



REPORT

Report Date: June 14, 2021
Contact: Lon LaClaire
Contact No.: 604.873.7336
RTS No.: 14467
VanRIMS No.: 08-2000-20
Meeting Date: June 23, 2021

[Submit comments to Council](#)

TO: Standing Committee on Policy and Strategic Priorities

FROM: General Manager of Engineering Services

SUBJECT: Amendments to the Street and Traffic By-law No. 2849 to Allow Electric Kick Scooters on Protected Bike Lanes and Minor Streets

RECOMMENDATION

- A. THAT Council approve the use of “electric kick scooters” on protected bike lanes and minor streets until April 5, 2024 as part of the Provincial pilot project.
- B. THAT Council approve, in principle, amendments to the Street and Traffic By-law No. 2849 as detailed in this report and Appendix “A”.
- C. THAT Council instruct the Director of Legal Services to bring forward for enactment amendments to the Street and Traffic By-law No. 2849 as generally set out in Appendix “A”.
- D. THAT Council direct staff to report back to Council in early 2023 with interim findings from the pilot.

REPORT SUMMARY

This report has three sections:

- 1) A summary of the Province’s Electric Kick Scooter project, in place from April 5, 2021 to April 5, 2024.
- 2) A summary of safety requirements and technical specifications for electric kick scooters operating within Vancouver.

- 3) A review of other implications, and the recommended changes to the Street and Traffic By-law No. 2849 for electric kick scooters

The report seeks Council approval to enact by-law changes to allow persons to use their own “electric kick scooters” on protected bike lanes and minor streets, as part of a Provincially-led 3-year pilot project.

These measures advance a new transportation option for residents and visitors, while helping ensure streets and sidewalks are safe for everyone.

COUNCIL AUTHORITY

Micromobility Devices on Vancouver Roadways

- In the 1990’s, skateboards, push scooters and other self-propelled devices, other than bicycles, were banned on streets, sidewalks, and paths.
- In December 2001, Council recommended that skateboards be permitted on minor streets, meaning streets without lane lines or directional dividing lines, for a one-year trial period.
- In April 2003, Council unanimously carried a motion to permit the use of skateboards on minor streets indefinitely.
- In 2005, staff reported to Council on the consequences of eliminating by-laws regulating skateboards and found allowing skateboarding on major streets to be a safety concern, and recommended no changes.
- In December 2015, Council approved that skates, skateboards, and push-scooters be permitted in protected bike lanes for a trial period of no less than one year.
- In November 2017, Council approved the use of skates, skateboards, and push-scooters in protected bike lanes on a permanent basis.
- On July 7th, 2020, Council approved the 2020 Transportation Safety Update Report which included *Recommendation B. THAT Council direct staff to advance design of pilot programs with the Province to test and advance blanket reduced speed limits and micromobility devices, to be delivered under the Ministry of Transportation’s Motor Vehicle Act Pilot Program.*
- On April 5th, 2021, the Province’s Electric Kick Scooter Pilot came into effect for a 3-year period. Based on City Council’s adoption of the 2020 Transportation Safety Update Report, Vancouver is one of six eligible cities in BC to be a part of the program subject to amendments to City by-laws to permit the use of electric kick scooters.

REPORT

Section 1: Provincial Pilot

Background

In recent years, staff recognized that a growing number of residents are using electric micromobility devices such as electric kick scooters, motorized skateboards and one-wheel boards / mono-boards. Despite the fact these electric micromobility devices are technically illegal to operate on public streets because of provincial legislation, staff wanted to continue exploring and supporting sustainable ways of getting around while ensuring the safety of everyone using roads and sidewalks. In late 2019, City staff began discussions with the Province to collaborate on a pilot to allow electric kick scooters and similar devices in protected bike lanes and minor streets.

The electric kick scooter pilot project provides an opportunity for participating communities and the Province to research, test, and evaluate the safety and operation of electric kick scooters in an effort to expand sustainable transportation options.

The municipalities currently enrolled in the Provincial electric kick scooter pilot are:

- City of Vancouver
- City of North Vancouver
- City of West Vancouver
- City of Kelowna
- District of North Vancouver
- City of Vernon

As part of the 2020 Transportation Safety Update Report, City Council approved electric kick scooters and similar micromobility devices to be piloted in Vancouver:

- **“Electric Kick Scooter”** has the meaning set out in the “Electric Kick Scooter Pilot Project Regulation” (B.C. Reg. 90/2021) effective April 5, 2021
- While City staff advocated for the inclusion of other micromobility devices such as electric skateboards, hoverboards and one-wheel boards (monoboards), the Province chose to only include electric kick scooters as part of this pilot. Since the scope of the pilot is determined solely by the Province, the City does not have the authority to permit the other devices even with a by-law change.

The pilot project allows the use of electric kick scooters on roads within the 6 chosen communities once local by-laws are in place designating locations where the devices may be operated. As such, this report seeks Council approval of by-law changes to allow the use of “electric kick scooters”.

Limited to privately owned electric kick scooters

Due to safety, accessibility and public realm and other considerations related to shared and rental fleets of electric kick scooters, rentals and shared programs are not part of this pilot. This pilot will be limited to privately owned electric kick scooters. The City intends to only allow persons to operate an electric kick scooter if it is owned and not rented or leased.

City staff have been liaising with other cities to learn from their approaches and gather insights into this emerging mode and how they may apply to Vancouver's context. Medical data including research by VCH suggests that inexperienced riders are at the greatest risk of injuring themselves. Accident rates do go down as riders become more experienced. By focusing the initial pilot project on privately owned electric kick scooters, staff aim to manage the number of new riders on City streets and the associated risks that come with this mode of transportation. Staff recommend to move forward cautiously with a phased approach to allow the City to manage the risk and learn from the pilot.

Details were provided to Council in the Memo "Shared Dockless Electric Stand-Up Scooters" (see Appendix "B"). More recently, staff have worked with Vancouver Coastal Health on a safety assessment of various approaches and found that a privately owned pilot would provide a well-balanced opportunity to pilot these devices. See Appendix "C" for a support letter from Vancouver Coastal Health's Medical Health Officer.

A brief summary of considerations is provided below:

- Safety: research by the US Centers for Disease Control (CDC) found a high injury rate exceeding that of bicycles (1.4) and motorcycles (10.3) at 14.3 injuries per 100,000 trips; 45% of incidents resulted in head injuries.
- Inexperience: over one third of e-scooter injuries occur during a first ride, and over 60% of injured riders have made fewer than 10 trips on a scooter. The ease and low initial cost of a first trip through shared and rental programs is expected to contribute to more first time riders.
- Negative impacts on the public realm: shared scooters in other cities have highlighted a number of challenges in the public realm including:
 - improperly parked scooters which can block safe egress from buildings, create a tripping hazard or limit accessibility to people walking, particularly those with accessibility needs,
 - the visual clutter of improperly parked scooters, and
 - the challenge of balancing competing needs for use of public space.

Staff will monitor the pilot program with the intent of evaluating the findings and potentially further expanding opportunities for micromobility.

Strategic Analysis

In alignment with Transportation 2040 and the Climate Emergency Action Plan, the City supports electric kick scooters as an alternative and low carbon transportation choice.

Electric kick scooters add another transportation option in the urban environment, including for those with limited mobility, income, or without a driver's license. They can act as first and last mile devices to enhance the use of transit or other transportation options, particularly where access may be impractical or limited. Vancouver is an ideal testing ground as a dense urban environment with high sustainable mode share, an existing population of micro-mobility users and a connected and growing cycling network of 325 km, 30km of those are protected lanes and 65km of off-street pathways.

Non-motorized kick scooters are already permitted and used on separated bike lanes and minor streets in Vancouver, and so this pilot provides an opportunity for the electric versions to be used legally. As the use of electric kick scooters and other devices becomes even more widespread, it is imperative for communities and the Province to work and learn together to better understand safety and operation for these emerging modes and support linking trips with other sustainable modes.

Furthermore, the Province is running the pilot in order to:

- learn from Vancouver residents who use these devices
- provide clarity on how these devices can be used
- inform government regulations on these devices in the urban context
- identify infrastructure gaps to improve safety and enhance user experience
- inform the best ways to consider shared use electric kick scooters
- understand and respond to safety implications.

Section 2: Safety Requirements and Technical Specifications

Background

Staff is recommending that electric kick scooters be allowed throughout the City of Vancouver on minor streets (streets without lanes line or directional dividing lines) and on protected bike lanes. Users will be prohibited from operating on sidewalks and on arterial streets. This is consistent with our current by-law which permits the use of non-motorized kick scooters in these areas.

Operation on adjacent Parks Board jurisdiction and on the seawall is under discussion with Parks Board and may be considered for future pilots.

Public safety is a priority in delivering this pilot. The rules of use are like the rules for an e-bike - people using electric kick scooters must be 16 years or older, wear a helmet and follow the rules of the road for cyclists. Per Provincial regulations, a driver's licence and insurance are not required (<https://news.gov.bc.ca/releases/2021TRAN0042-000523>).

For the safety of the operator and other road users, all electric kick scooters will be limited in speed, weight and size and have appropriate lighting to minimize collision and injury risk. The Province's [posted regulations](#) for electric kick scooters, define them as follows:

- A steering handlebar
- Maximum speed regulated at 24km/h
- Power limitation to 500 Watts (1,400W for self-balancing vehicles)
- The motor must cease to propel the device forward if the accelerator is released or if the brakes are applied
- Wheels no larger than 430mm in diameter
- A white or amber light on the front of the device when operated between sunset and sunrise (note: if the device is not equipped with a light an operator may carry or wear a light on their person when operating the device)
- The device must not be equipped with a seat (or a surface or structure that may be used as a seat), pedals, or a structure enclosing it.

Strategic Analysis

Vancouver has high pedestrian volumes on sidewalks, including people with disabilities, seniors and young children. In fact, more than fifty percent of Vancouver trips are performed by walking, cycling or transit. Based on this staff do not recommend electric kick-scooters on sidewalks. In addition, limiting users to minor streets will minimize exposure and impact to the arterial street network which carries high motor vehicle traffic volumes and heavy vehicles including trucks and buses. These recommendations align with the City's commitment to transportation safety such as our Vision Zero goals.

If by-law changes are supported by Council, staff will develop a public information campaign including information on the City's website, media releases and social media posts to inform the public of the changes. Through the three-year pilot staff will continue to work with the Province to advocate for and monitor the use and operation of electric kick scooters in the City.

Slower Default Speed Limits

In addition, staff will continue to advocate to the Province to include a pilot to allow the City to set lower blanket speed limits in local streets. The current Motor Vehicle Act sets the default speed limit at 50 km/h and does not permit cities to make blanket changes to default speeds. Speed limits can only be changed with a posted sign on every street block. The City has been doing this for many years on all local street bikeway and greenways, and adjacent to schools and playgrounds. However, implementing lower speeds on all local streets without the ability to set default speeds would have a significant cost for signs and installation considering they represent around 80% of the street network.

Staff have continued discussions with the Province including advocating for the ability to set default speeds as part of this Electric Kick Scooter Pilot, but unfortunately it was not included in the April 5th announcement of the pilot. However, the Province has been made aware of the City's Neighbourhood Slow Zone pilot which was approved by Council in the 2020 Transportation Safety Update Report and implemented in March 2021. Ministry Staff are interested in the outcome of the Neighbourhood Slow Zone in Grandview-Woodlands (G-W) and will be looking to how this was implemented as they consider a pilot for slower default speeds. City staff will be sharing the outcome of the pilot in G-W and will continue to work with the Province on this initiative. Staff plan to report back and provide Council with an update on interim findings of this three year pilot.

Implications/Related Issues/Risk

City staff have been liaising with other cities to learn from their approaches and gather insights into this emerging transportation mode and industry and how they may apply to Vancouver's context. Staff recommend to move forward cautiously with a phased approach which focuses first on privately owned electric kick scooters to allow the City to manage the safety, accessibility and public realm risks and learn from the pilot.

Financial

There are no financial implications.

Legal

To implement the pilot project outlined within this report, amendments to the Street and Traffic By-law are required.

The draft by-law seeks to regulate the “ownership” of electric kick scooters, and to restrict their use to certain minor streets and protected bicycle lanes. This may require Provincial approval under the Motor Vehicle Act. Such approval is being discussed with the Province, and will be sought if necessary.

A draft By-law to amend the Street and Traffic By-law is set out in Appendix “A”.

CONCLUSION

- Staff recommend that Council approves the temporary use of electric kick scooters in protected bike lanes and minor streets, until April 5, 2024 (end of Provincial pilot).
- Staff recommend that Council also approve, in principle, changes to the Street and Traffic By-law as detailed in this report and Appendix “A”.

APPENDIX A

BY-LAW NO. _____

**A By-law to amend Street and Traffic By-law No. 2849
regarding electric kick scooters**

THE COUNCIL OF THE CITY OF VANCOUVER, in public meeting, enacts as follows:

1. This by-law amends the indicated provisions of the Street and Traffic By-law.
2. Council inserts a new definition of “electric kick scooter” in the correct alphabetical order as follows:

““Electric Kick Scooter” has the meaning set out in the “Electric Kick Scooter Pilot Project Regulation” (B.C. Reg. 90/2021) effective April 5, 2021.”
3. Council strikes the definition of “Protected Bicycle Lane” in section 3 and replaces it as follows:

““Protected Bicycle Lane” means that a part of a roadway or path which is separated from motor vehicle traffic by a bicycle lane buffer and is designated by the City Engineer for use by persons on bicycles, non-motorized skates, skateboards, electric kick scooters or push scooters.”
4. Council strikes sections 60G., 60H., and 60I., and replaces them as follows:

“60G. No person shall ride a bicycle, skateboard, electric kick scooter or push scooter, or use non-motorized skates in a marked crosswalk, unless it is also marked by elephants’ feet markings on one or both sides of the crosswalk, or it is otherwise signed to permit cycling.

60H. Subject to the provisions of section 60I, a person may ride a bicycle, skateboard, electric kick scooter or push scooter, or use non-motorized skates in an unmarked crosswalk.

60I. A person riding a bicycle, skateboard, electric kick scooter or push scooter, or using non-motorized skates in, through or out of a marked or unmarked crosswalk, must yield the right of way to pedestrians who are entering into, walking in or walking out of the crosswalk. For the purposes of this section, a marked crosswalk includes the area of the crosswalk delineated by elephants’ feet markings.”
5. Council strikes subsection 77A(1) and replaces it as follows:

“(1) Despite section 77, but subject to the requirements of this section, a person may ride or coast on non-motorized skates, a skateboard, electric kick scooter or a push scooter on any minor street or protected bicycle lane.”

6. Council inserts a new section 77B as follows:

“77B. Notwithstanding subsection 77A (1), no person shall ride an electric kick scooter on a minor street or protected bicycle lane if the electric kick scooter is rented or leased”.

7. A decision by a Court that any part of this By-law is illegal, void, or unenforceable severs that part from this By-law, and is not to affect the balance of this By-law.

8. This By-law is to come into force and take effect on the date of its enactment.

ENACTED by Council this day of , 2021

Mayor

City Clerk

APPENDIX B

2019 Council Memo

From: "Johnston, Sadhu" <Sadhu.Johnston@vancouver.ca>
To: "Direct to Mayor and Council - DL"
CC: "City Manager's Correspondence Group - DL"
"Dobrovolny, Jerry" <jerry.dobrovolny@vancouver.ca>
Date: 7/31/2019 4:14:26 PM
Subject: Memo: Shared Dockless Electric Stand-Up Scooters
Attachments: Memo - Shared Dockless Electric Stand-Up Scooters.pdf

Dear Mayor and Council,

Please see the attached memo from Jerry Dobrovolny. A short summary of the memo is as follows:

- Since late 2017, cities have seen an influx of publicly shared two-wheeled, electric stand-up scooters that typically go up to 32 km/h and can be parked anywhere, from companies like Spin, Lime, Bird, JUMP, and Lyft.
- Rapid adoption of shared electric scooters highlights the potential for these to facilitate low-carbon trips in cities.
- As the City continues to monitor the shared electric scooter industry a number of opportunities and challenges were identified from our peer cities and City staff discussions with various operators:
 - Other cities have reported high injury rates on scooters, about 10x higher than bicycles
 - Operators in other jurisdictions do not yet align with City goals around equity and inclusion
 - Cities have struggled with clutter and competing needs for use of public space
 - Lifecycle of devices and trip replacement
- At this time, both Provincial and City regulations prohibit the use of low-powered vehicles such as electric scooters on all public rights-of-way.

If you have any questions, please feel free to contact Jerry Dobrovolny at 604-873-7331 or jerry.dobrovolny@vancouver.ca.

Best,
Sadhu

Sadhu Aufochs Johnston | City Manager
Office of the City Manager | City of Vancouver
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604.873.7627

Pronouns: he, him, his





ENGINEERING SERVICES

Jerry W. Dobrovolny, P.Eng., MBA
City Engineer / General Manager

MEMORANDUM

July 31, 2019

TO: Mayor and Council

CC: Sadhu Johnston, City Manager
Paul Mochrie, Deputy City Manager
Lynda Graves, Administration Services Manager, City Manager's Office
Rena Kendall-Craden, Civic Engagement and Communications Director
Katrina Leckovic, City Clerk
Neil Monckton, Chief of Staff, Mayor's Office
Alvin Singh, Communications Director, Mayor's Office
Anita Zaenker, Chief of Staff, Mayor's Office
Margaret Wittgens, Director, Public Space and Street Use

FROM: Jerry Dobrovolny
General Manager, Engineering Services

SUBJECT: Shared Dockless Electric Stand-Up Scooters

The purpose of this memo is to provide information to Mayor and Council on the growing industry interest to deploy shared dockless electric stand-up scooters on City streets and sidewalks and some of the legal, safety, equity, public realm, and sustainability considerations for the City.



Picture 1 shows shared electric scooters available for rent
Picture 2 shows a typical app and controls of a shared electric scooter

Since late 2017, cities all over the world have seen an influx of publicly shared two-wheeled, electric stand-up scooters that typically go up to 32 km/h and can be parked anywhere. In the United States (US), shared scooters from operators like Lime, Spin, Bird, Uber's JUMP, Lyft, and others have in some cases flooded city streets and sidewalks seemingly overnight. To use a shared scooter, users have to download the operator's app which shows the location (tracked by GPS) of all available scooters nearby. The user then uses a smartphone to scan a QR code on the scooter, unlocking the scooter and beginning a trip. To end the trip, the user parks the scooter, often on the sidewalk, and ends the ride through the app. The cost of the trip is immediately withdrawn from the user's credit card. In 2018, 38.5 million trips were taken in the US on shared electric scooters, reflecting the wide proliferation of these vehicles in many cities.

Opportunities and Challenges

The rapid adoption of shared electric scooters highlights the potential for these to facilitate lowcarbon trips in cities. In accordance with the City's Transportation 2040 plan the City continues to support early deployment of low-carbon and electric vehicles, and scooters could play a role in the future transportation mix. As the City continues to monitor the shared electric scooter industry a number of opportunities and challenges were identified from our peer cities and City staff discussions with various operators.

1. Safety

Research by the US Centers for Disease Control (CDC) found a high injury rate exceeding that of bicycles (1.4) and motorcycles (10.3) at 14.3 injuries per 100,000 trips; 45% of incidents resulted in head injuries. Possibly because of the ease and low initial cost of a first trip about 33% of incidents occurred during the first ride of a person on a shared electric scooter. There

have been reports of conflicts and injuries between people walking and people riding shared scooters often illegally on sidewalks as well as incidents caused by improperly parked scooters blocking sidewalks and roads. A high proportion of injuries involved potentially preventable risk factors, such as lack of helmet use, or motor vehicle interaction and improved infrastructure may improve safety for all road users. The industry is looking to improve upon their current operations through redesign of their equipment, education and training programs and improvements to infrastructure. Staff are continuously monitoring these developments and communicating with operators.

2. Equity

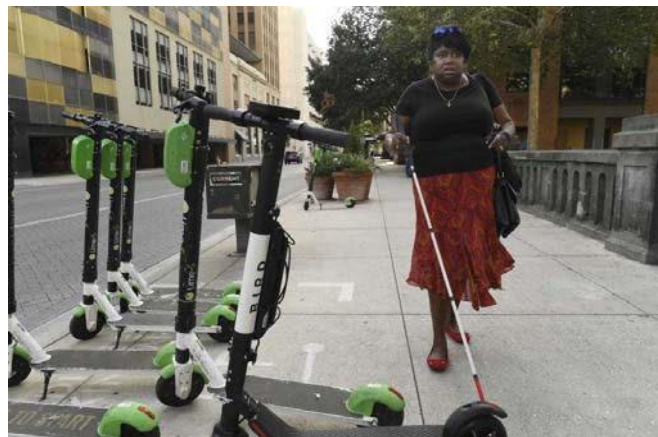
Staff have identified requirements for shared mobility systems to ensure that people have equitable access to mobility and to align with City goals around equity and inclusion. These requirements include: discounted monthly or annual plans, a continuous service area, including vulnerable neighborhoods, engagement by the operators with local communities to ensure access to the system for all, including the unbanked, and people without access to a smartphone. Currently scooter operators in other jurisdictions do not meet most of these requirements.

3. Public realm

Shared scooters in other cities have highlighted a number of challenges in the public realm. These challenges include

- improperly parked scooters which can block safe egress from buildings, create a tripping hazard or limit accessibility to people walking particularly those with accessibility needs,
- the visual clutter of improperly parked scooters, and
- the challenge of balancing competing needs for use of public space.

Staff have shared concerns regarding the many demands for mobility and activation within our public realm with industry representatives.



Picture 3 shows a parked electric scooter tipped over on a sidewalk creating a tripping hazard. Picture 4 shows parked electric scooters creating a tripping hazard on a sidewalk.

4. Sustainability

With the declaration of a climate emergency it has become even more important to ensure that a potential new transportation mode will support sustainability goals, not counteract them. There have been reports of scooters only lasting a few weeks before they reach the end of their lifecycle with no clear recycling process in place. It has been reported that 42% of shared electric scooter trips are replacing walking and personal bicycling trips. A better understanding of electric scooter-related emissions is needed to help evaluate the climate impact of electric scooter trips.

Current regulations

The Province regulates the use of all motor vehicles, including low-powered vehicles like electric scooters, on the roadway and the sidewalk adjacent to the roadway through the Motor Vehicle Act (MVA) which governs most city streets. The City's regulation is limited to the use of park paths and the seawall through the Street and Traffic Bylaw and Parks Control Bylaw.

At this time, both Provincial and City regulations prohibit the use of low-powered vehicles such as electric scooters, motorized hover boards, unicycles, electric skateboards and Segways on all public rights of way. The only exceptions are motorized wheelchairs and

The City continues to monitor the electric scooter industry through its commitment to support sustainable (micro)mobility, and connect with sharing companies as well as with municipalities where electric scooters have been introduced. Other micromobility modes such as shared electric bikes (e-bikes) are also being explored by staff which have shown to support active transportation, have a greater gender balance and age range amongst users, and greater likelihood to displace longer motorized (internal combustion) modes and transit. The City is committed to balancing safety and transportation needs with land use, and concerns exist around safety, equity, public realm, and sustainability.

Staff look forward to continued discussions with industry representatives reflecting the considerations outlined in this memo and will report back if regulations are changed or the local industry changes.

If you have any questions, please do not hesitate to contact me directly.



Jerry W. Dobrovolny, P.Eng., MBA
General Manager, Engineering Services

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electric-assisted bicycles.

<https://vancouver.ca/files/cov/2019-07-31-shared-dockless-electric-stand-up-scooters.pdf>

APPENDIX C

VCH support letter on private use only



Office of the Medical Health Officer

8th floor, 601 West Broadway
Vancouver, BC
V5Z 4C2

Dale Bracewell, Manager of Transportation Planning
City of Vancouver
320-507 West Broadway
Vancouver, BC V5Z 0B4

RE: Motor Vehicle Act Request for Pilot Project Proposals

Dear Mr. Bracewell,

Please accept this letter as Vancouver Coastal Health's (VCH) support for the City of Vancouver's (the City) two submissions pursuant to the Motor Vehicle Act Request for Pilot Project Proposals. We fully support the phased approach being proposed that will allow the City to improve safety and explore micromobility on a smaller scale before considering and committing to a shared e-scooter program.

The use of e-scooters and other similar forms of micromobility devices has been on the rise in recent years in many jurisdictions around the world, including in multiple Canadian cities such as Calgary, Edmonton, and Montreal. This growth can largely be attributed to the introduction of shared e-scooter pilot programs.

Alongside this trend, there is an emerging body of evidence regarding the health and safety impacts (notably injuries and fatalities) associated with e-scooters. Most of the studies available to-date are retrospective analyses of emergency department and/or hospital admissions data. As there is currently no ICD-10 code (the International Disease Classification system) specific to e-scooter related injuries, these studies have used information from medical chart reviews. Recent findings include:

- **Injury rate:** The City of Austin's Public Health Department estimates an injury rate of 20 per 100,000 scooter trips; at this rate, e-scooter use is 100 times riskier than walking and 13 times riskier than cycling¹. This aligns with similar data from Auckland, New Zealand that estimates a hospital presentation rate of 20 per 100,000 e-scooter trips².

¹ Austin Public Health & Centers for Disease Control and Prevention. Dockless Electric Scooter-Related Injuries Study. April 2019.

² Bekhit, M. N. Z., Le Fevre, J., & Bergin, C. J. (2019). Regional healthcare costs and burden of injury associated with electric scooters. *Injury*, <https://doi.org/10.1016/j.injury.2019.10.026> ³ Trivedi, T. K., Liu, C., Antonio, A. L. M., Wheaton, N., Kreger, V., Yap, A., Schriger, D., & Elmore, J. G. (2019). Injuries associated with standing electric scooter use. *Emergency Medicine*.
Doi: 10.1001/jamanetworkopen.2018.7381

- **Injury mechanism:** The most common mechanisms of injury include falling, collision with an object, and collision or attempt to avoid collision with a motorized vehicle^{1,2,3}. E-scooter speed is a factor that may play a role in injuries^{1,2}.
- **Injury type:** Head injuries (27.6-40.2%) are the most common body area injured^{3,3,4}, with approximately 15-26.2% of these injuries resulting in traumatic brain injury^{1,5,6}.
- **Active transportation:** Based on a life-cycle analysis, e-scooters emit 20 times more greenhouse gases than a bicycle but half the amount associated with a car. However, most people are not using e-scooters to replace car trips; rather, e-scooters most often replace trips by bike, walking or public transit⁸.

The proliferation of micromobility is inevitable, given the public's appetite for new, convenient and flexible modes to travel in increasingly congested areas. It is therefore critical for cities to manage the spread of these devices in a proactive, safe, and thoughtful way, and minimize the negative impacts this growth could bring such as threats to the health and safety of residents and visitors, congestion to the public realm and other unanticipated consequences. For this reason, the City's plan to allow and monitor personal electric micromobility devices and to expand 30km/hr speed limits on local streets is an important, exploratory step before widely introducing a shared e-scooter program in the City's transportation network.

With respect to each of the proposals, VCH has the following comments:

1. **Allowing private personal electric micromobility devices to operate on local streets and in separated bike lanes** will allow the City to monitor and track the *legal* use of these devices, and address any potential safety and infrastructure needs associated with their use. This approach will mitigate the challenges experienced in other jurisdictions that have piloted shared programs without proper due diligence, and have since retracted e-scooters and other forms of micromobility in their cities due to fatalities, a rise in injuries, and increased congestion on sidewalks and other public pathways. Most recently, Montreal banned e-scooters after introducing a shared program because poor planning resulted in insufficient parking spots across the city which led to rider non-compliance and significant cluttering of public spaces⁷. By monitoring micromobility on a smaller, more manageable scale in Vancouver by only allowing private devices, many of these risks can be managed.
2. **Allowing for blanket 30km/hr speed limits on local streets** is a critical step towards making the City's transportation network safer and more pleasant for vulnerable

³ Bresler, A. Y., Hanba, C., Svider, P., Carron, M. A., Hsueh, W. D., & Paskhover, B. (2019). Craniofacial injuries related to motorized scooter use: a rising epidemic. *American journal of otolaryngology*, 40(5), 662-666.

⁴ Aizpuru, M., Farley, K. X., Rojas, J. C., Crawford, R. S., Moore Jr, T. J., & Wagner, E. R. (2019). Motorized scooter injuries in the era of scooter-shares: A review of the national electronic surveillance system. *The American Journal of Emergency Medicine*, 37(6), 1133-1138.

⁵ Kobayashi, L. M., Williams, E., Brown, C. V., Emigh, B. J., Bansal, V., Badlee, J., ... & Doucet, J. (2019). The e-merging e-pidemic of e-scooters. *Trauma surgery & acute care open*, 4(1), e000337.

⁶ Alwani, M., Jones, A., Sandelski, M., Bandali, E., Lancaster, B., & Sim, M. et al. (2020). Facing Facts: Facial Injuries from Stand-up Electric Scooters. *Cureus*. doi: 10.7759/cureus.6663

⁸ Hollingsworth, J., Copeland, B., & Johnson, J. X. (2019). Are e-scooters polluters? The environmental impacts of shared dockless electric scooters. *Environmental Research Letters*, 14(8), 084031.

⁷ Lau, R. (2020). No more shared e-scooters in Montreal because they weren't being parked legally: city officials. *CTV News*. Accessed from: <https://montreal.ctvnews.ca/no-more-shared-escooters-in-montreal-because-they-weren-t-being-parked-legally-city-officials-1.4818347>

road users. When transportation networks are designed to make active transportation safe, it encourages people of all ages and abilities to choose it as a mode of travel⁸. Active transportation is associated with increased physical activity, decreased obesity, increased social connectivity, and reduced pedestrian and cyclist injury, all of which contribute to fostering positive mental and physical well-being¹¹. As new modes of travel - such as e-scooters and other micromobility devices - start to share the City's local streets, it is vital to consider how to design the network to ensure that every road user can travel safely. Lowering motor vehicle speeds is an excellent step.

Recent studies have shown that approximately 10% of e-scooter injuries are the result of conflicts between an e-scooter rider and a moving vehicle^{1,3}. Further, the relationship between motor vehicle speed and injury severity in the event of a motor vehicle collision with an unprotected body, is undeniable. An accepted principle is that every 1% increase in average speed produces a 4% increase in the fatal crash risk and 3% increase in the serious crash risk; a 5% reduction in average speed can reduce the number of fatalities by 30%⁹. Therefore, a reduction in the speed limit on local streets from 50km/hr to 30km/hr in Vancouver (i.e., a 67% decrease) would translate to a considerable reduction in the risk of serious injury and fatality posed by micromobility devices coming into contact with a motor vehicle. Imposing 30km/hr speed limits or lower on roadways where vulnerable road users (such as micromobility users) share space with motor vehicles has been highlighted as a recommendation in a recent *Safe Micromobility* report developed by the International Transport Forum¹⁰.

VCH is committed to working with the City to reduce injuries and deaths, and to create communities that are conducive to healthy behaviors. We support the phased approach proposed by the City as working towards these objectives and we encourage you to consider these submissions with this in mind.

Yours sincerely,



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⁸ Ministry of Transportation and Infrastructure BC (2019). British Columbia Active Transportation Design Guide (2019 Edition). Retrieved from www.gov.bc.ca/ActiveTransportationDesignGuide ¹¹ City of Surrey. (2019). Safe Streets for Everyone Vision Zero Surrey Safe Mobility Plan 2019-2023 (<https://www.surrey.ca/files/VisionZeroPlan.pdf>).

⁹ World Health Organization. (2018). Global status report on road safety 2018.

¹⁰ International Transport Forum. (2020). Safe Micromobility. *OECD/ITF*. Accessed from: <https://www.itf-oecd.org/safe-micromobility>