



Lime

May 17, 2024

Mayor and Council
Toronto City Hall
100 Queen St W,
Toronto,
ON M5H 2N2

RE: Engagement on Micromobility Study, City of Toronto

Dear Mayor and Council,

We are writing to formally engage with the City of Toronto in the ongoing discourse surrounding micromobility solutions. As a leading provider of electric scooters and bicycles in urban environments, Lime is committed to fostering safe, accessible, and sustainable transportation options within communities worldwide. In alignment with this commitment, we seek to contribute to the City's efforts in shaping policies and regulations that promote the well-being of Toronto's residents and visitors.

Lime urges Council to **reconsider** City staff's recommendation to once again decline the option of participating in Ontario's e-scooter pilot project. The public consultation commissioned by the city earlier this month shows that **72% Toronto residents are largely supportive of allowing e-scooters in bike lanes and cycling infrastructure.**

Lime's in house policy and research team, led by Dr. Calvin Thigpen has provided commentary at the end of this letter, on the City of Toronto's staff report which is based on a limited and dated understanding of the technological solutions that have been developed and implemented in other jurisdictions across the 280 Cities in which Lime operates.

Given the rapid advancements in micromobility technologies and the evolving landscape of urban transportation, we believe it is imperative for cities to remain informed about the latest developments within the industry when making recommendations to political leaders. The table below includes information that was provided to city staff by industry experts, including Lime, through various channels as city staff developed their report and recommendations related to the city's micromobility strategy. However, much of this information and numerous other submissions were not considered in the City's recommendations and analysis. In this context, we believe the initiation of a Request for Information (RFI) process aimed at gathering



insights into innovative technological solutions addressing safety and accessibility concerns associated with micromobility is necessary for council to make an informed decision.

The primary objectives of this RFI process would be as follows:

- To identify and evaluate emerging technologies, features, and best practices that enhance the safety of micromobility users and other road users, including pedestrians and cyclists.
- To assess the accessibility features and design considerations integrated into micromobility devices, ensuring equitable access for individuals with diverse mobility needs.
- To gather feedback and recommendations from industry experts, advocacy groups, and relevant stakeholders regarding potential regulatory frameworks and policy measures to support the safe and inclusive deployment of micromobility solutions in Toronto.

We envision the RFI process as a collaborative effort involving input from a diverse range of stakeholders, including but not limited to micromobility operators, accessibility advocates, academic researchers, and members of the community. By leveraging collective expertise and insights, we aim to develop informed strategies and guidelines that prioritize safety, accessibility, and sustainability in the integration of micromobility within Toronto's urban fabric.

Furthermore, we are committed to actively participating in the RFI process, offering our industry knowledge, data insights, and technological expertise to support the City's objectives. We are confident that through constructive dialogue and collaboration, we can collectively advance the shared goals of enhancing urban mobility while ensuring the well-being and inclusivity of all residents.

We kindly request your consideration of this proposal and welcome the opportunity to discuss further details regarding the RFI process.

Thank you for your attention to this matter, and we look forward to the possibility of collaborating with the City of Toronto on this important initiative.

Sincerely,

Sonia Kandola

Director of Government Relations, Canada

Lime



City Staff	Lime’s Policy Team Analysis																									
Safety																										
<p>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.</p>	<p>A recent study conducted by Rutgers University, which analyzed data from over 13,000 incidents across more than 100 US hospitals, concluded that e-scooters pose no greater danger than bicycles or e-bikes. Additionally, the UK E-scooter Safety Report from the Royal Society for the Prevention of Accidents (RoSPA) highlights that e-scooters are safer than many other modes of transportation, with significantly lower casualty rates compared to bicycles, which were five times more likely to be involved in accidents. Moreover, the report reveals that the majority of incidents occurred in areas where no e-scooter rental scheme was in operation. It also emphasizes that the risk to pedestrians is minimal compared to collisions involving larger, motorized vehicles such as motorcycles, cars, or trucks.</p> <p>Further, a 2023 report issued by the Ontario Ministry of Transportation studying the safety of e-scooters found that sidewalk riding and other reported issues reduces meaningfully every year of program operations.</p> <p style="text-align: center;"><i>Table 4. Comparisons of Jurisdictional Injury Rates</i></p> <table border="1" data-bbox="760 1236 1442 1419"> <thead> <tr> <th>City</th> <th>Time Period</th> <th>Number of ED Visits</th> <th>Number of SMP Trips</th> <th>Injuries per 100,000 Trips</th> </tr> </thead> <tbody> <tr> <td>Ottawa*</td> <td>Jul-Sep 2022</td> <td>53</td> <td>89,372</td> <td>59</td> </tr> <tr> <td>Windsor</td> <td>Apr-Sep 2022</td> <td>29</td> <td>98,071</td> <td>30</td> </tr> <tr> <td>Calgary</td> <td>Jul-Oct 2019 and May-Sep 2020</td> <td>1,272</td> <td>1,870,000</td> <td>68</td> </tr> <tr> <td>Kelowna</td> <td>Apr-Aug 2021</td> <td>51</td> <td>203,000</td> <td>25</td> </tr> </tbody> </table> <p><small>* Ottawa SMPs began operating in July for the 2022 e-scooter season.</small></p> <p>The 2024 ITF Safer Micromobility Report analyzed safety trends in shared micromobility since its previous report published in 2020. ITF’s analysis found that safety for people using micromobility has been improving. In Europe, the average crash risk for e-scooter riders dropped by 26% in 2022 compared to 2021. Furthermore, they note the importance of safe infrastructure, given the outsized risks posed by automobiles.</p>	City	Time Period	Number of ED Visits	Number of SMP Trips	Injuries per 100,000 Trips	Ottawa*	Jul-Sep 2022	53	89,372	59	Windsor	Apr-Sep 2022	29	98,071	30	Calgary	Jul-Oct 2019 and May-Sep 2020	1,272	1,870,000	68	Kelowna	Apr-Aug 2021	51	203,000	25
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	<p>The City has the capacity to implement policies to address and mitigate risks identified by city staff, for example:</p> <ol style="list-style-type: none">1. Enforcing Helmet Mandates: Requiring helmet use and launching public awareness campaigns about safe riding practices and helmet use are crucial to reducing injuries for all forms of micromobility.2. Regulating Sidewalk Riding: Clear regulations against sidewalk riding, supported by strict enforcement, will protect pedestrians.3. Partnering with E-Scooter Providers: Collaborating with e-scooter companies to ensure safety features, such as speed limits and proper maintenance, and using geo-fencing to control where e-scooters can operate will further enhance safety.4. Engaging Community Stakeholders: Involving community stakeholders in the policy-making process will ensure that the policies are effective and well-received.
<p>Night-time riding, intoxicated riding, underage riding, and encountering poorly maintained road surfaces all contribute to elevated crash and injury risk.</p>	<p>The current e-scooter ban is not enforced, and current measures regarding these challenges are negligible. A regulated e-scooter environment provides safeguards to unsafe riding that are not available or unenforceable on private rides.</p> <p>For example, operators can:</p> <ol style="list-style-type: none">1. Implement cognitive testing and require it at certain times before late-night riding2. Implement ID scanning requirements for account creation to mitigate risks of underage riding3. Establish time-based no-ride zones to manage high-risk areas and remotely lock or stop devices to add control over their usage4. Remove and ban riders who fail to meet city standards and regulations. <p>Lime has the capacity to inform regulations and policies that are based on data.</p>
<p>The issue of fire risk from lithium-ion batteries also remains to be solved.</p>	<p>Lime's Environmental Health & Safety (EHS) program, compliant with CCOHS, CNESST and Workplace</p>



	<p>Hazardous Materials Information System (WHMIS), and ISO 14000, includes procedures for lithium-ion battery maintenance, charging, storage, and disposal. We enhance our battery safety protocols and staff training continually, utilizing external consultants like LMS Environmental Inc and Hazmat Safety Consulting.</p> <p>The increase in battery fires has been overwhelmingly driven by the use of illegal or unregulated batteries by personally-owned e-bike riders. As noted in this New York Times article, bikeshare and scooter share providers have implemented safety protocols and rely on compliant batteries, while compliance is difficult or impossible to enforce among individual, private owners of e-bikes.</p>
<p>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.</p>	<p>Safety incidents on electric scooters and bicycles have increased in recent years, but importantly, those increases have been in proportion to increased usage.</p> <p>Sidewalk riding is most prevalent in areas without bike infrastructure, poor road conditions, and areas with high speed limits. Sidewalk riding decreases with construction of bike lanes, and makes pedestrians safer from cars aswell.</p> <p>In the context of shared scooter systems, there's an opportunity for better regulation of use behaviors and device operations to improve safety outcomes. By collaborating with industry, cities can implement measures such as enhanced parking regulations, speed controls, and device maintenance standards to mitigate risks associated with sidewalk riding.</p> <p>This proactive approach would not only enhance safety for all, but also address concerns regarding potential negative outcomes for vulnerable populations, such as seniors and people with disabilities.</p>
<p>Mobility</p>	
<p>The limited data available at this time is inconclusive about whether use cases are more for short trips and leisure than for</p>	<p>Based on rider survey data from the Canadian cities that Lime serves, 27% of trips are for commute purposes, 11% are for errands and shopping, and 29% are for social</p>



<p>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.</p>	<p>outings (e.g. going to dinner, meeting for coffee). In contrast, only 21% of trips are for a joy ride. These data are backed up by peer-reviewed research as well as many cities' evaluation reports (e.g. Portland, OR)</p>
<p>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.</p>	<p>A University of Oregon study found that across the US, dockless bikeshare systems have more equitable distribution of vehicles than docked bikeshare.</p> <p>In a study of San Francisco bike share, researchers found that dockless bikeshare does a better job of serving low-income neighborhoods ("communities of concern" in SF) than docked bikeshare.</p> <p>A Virginia Tech study found that dockless bikeshare in Washington, DC attracted a greater proportion of lower-income and minority riders than traditional bikeshare, as well as covering a greater proportion of the city.</p>
<p>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.</p> <p>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.</p>	<p>Lime has pioneered a reduced-fare program, called Lime Access, for low-income individuals. A 2023 study by Monash University documented the benefits experienced by Lime Access riders. Although both non-Access and Access riders used Lime for utilitarian trips, Lime Access riders were more likely to commute using Lime than non-Access riders. The study also uncovered how many Lime Access riders experience a disability and how Lime helps address the mobility and access challenges presented by that disability.</p> <p>In Hamilton, the operations of the docked bikeshare system are funded by sponsorship, donations, and contributions from the City of Hamilton, in addition to trip fare revenues. To make shared scooters and bikes more affordable, cities can avoid extra charges, like high permit fees on top of rider taxes.</p>
<p>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,</p>	<p>Physical infrastructure will always be the preferred approach to addressing problematic riding. Lime has collaborated with cities and researchers to address issues associated with parking. In addition to a slew of technological solutions (end trip photo, bluetooth</p>

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. A Micromobility Strategy for Toronto Page 13 of 27 deterrents rather than an effective means to stop illegal sidewalk riding.

beacons, etc.), we have also partnered with academics to understand how much micromobility parking (racks, corrals) should be provided to meet parking demand and improve compliance - [the report was published](#) in April 2024.

A 2023 report issued by the Ontario Ministry of Transportation studying the safety of e-scooters found that sidewalk riding and other reported issues reduces over time.

Table 1. E-Scooter Service Request Counts and Percent Change by Municipality from 2021 to 2022

Issue Topic	Windsor			Ottawa**			Calgary			Kelowna*
	2021	2022	%Change	2021	2022	%Change	2021	2022	%Change	
Sidewalk Riding	27	0	-100%	79	36	-54%	18	4	-78%	4
Improperly Parked/ Abandoned	60	10	-83%	374	191	-49%	66	49	-26%	17
Rider Behaviour	14	1	-93%	4	2	-50%	18	11	-39%	1
Collisions/ Near-Misses	N/A	N/A	N/A	N/A	2	N/A	6	3	-50%	4
Other	8	4	-50%	198	50	-75%	4	13	225%	2
Total	109	15	-86%	655	281	-57%	112	80	-29%	28

*Detailed 2021 data was not publicly available for Kelowna. However, municipal program staff shared that issue requests fell by 90% from 2021 to 2022.

**Ottawa's 2021 system applied multiple categories to some emails from the public so total counts may be overestimated.

Environment

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, whereas 47 per cent replaced walking and around 25 per cent replaced public transit trips.

The mode shift to shared scooters and bicycles varies depending on the city and its characteristics. [A literature review](#) showed that in North American cities, “the substitution rate of riding e-scooters for auto trips is within 25-40% in most cases.” When considering the disproportionate impact of these trips, this more than compensates for trips that replace walking or transit.

Furthermore, a [2022 Fraunhofer ISI study](#) found that shared scooters and bicycles have a lifecycle emissions profile as good as or better than many public transit modes. As a consequence, when taking into account the lifecycle emissions of shared scooters and the modes they replace, the introduction of shared scooters leads to emissions reductions overall.

This was achieved by dramatically reducing the carbon footprint of Lime trips. We have drastically improved vehicles lifespans, have relied on renewable energy for powering our fleet, and invested in an electrified



	<p>operations fleet. Lime’s vehicles are more than 96% recyclable, including the battery.</p> <p>This is corroborated by Portland, Oregon’s evaluation report of their pilot program, which estimated that shared scooters avoided roughly 120 metric tons of CO2 over the pilot period.</p>
Equity and Inclusion	
<p>Disproportionate negative impact on pedestrians, seniors, and persons with disabilities who rely on safe sidewalks.</p>	<p>In a July 2019 Global Rider Survey, we learned that:</p> <ul style="list-style-type: none">• Approximately 8% of Lime riders have a disability, either temporary or permanent• Globally, 25% of disabled riders are 40 years or older• 39% of global rides taken by disabled riders are to commute to or from work or school• Over half of disabled riders in the US (53%) live in households earning less than \$50,000 a year, and two in three disabled riders in the US (67%) live in households earning less than \$75,000 a year <p>Despite the City of Toronto’s current ban on e-scooters, enforcement of these regulations remains limited and private e-scooters operate freely on sidewalks. The status-quo poses a significant risk to vulnerable pedestrians. The City would benefit from the technological solutions offered by shared e-scooter providers and providing regulation to ensure the safety of all road users.</p> <p>E-scooters operated by shared-providers offer advanced technologies, including geo-fencing, docking systems, speed limits, and rider regulation systems, which can effectively prevent e-scooters from encroaching on sidewalks.</p>
<p>The majority of e-scooter users are male (71 per cent) and under age 35 (74 per cent).</p>	<p>In North American cities, the majority of scooter riders are male. This unfortunate imbalance mirrors the discrepancy in ridership among privately-owned bicyclists as well. Using data from the 2017 US National Household Travel Survey, researchers found that men were twice as likely as women to use scooters, bikes, and other micromobility vehicles. This is consistent with research on traditional</p>



	<p>pedal bicycles: in the US, only a quarter of bicycle trips are made by women (Pucher and Buehler, 2008). Reasons for this gender gap are several: researchers from UC Davis identified that women are more likely to have heightened safety concerns as well as household responsibilities that make riding a bicycle more difficult.</p> <p>In Lime’s rider survey research, we find that the average age of scooter riders is 34, meaning that half of riders are <i>34 or older</i>.</p> <p>If the City is interested in encouraging micromobility usage among women and individuals over 35, there are opportunities to collaborate with shared e-scooter operators to develop an educational campaign targeting these demographics, in addition to consulting with stakeholders to gain a deeper understanding of the barriers currently in place.</p>
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).	See above.
Health and Public Health	
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.	<p>If bicycles were invented for the first time today and introduced to our roads, this same statement would apply: “serious injury and fatality risks for [bike] riders and non-riders would increase the burden for the health care system.”</p> <p>Yet no one proposes to ban personally-owned bicycles. This reflects a perspective that shifts the burden of public health to the most vulnerable road users, rather than the systematic causes of serious traffic injuries (unsafe roads, cars).</p>



	<p>While it's essential to address the safety risks associated with e-scooters, the overall impact on public health can be positive when considering their role in reducing car trips, enhancing public transit use and promoting a more active lifestyle. By working with Industry, the City can implement comprehensive safety measures and urban planning strategies to mitigate risks and maximize the benefits of shared e-scooters.</p>
Economic Vitality	
<p>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 scooter systems contribute further with e-scooters littered on sidewalks and vandalism of the devices.</p>	<p>An Emory University study found that for every shared scooter permitted in cities, local restaurants experienced \$180 in additional sales. In addition to benefiting the businesses, this also leads to additional sales tax revenue to the city (on top of the VAT paid by riders for their trips on shared scooters).</p>
Costs and Liability	
<p>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 scooter users, and significant exposure for the City in terms of claims and liability.</p>	<p>Every city in Canada that permits shared e-scooter operations has in place indemnification provisions. Bike Share Toronto has the same insurance in place that shared e-scooter companies operate with across Canada.</p>
<p>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.</p>	<p>The industry pays for the privilege of operating in most cities, and all of our programs are revenue neutral or in most cases revenue-generating for the city, whereby we provide additional revenue that can be used for capital infrastructure such as additional cycle lanes.</p>