives related to micromobility, including, but not limited to:

- Achieving Net Zero Strategy targets for active transportation mode share;
- Informing the cycling network planning and feeding into Bike Share Toronto's growth planning;
- Integrating with TTC's 5-Year Service Plan and linking to Metrolinx's station access planning;
- Considering and aligning with the principles and goals of the Multi-Year Accessibility Plan, the AODA, the City's Corporate Accessibility Policy and the City's commitment to creating an accessible City through the identification, removal, and prevention of accessibility barriers;
- Considering and aligning with policy goals for the Poverty Reduction Strategy, the Toronto Seniors Strategy, as well as principles of equity and inclusion;
- Coordinating with City Planning's transportation planning policy work and zoning by-law review for bicycle parking in new developments, and other initiatives on bicycle parking;
- Coordinating with Economic Development & Culture's work on sustainable transportation industry growth planning;
- Collaborating on Toronto Fire Services' (TFS) public education campaign for fire prevention and safe charging of micromobility devices that use lithium-ion batteries; and
- Informing and coordinating with Fleet Services' *Sustainable City of Toronto Fleets Plan* that is transitioning City Fleets to sustainable, resilient, net-zero operations by 2040.

Process to develop the strategy

Since the fall of 2023, TS staff have conducted a scan of other jurisdictions and trends in the sector, as well as undertaken extensive engagement. Over 7,800 members of the public participated across a variety of consultation activities including an online survey, email and phone comments, a virtual town hall focussed on accessibility issues, a telephone town hall, and community and interest group meetings. Staff also engaged with the micromobility industry through virtual meetings, e-mail comments and phone, and included rental (subscription) and shared companies, food delivery app companies, parcel delivery companies, and a few manufacturers and distributors of micromobility vehicles. Transport Canada and the MTO were also engaged in virtual meetings and by e-mail on a number of micromobility issues (i.e. vehicle standards/definitions, safety, and roles and responsibilities).

Internally over 20 City Divisions and ABCs were engaged through an inter-divisional working group and meetings to provide input on the development of the strategy and to coordinate support for the proposed approach presented in this staff report. A presentation was made to the TAAC in February 2024. Internal presentations were also made to subject matter expert groups on Vision Zero road safety and mobility issues, and to senior management through various tables with directors and senior leaders. Consideration of the feedback is integrated into this report back, and a summary report is provided in *Attachment 3 - Public Consultation Report*.

Micromobility strategy overview

Purpose statement

The strategy's purpose is to outline a path forward for the adoption of micromobility in Toronto, in a manner that aligns with the key policy goals of safety, mobility, the environment, equity and inclusion, health and public health, economic vitality, costs and liability.

Key policy goals and criteria

The strategy is intended to align the use of micromobility within Toronto with the following policy goals:

- protect or enhance **safety** for all road users in Toronto, especially vulnerable road users, i.e. non-riders (pedestrians and persons with disabilities) and riders (people who bicycle and other micromobility users);
- enhance and expand use of **mobility** options that are smaller, lighter, and lower-emissions, for non-leisure purposes (e.g. commuting and carrying groceries/purchased items or children) and for connections to public transit within the city;
- increase the mode share of active transportation, public transit and zero emission vehicles to achieve the City's Net Zero Strategy **environmental** targets and to support the transition to zero emission vehicles;
- account for, and prevent negative **equity and inclusion** impacts on persons with disabilities, older adults/seniors, women, people with low income, gig workers, and

equity-deserving/underserved parts of the City; while enhancing affordable mobility options for these same groups

- reduce the burden on the **health** care system by preventing an increase in fatalities and serious injuries, and by encouraging active transportation (i.e. walking and cycling) to support health and chronic disease prevention
- support **economic vitality** by enhancing affordability of travel to reduce the cost of living in Toronto, by considering impacts on the public realm including the vibrancy of streets, and by supporting a shift to more space-efficient modes for commercial deliveries; and
- mitigate **costs and liability** to the City, including impacts on the City's budget and resourcing, and consequent impacts on the City's other priority programs and services.

The goals above form the criteria against which staff assess new micromobility opportunities, such as those made available to the City through provincial HTA pilot projects. These goals also informed the other recommendations and the 10 areas for action to advance the adoption of micromobility that are described in a later section in this report.

What micromobility is already allowed in Toronto

This section summarizes the current micromobility rules in Toronto to help understand what is already allowed. The City currently permits several micromobility vehicle types on Toronto's public streets as shown in Table 1 below. In summary, the rules are:

- Bicycles, personal/family-style cargo bikes, commercial cargo cycles/tricycles that have a container for parcel deliveries, and electric-assisted cycles that require pedalling for propulsion (i.e. not "throttle only") are allowed in bike lanes, cycle tracks and roads.
- For electric mopeds or two-wheeled seated scooters that are "throttle only" with maximum speed up to and including 32 kilometres per hour (km/h), they are allowed in bike lanes, marked with pavement markings (e.g. paint) that are not physically separated from car traffic with posts/ bollards or concrete barriers, and on roads.
- Any micromobility vehicles that are capable of speeds greater than 32 km/h are only allowed on the road and not any dedicated bike infrastructure.
- The stand-on e-scooters, that are like a skateboard with a stickhandle and throttle, but with only two small wheels about 8" to 10" in diameter, are not allowed on any public infrastructure. This prohibition was adopted by City Council in 2021 because of injury risks to riders and non-riders, and liability costs to the city.

Under the HTA, e-skateboards, Segway personal transporters, and powered one wheels are not permitted, and there are no current provincial pilot projects for them.

Table 1 - Where can I currently ride this vehicle in Toronto?

Where can I currently ride this vehicle in Toronto?	Road	Painted Bikeway	Physically Separated Bikeway	Sidewalk
 	✓	✓	✓	✗
	✓	✓	✗	✗
 >32 kph speed	✓	✗	✗	✗
	✗	✗	✗	✗

Assessing new micromobility opportunities under HTA pilot projects

The key policy goals, outlined earlier in the report, form the criteria against which staff assess new micromobility opportunities. Under the HTA, the province enables municipalities to choose whether to test new micromobility vehicles through pilot projects. Currently there are four projects in which the City could participate. Note that staff previously recommended, and Council adopted participation in two of the HTA pilot projects, i.e. cargo power-assisted bicycles and large quadricycles. This staff report applies the policy criteria to the remaining two HTA pilot projects for 1) Low-Speed Vehicles (LSVs); and 2) e-scooters; and assesses whether the City should pursue or decline the projects.

1) Low-speed vehicles (LSVs) (recommendation to opt-in)

The province's LSV pilot began in 2017 and runs until June 29, 2027. An LSV is a four-wheeled electric mini-car that does not have the same safety standards as a typical car (e.g. no frontal or side impact protections, or rollover protection), but it must meet some standards under Transport Canada's *Motor Vehicle Safety Act*. An LSV seats two to four people and has a maximum speed of 40 km/h. Under the HTA, LSVs are only allowed to operate on roads with a maximum posted speed limit of 50 km/h. Full HTA regulations are in *Attachment 2 - Low-Speed Vehicle Regulations under the Ontario Highway Traffic Act*. Risks are mitigated by the requirement of LSVs to meet some federal vehicle safety standards, and the HTA requirements for the operator to have a full G driver's licence or higher, proof of insurance, and vehicle registration (i.e. for a vehicle permit and licence plate) through Service Ontario.

As they are smaller, slower and lighter weight than a conventional car, van or truck, LSVs enhance road safety by being less dangerous to vulnerable road users (i.e.

pedestrians and people who cycle). LSVs expand non-leisure mobility options by increasing the user's ability to transport parcels or passengers (compared to other forms of micromobility) and providing protection from inclement weather. LSVs range in price from over \$10,000 to \$25,000+, making them more affordable than conventional electric vehicles (EVs). In general, an LSV can be charged using a standard electrical outlet or can use a fast charging outlet. Depending on the make of the LSV, the range of a fully charged LSV can be around 64km to 100km.

Municipalities in Ontario that have already opted in to the LSV pilot include Haldimand County, Lambton Shores, Norfolk County, Ottawa, and Parry Sound. In 2023, British Columbia updated its regulations to allow LSVs, which are called "neighbourhood zero emission vehicles", to operate in the province by default on any roads with a speed limit of 40 km/h or less, and if approved by permit or municipal by-law, on roads with a speed limit of 50 km/h or less. In Quebec there is a pilot project to test the use of three types of LSVs, which are authorized by the SAAQ for operation on public roads with posted speeds of 50 km/h or less. City staff reached out to staff from the Ontario municipalities participating in the pilot, as well as Vancouver and Montréal, and conducted a news scan. No safety issues were identified through this research.

Public feedback is generally favourable for allowing LSVs that can be used for utilitarian travel, while being greener and safer than heavier, faster cars/SUVs/vans/ trucks. Key use cases are personal and privately owned use and commercial parcel delivery (e.g. Purolator) which would have environmental, safety and public realm benefits if deliveries are made by LSV instead of by conventional van or truck. A consultation with parcel delivery companies indicated potential interest in testing LSVs for deliveries in Toronto if City Council opted in to this provincial pilot.

Given their size, weight, speed, and throttle-only operation, LSVs should not be permitted to operate on any dedicated bike infrastructure. A by-law amendment is not needed to enact an LSV prohibition on dedicated bike infrastructure. As currently written, Toronto by-laws already prohibit vehicles such as LSVs from operating in bike lanes, cycle tracks and bike paths. Staff propose amending by-laws to permit LSVs to operate on public streets in Toronto that have a maximum posted speed limit of 50 km/h or less. A drawback is that the HTA's LSV pilot expires on June 29, 2027 which provides limited time for such vehicles to be adopted in order to gain experience from the pilot. However, depending on the demand and usage of LSVs, there could be a case made for an extension of the pilot.

Commercial passenger transportation uses of LSVs, e.g. vehicle-for-hire (VFH) are not recommended until more data is acquired and analysis conducted on the safety of these vehicles. This information would help inform staff regarding how to address the requirement for safety certificates for VFH vehicles, given their greater accumulation of time/distance on the road compared to vehicles for personal use. An extension of the provincial pilot could allow for such data collection.

Summary of policy rationale for Low-Speed Vehicles

Legend for table below: Green denotes positive benefits; yellow denotes some benefits and drawbacks; orange denotes more drawbacks than benefits; and red denotes significant drawbacks.

<i>Policy criteria (rating is in parentheses)</i>	<i>Low-speed vehicles assessment based on jurisdictional scan and Toronto's context</i>
Safety (green)	Enhances safety by being less dangerous to vulnerable road users and encourages smaller, lighter weight and slower EVs on roads
Mobility (green)	Expands options for non-leisure/utilitarian purposes (carrying items/groceries or running errands) using smaller, lighter, and lower-emissions vehicles
Environmental (green)	Supports the transition to EVs/zero emission vehicles
Equity & inclusion (yellow)	Provides an option to transition to more affordable EVs that does not have a disproportionate negative impact on any one group/groups. Requires budget to purchase an LSV. Use cases may appeal more to persons with disabilities, older adults/seniors and women compared to other forms of micromobility
Health & public health (green)	Contributes to road safety by being less dangerous to vulnerable road users as LSVs are smaller, lighter weight and slower than typical cars/vans/trucks on roads, and reduces air pollution as a zero emissions vehicle
Economic vitality (green)	Provides a more affordable way to transition to EVs and takes up less road space and enables a more space-efficient mode on the street for commercial (parcel) deliveries
Costs and liability (green)	Risks are mitigated for the City since LSV operators are required under the HTA to have a driver's licence, vehicle registration and proof of insurance provided to Service Ontario

2) E-scooters (recommendation to continue to decline this pilot)

An e-scooter is a battery-powered vehicle with a narrow board that you stand on to operate; with a long steering handle to steer it; a throttle for acceleration; and two small wheels about 8" to 10" in diameter at each end of the board. In May 2021 Council declined to opt in to an e-scooter pilot project under the HTA. Currently e-scooters are not allowed to be operated, left, stored or parked on any public street in Toronto including bicycle lanes, cycle tracks, trails, paths, sidewalks or parks. The reasons for the 2021 decision were concerns about safety, liability and associated costs. In July

2023, City Council requested that staff review the latest experiences of other jurisdictions and assess whether or not to launch micromobility pilot projects, such as shared e-scooters, considering the following: precautions to protect pedestrians including those with disabilities, climate benefits, safety standards and liability insurance.

From a scan of other jurisdictions, there is no consistent approach to regulating e-scooters because of the varied conditions of each municipality. Municipal contexts differ in terms of their liability, population size, density, mode shares, existing shared micromobility programs, and other unique issues such as the amount of construction activity on streets, size of the streetcar track network, and state-of-good-repair (SOGR) of road surfaces. Emerging evidence continues to suggest that e-scooters are less safe than bicycles because they are less able than bicycles to handle uneven surfaces, as well as the user's high centre of gravity. In addition, trends indicate major safety issues stemming from the behaviour of e-scooter users, including serious injury and fatality risks with intoxicated riding, night-time riding and under-age riding.

Issues for shared e-scooter programs

Studies suggest that the majority of shared e-scooter trips are displacing walking, transit and cycling especially in cities that are transit-friendly, walkable, high density with many tourists (e.g. Paris and Transport for London (TfL)). In the 2022 TfL study, only about 6.5 per cent of shared e-scooter trips replaced cars, taxi or private hire vehicle trips, where as 47 per cent replaced walking and around 25 per cent replaced public transit trips. Average e-scooter trips lengths are 1.8km (Germany, Ottawa) or a 20 minute walk; Bike Share Toronto's average trip length is almost double at 3.7km. In Hamilton, Ontario, for example, the cost of a shared e-scooter trip is about \$7 dollars for a 14 minute ride whereas a bike share ride by SOBI (Hamilton's bike share program) of the same distance would cost about \$2, suggesting that shared e-scooters are too expensive for commuting or first/last mile trips, but more likely to be for recreation or leisure.

Regarding the demographics of e-scooter users, the 2022 TfL study presented similar findings to those of other jurisdictions: the majority of e-scooter users are male (71 per cent) and under age 35 (74 per cent). E-scooter vehicle design and operations have not factored in gender adequately, which hinders women from using e-scooters and increases the risks for women using e-scooters (Zag Daily (2023); Steer (2022); International Journal of Environmental Research and Public Health (2022); Social Sciences (2021)). While young male micromobility users tend to have more mobility choices, those living with a disability(ies) have fewer choices and are disproportionately impacted being pedestrians who rely on safe sidewalks for their mobility. E-scooters users frequently ride on sidewalks for various reasons; the smaller wheels are less able to manage potholes/uneven surfaces in the roadway, the small compact size is easier to maneuver on sidewalks than bicycles, and because e-scooter riders may not have experience with the rules of the road. Technologies used by the shared e-scooter industry to address problematic riding, such as enhanced global positioning systems (GPS), on-board cameras, artificial intelligence (AI), and vibration detection, have not proven reliable. E-scooter companies and a number of city regulators (e.g. Chicago, Denver, San Diego, and San Francisco) say these technologies are educational

deterrents rather than an effective means to stop illegal sidewalk riding. City regulators and customers have found that such technologies can increase risk for e-scooter users when an e-scooter slows down or stops abruptly after inbuilt GPS or AI systems mistakenly identifies a bike lane or roadway as a sidewalk.

As the City of Toronto's provider of shared micromobility services, the TPA would assume responsibility of shared e-scooters, should City Council request a shared pilot. However, without significant new resources to introduce e-scooters, a shared e-scooter program would compromise TPA's ability to appropriately fund its existing programs and services, including Bike Share Toronto and EV charging. Lastly, evidence suggests that shared e-scooters present greater risks and costs than bike sharing, including the lack of indemnity by e-scooter companies and the financial instability of the e-scooter industry.

Issues for private/personal e-scooter use

While private/personal e-scooter riders are more likely to wear helmets and other protective equipment (e.g. full face/chin guard helmet, wrist/elbow/knee protection, motorcycle jacket/back protection, etc.), the issue remains where the e-scooter would be ridden. Lack of bike infrastructure can result in sidewalk riding, which poses great risk at driveways and crosswalks for e-scooter users because drivers are not expecting a fast-moving object (i.e. travelling at 7 metres per second or faster) on a sidewalk. Furthermore, many e-scooter products for sale online and in stores exceed the HTA maximum speed of 24km/h. Because there are no vehicle safety standards federally, and no regulations at point-of-sale or importation, even though a privately owned e-scooter may be more affordable than shared e-scooters, the issue is that the product itself presents little to no consumer protection to mitigate the hazards inherent in the road surfaces and weather conditions that an e-scooter user would encounter. Finally, there are little to no insurance products in Ontario and Canada to cover private/personal use which exposes both riders and non-riders to costs not covered by OHIP for medical and rehabilitation costs, as well as other costs if injured or injuring another person. The combination of lack of infrastructure, SOGR backlog, lack of vehicle standards, and lack of insurance - exposes riders, non-riders, the City and the health care system to the consequences of these risks and associated costs.

Although some people are riding e-scooters illegally in Toronto, it is thought that the prohibition has kept the number lower than if they were permitted. Higher numbers of users would exacerbate issues with sidewalk riding and lack of enforcement resources, and lead to an anticipated multiple-fold increase in usage and subsequent injuries, friction, nuisance, enforcement issues and costs to the City with increased exposure to liability. Further, a prohibition would support the position of the TAAC, as well as align with feedback and concerns from health professionals about an e-scooter pilot adding avoidable emergencies to the health care system, rather than reducing traumas when Emergency Departments are still dealing with resourcing issues, and surgery wait times (e.g. orthopedic) are a consideration at hospitals.

Summary of policy rationale for declining e-scooter pilot in Toronto

Legend for table below: Green denotes positive benefits; yellow denotes some benefits and drawbacks; orange denotes more drawbacks than benefits; and red denotes significant drawbacks.

<i>Policy criteria (rating is in parentheses)</i>	<i>E-scooter assessment based on jurisdictional scan and Toronto's context</i>
Safety (red)	Less stable and less able to handle uneven surfaces than bicycles. E-scooter users presented to hospitals with a greater share of head, face, and neck injuries than cyclists. Night-time riding, intoxicated riding, underage riding, and encountering poorly maintained road surfaces all contribute to elevated crash and injury risk. The issue of fire risk from lithium-ion batteries also remains to be solved.
Mobility (yellow)	The limited data available at this time is inconclusive about whether use cases are more for short trips and leisure than for utilitarian purposes. Under the HTA, e-scooter riders are not permitted to carry things, e.g. parcels/cargo and not allowed to carry a passenger.
Environmental (yellow)	The limited data available at this time is inconclusive about whether e-scooter use primarily replaces trips by walking, transit and cycling rather than higher impact modes. Short life span/life cycle of e-scooter devices generates more waste than other micromobility.
Equity & inclusion (orange)	Disproportionate negative impact on pedestrians, seniors, and persons with disabilities who rely on safe sidewalks. E-scooter vehicle design and operations have not factored in gender adequately.
Public health (orange)	Serious injury and fatality risks for e-scooter riders and non-riders would increase the burden for the health care system. Negative impacts for walking, cycling and transit mode shares would undermine chronic disease prevention.
Economic vitality (orange)	Jurisdictional scan suggests negative impacts on the public realm associated with e-scooter use (e.g. sidewalk riding, weaving among pedestrians, racing), which impact business activity. Shared e-scooter systems contribute further with e-scooters littered on sidewalks and vandalism of the devices.
Costs and liability (red)	The e-scooter's inherent instability in its design (i.e. small wheels, high center of gravity, twitchy steering, etc) combined with the City's substantial SOGR backlog for roads, on-going construction/utility cuts and freeze-thaw impacts on asphalt, poses injury risks for e-scooter users, and significant exposure for the City in terms of claims and liability.

Staff recommend not revisiting participating in an e-scooter pilot until all of the following key issues are addressed:

- Technical vehicle safety standards are developed by the Federal government and enforced through point-of-import, and point-of-sale. Standards would include but not be limited to minimum wheel size, wheel type, dual braking, suspension, non-slip platforms, lighting, indicator lights, lifecycle/durability, etc.;
- Provincial government implementation of mandatory first and third party insurance for micromobility vehicles and their operators and to establish a micromobility accident fund accessible to those who are injured in micromobility incidents where no insurance exists to respond to their claim, carried out in consultation with the insurance industry;
- Updated minimum maintenance standards for roads that take into account the small wheels and high centre of gravity (propensity to tip) for e-scooter operations, and the accompanying budget for SOGR for the street network to accommodate those operations;
- Dedicated TPS enforcement resources to curb illegal e-scooter operation on sidewalks; and
- Adequate budget for the TPA to add e-scooters to their plans and program without impacting Bike Share Toronto expansion.

The path forward for managing all forms of micromobility in Toronto

Beyond consideration of pilot projects, this strategy's purpose is to provide a holistic view of what is needed to support micromobility adoption in the City. This report outlines **10 areas of action** below that would align micromobility adoption with the City's key policy goals.

TS would continue to facilitate inter-divisional meetings with City Divisions and ABCs to advance and track these areas of action.

i) Updating and clarifying rules on what types of micromobility are allowed and where they can operate

ii) Enhancing use and reach of shared micromobility – through expansion of Bike Share Toronto, integration with transit, and equity and affordability initiatives

iii) Enabling and promoting use of micromobility among City staff

iv) Expanding micromobility infrastructure through the City's network of bikeways, bikeway design, road safety improvements, and bike parking

v) Operations and maintenance initiatives to support micromobility

vi) Collaborating to promote awareness of safe and lawful use of micromobility and use of seasonal enforcement blitzes

vii) Broad education on fire safety for lithium-ion batteries used in micromobility vehicles

viii) Engaging Transport Canada and MTO to request support for safe micromobility adoption

ix) A multi-partner table to address the food delivery app industry issues

x) Data collection for monitoring micromobility usage and safety

i) Updating and clarifying rules on what types of micromobility are allowed and where they can operate

The strategy recommends a) continuing existing permissions that allow for a wide range of micromobility types to use Toronto's streets; and b) opting in to the LSV pilot project. The updated rules are exhibited in Table 2 and the policy rationale is explained below.

Table 2: Updated rules on where micromobility vehicles should be permitted to operate

Where can I ride this vehicle in Toronto?	Road	Painted Bikeway	Physically Separated Bikeway	Sidewalk
	✓	✓	✓	✗
	✓	✓	✓	✗
	✓	✓	✗	✗
Note 	✓	✗	✗	✗
	✗	✗	✗	✗

Note: LSVs will be allowed to operate in a general traffic lane on any public roads in Toronto with a posted speed limit of 50km/h or less.

Policy rationale:

- With the key goal of safety in mind, it is important to consider the comfort and safety of micromobility users when they are interacting and mixing with others on different parts of the roadway. To make it simple to understand where different micromobility belong, it is useful to think of two categories for micromobility vehicles based on the key features of speed, power and mass (size and weight): 1) light-duty and 2) mid-duty.

- **"Light-duty"** micromobility are similar to bicycles, trikes and cargo cycles in that they have similar maximum speeds and while some may be electrically-assisted, they are still capable of being propelled solely by human power. Light-duty micromobility will be allowed on all bike infrastructure on public streets.
- **"Mid-duty"** micromobility are more powerful, heavier and faster than bicycles, and do not rely on human-power, such as e-mopeds (seated motorscooters) that are "throttle only". Mid-duty micromobility are not permitted in physically separated bikeways (i.e. cycle tracks). When mid-duty micromobility users are passing slower users, this weaving around presents risks to the operator and to others if in a physically separated bikeway/cycle track. They are allowed on bike lanes that are demarcated with paint only, since mid-duty micromobility options provide alternatives to cars.
- Under the proposed new pilot, LSVs will be allowed to operate in a general traffic lane on any public roads in Toronto with a posted speed limit of 50km/h or less. This type of operation is considered sufficiently safe because LSVs are electric mini-cars, can travel up to 40km/h, and have an exterior physical enclosure. The HTA prohibits LSVs on roads with posted speed limits of over 50km/h, where the speed differential from other vehicles is anticipated to cause traffic conflict and would put the LSV operators at greater risk of injury or death in the event of a collision. LSVs are prohibited from operating on any dedicated bike infrastructure and sidewalks, as they are motor vehicles and do not meet the definition of any vehicles allowed on any bike infrastructure under Toronto Municipal Code Chapter 886 that covers bike paths, bike lanes and cycle tracks.

No other regulatory changes are recommended at this time. If adopted by Council, staff will undertake public education and outreach to ensure broad awareness of the updated rules and will monitor the effectiveness of such education.

ii) Enhancing use and reach of shared micromobility through expansion of Bike Share Toronto, integration with transit, and equity and affordability initiatives

A key use case for micromobility is shared services. Shared micromobility provides convenient, affordable and sustainable mobility options for people who cannot afford their own micromobility device and/or the related maintenance costs, who do not have space to store a bicycle in their home or on their property, or who prefer flexibility to use different modes of travel in the same day without returning somewhere to retrieve a locked personal bicycle. The City's shared micromobility program is called Bike Share Toronto. Run by the TPA, it is an integral component of Toronto's transportation network. As the fourth largest bike share system in North America, it currently provides over 9,000 rental/shared bikes (including 1,825 e-bikes) to the public through over 780 docked stations. Ridership grew 24 per cent in 2023 to 5,704,000 rides. Year-round usage has been demonstrated with January trips increasing year-over-year by 217 per cent in 2023.

By 2026 TPA plans to grow Bike Share to more than 1,000 docked stations to serve every ward, with 20 per cent electrification. The expansion plan identifies 110 areas of the City for station expansion in 2023. New locations are prioritized based on proximity

to transit stations, cycling infrastructure and other nearby Bike Share stations. This ensures that new locations are in areas that support first and last mile mobility options. Currently, Bike Share Toronto provides first and last mile integration with public transit at 52 TTC stations and 6 Metrolinx/GO stations. Discussions continue with TTC and Metrolinx on ways to further improve access to public transit.

A key objective for Bike Share Toronto is to make the system more accessible to all residents in the City, including low-income households. Its 2024 expansion reflects this objective by including 211 of 375 stations to be installed in Neighbourhood Improvement Areas (NIAs), many of which have higher concentrations of low-income and newcomer populations. In addition, the new rate structure, launched in April 2023, provides more affordable and low income options: payment of annual memberships in three installments; special Ontario Disability Support Program passes (100); a seniors pass (65+ years) to be piloted for one year; and corporate discounts to staff and students at Toronto District School Board and Toronto Catholic District School Board. In addition, TPA has worked with Toronto Community Housing Corporation (TCHC) to make \$5 annual memberships available to existing rent-geared-to-income residents and is working with Social Development, Finance and Administration Division (S DFA) to implement a \$5 annual membership available to existing Fair Pass Transit Discount Program recipients in 2024.

In terms of trends in North America, from 2021 to 2022, station-based bike share trips increased by 17 per cent, and rental/shared e-scooter trips dropped by 10 per cent across the U.S. and Canada. (NACTO, 2022) Station-based bikes made up one third of shared micromobility devices available in the U.S. and Canada, yet accounted for over 50 per cent of all shared bike and e-scooter trips. Canada's four major station-based systems saw a 47 per cent increase in trips from the previous year (NACTO, 2022)

Based on the analysis in this report, City staff recommend focusing on the provision and expansion of Bike Share Toronto as the means of providing shared micromobility in Toronto, given that bike share is safer, more affordable and more reliable as a form of public transportation than private e-scooter shared operations.

iii) Enabling and promoting use of micromobility among City staff

The City itself is encouraging staff use of micromobility through Fleet Services and the City's participation in the Smart Commute program, as managed by the Environment & Climate Division. City vehicles used in the delivery of City services are the second highest source of the City's corporate emissions at 40 per cent, with buildings at 46 per cent. The *Sustainable City of Toronto Fleets plan* is transitioning City Fleets to sustainable, resilient, net-zero operations by 2040. The City also aims to transition 20 per cent of its Fleet to Zero Emission Vehicles (ZEV) by 2025, and 50 per cent by 2030. As part of the plan implementation, various City Divisions are trialing the use of micromobility including manual and e-bikes, e-cargo bikes and folding bikes by City staff in Divisions where operational considerations allow, including but not limited to teams in Municipal Licensing and Standards, and TS, with others joining as this program expands. LSVs have been used by various Divisions such as Toronto Water, Solid Waste and Parks, Forestry and Recreation on private City-owned properties such as plant facilities, parks and yards. With the additional HTA pilot project for LSVs (if

adopted by City Council), there is the potential to review the experiences of other Ontario municipalities such as Parry Sound which uses LSVs for maintenance vehicles. LSVs may have beneficial use cases for deployment such as to carry out maintenance activities in constrained spaces in public laneways or other narrow public rights-of-way.

The City participates in the GTHA Smart Commute program that helps commuters adopt smart travel options by providing tools, resources and campaigns to encourage sustainable commuting habits. The Toronto Public Service was recognized in 2023 as Canada's first 'Best Workplace for Commuters' by supporting and encouraging employees to commute to work in sustainable ways - by transit, cycling, walking, carpooling - and also by offering hybrid work. Promotional and educational events take place throughout the year, including annual campaigns for Bike to Work Day, Bike Month, Winter Commute Month, and Smart Commute Month, and webinars, clinics/workshops, surveys, and prize draws. Sustainable commuting is a key component of the City's TransformTO Net Zero Strategy and Smart Commute helps promote Bike Share Toronto, all year round cycling, and micromobility as an alternative to driving to work.

iv) Expanding micromobility infrastructure through the City's network of bikeways, bike way design and road safety improvements, and bike parking

A cornerstone of the strategy is an emphasis on ensuring micromobility safety through the provision of infrastructure that is well designed and maintained. Having a network for micromobility is critical, so that people can take up micromobility options comfortably and safely in Toronto to get to/from work or school, shop, visit friends/family, conduct errands, or connect to public transit. Dedicated, protected micromobility infrastructure on public streets is a priority as it will reduce illegal sidewalk riding and make sidewalks safer for pedestrians. The challenge will be to provide a city-wide connected grid of protected micromobility infrastructure to provide for safety for all road users.

The City's **Cycling Network Plan** is a critical part of providing micromobility infrastructure. The Plan seeks to build on the existing network of cycling routes to **Connect** gaps in the current network, **Grow** the network into new parts of the city, and **Renew** existing parts of the network to improve safety and comfort for micromobility users. The City's cycling infrastructure projects improve safety and mobility options by providing improved micromobility connections to places of employment, transit, parks, local schools, businesses, residences, and other locations serving daily needs and recreation. Moreover in 2019, the Plan began applying an equity lens to give greater priority to underserved neighbourhoods in the city. This equity-based approach is also being applied to, and integrated with TS capital planning. In addition, TS Division has been advancing work on design considerations to address the growing use of micromobility. For example, City staff worked with NACTO on updating guidance for the design and engineering of micromobility infrastructure, including updating the width of bikeways to accommodate passing, queuing lengths, turn radii, grade changes and surface materials.

In addition, micromobility safety is addressed through the Council-endorsed **Vision Zero Road Safety Plan**, which includes initiatives to improve safety of vulnerable road users, i.e. for people who walk, roll and cycle. Examples of these safety initiatives

include street design (geometric safety) improvements and speed limit reductions. Street design improvements aim to increase visibility between all road users, reduce motorist turning speeds (resulting in less frequent and less serious collisions), and reduce conflicts between motorists and vulnerable road users. To address the fatality and serious injury risks of speeding, the City is currently reducing speed limits to curb speeding on our roads, as part of a holistic Speed Management Strategy as outlined in the City's Vision Zero Road Safety Plan. In addition, staff continue to carry out reviews for fatal collisions involving vulnerable road users, to continue assessing Toronto's streets and intersections for ways to improve their design to make them safer for all road users including micromobility users.

Finally, micromobility adoption requires not only safe places to ride, but also places to park. The City's **bicycle parking programs** aim to provide public bicycle parking facilities within the City at locations which helps meet the needs of micromobility parking for light duty types of micromobility (that are similar to bikes, trikes and personal cargo cycles), including: bicycle lockers, secure indoor bicycle stations, on-street bike corrals, bicycle lock-up rings on sidewalks and boulevards that have adequate width, and initiatives to increase bike parking including guidelines for bike parking facilities and expanded options for on-street cycle parking in residential areas.

The City Planning Division is currently working on updating bicycle parking requirements as part of the **Zoning By-law review** of parking requirements for new developments, in response to an increasing demand for bicycle and micromobility (e.g. personal cargo cycles) parking. Private companies are offering multi-vehicle, electric rideshare amenities in multi-unit buildings for residents to access sustainable mobility options. As part of public education efforts, TS staff are consulting with Toronto Building and TFS to develop general guidance for consideration of fire safety and prevention for proponents when designing indoor, on-site multi-vehicle charging for micromobility.

Above all, the provision of dedicated infrastructure is critical to ensure micromobility safety and to encourage the adoption and integration of micromobility in Toronto's transportation system. Exploration of other innovative initiatives to improve the quality of infrastructure for micromobility safety is discussed below.

v) Operations and maintenance initiatives to support micromobility

Ensuring the existing and future network of micromobility infrastructure remains safe for users is essential to sustaining its use and maximizing the value of that investment by the City. Safety hazards frequently experienced include illegal parking in bike lanes, debris, construction disruption, and damage to the road surface. These hazards often force cyclists and other micromobility users to share space with motorized traffic, which inhibits people from adopting micromobility, and/or reduces how often they will use it. Several initiatives are in place or being initiated, and will continue in the coming years to address these challenges, which include:

a) Potential automated enforcement: Investigation by TPS, in consultation with TS and TPA, of the potential to use automated licence plate readers (ALPRs), for enforcement of illegal parking in bike lanes. In November 2023 Council requested that the TPS and TPA, in partnership with TS, conduct a pilot project in 2024 to

acquire, test and evaluate mobile automated licence plate readers, primarily in enforcing parking offences that adversely affect the safety of vulnerable road users, such as obstructing bike lanes and blocking visibility at intersections.

b) A plan for maintenance of bikeways: A staff report, entitled *IE17.3 - Reducing the State of Good Repair Backlog and Enhancing Cycling Lane Maintenance*, provides a plan for the maintenance and refresh of new bikeways (cycle tracks). The expanding bikeway network presents some added complexity to the road network's SOGR, which includes pothole repairs, flexibollard replacement, precast concrete curb maintenance and refresh of pavement markings. TS Division is undertaking more maintenance and repair in-house to be more responsive than having to outsource these activities.

c) Testing different methods to assess asset conditions in bikeways: TS Division's work on pavement data collection includes a pilot for cycling facilities. The pilot project will use purpose-built equipment to survey representative locations of bike lanes, cycle tracks and multi-use trails maintained by TS Division. The project's vendor will then prepare a project analysis report to include collected data for location attributes, lane indicators (i.e., delineators, bollards, paintings and other physical barriers) and condition assessment (Good, Fair, Poor).

d) Safety improvements when navigating construction work zones: TS Division is coordinating efforts to ensure safety and accessibility for pedestrians and people who cycle when sidewalks and bicycle lanes are disrupted by construction work. This program is engaging staff across TS, Engineering & Construction Services and Toronto Water, as well as utilities and constructors.

e) Enhanced focus on snow clearing and snow removal in bike lanes: TS Division has work underway through the new (2022 to 2029) winter maintenance contracts, and the pending Major Snowstorm Response Plan coming to IEC in July 2024.

Other opportunities are in earlier stages of investigation, with early background work on considering EV charging potential tied to street furniture, monitoring trends elsewhere regarding speed limiters on SUVs/trucks for safety for all road users, especially vulnerable road users.

vi) Collaborating to promote awareness of safe and lawful use of micromobility and use of seasonal enforcement blitzes (to complement action area (ix) below)

Once adopted, this strategy will be promoted through a concerted public education campaign led by TS, working with Strategic Public and Employee Communications (SPEC), using various methods including messaging (in different languages), visuals and short videos, and social media. Educational strategies and content will be informed by and coordinated with the multi-partner table from action area (ix) below, that will involve other internal and external partners such as SDFSA, food delivery companies, gig workers/ couriers, Smart Commute, Cycle Toronto, community groups, health and academic partners, Bike Share Toronto, TTC, Metrolinx, TPS, TFS and others. These educational strategies will be coordinated with seasonal educational/enforcement blitzes

by the TPS to reinforce rules of the road, safe riding and prohibitions on sidewalk riding for micromobility. Members of the public can also request enforcement by contacting the TPS to report violations on roads or sidewalks, such as through the [Online Reporting for the TPS](#). In addition, where members of the public wish to propose a bikeway or cycling infrastructure, they can review information on the [City's website](#) on the [Cycling Network Plan](#) and how to contact staff.

Finally, regarding Council's request to mandate helmets, staff are not recommending this at this time. Under the HTA there is an existing mandatory helmet law for individuals younger than 18 years old. Helmets are not compulsory for adults over 18; however, a helmet can greatly reduce the risk of permanent injury or death if you fall or collide. Efforts to increase helmet use would be more effective if focused on education and incentives such as helmet giveaways, to support the message that it is strongly recommended that all riders wear helmets. Enforcement of mandatory helmet laws would require resourcing. Mandatory helmet laws could undermine the usage of shared micromobility such as Bike Share Toronto, which provides convenient alternatives to short car trips.

vii) Broad education on fire safety for lithium-ion batteries used in micromobility vehicles

Lithium-ion batteries are one of the main power sources for many micromobility devices such as e-bikes and e-scooters. Fires and explosions, caused by lithium-ion battery failures, have been occurring at an increasing rate creating immediate threat to life hazards for both the public and responding emergency crews. In 2023, TFS responded to 55 fires caused by lithium-ion battery failures, which represents an 83 per cent increase over 2022.

The fires that result from the failure of lithium-ion batteries represent a significant public fire risk. To mitigate this risk, TFS, along with partners from both the City and the Ontario Fire Marshal, will be launching a city-wide education campaign to support safe charging and usage of lithium-ion batteries later this year. This campaign will focus on the importance of using certified batteries that meet industry standards such as UL/ULC, using only approved charging devices, not tampering with or altering these systems in any way and using the batteries and devices only as approved by the manufacturer.

Since late 2022-early 2023, TFS has led an interdivisional and intergovernmental Lithium-ion battery working group, to develop an enhanced understanding and identify solutions to the challenges posed by lithium-ion batteries. Earlier this year, the Toronto Fire Chief wrote to both Health Canada and Transport Canada, requesting that they address the challenges being created as a result of the lack of Canadian regulations for lithium-ion batteries, in light of the significant public fire safety and Firefighter safety risks that are the result when these batteries fail. This inter-governmental effort remains ongoing and is being supported by various Fire Chief and Fire Service Associations across North America, including the Ontario Association of Fire Chiefs, the Canadian Association of Fire Chiefs, the International Association of Fire Chiefs, and the Metropolitan Fire Chiefs Association.

viii) Engaging Transport Canada and MTO to request their help and support for safe micromobility adoption

Transport Canada and MTO play key roles in regulating micromobility to provide for public safety. It is recommended that Council send letters to these higher orders of government, requesting action to improve safety and to help mitigate the liability risks related to micromobility, the outcomes of which are borne by municipalities. Currently, there are no harmonized micromobility vehicle safety standards in Canada. In February 2021, the federal government rescinded the definition of powered-assisted bicycle (or e-bike), which resulted in each province or territory needing to develop its own definition. This disjointed patchwork of e-bike regulations across Canada is confusing to comprehend for individuals, as well as corporate consumers, retailers, distributors, and manufacturers. Harmonization of micromobility vehicle standards in Canada would make it easier for national or international corporations (e.g. Canada Post, FedEx, Purolator, etc.) to procure fleets of micromobility; and would better support growth of the sustainable transportation industry, and support efforts to achieve environmental targets nation wide.

Importantly, the **lack of federal vehicle safety standards** hinders consumer protection and safety at point-of-sale and importation for electric powered micromobility. The federal government is responsible for technical vehicle standards and requirements which inform what is allowed to be imported and sold in Canada. In 2021 TS staff wrote to, and met with Transport Canada about the above issues, and more recently again in 2024, regarding these same concerns. While Transport Canada is aware of the issues, there has been no concrete progress on them. As previously noted in this report, Toronto's Fire Chief wrote to the federal government regarding the e-bike lithium-ion battery fire on the subway on December 31, 2023 and a request for federal regulation of lithium-ion batteries in micromobility vehicles to address public safety and fire prevention, such as on the TTC and in multi-unit buildings. For these reasons, staff are again requesting that Transport Canada regulate micromobility vehicle safety and battery safety requirements, standards, testing and labelling, for point of sale and importation; and in creating those regulations, to consult with key interested and affected parties with expertise in micromobility vehicle design and safety and universal accessibility.

Some of the key issues presented by micromobility require **provincial involvement to support safe adoption**. First, the Association of Municipalities in Ontario (AMO) has highlighted the municipal risks and liability resulting from minimum maintenance standards (MMS) for roads in the province that did not contemplate new small-wheeled devices such as stand-on e-scooters. The City's pavement and sidewalk surfaces are affected by seasonal variations that could impact micromobility users, such as when frost effects in the winter lead to frost heaves causing increased differential surfaces conditions. Late winter/early spring freeze-thaw cycles increase the development of and number of potholes. MMS are requirements for correcting pavement deficiencies such as potholes and large cracks in *O. Reg. 239/02: Minimum Maintenance Standards for Municipal Highways*. These current standards allow for surface deficiencies that would pose a hazard to micromobility activities. As a result, municipalities may need to determine and maintain a higher maintenance standard. In 2023 Good Roads (formerly the Ontario Good Roads Association) is undertaking a review of the MMS for roads and

it is unclear how the MMS will address micromobility going forward, which has implications for municipal budgets and for micromobility safety.

Regarding liability and reducing the exposure and burden on the City, there is a need to consider the lack of insurance coverage in the instances that pedestrians or cyclists or others are injured by uninsured operators of motorized or electric powered micromobility (especially throttle only vehicles). To this end, staff recommend requesting the Ontario Ministry of Finance and the Financial Services Regulatory Authority of Ontario, to consult the insurance industry and other relevant parties on developing first and third party insurance requirements for micromobility vehicles and establish a micromobility accident fund accessible to those who are injured in micromobility incidents where no insurance exists to respond to their claim, given that OHIP does not cover all medical and rehabilitation and other costs associated with injuries in these instances.

Finally, many e-scooter products imported do not meet the HTA regulations under the provincial e-scooter pilot project and are capable of travelling faster than 24km/h. An issue is that there are no set fines established by MTO for the operation of micromobility vehicles that do not comply with HTA definitions. Without a set fine, law enforcement officers have to lay a Part III offence, which would require a substantially more complex court process and lead to an open-ended, inconsistent, and confusing application of penalties by courts across Ontario.

ix) A multi-partner table to address the food delivery app industry issues

In May 2023, City Council requested that unique identifiers be required on powered micromobility vehicles used by couriers to address compliance with traffic laws. Several challenges stand in the way of such an approach. First, the COTA prohibits the City from providing a system of licenses with respect to couriers and courier companies. Second, if the City then required unique identifiers for any powered micromobility users within the City, this would necessitate creating a licensing system for the public (except for motorized wheelchair users). Similarly licensing cyclists has been considered a number of times in the past and rejected each time for the same reasons: high cost, jurisdiction issues and being ineffective. It would be a significant cost to develop, administer and enforce such as system. Further, the high number of people from neighbouring jurisdictions who cross municipal boundaries makes the province the most logical jurisdiction to regulate powered micromobility.

To meaningfully address the complex issues involving the food delivery industry and micromobility within the City, there needs to be collaboration and creative problem-solving among the various interested and affected parties to prevent unintended impacts that discourage micromobility use and push deliveries to be made by car/van. Staff have already begun to have these discussions with the food delivery app industry and various interested and affected parties (internally and externally) to broker solutions to issues regarding road safety and public space impacts raised by local BIAs. Staff recommend establishing **a multi-partner table** that meets quarterly to address issues collectively. Intended participants include the food delivery app industry, gig workers/couriers, active transportation groups (pedestrians, cyclists), BIAs, and various social equity groups, and community groups including persons with disabilities, seniors, transit riders, and others. The purpose would be to work collaboratively and collectively

to raise public awareness, improve skilled riding, incent positive behaviours, and address issues identified by the multi-partner table. Divisional and ABC partners include SDFA, Bike Share Toronto (TPA), TTC, TPS, TFS and others.

Similar to other jurisdictions, the City is struggling with the proliferation of online deliveries and the impacts of this demand on public streets. Staff recommend that near-term actions include the development and dissemination of specific messaging and materials through partner organizations, such as why it is vital to avoid blocking bike lanes (i.e. by couriers driving cars), sidewalk riding, wrong-way riding, riding without lights or protective gear, and safe charging of lithium-ion battery powered micromobility. Other issues for discussion and exploration of potential solutions/initiatives include, but are not limited to, eliminating aggressive delivery time promises (e.g. 15 minutes or less, or 25 minutes or less), ensuring cycling routes rather than driving routes are provided to micromobility couriers when estimating delivery times, and addressing infrastructure gaps, data collection, public realm impacts, courier hubs, and charging facilities.

The widespread and safe adoption of micromobility for non-leisure purposes, such as commuting and deliveries, cannot be achieved by the City alone, and necessitates support from federal and provincial governments in the ways described above.

x) Data collection for monitoring micromobility usage and safety

It will be important to monitor micromobility usage in Toronto through new data collection initiatives such as the micromobility cordon count (an observational area study of the number and type of micromobility vehicles being used), and reaching out to various health and academic researchers to learn more about micromobility usage and injury prevention. There are many current data gaps and challenges with coding, recording, tracking, verifying data quality, extracting data, and all things to do with data for usage, safety, demographics, and other dimensions of micromobility activities.

Currently, cycling data is collected through different methods, such as eco-counter locations, permanent Miovision cameras collecting bicycle counts at intersections, ad-hoc Turning Movement Counts collected in the City, and project-specific bicycle counts (for bikeway projects). A bicycle cordon count is planned for Fall 2024 which would collect data that classifies different types of micromobility being used. TS staff are planning to start rolling out a routine, rotating program of bicycle counts on mostly dedicated bicycle infrastructure in the second half of 2024. In 2022 TPS opened a self-reporting collision center located downtown in Liberty Village to provide another location for pedestrians, cyclists and other vulnerable road users to report collisions. Around the same time, TPS launched an online reporting system so pedestrians, cyclists and other vulnerable road users can report collisions from home. These additional reporting methods should help collect better data about collisions involving cyclists and micromobility users. The challenge for micromobility safety data is that many injuries are likely not counted or reported.

Summary

Overall, it will be critical for the City to continue its work on designing, building and better maintaining the dedicated street space for micromobility users to operate safely year-round, as well as coordinating on the various initiatives to improve the design and delivery of Complete Streets, more micromobility parking and EV charging for vehicles including micromobility. A coordinated approach to sustainable mobility and EVs that includes micromobility considerations will enable the City to reap the rewards of a greener, more space-efficient mode that will improve road safety and alleviate traffic congestion.

The widespread and safe adoption of micromobility, for non-leisure (utilitarian) purposes such as commuting, errands and deliveries, cannot be achieved by the City alone, and necessitates collaboration with many external parties representing cyclists and other micromobility users, drivers/Canadian Automobile Association, food delivery app industry, gig workers, community groups, academic and health researchers, and others. There are key roles to be played by the federal and provincial governments to enable widespread and safe adoption of micromobility to achieve collective policy goals for safe mobility, the environment and the economy.

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ATTACHMENTS

Attachment 1: Photos of Micromobility

Attachment 2: Low-Speed Vehicle Regulations under the Ontario Highway Traffic Act

Attachment 3: Public Consultation Report