TORONTO

REPORT FOR ACTION

E-Scooters - A Vision Zero Road Safety Approach

Date: June 24, 2020
To: Infrastructure and Environment Committee
From: General Manager, Transportation Services
Wards: All

SUMMARY

E-scooters, or electric kick-scooters, are a new vehicle type suited for short urban trips. Since 2017, they have emerged in many cities across North America and Europe as they provide convenient, low-cost solutions for short trips and can provide connections to other modes of travel such as transit.

On January 1, 2020, new Provincial regulations came into effect that allow Ontario municipalities to opt in to a five-year e-scooter pilot project subject to conditions. This requires revising municipal by-laws to identify where e-scooters would be allowed to be used. Key pilot rules for e-scooter riders include a minimum operation age of 16, maximum travel speed of 24 km/hr, mandatory riding in bike lanes where available, and helmets required if the rider is under 18 years old.

This report is informed by a Vision Zero approach to road safety, particularly for vulnerable road users, while also considering the potential benefits of e-scooters such as convenience and alternatives to automobile use for short trips. Based on extensive research and consultations, this report recommends an approach that reduces the likelihood of e-scooter risks to riders, impacts on people with accessibility needs, community nuisance, and liability to the City, as well as enhancing the public benefits.

City staff recommend that the Toronto Parking Authority (TPA) be authorized to serve as the provider of shared micromobility services to allow for the implementation of more safeguards and better coordination with other municipal services, especially Bike Share. This approach would result in a competitive procurement process for shared e-scooters that complements Bike Share Toronto. The use and parking of e-scooters would continue to be prohibited in Toronto until such time that the TPA service has been contracted and City resources for enforcement are in place.

This report also recommends the need for improved industry standards at the provincial and federal levels for greater consumer protection in the purchase and/or use of e-scooters. While staff are aware that e-scooters are being considered as an open-air transportation option, the absence of improved standards and available insurance for e-

scooter riders, coupled with lack of enforcement resources, would risk the safety of riders and the public on the City's streets and sidewalks, especially for people with disabilities.

Next steps are to commence development of an RFP by the TPA, with support by Transportation Services, and for City staff to report back in the first quarter of 2021 with an update on progress on opting into the pilot and proposed pilot by-law changes applicable to e-scooters (personal and shared) for an e-scooter pilot recommended for May 2021.

RECOMMENDATIONS

The General Manager, Transportation Services recommends that:

1. City Council request that the General Manager, Transportation Services, report back in the first quarter of 2021 with progress on opting into the pilot and the recommendations below, including, but not limited to, injury, fatality and collision investigations and data collection and tracking, further standards development for e-scooter device design, as well as consultations on proposed by-law changes with the accessibility community and other external and internal stakeholders (e.g., Toronto Police Services, Toronto Parking Authority, and Toronto Public Health), prior to, or in conjunction with, proposed by-law changes required to opt in to the Provincial e-scooter pilot for May 2021, subject to budget approvals and COVID-19 status.

2. City Council amend Municipal Code Chapter 179 - Parking Authority by adding the term, "micromobility", in section 179-7.1 to expand the Toronto Parking Authority's authority over the bike share system to add micromobility share system as shown in the amended section in Attachment 1.

3. City Council request that the Ontario Ministry of Transportation amend the Motor Vehicle Collision Report to add electric kick-scooters as a vehicle type and to treat e-scooters as a motor vehicle for reporting purposes.

4. City Council request that the Ontario Ministry of Transportation and the Ontario Ministry of the Attorney General establish set fines for violations of O. Reg. 389/19, Pilot Project - Electric Kick-Scooters, and communicate these set fines to Toronto Police Services through an All Chiefs Bulletin.

5. City Council request that the General Manager, Transportation Services, consult with internal and external stakeholders regarding the lack of available medical coverage for e-scooter users and non-users when injured, and explore options with other government and industry stakeholders on creating a solution for automatic no-fault benefits for medical and rehabilitation expenses not provided through the Ontario Health Insurance Plan (OHIP) for those injured in incidents involving e-scooters and other micromobility devices.

6. City Council request that the Ontario Ministry of Transportation strengthen its standards and specifications for e-scooters in O. Reg. 389/19, Pilot Project - Electric Kick-Scooters based on the latest best practice research.

7. City Council request that the General Manager of Transportation, in consultation with health agencies and/or academic partners, to explore options and methods for studying the health impacts of e-scooter use, including, but not limited to, tracking the number and types of injuries and fatalities related to e-scooters.

8. City Council request that the General Manager, Transportation Services, report back through the 2021 budget process, and in consultation with the Toronto Parking Authority, Toronto Police Services, the Chief Financial Officer and Treasurer, and other Divisions as necessary, on the financial and additional staff resources required to manage the implementation, operation, and enforcement of e-scooters in Toronto.

9. 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 in order to give effect to the recommendations in this report dated June 24, 2020, titled "E-Scooters - A Vision Zero Road Safety Approach", in consultation with the General Manager, Transportation Services and the President, Toronto Parking Authority.

FINANCIAL IMPACT

Funding and resources required in various programs for the following will be included as part of future budget submissions for consideration during the budget process to address the financial and additional staff resources required to: manage implementation, operational, and enforcement issues of e-scooters in Toronto; and the resolution of e-scooter issues, including, but not limited to, injury/fatality and collision investigations and data collection and tracking (e.g., in consultation with health agencies and/or academic partners, Toronto Police Services, and others), further standards development for e-scooter device design, and consultations on proposed by-law changes with accessibility and other stakeholders.

The Chief Financial Officer and Treasurer has reviewed this report and agrees with the financial impact information.

EQUITY STATEMENT

While e-scooters have potential to serve areas with less access to mobility, the experience of other cities has shown that this has not always been realized. The privately operated e-scooter business model is centred around serving areas with higher pedestrian density and more disposable income.

E-scooters pose a risk to people with disabilities due to their faster speeds and lack of noise. Cities that have allowed e-scooters have observed a high incidence of sidewalk

riding by riders, whether permitted or not on sidewalks. Parked e-scooters, especially when part of a dockless sharing system, can pose trip hazards and obstacles. Seniors, people with disabilities, and those with socio-economic challenges could face negative outcomes if injured in a collision or fall. Solutions to enforcement and compliance are still in their infancy.

DECISION HISTORY

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 people living with disabilities, and related organizations serving this population.
http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2020.DI7.3

On October 2-3, 2019 City Council, directed the General Manager, Transportation Services, to report on a program for the oversight and management of e-scooters on City roadways, including possibly adding e-scooters to the bike share fleet as a way of managing e-scooters in the public right-of-way, to ensure a safe and accessible transportation network for all users during the proposed five-year Provincial pilot project. City Council also prohibited e-scooter use on City sidewalks and pedestrian ways, and parking, storing or leaving an e-scooter on any street, sidewalk and pedestrian way.
http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2019.IE7.13

On April 25, 2019, the Infrastructure and Environment Committee requested a report back on a proposed regulatory framework, safe road design and intersection requirements for low-speed wheeled modes under 25 km, including but not limited to electric wheelchairs, scooters, cargo cycles, and e-assist cycles in Toronto.
http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2019.IE4.5

COMMENTS

Background

E-scooters are a two-wheeled battery-powered device, with a narrow board that the rider stands on and steers using a handle stick, and a throttle for acceleration (see Figure 1 below). They are a form of micromobility, a general concept for shorter distance travel using light-weight vehicles such as bicycles, e-bikes, and e-scooters. They may be privately owned or are often rented by the minute through mobile apps.

On January 1, 2020, *Ontario Regulation 389/19 Pilot Project - Electric Kick-Scooters* under the *Highway Traffic Act* (HTA) came into force, outlining broad conditions for a five-year e-scooter pilot period. Municipalities may opt in to the pilot by revising their by-laws on where e-scooters would be allowed to operate such as roads, bike lanes, and trails within its jurisdiction. A few of the City of Toronto's requested standards for e-scooters were included in the Province's regulations. Key parameters in the HTA for the vehicle and rules are:

- 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/hr 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;
- 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 crossovers.

Figure 1: E-scooter (example)

In the absence of federal or provincial industry standards for e-scooter manufacturing and retailing, buyers are able to purchase e-scooters that do not meet provincial regulations.

Benefits of E-scooters

The key appeal and popularity of e-scooters is that they are fun and convenient, particularly to people under the age of 35. They are often used for recreation and touring, but can also be used as a method of commuting or for taking short utilitarian trips. They reduce effort and sweat from exertion compared to human-powered kick-scooters and bicycles. They also enable people to go farther distances than on foot. A large part of the convenience is that there is no need to search for parking as there is with a car; adding to that e-scooters are easy to access, if folded and carried with the user, or if available through a dockless sharing system where the devices are widely available on the street.

E-scooters also take up little space in the roadway and offer the potential to replace automobile trips with some reports of 30 per cent of riders choosing the e-scooter over taking a car/ridehail/taxi (Portland, Calgary), thereby helping to reduce traffic congestion. Some e-scooter rider surveys indicate e-scooters are used to address first mile/last mile issues to get to and from transit. For example, in the Paris area, about 23 per cent of trips were combined with another mode like public transit, and in Montreal, about 27 per cent of e-scooter trips originated or ended at a subway or train station. E-scooters are also attracting interest from individuals during the COVID-19 pandemic as

they offer an individual, socially distanced, and open-air transportation option that is a potential alternative to public transit or car use.

Micromobility

Micromobility is a general concept for light weight, human- or electric-powered modes of travel such as walking, cycling, e-biking, and e-scootering used for shorter trips than by driving a car and for first and last mile to transit. Some cities (Montreal, Paris) and industry thinkers (Deloitte TMT Predictions 2020) anticipate that the future of e-micromobility will be realized with pedal assist e-bikes which can be used more comfortably for longer distances than e-scooters or human-powered bicycles, and allow for carrying cargo.

Recent reports by Metrolinx suggests that 40 per cent of trips (4.35 million trips in 2016) within the Greater Toronto and Hamilton Area (GTHA) can be considered bikeable (i.e. less than five kilometres in length). Distances in the Downtown and City Centres in Toronto have great potential for micromobility. From a City Planning 2016 survey of those who live and work in the Downtown, 57 per cent reported walking to work, over 30 per cent taking public transit to work, and 13 per cent cycling to work.

Recognizing the importance of micromobility options, especially as part of COVID-19 emergency response and recovery, the City of Toronto and its agencies are already advancing active transportation as follows:

- Implementation of ActiveTO, CurbTO, and CaféTO to reallocate space for walking, cycling, and support of local businesses and their patrons;
- Implementation of TransformTO and ResilientTO with a target by 2050 that 75 per cent of trips under 5km will be by walking or cycling, and 100 per cent of transportation will use zero carbon energy;
- Accelerated expansion of 40km of active transportation infrastructure in the City Council-adopted Cycling Network Plan;
- Expansion of Bike Share Toronto in 2020 to 20 of the 25 wards in the City, adding 1,850 new bicycles, 160 stations and 3,615 docking points to the network. The system will grow to a total of 6,850 bikes, 625 stations, and 12,000 docking points.
- Completion of e-bike feasibility testing and the addition of 300 e-bikes to the Bike Share fleet for 2020;
- Implementation of the Electric Vehicle Strategy's action to pilot electric micro-mobility programs (e.g., e-bikes, etc.) that expand electric mobility alternatives to driving; and
- Implementation of the Walking Strategy (2009-2019) resulting in a majority of Torontonians saying their neighbourhood is “very walkable” (64 per cent citywide and 75 per cent in Toronto and East York, The Strategic Counsel's 2018 survey).

Vision Zero Road Safety – Risks with E-scooters

The City has a Vision Zero commitment to eliminate serious injuries and fatalities resulting from roadway crashes, particularly around six emphasis areas including pedestrians, school children, and older adults. Replacing car trips with e-scooter trips presents an opportunity to address some road safety issues if e-scooters produce a net safety benefit, especially for these groups. A 2020 International Transport Forum study notes that the risk of hospital admission may be higher for e-scooter riders than for

cyclists, but that there are too few studies to draw firm conclusions. While not comprehensive, the emerging evidence of the health impacts associated with e-scooter use warrants a cautious approach to mitigate risks to e-scooter riders, pedestrians, and the City. Some of the findings are below.

- **New e-scooters users** are most likely to be injured with 63 per cent of injuries occurring within the first nine times using an e-scooter. (CDC and City of Austin).

- **A comparison of serious injury rates** between Calgary's 2019 shared e-scooter pilot and Bike Share Toronto suggests riding a shared e-scooter is potentially about 350 times more likely to result in a serious injury than riding a shared bike on a per km basis, and about 100 times more likely on a per trip basis.[1]
- The **fatality rate** for shared e-scooter users is potentially nine to 18 times the rate of bike share-related deaths in the U.S., based on a news report in the Chicagoreader.

- **Head trauma** was reported in nearly one third of all e-scooter-related injuries in the U.S. from 2014 to 2018 – more than twice the rate of head injuries to bicyclists. In a City of Austin study in 2018 over three months, 48 per cent of e-scooter riders who were hurt had head injuries (91 out of 190), with 15 per cent (28 riders) experiencing more serious traumatic brain injuries.

- **Falling off e-scooters** was the cause of 80 per cent of injuries (183 riders); 20 per cent (45 riders) had collided with a vehicle or an object, according to a 2019 UCLA study of two hospital ERs in one year. Just over eight per cent of the injuries were to pedestrians injured as a result of e-scooters (11 hit by an e-scooter, 5 tripped over a parked e-scooter, and 5 were attempting to move an e-scooter not in use).

Hospital data will be key to track injuries and fatalities by type and severity, especially for incidents where no motor vehicle has been involved (e.g., losing control) or for a trip and fall involving improperly parked e-scooters. As an ICD-10 code (international standard injury reporting code) specific to e-scooters will not be implemented in Canada until at least spring 2021, a reliable method to track serious e-scooter related injuries and fatalities presenting at hospitals is currently not available.

Enhancing Vision Zero Road Safety with the Provincial Pilot Project

Although the HTA sets out some e-scooter standards, such as maximum speed and power wattage, due to the nature of urban and suburban conditions such as Toronto's,

1 Includes a limited sample size, differing definitions for serious injuries, different city contexts (e.g., Calgary allowed e-scooter riding on sidewalks, whereas bicycle riding is not allowed on sidewalks in Toronto) and serious injuries may decline over time as people gain experience riding e-scooters. (Montréal reported few e-scooter injuries for its 2019 pilot, however, it is unclear whether and how data for serious injuries was gathered.) Calculations are based on: 33 ER visits requiring ambulance transport over three months (Jul to Sep 2019) in Calgary for e-scooter-related injuries with a reported 750,000 trips, and average trip length of 0.9km; and 2,439,000 trips for Bike Share Toronto, with 3km average trip length, over 12 months in 2019, and no serious injuries (e.g., broken bones, head trauma, hospitalization) but attributing one for comparison purposes. Further data collection and studies of injuries are needed on a per km basis, by type of trip (i.e., recreational versus commuting, facility type), and by injury type.

City staff recommend that the Province strengthen the device standards for greater rider safety. Based on an extensive literature review, items recommended for further Provincial exploration include a maximum turning radius, a platform surface grip, wheel characteristics (e.g., minimum size, traction, tire width), braking and suspension.

In addition, the Province has not established set fine amounts for offences under the HTA e-scooter regulations. Without this in place, for the police to lay a charge in respect of a violation, a "Part III Summons" is required, which means the police must attend court for each charge laid regardless of severity, and a trial is required for a conviction and fine to be set. This may make it less likely that charges are laid. Fines outside of ones the City could set (e.g. e-scooter parking violations, illegal sidewalk riding) would create workload challenges for Police and courts.

In spite of the Pilot requirement to collect data, there is currently no vehicle type for e-scooters in the Ministry of Transportation's (MTO) Motor Vehicle Collision Report (MVCR) template used by all police services to report collisions. Unless the Province specifies e-scooters are motor vehicles for the purposes of collision reporting, and has a field for this in its template, e-scooter collisions may not be reported reliably and meaningful collision data analysis will not be possible. In Fall 2019, City staff requested that the MTO add e-scooters as a separate vehicle type, but MTO has not yet communicated they would make this change.

Accessibility for Ontarians with Disabilities Act (AODA)

Persons with disabilities and seniors have considerable concerns about sidewalk and crosswalk interactions with e-scooter users, as well as concerns regarding trip hazards and obstructions from poorly parked or excessive amounts of e-scooters. The Toronto Accessibility Advisory Committee, a body required under the AODA, recommends that City Council prohibit the use of e-scooters in public spaces, including sidewalks and roads. In other jurisdictions outside of Ontario, some legal action has been undertaken against municipalities by persons injured as a result of e-scooter sidewalk obstructions, as well as by persons with disabilities.

Risk and Liability Issues

There is a significant risk that the City may be held partially or fully liable for damages if e-scooter riders or other parties are injured. Transportation Services staff consulted with the City's Insurance and Risk Management office (I&RM) to understand the magnitude of the City's liability if allowing e-scooters. At this time, loss data is lacking on e-scooters due to generally lengthy settlement times for bodily injury claims. The City has significant liability exposure, however, due to *joint and several liability*, as the City may have to pay an entire judgement or claim even if only found to be 1 per cent at fault for an incident. The City has a $5M deductible per occurrence, which means the City will be responsible for all costs below that amount. In terms of costs, Transportation Services staff will also be required to investigate and serve in the discovery process for claims.

E-scooter sharing/rental companies typically require a rider to sign a waiver, placing the onus of compensating injured parties on the rider. Riders are left financially exposed due to a lack of insurance coverage and if unable to pay, municipalities will be looked to

for compensation (e.g., in settlements and courts). Claims related to e-scooter malfunction have been reported by the media (such as in Atlanta, Auckland, New Zealand and Brisbane, Australia). In 2019, a Grand Jury faulted the City of San Diego for inadequate regulation and enforcement of e-scooter sharing companies. By opting in to the Pilot, the City will be exposed to claims associated with improperly parked e-scooters as evidenced by lawsuits filed by persons with disabilities and those injured by e-scooter obstructions (such as in Minneapolis and Santa Monica, California).

The insurance industry does not currently have insurance products available for e-scooter riders. In Fall 2019, City staff explored whether the Motor Vehicle Accident Claims Fund could be expanded or if a similar kind of fund in principle could be created to address claims where e-scooter riders or non-users are injured and their expenses are not covered by OHIP, nor by other insurance policies (e.g., homeowner's or personal auto). Further research and consultation would be needed to look into these considerations.

It will be critical to ensure that insurance evidenced by e-scooter sharing companies will cover their operations for all jurisdictions operated in (e.g., all cities nationally or internationally). Further, there needs to be full indemnification for the municipality by e-scooter sharing companies, and not limitations in their indemnification contracts.

In addition to the experiences in other jurisdictions, several risk factors are unique to the City of Toronto and play a role in informing the recommended approach to e-scooters:

- **Streetcar tracks:** Toronto has an extensive track network (177 linear kilometres) which poses a hazard to e-scooter riders due to the vehicle's small wheel diameter.
- **Winter and State-Of-Good-Repair:** Toronto experiences freezing and thawing that impacts the state-of-good-repair for roads. A large portion of roads are 40 to 50 years old, with 43 per cent of Major Roads and 24 per cent of Local Roads in poor condition. Coupled with lack of standards for e-scooter wheels (e.g., traction, size), this makes this particular device more sensitive to uneven road surfaces.
- **High construction activity:** In addition to the city's various infrastructure projects, Toronto has been one of the fastest growing cities with about 120 development construction sites in 2019.
- **Narrow sidewalks and high pedestrian mode shares** in the Downtown Core and City Centres: Most jurisdictions experienced illegal sidewalk riding by e-scooter users, with some business districts saying e-scooters deterred patrons from visiting their previously pedestrian-friendly main streets. This is especially challenging with physical distancing requirements and other COVID-19 recovery programs expanding the use of the City's sidewalks and boulevards.

Environmental Impacts of E-scooters

While some mode shift from driving to using an e-scooter has occurred in other cities, the majority of e-scooter trips would have been by walking or public transit (around 60% for Calgary and Portland; and 86% in Greater Paris). For example, 55 per cent would have walked instead of using an e-scooter (Calgary). From a Paris area survey, 44 per cent would have walked, 30 per cent would have used public transit, and 12 per cent would have used a bicycle/shared bike; while this study noted that e-scooters had no

impact on car equipment reduction, an extrapolation would assume that 14 per cent would have used a car/ridehail/taxi, which still represents a minor shift away from motorized vehicular use.

Transportation accounts for about 38% of greenhouse gas (GHG) emissions in Toronto (2017). E-scooters are promoted as a near-zero local GHG transportation option as the electricity grid in Ontario is very low-carbon. A 2019 study based on life-cycle analysis suggests that average greenhouse gas (GHG) emissions per e-scooter mile travelled were half the amount associated with a car, but 20 times than that of a personal bicycle. Suggesting that reliance on e-scooters alone to shift people out of cars and to reduce GHGs and environmental impacts may not be entirely effective. Environmental impacts of e-scooters include disused e-scooters arising from the device's short lifespan, toxic materials from battery waste, and emissions from the manufacturing, shipping, and maintenance of sharing fleets. In May 2020, Jump reportedly scrapped thousands (possibly 20,000) still functional e-bikes, and in June 2020, an estimated 8,000 to 10,000 Circ e-scooters were scrapped in the Middle East.

Transportation Services staff consulted with Energy and Environment, and Solid Waste Management Services Divisions, who are involved in researching and monitoring issues related to e-waste in the Electric Vehicle Strategy, such as potential battery recycling and second life applications for batteries; impacts to the waste stream where end-of-life batteries from these devices may require special disposal as hazardous waste; and also management of discarded or abandoned e-scooters as litter.

Public and Stakeholder Feedback

Various consultation was undertaken in late 2019 to early 2020 (pre-pandemic), including direct staff contact, written submissions, in-person meetings, industry meetings, an online panel survey of 1,010 residents, and focus groups. City staff also consulted a municipal e-scooter coordinating committee across Ontario, and contacts across Canada, the U.S, as well as Paris and Transport for London, UK.

Results are fairly polarized among all those consulted with just over half supporting, and just under half not supporting, the use of e-scooters in Toronto. Most stakeholders and a majority of Toronto residents surveyed (69 per cent) support a coordinated approach to shared e-scooter services managed by Bike Share Toronto. Responses highlighted the potential of e-scooters to provide first mile/last mile connections, however concerns related to safety were also noted. Highlights from the online survey panel:

- Fifty-five per cent of residents said they would be *comfortable (19%)* or *somewhat comfortable* (36%) recommending that a loved one use an e-scooter, while 18% said *somewhat not* comfortable, and 21% said *not* comfortable, and 6% were *unsure*.
- About half of Toronto residents said e-scooters are still a new device and should be introduced cautiously, starting with a limited pilot project.
- Residents gave the highest intensity of support for e-scooter riders having to wear helmets (mean score of 8.8 out of ten).
- Dangerous and fun/adventure are top of mind words. Those 55 years or older are six times more likely to have said, "dangerous" for e-scooters than younger residents.

- Eight per cent of residents said they have used or rented an e-scooter. Fun (26%) and convenient (25%) described their experiences, followed by "I would use it but not everyone should use it as it takes some skill" (19%).

Feedback from stakeholder groups surveyed:

- Fifty-nine per cent said e-scooters could serve as a first and last mile transportation option to/from public transit.
- Sixty-seven per cent said the City's priority should be road safety, focused on preventing serious injuries and deaths in its approach to e-scooters, rising to 80% for BIA respondents.
- Among BIA respondents, 47% said e-scooters are too dangerous to be on city streets and should not be used for transportation, while 40% said e-scooters should be treated the same as power-assisted bicycles.

Other key issues raised in the consultations include lack of enforcement and adequate infrastructure; and questions about environmental sustainability, public space and the potential for clutter and safety hazards particularly for people with disabilities.

Industry Stakeholders

Over 20 e-scooter-, micromobility- and software-related companies have been actively seeking out meetings with City staff, and to varying degrees with City Councillors, TPA Board Members, and senior management at the City to persuade them of the potential benefits of e-scooter sharing products and services. City staff conducted two industry group meetings - one in October 2019 and one in January 2020 - among other individual meetings and communications with industry representatives to understand and share information on e-scooter issues and to develop this report.

E-Scooters and COVID-19

Some cities like San Francisco designated shared mobility as essential during the COVID-19 pandemic, while others have not (e.g., Chicago). Some e-scooter providers provided discounts or incentives like free 30 minute rides for essential frontline or hospital workers. Cleaning was done more frequently (e.g., twice per day or each time the e-scooters were charged/maintained), and users are reminded to wash their hands and not touch their faces. In cities where the service was deemed essential, many private sector providers had reduced or altogether removed their shared bike and e-scooter fleets due to low demand, and in some cases this was contrary to municipal desires to provide transportation options to the public who rely on them (e.g., Portland, San Francisco, and SoBi bike share in Hamilton, Ontario).

While physical distancing requirements and COVID-19 impacts have changed travel patterns, existing options such as independent cycling and use of Toronto Bike Share, in combination with expanded cycling infrastructure, have increased to provide independent mobility. For the first 5 months of 2020, Bike Share Toronto casual ridership has increased 72.6 per cent over the same period in 2019. A Forbes article reported cycling being up 150 per cent in Philadelphia in May 2020.

More recently, with cities in stages of re-opening, e-scooter sharing companies are returning (e.g., Calgary, Edmonton). Other cities have suspended e-scooter sharing services until after COVID-19 (e.g., Windsor approved a shared e-scooter pilot in April 2020, but has now deferred its pilot until after COVID-19). Prior to the pandemic, a number of jurisdictions (e.g., Boulder, Honolulu, and Houston) had refused to allow or banned the use of e-scooters due to public safety concerns. Key cities with similar population, urban form, and/or climate have not yet piloted e-scooters such as New York City (Manhattan/New York County ban), Philadelphia, and Sydney, Australia. A summary of lessons learned from other jurisdictions can be found in Attachment 2.

Consideration of a Potential Pilot for ActiveTO Major Road Closures

While staff have considered a potential e-scooter pilot on ActiveTO major road closures, it would pose risks to vulnerable road users and leave the City open to considerable liability and risk due to lack of resources for oversight, education and enforcement at this time. A key purpose of ActiveTO is to provide a mixed use space for physical activity for people of all ages for walking, jogging and human-powered cycling. Piloting a new vehicle type that is throttle-powered and can potentially exceed speeds of 24km/hr poses risks to vulnerable road users in such conditions. It could also lead to confusion about which infrastructure or facilities under ActiveTO are permissible, and this would pose public safety risks that the City does not have resources to manage at this time.

City staff would also need to address fair process for the 15 or more companies interested in renting out e-scooters for use in a short timeframe (e.g., processing requirements for insurance and indemnification, and appeals for which vendors are allowed or rejected, and creating a permit/legal agreement for the vendors allowed), and this would pre-empt the recommended RFP process. Finally, the risk of injury for new users is high, and could put additional burden on local hospitals and paramedics at this time. For the reasons above, City staff do not recommend permitting e-scooters in ActiveTO facilities in 2020.

Consideration of Allowing Personal E-scooters, Not Shared E-scooters

In theory, there would be a way to only allow personal e-scooters and not shared e-scooters, but this is not the case. By changing the City's bylaws to allow e-scooters to be operated on the City's streets – it would be near impossible to prevent shared or rental e-scooters. For example, a number of companies both sell e-scooters for private use and rent them for shared use (e.g., Bird, Razor, and Segway). In addition, while e-scooters present another form of individualized mobility other than cycling or driving, it is limited by the HTA's e-scooter regulations that do not allow carrying items/goods for safety reasons as this could affect an e-scooter rider's balance resulting in falls or losing control. Further, e-scooters appear very simple to use, which poses a risk that new riders underestimate the skill and attention required to balance and ride safely.

If Council were to permit e-scooters to be operated on City streets - without the commensurate resources to provide oversight, education, outreach and enforcement, there would be considerable risks to public safety for e-scooter riders and other vulnerable road users; additional burden on hospitals and paramedics; impacts on accessibility, community nuisance and complaints; impacts on current initiatives to

enhance the public realm for COVID-19 recovery efforts, such as CurbTO and CaféTO; and liability and costs to the City. For the reasons above, staff recommend that personal use of e-scooters not be considered until 2021.

Recommended Approach

Staff recommend an approach that minimizes risk by seeking enhancements to the Provincial pilot project regulations and supports, as well as building from the improvements made to e-scooter programs in other cities. The conclusion is to propose a municipal service model under the TPA that is competitively procured, and that is coordinated with, and complements Bike Share Toronto. This will ensure shared micromobility continues as a public transportation option with oversight. This approach reduces impacts on sidewalk users and public space by managing shared micromobility parking. This approach requires an amendment to the authority granted to the TPA under Chapter 179, Parking Authority of the Municipal Code to add shared micromobility including e-scooters. (see Attachment 1)

Staff recommend continuing the current prohibitions of e-scooter use and parking as outlined in Chapter 950, Traffic and Parking, and Chapter 886, Footpaths, Pedestrian Ways, Bicycle Paths, Bicycle Lanes and Cycle Tracks, until the system for oversight is in place for public safety, and given the requests for amendments to Provincial regulations. While a number of e-scooter sharing companies are looking for permission from the City to allow e-scooters in 2020, staff do not recommend this as it would pre-empt the recommended approach for competitive procurement, require diversion of staff resources to manage opting in to the Provincial pilot, and lead to considerable risks and costs to the City. A pilot involving e-scooter use in ActiveTO facilities would not provide useful assessment of e-scooters as ActiveTO (e.g., major road closures) are not representative of typical real life conditions and interactions with other road users, and would present immediate liability exposure and costs to the City.

Next Steps

Next steps are to commence development of an RFP by the TPA, with support by Transportation Services, and for City staff to report back in the first quarter of 2021 with an update on proposed pilot by-law changes applicable to e-scooters (personal and shared) and budget requirements for an e-scooter pilot recommended for May 2021. The report back for 2021 can include any progress on consultations with the Province and other key stakeholders to:

- Strengthen the e-scooter standards and specifications to foster greater safety for privately owned e-scooters and for e-scooter sharing;
- Update the MVCR template and treat e-scooters as a motor vehicle for reporting purposes to enable effective, consistent data collection;
- Establish set fines for offences made under the HTA Pilot Project regulations and communicate this to the Toronto Police; and

- Research and explore issues and opportunities to create a fund for claims by e-scooter users and non-users who are injured as a result of e-scooter incidents and have medical/rehabilitation expenses not provided through OHIP or existing homeowner's or auto insurance.

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ATTACHMENTS

Attachment 1: Amendments to Chapter 179 - Parking Authority
Attachment 2: Lessons Learned from Other Jurisdictions
Attachment 3: E-scooter Focus Groups Report
Attachment 4: Views of Toronto Residents on E-Scooters (Summary Report)

Attachment 1: Amendments to Chapter 179 - Parking Authority

Add the following definition:

MICROMOBILITY – a category of vehicles or devices that includes those operated or used by a person that moves the sole person operating or using the vehicle or device, as well as any vehicles or devices that can move or carry up to two people including the person operating the vehicle or device, that are not automobiles, such as – without limitation – electric bicycles, electric kick-scooters, and electric mopeds, and that excludes wheelchairs or unenclosed motorized wheelchairs.

§ 179-7.1 Authority over bike share and micromobility share system
All the powers, rights, authorities and privileges with respect to the ownership, acquisition, management, maintenance and operation of the bike share and micromobility share program assets within the City of Toronto or outside the geographical boundaries of the City of Toronto, including entering into contracts and agreements, undertaking sponsorship, naming, rebranding, partnership, acceptance of donations, approval of sponsorship and third party advertising on the station panels, and all other related ownership, operational, management or revenue generating activities, shall be exercised only by the Parking Authority, subject to the following limitations:
A. Any operating surplus from the bike share program shall be deposited in the bike share program reserve for the purposes of the reserve, including replenishment of the bike share program capital assets and/or any future operating deficits.
B. The Parking Authority shall be required to obtain the approval of the appropriate City officials with respect to the location or relocation of the bike share stations and equipment on City property which has not been designated for the Parking Authority's use by by-law of Council; and shall be required to obtain the approval of the appropriate City officials with respect to the location or relocation of the micromobility stations and equipment on any City property.
C. (Reserved) 6
D. Despite anything else in this section, where the annualized cash flow deficit for the bike share program exceeds $750,000, the President of the Parking Authority shall report directly to Council for direction.
E. The Parking Authority shall not undertake any actions in connection with the bike share and micromobility share system outside the geographic boundaries of the City of Toronto unless the action is in keeping with the purposes of enhancing the long term viability of Bike Share Toronto and the micromobility share system overseen by the Parking Authority, or building and developing the Bike Share Toronto brand or other micromobility system brands overseen by the Parking Authority and not until the Parking Authority obtains the consent of the municipality in which such actions will occur, in accordance with the City of Toronto Act, 2006.

Attachment 2: Lessons Learned from Other Jurisdictions

More recently, e-scooters have received greater interest as a potential open-air transportation alternative that enables physical distancing. While a number of jurisdictions that previously did not allow e-scooters are considering it, such as the UK, it is still early days in terms of how the schemes will be established to address public safety, nuisance and liability issues. Iterative approaches include time limited pilots (e.g., four months or one season) and geographically contained pilots. In June 2020, the UK's largest urban transport authorities have urged caution in response to the national government's consultation on allowing e-scooter trials, with respect to speed and the impact on active travel. Key parameters put forward in their response:

- Recommending mandatory helmet use;
- Setting e-scooter device standards for features such minimum wheel size, lighting, braking and indicators;
- Introducing mandatory training for e-scooter users;
- Addressing the risk that e-scooters will replace walking and cycling journeys and associated public health impacts;
- Improving cycle infrastructure and streets that place people first; and
- Giving municipalities the explicit powers to cap the number of rental e-scooters.

While these UK cities welcome the opportunity for e-scooter trials, they made a joint statement that "it is vitally important that Government recognises the need for e-scooters to be introduced safely and in a way that ensures they help – rather than hinder – the achievement of wider city region objectives for people and places, from a pleasant urban realm to a healthy population."

Where e-scooters are allowed to operate

Majority of cities treat e-scooters like bicycles and allow them to be operated in bike lanes and on roads (with maximum posted speed limits of 40km/hr to 50km/hr), and prohibit them from sidewalks, trails, paths and parks. Cities that initially allowed e-scooters on sidewalks have since banned them due to safety issues (pedestrian deaths and injuries), e.g., France, Spain, Singapore and San Diego; and other jurisdictions such Ottawa's National Capital Commission have banned e-scooters on mixed use trails/paths.

E-scooters have been prohibited also from mixed use paths or in parks because of the intermixing with people and children on foot, who are slower, and also making unpredictable movements when using public space for leisure and recreational purposes. In cities such as Berlin, Paris and Tel Aviv, where e-scooters are permitted for operation on roads or bike lanes, and not sidewalks, there have been compliance and enforcement issues with these rules. Some cities (such as Atlanta) and countries (such as the UK) have accelerated bicycle infrastructure projects after e-scooter fatalities, and in anticipation of expanding micromobility. In May 2020, the UK announced a £250 million emergency active travel fund - the first stage of a £2 billion investment supporting cycling, walking and bus-only infrastructure.

Where e-scooters are allowed to park

Dockless or free-floating e-scooters are said to be the most convenient for potential e-scooter customers, as they are left anywhere on sidewalks in a convenient location to be found by an e-scooter customer. E-scooter clutter has resulted in obstacles for pedestrians especially those with disabilities, and in some cases, injury and lawsuits. (Santa Monica, Minneapolis, Paris) More jurisdictions are requiring e-scooters to be parked: in designated areas (Berlin, Calgary, Montreal), at docked stations (Christchurch, New Zealand), or “locked to” a post (e.g., for bike parking) (San Francisco).

In some jurisdictions, e-scooters must be removed overnight or locked (unable to be unlocked and used) to prevent theft, vandalism using e-scooters or vandalism of e-scooters, and intoxicated riding. Companies are developing docked stations that enable charging (e.g., Spin). While some companies operate a dockless approach, there is feedback from some cities that users prefer having the reliability of designated areas or docked stations available to find the e-scooters, bike share or e-bike share.

Personal E-scooter Use, Protections and Regulations

Most jurisdictions do not require individuals to have permits or licenses to operate personal e-scooters; however, some have begun to implement greater oversight to address public safety:

- The Netherlands has device standards and testing, and only e-scooters meeting certain conditions are allowed for use on public roads after the RDW (the Vehicle Authority) assesses them.
- Germany and The Netherlands have mandatory insurance requirements for individual e-scooter users.
- New Zealand has an Accident Compensation Corporation that covers personal injury claims related to e-scooters (for riders and non-riders).
- Australia has the Australian Competition and Consumer Commission, which holds e-scooter companies accountable to its legislation (e.g., misrepresentations to consumers about safety when issues known were not disclosed to e-scooter users).
- Malta requires that e-scooter users must be in possession of a valid driving licence, third-party insurance coverage and registration plates like a normal vehicle. Breaching these rules could result in being fined thousands of euros, confiscation of the e-scooter, and license suspension.
- Singapore requires mandatory training for e-scooter riders, and has high fines and penalties including compensation of damages for injured parties and jail time.
- Province of Quebec requires helmets for e-scooter users.
- Tel Aviv requires e-scooter riders wear a helmet with a high visibility strip; a driver’s license or training; and license plates affixed to e-scooters. (regulations were implemented in response to fatalities)

Program Management of E-scooter Sharing

In general, jurisdictions have used either a selective permit system or a request for proposals/qualifications for e-scooter sharing companies. Across existing pilot projects, the ideal number of operators ranges from two to four, in order to reduce community

nuisance with high amounts of e-scooters on sidewalks, and to reduce the burden of enforcement. More cities are using an RFP (competitive procurement) to have greater oversight over shared mobility as an essential part of public transportation for residents. Cities have also emphasized the importance of taking an incremental approach, and being conservative in setting the initial fleet size and geographic area to mitigate issues related to new rider behaviours and sidewalk clutter, liability and risk, and to evaluate and modify program parameters. Key criteria or conditions in RFP/RFQs and selective permit systems include:

- strong and clear indemnification agreements,
- adequate insurance requirements and upfront fees and deposits,
- minimum service standards,
- social equity requirements,
- data and dashboard requirements including both the MDS and GBFS standards, and
- a 24 hour/7 day a week customer phone line.

Enforcement

A number of jurisdictions have set higher fines for aberrant behaviour such as discourteous or reckless sidewalk riding, improper parking and intoxicated riding. Citations have been issued to e-scooter companies and in some cases, permits have been revoked and re-issued after compliance is improved. In general, jurisdictions do not have the capacity to enforce compliance. For example, Tel Aviv has a unit of 22 inspectors dedicated to enforcing that e-scooters do not ride on sidewalks. These inspectors are able to issue tickets for sidewalk violations, but only the police have the authority to issue tickets to riders not wearing helmets, as required by law. 21,000 tickets for sidewalk offenses were issued in 2019.

Earlier on with the introduction of e-scooters, some cities had to deal with issuing injunctions and seizing and impounding e-scooters of companies that launched in these cities without permission from the cities. Some cities have outsourced the enforcement and compliance operations to manage parking issues and other complaints.