



REFERRAL REPORT

Report Date: January 31, 2024
Contact: Lisa Parker
Contact No.: 604.871.6185
RTS No.: 16171
VanRIMS No.: 08-2000-20
Meeting Date: February 27, 2024

TO: Vancouver City Council
FROM: General Manager of Engineering Services
SUBJECT: Shared Electric Kick Scooter Pilot By-Law Amendments

RECOMMENDATION TO REFER

- A. THAT the General Manager of Planning, Urban Design and Sustainability be instructed to bring forward the application as described below, and that the application be referred to Public Hearing together with the recommendations set out below.
- B. THAT the Director of Legal Services be instructed to prepare the necessary amendments to the Zoning and Development By-law, the CD-1 (46) By-law, Street and Traffic By-law, Sign By-law, City Land Use By-law, Building By-law, License By-law, Street Vending By-law, Vehicles for Hire By-law, and Granville Mall By-law in accordance with the recommendations below, for consideration at the Public Hearing.

RECOMMENDATION FOR PUBLIC HEARING

- A. THAT Council approve, in principle, an application to amend the Zoning and Development By-law and the CD-1 (46) By-law to enable the implementation of a Shared E-Scooter System in Vancouver and revise the regulations for Public Bike Share.
- B. THAT Council also approve, in principle, related amendments to the Street and Traffic By-law, Sign By-law, City Land Use By-law, Building By-law, License By-law, Street Vending By-law, Vehicles for Hire By-law, and Granville Mall By-law to enable the implementation of a Shared E-Scooter System in Vancouver.
- C. THAT the Director of Legal Services be instructed to bring forward for enactment the amendments to the various by-laws as presented in Appendix A.

- D. THAT Council hereby consents to being a participating community in the Province of BC Electric Kick Scooter Pilot Project, starting on April 5, 2024.

REPORT SUMMARY

This report responds to a Council resolution “Moving Climate Goals Forward with Micromobility” approved on June 16, 2022, regarding the use of electric kick scooters (“e-scooters”) in Vancouver.

First, this report identifies and recommends the enactment of by-law amendments necessary to licence and regulate the operation of shared e-scooters, to enable the implementation of a shared e-scooter system (SES) in Vancouver, per Council’s direction in the June 16, 2022, Motion. The report also outlines proposed minor by-law amendments related to Public Bike Share (PBS) to ensure consistency in the regulations for both shared micromobility systems, and to reflect updates to the PBS system since its adoption in 2012.

To permit the operation of a SES, amendments to the following by-laws are required:

- Zoning and Development By-law
- CD-1 (46) By-law (site specific)
- Street and Traffic By-law
- Sign By-law
- City Land Regulation By-law
- Building By-law
- License By-law
- Street Vending By-law
- Vehicles for Hire By-law
- Granville Mall By-law

Second, this report recommends a Council resolution consenting to the City’s participation in the updated Provincial electric kick scooter pilot. This new pilot project replaces the current pilot project and is scheduled to run from April 5, 2024, until April 5, 2028. The resolution is required to join the new iteration of the pilot, which applies to both private and shared e-scooters.

Adopting the proposed by-law amendments and consenting to the revised Provincial electric kick scooter pilot enables the City to create a regulatory framework for an accessible, equitable, and safe SES in Vancouver.

COUNCIL AUTHORITY/PREVIOUS DECISIONS

Electric Kick Scooter Devices on Vancouver Roadways

- 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.

- On June 16, 2022, Council directed staff in the Member's Motion "Moving Climate Goals Forward with Micromobility" to seek a public shared e-scooter operator via a competitive RFP (Request for Proposal) process.

CITY MANAGER'S/GENERAL MANAGER'S COMMENTS

The City Manager recommends approval of the foregoing.

REPORT

Background

Micro-mobility options alter the urban transportation landscape, as they respond to emerging transportation preferences and needs of city dwellers. Vancouver, like many urban areas, faces challenges related to traffic congestion, air pollution, and limited first-and-last-kilometre transportation options. Shared e-scooters offer a convenient and sustainable mode of transportation that may help ease congestion and help diversify mobility options.

The City has been actively promoting sustainability and reductions in carbon emissions through bold action plans such as the Climate Emergency Action Plan (CEAP) and Transportation 2040 Plan, which set targets for the city to reduce its carbon pollution by 50% and have two-thirds of trips in Vancouver made by active transportation and transit by 2030. To help reach those targets, Council approved participation in the Province's "Electric Kick Scooter" pilot in June 2021, which authorized the use of privately owned electric-kick scooters on protected bike lanes and minor streets.

Building on the success of the private e-scooter pilot, the June 2022 Council motion directed staff to deliver a shared e-scooter pilot to provide more equitable and affordable access to this new transportation mode. The motion specified that the SES pilot be delivered through a competitive Request for Proposals (RFP) process, informed by Advisory Committees' feedback and best practices research, and integrating key considerations such as safety, accessibility and equity.

In preparing for a pilot launch in Q2 2024, staff have completed a comprehensive review of by-law amendments required to enable the City to licence and regulate the SES. Some amendments, such as to the Zoning and Development By-law and Comprehensive Development District (CD-1) by-law, require a public hearing. Other by-law amendments, including to the Street and Traffic By-law, the Sign By-law, the City Land Regulation By-law, the Building By-law, the License By-law, the Street Vending By-law, the Vehicle for Hire By-law, and the Granville Mall By-law, do not require a public hearing but, are included in this report to allow Council to consider the full context for the SES regulatory framework.

Notable changes include expanding where e-scooters can legally operate. In the original pilot, they were allowed to operate only on minor streets and in protected bike lanes; this report recommends that they now be allowed on all city streets with a posted speed limit of 50 km/h or less. This amendment would align the Street and Traffic By-law (S&T) with current Provincial

legislation and policies in comparable cities across North America. In addition, staff are coordinating with Vancouver Board of Parks and Recreation (VBPR) to consider legislation to permit the use of e-scooters and e-bikes on the seawall and within lands under VBPR jurisdiction. Proposed amendments in this report apply only to the seawall under the City's jurisdiction, as VBPR would initiate its own process to revise legislation under its jurisdiction.

Strategic Analysis

In alignment with Transportation 2040 and the CEAP, the City supports e-scooters as another low carbon transportation option suitable for short trips. A shared e-scooter system can provide mobility benefits to residents and visitors including people with limited mobility, low income, or without a driver's licence. This on-demand transportation mode can act as a first-and-last kilometre tool to enhance the use of transit or other transportation options, particularly where access may be limited.

In order to implement a SES in Vancouver, Council must adopt a resolution consenting to the City's participation in the revised Provincial e-scooter pilot, and enact a set of related by-law amendments.

Shared E-Scooter System

The SES will comprise a network of self-service stations, where users can rent and return shared e-scooters (including the helmet) for trips. Further details of the SES, including proposed service area, fleet size and number of stations, will be presented to Council at a later date, as part of the SES procurement process.

Provincial Pilot Extension

Since the start of the Provincial pilot in 2021, the use of e-scooters continues to increase. Counts from 2023 along a selection of bike routes in Vancouver suggest a 25% year over year increase in the number of e-scooters, with higher volumes on routes near the city centre. It is estimated e-scooters now make up between 3% to 11% of bike-like devices operating in the city. The current e-scooter Provincial pilot ends on April 5, 2024. In December 2023, the Province passed legislation for a new pilot to extend to April 5, 2028 (See Appendix B). The new Provincial e-scooter pilot requires a Council resolution to continue participation. Extending the pilot will support residents who use this mode of transportation and allow for the development of a SES.

Zoning and Development By-law & CD-1(46) By-law

Zoning and Development By-law amendments are proposed to facilitate the SES station placement on private lands which are accessible to the public, as these sites sometimes offer the best or only solution for a SES station in certain parts of the service area. To support city-wide deployment, the district schedules need to be amended to permit SES as an approved use. Updates are also proposed to align the definitions of PBS and SES.

Amendments to CD-1 (46), located at 453 W 12th Avenue (City Hall), are proposed to allow for the potential installation of a SES station at City Hall. City Hall is considered a flagship location and a station on the grounds would highlight the City's commitment to shared micromobility. (Currently, the City provides PBS with space for a station on City Hall grounds.) If, at a later

date, potential SES station locations on other CD-1 sites are identified, amendments for each CD-1 by-law will be forthcoming.

The proposed zoning changes are summarized as follows:

SES

- Introduce definitions for “Shared E-Scooter System” and “Shared E-Scooter System; Station” as a Retail Use to facilitate share e-scooter system (SES) station placement;
- Permit SES as conditional use in all District Schedules, with the intent SES be allowed city-wide;
- Exempt SES from requiring a Development Permit to install SES stations, as long as criteria are met; and
- Add “Shared E-Scooter System” as a permitted use to one CD-1 By-law (City Hall) at this time.

PBS

- Revise definitions of “Public Bike Share” and “Public Bike Share Station” to align with SES definitions;
- Add PBS to all district schedules which will allow the use city-wide; and
- Delete an existing map that restricts PBS to certain areas of the city.

Please see Appendix A for full details of these amendments.

Street and Traffic By-law

The Street and Traffic By-law regulates the use of streets in Vancouver. A number of changes are required to allow the operation of a SES, and to support micromobility in general.

Staff recommend removing restrictions in the S&T By-law that currently limit the use of e-scooters to minor streets and streets with protected bike lanes. These restrictions were put in place during the initial Provincial e-scooter pilot and were intended as a measured approach to manage risks such as high first ride injury rates, and to learn about how this new mode would fit into our transportation network. Data gathered from the initial pilot supports an expansion of where devices should be able to operate.

One of the largest concerns for e-scooters is sidewalk riding, especially on busy commercial streets. While most e-scooter riders use bicycle routes and protected bike lanes when possible, some trips do occur on busy streets to access commercial and other destinations. To discourage sidewalk riding and facilitate e-scooters as a practical mode of transportation, it is recommended to allow, on a trial basis, e-scooters on all city roadways (50km/hr or less), similar to regulations for bicycles and consistent with most other cities (See Appendix C). This regulatory change will provide a legal way to ride to destinations without using sidewalks and allow for more consistent public messaging. It is not anticipated that busy streets will experience high e-scooter volumes, but that riders may use them for short distances to access immediate destinations, connect to/from transit, or to navigate gaps in the local street grid. Moreover, recent University of British Columbia (UBC) research shows that e-scooters have similar average operating speeds to bicycles, suggesting it is reasonable to operate with the same rules.

The current S&T By-law, as it was amended for the initial Provincial e-scooter pilot, allows only privately-owned devices, and restricts rented or leased devices. Staff recommend removing this restriction to enable a SES to legally operate. The forthcoming SES will be informed by best practices in other jurisdictions and will apply recent technological advances, to prioritize safety and ensure this new mode is well-integrated into the transportation network. Technologies such as limiting speeds on first rides, sidewalk riding detection, geo-fenced slow- or no-ride zones, and improved parking management systems have been shown to decrease injury rates and mitigate public realm impacts.

Staff further recommend removing S&T By-law restrictions that prohibit the use of electric assist devices such as e-bikes and e-scooters on the seawall around False Creek. This restriction was put in place in the early 2000s to discourage faster electric devices and minimize conflicts on the already crowded seawall. Since then, the seawall has been largely separated into walking and cycling paths, greatly reducing conflicts between people walking and those cycling or rolling. User surveys conducted by UBC indicate that people using bicycles, pedal-assisted e-bikes, and e-scooters are generally comfortable sharing a path (provided it is separate from walking), and vice versa (see Appendix D). Moreover, as Vancouver's pre-eminent car-free recreational route and a critical part of the city's active transportation network, the seawall is the safest and most desirable place for many people who ride bikes and scooters, for both recreational and practical trips. With hundreds of people riding e-bikes and e-scooters on the seawall every day, enforcement of the current regulation is impractical, and the current prohibition makes it challenging to deliver coherent public education messaging to encourage safe, respectful behaviour. It is thus recommended to update the By-law to allow e-assist devices along the seawall.

VBPR will subsequently consider changes to the Parks Control By-law to allow the use of e-assist devices on the portions of the seawall around Stanley Park and other large parks where there are designated cycling paths. With the launch of a SES, staff intend to require that the operator put in place a geo-fenced slow zone along the entirety of the seawall. This would allow shared e-scooter riders to use the seawall while being limited to speeds slower than riders using privately-owned devices. The shared e-scooter system would help model and encourage slow speeds for all micromobility device users on the seawall.

The City will continue to monitor e-scooter usage and safety data, in collaboration with Vancouver Coastal Health, and will report back prior to making these regulatory changes permanent. Staff will also continue to communicate with Vancouver Police Department and inform them of resident concerns regarding e-scooter misuse, as reported through 311. To date, resident concerns are mostly related to safety, sidewalk riding and speeding on pedestrian-oriented pathways on the Seawall. Staff will continue to work with the VPD on education and enforcement, to improve safety for all road users. Notably, the introduction of a SES can enhance the educational campaigns and help promote appropriate riding behaviour.

Sign By-law

Similar to PBS, the SES would benefit from the support of additional revenue streams such as sponsorship agreements. Sponsorship funding typically supports operations as part of a multi-year agreement, in which sponsors typically require acknowledgements to be displayed in various forms, including logos on shared e-scooters and/or signage at stations.

Amendments are proposed to the Sign By-law, which applies to all signs on private property, to align with the PBS provisions and allow sponsorship acknowledgment and signage associated with a SES use.

The proposed Sign By-law changes are summarized as follows:

SES

- Introduce definitions for “Shared E-Scooter System” and “Shared E-Scooter Station”;
- Exempt SES from requiring a Sign Permit if the sign has a sign area no greater than 3.0 m², and is no more than 3.0 m in height, excluding any associated solar panel, and related components and allow limited sponsorship acknowledgement.

PBS

- Update language for “Public Bike Share” and “Public Bike Share Station” definitions;
- Remove a provision for PBS regarding the copy area restriction.

City Land Regulation By-law

An exemption to the City Land Regulation By-law is necessary to allow for the construction or placement of SES stations on City land without the need for a permit. This same exemption is already provided to PBS stations.

The proposed amendments to the City Land Regulation By-law would exempt SES from a permit or written permission provided that the SES:

- a) does not include any enclosed structures;
- b) is automated;
- c) does not interfere with any public works, facilities or amenities; and
- d) is part of a network comprised of no fewer than 50 Shared E-Scooter Stations.

SES stations on City land or street right of way would still be required to meet the standards in the City’s Engineering Street Furniture Guidelines, to ensure they are well integrated into the public realm.

Building By-law

The proposed amendments to the Building By-law would add SES to the list of structures that are exempt from a building permit.

The exemption would only apply if the SES station does not interfere with any public works, facilities or amenities, and does not include any enclosed structures. This same exemption is provided for PBS stations.

License By-law

All persons and companies doing business in the City of Vancouver need to be licenced. Since the SES business model involves cloud based commercial transactions occurring within the City, the operator would require a business licence. The current licensing framework does not contain a business licence for a SES; the proposed amendments would provide for the SES business type to be licensed as soon as the new License By-law is enacted.

The 2024 business licence fee for the operator of the SES would be set at \$2,868.00 for the entire system. This single fee is comparable to other, similar licensing fees, including PBS and would streamline the permitting process.

Additionally, the proposed amendment to the License By-law would exempt SES from the requirement that every business location or station, requires a separate business licence, in recognition of the fact that a SES is really one interconnected system, and not a number of separate unrelated facilities. Staff also propose minor amendments to align the PBS station and SES station definitions.

Street Vending By-law

SES equipment and stations will be located on streets to provide users the opportunity to rent a device. Typically, if a sale occurs on the street, a Street Vending permit is required. This creates a regulatory overlap with the licencing framework, as the SES will be licenced annually for the whole system rather than individual stations. To avoid duplicating permitting processes, staff propose to exempt the SES from the Street Vending By-law, similar to the exemption provided to PBS.

The exemption would be applicable provided that the SES:

- a) does not include any enclosed structures;
- b) is automated and intended to be accessible 24 hours a day;
- c) does not interfere with any public works, facilities or amenities; and
- d) is part of a network comprised of no fewer than 50 Shared E-Scooter Stations.

Vehicle For Hire By-law

The proposed amendment would exempt the operation of any e-scooter that is part of a SES from the Vehicle for Hire By-law, which typically regulates motor vehicle-based services such as, ride hailing, charter buses and taxi cabs. Since the PBS is exempt from this By-law, staff recommend the SES be exempt, too. A minor amendment will also modernize and align the PBS definition with SES.

Granville Mall By-law

To maintain consistency with other exemptions, staff propose an amendment to the Granville Mall By-law that would permit the operation of electric kick scooters (private or shared) on the portion designated as a transitway.

Bicycles are currently permitted on the transitway, and the proposed amendments are aligned with the proposed Street and Traffic By-law changes which aim to create a safe and connected SES network to support higher user compliance for safe and responsible riding.

Implications/Related Issues/Risk

Financial

As the procurement process to select an electric kick scooter vendor is currently underway, specific revenue figures are not yet available. However, it is anticipated that the cumulative income generated from station siting payments, per device payments,

and revenue sharing payments would outweigh the foregone revenue resulting from by-law amendments or exemptions.

While the proposed changes involve the foregoing of certain fees from other sources, the City is strategically positioned to recoup these losses through a structured and sustainable revenue model associated with the SES. The primary sources of revenue include:

- **Station Siting Payments**
The City will require an SES operator to pay the City to establish stations where e-scooters can be parked, ensuring a streamlined and organized deployment of the shared system.
- **Per Device Payments**
The SES operator will be required to make an annual per-device payment to the City, contributing to the cost of managing and maintaining the public spaces allocated for the system.
- **Revenue Sharing**
The City will negotiate a revenue-sharing arrangement with the selected SES operator for ridership revenues and non-ridership revenues. This model ensures that the City benefits proportionally from the commercial success of any shared system.

Legal

If approved, the recommendations in this report will result in amendments to City by-laws that will facilitate a SES program and refine the PBS program. Council will also consent to have the City participate in the Province's revised electric kick scooter pilot project.

CONCLUSION

The recommendations put forward in this report, if enacted, will result in amendments to the Zoning and Development By-law, CD-1 (46) By-law, Street and Traffic By-law, Sign By-law, City Land Regulation By-law, Building By-law, License By-law, Street Vending By-law, Vehicles for Hire By-law, and Granville Mall By-law to facilitate and enable the City to implement a viable and sustainable SES.

Staff also recommend that Council consent to participating in the revised the Provincial electric kick scooter pilot as well as amending the current regulations to allow e-scooters on roads with a posted speed limit of less than 50km/h to match updates to the Provincial regulation. Finally, staff recommend adopting minor changes to PBS regulations to update and align the regulatory frameworks for both shared micromobility systems.

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APPENDIX A
BY-LAW AMENDMENTS

- **Zoning and Development By-law & CD-1 By-Law**

**A By-law to amend
Zoning and Development By-law No. 3575
Regarding Shared Electric Kick Scooter Pilot By-law Amendment**

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

1. This By-law amends, unless indicated otherwise the indicated provisions of the Zoning and Development By-law No. 3575.

2. Council inserts the definition “Shared E-Scooter Station” in correct alphabetical order in section 2, as follows:

“Shared E-Scooter Station: An electric kick scooter sharing facility where electric kick scooters are stored and from which the general public may rent and return electric kick scooters and other objects or equipment as part of a Shared E-Scooter System.”.

3. Council inserts the definition “Shared E-Scooter System” in correct alphabetical order in section 2, as follows:

“Shared E-Scooter System: A use of premises that provides the general public with an opportunity to rent electric kick scooters through an automated system, on a short-term basis for use within the City as part of a network comprised of no fewer than 50 public Shared E-Scooter Stations located separate sites on streets, and public and private real property.”.

4. Council strikes the definition “Public Bike Share” from section 2, and replaces it with:

“Public Bike Share: A use of premises that provides the general public with an opportunity to rent bicycles through an automated system, on a short-term basis for use within the city as part of a network comprised of no fewer than 50 Public Bike Share Stations located on separate sites on streets, and public and private real property.”.

5. Council strikes the definition “Public Bike Share Station” from section 2, and replaces it with:

“Public Bike Share Station: A bicycle sharing facility where bicycles are stored and from which the general public may rent and return bicycles and other objects or equipment as part of a Public Bike Share.”.

6. Council inserts “Shared E-Scooter System” in correct alphabetical order in section 2 as part of the definition of “Retail Uses”.

7. Council inserts the following after subsection 4.8.1(s) and renumbers the following subsections (t), (u) and (v) as (u), (v) and (w) respectively:

- “(t) the installation and maintenance of an shared e-scooter station as part of a shared e-scooter system, provided that the shared e-scooter station:
- (i) does not include any enclosed structures,
 - (ii) is automated,
 - (iii) does not interfere with any public works, facilities or amenities, and
 - (iv) is part of a network comprised of no fewer than 50 shared e-scooter stations;”.

8. Council strikes section 11.8.4 and replaces it with:

“11.8.4 Public Bike Share

- 11.8.4.1 The Director of Planning may approve public bike share or a public bike share station, if the Director of Planning considers:

- (a) all applicable Council policies and guidelines; and
- (b) the submission of any advisory group, property owner or tenant,

but no development permit approving the use will be required if the use complies with section 4.8.1(s) of this by-law.

- 11.8.4.2 Floor area necessary for public bike share or a public bike share station must be excluded from the calculation of floor space ratio on any site.”.

9. Council deletes “Map 1: Area Where Public Bike Share is Permitted”.

10. Council inserts the following after section 11.8.11:

“11.8.12 Shared E-Scooter System

- 11.8.12.1 The Director of Planning may approve a shared e-scooter system or a shared e-scooter station, if the Director of Planning considers:

- (a) all applicable Council policies and guidelines; and
- (b) the submission of any advisory group, property owner or tenant,

but no development permit approving the use will be required if the use complies with section 4.8.1(t) of this by-law.

- 11.8.12.2 Floor area necessary for shared e-scooter system or a shared e-scooter station must be excluded from the calculation of floor space ratio on any site.”.

11. Council inserts “Public Bike Share” as a “Conditional” approval use in correct alphabetical under the “Use” heading “Retail Uses” in section 2.1 of the following District Schedules:

- a. RT-11 and RT-11N, and
- b. RM-7, 7N, and 7AN.

12. Council inserts a new “Use” heading “Retail Uses” immediately above “uncategorized” uses and include “Public Bike Share” as a “Conditional” approval use under the new “Use” heading “Retail Uses” in section 2.1 of the following District Schedules:
- RR-1, and
 - RR-2A, RR-2B, and RR-2C.
14. Council inserts “Shared E-Scooter System” as a “Conditional” approval use in correct alphabetical order under the “Use” heading “Retail Uses” in section 2.1 of the following District Schedules, subject to the same “Use-Specific Regulations” as Public Bike Share, if Public Bike Share is subject to any “Use-Specific Regulations”.
- a. RA-1,
 - b. R1-1,
 - c. RR-1,
 - d. RR-2A, RR-2B, and RR-2C,
 - e. RT-1,
 - f. RT-2,
 - g. RT-3,
 - h. RT-4, RT-4A, RT-4N and RT-4AN
 - i. RT-5 and RT-5N
 - j. RT-6,
 - k. RT-7,
 - l. RT-8,
 - m. RT-9,
 - n. RT-10 and RT-10N,
 - o. RT-11 and RT-11N,
 - p. RM-1 and RM-1N,
 - q. RM-2,
 - r. RM-3,
 - s. RM-3A,
 - t. RM-4, and RM-4N,
 - u. RM-5, RM-5A, RM-5B, RM-5C and RM-5D,
 - v. RM-6
 - w. RM-7, 7N, and 7AN,
 - x. RM-8, RM-8N, RM-8A and RM-8AN
 - y. RM-9A and RM-9AN,
 - z. RM-9, RM-9N and RM-9BN,
 - aa. RM-10 and RM-10N,
 - bb. RM-11 and RM-11N,
 - cc. RM-12N,
 - dd. FM-1,
 - ee. C-1,
 - ff. C-2,
 - gg. C-2B,
 - hh. C-2C,
 - ii. C-2C1,
 - jj. C-3A,
 - kk. C-5, C-5A and C-6
 - ll. C-7 and C-8

mm. FC-1,
nn. FC-2,
oo. I-1,
pp. I-1A,
qq. I-1B
rr. I-1C,
ss. I-2,
tt. I-3,
uu. I-4
vv. IC-1,
ww. IC-2,
xx. IC-3,
yy. M-1,
zz. M-1A,
aaa. M-1B,
bbb. M-2,
ccc. MC-1 and MC-2,
ddd. HA-1, and HA1A,
eee. HA-2, and
fff. HA-3.

15. Council strikes section 2.2.1 in the RM-5, RM-5A, RM-5B, RM-5C and RM-5D District Schedule and replaces it with the following:

“2.2.1 All uses listed in section 2.1 of this schedule, other than dwelling uses, must be carried on wholly within a completely enclosed building, except for the following:

- (a) child day care facility;
- (b) display of flowers, plants, fruit and vegetables;
- (c) farmers’ market;
- (d) outdoor eating area in combination with a club, grocery or drug store, or neighbourhood grocery store, subject to any conditions that the Director of Planning considers necessary, having regard to the area and location of the eating area with respect to adjoining sites, the hours of operation and the intent of this schedule;
- (e) park or playground;
- (f) parking and loading facilities;
- (g) public bike share;
- (h) restaurant;
- (i) shared e-scooter system; and
- (j) urban farm - class A.”.

16. Council strikes section 2.2.1 in the RM-6 District Schedule, and replaces it with the following:

“2.2.1 All commercial uses listed in section 2.1 of this schedule must be carried on wholly within a completely enclosed building, except for the following:

- (a) child day care facility;
- (b) display of flowers, plants, fruits and vegetables;
- (c) farmers' market;
- (d) gasoline station - split island;

- (e) outdoor eating area in combination with a club, grocery or drug store, neighbourhood grocery store or retail store, subject to any conditions that the Director of Planning considers necessary, having regard to the area and location of the eating area with respect to adjoining sites, the hours of operation and the intent of this schedule;
- (f) park or playground;
- (g) parking and loading facilities;
- (h) public bike share;
- (i) restaurant;
- (j) shared e-scooter system; and
- (k) urban farm - class A.”.

17. Council strikes section 2.2.1 in the C-1 District Schedule, and replaces it with the following:

“2.2.1 All commercial uses listed in section 2.1 of this schedule must be carried on wholly within a completely enclosed building, except for the following:

- (a) display of flowers, plants, fruits and vegetables;
- (b) farmers’ market;
- (c) gasoline station - full serve;
- (d) gasoline station - split island;
- (e) neighbourhood public house;
- (f) outdoor eating area in combination with a club, grocery or drug store, or retail store;
- (g) parking and loading facilities;
- (h) public bike share;
- (i) restaurant - class 1;
- (j) shared e-scooter system; and
- (j) urban farm - class B,

except that the Director of Planning may vary this regulation to permit the outdoor display of retail goods and the Director of Planning may impose any conditions that the Director of Planning considers necessary, having regard to the types of merchandise, the area and location of the display or eating area with respect to adjoining sites, the hours of operation and the intent of this schedule.”.

18. Council inserts “(n) shared e-scooter system;” after “(m) restaurant – drive-in;” in section 2.2.1 of the C-2 District Schedule and renumbers the following subsections (n), (o) and (p) as (o), (p) and (q) respectively.

19. Council inserts “(k) shared e-scooter system;” after “(j) restaurant – class 1;” in section 2.2.1 of the C-2B District Schedule and renumbers the following subsections (k) and (l) as (l) and (m) respectively.

20. Council strikes section 2.2.1 in the C-2C District Schedule, and replaces it with the following:

“2.2.1 All commercial uses listed in section 2.1 of this schedule must be carried on wholly within a completely enclosed building, except for the following:

- (a) arts and culture event;
- (b) display of flowers, plants, fruits and vegetables;

- (c) farmers' market;
- (d) gasoline station - full serve;
- (e) gasoline station - split island;
- (f) neighbourhood public house;
- (g) outdoor eating area in combination with a club, grocery or drug store, or retail store, subject to any conditions that the Director of Planning considers necessary, having regard to the area and location of the eating area with respect to adjoining sites, the hours of operation and the intent of this schedule;
- (h) parking and loading facilities;
- (i) public bike share;
- (j) restaurant - class 1;
- (k) shared e-scooter system; and
- (l) urban farm - class B,

except that the Director of Planning may vary this regulation to permit the outdoor display of retail goods and the Director of Planning may impose any conditions that the Director of Planning considers necessary, having regard to the types of merchandise, the area and location of the display with respect to adjoining sites, the hours of operation and the intent of this schedule.”.

21. Council strikes section 2.2.1 in the C-2C1 District Schedule, and replaces it with the following:

“2.2.1 All commercial uses listed in section 2.1 of this schedule must be carried on wholly within a completely enclosed building, except for the following:

- (a) arts and culture event;
- (b) display of flowers, plants, fruits and vegetables;
- (c) drive-through service;
- (d) farmers' market;
- (e) gasoline station - full serve;
- (f) gasoline station - split island;
- (g) neighbourhood public house;
- (h) outdoor eating area in combination with a club, grocery or drug store, or retail store, subject to any conditions that the Director of Planning considers necessary, having regard to the area and location of the eating area with respect to adjoining sites, the hours of operation and the intent of this schedule;
- (i) parking and loading facilities;
- (j) public bike share;
- (k) restaurant - class 1;
- (l) restaurant – drive-in;
- (m) shared e-scooter system; and
- (n) urban farm - class B,

except that the Director of Planning may vary this regulation to permit the outdoor display of retail goods, and the Director of Planning may impose any conditions that the Director of Planning considers necessary, having regard to the types of merchandise, the area and location of the display with respect to adjoining sites, the hours of operation and the intent of this schedule.”.

22. Council inserts “(n) shared e-scooter system;” after “(m) restaurant – drive-in;” in section 2.2.1 of the C-3A District Schedule and renumbers the following subsections (n), (o), (p) as (o), (p) and (q) respectively.
23. Council inserts “(n) shared e-scooter system;” after “(m) restaurant – drive-in;” in section 2.2.1 of the FC-1 District Schedule and renumbers the following subsections (n) and (o) as (o) and (p) respectively.
24. Council strikes section 2.2.1 in the C-5, C-5A, and C-6 District Schedules, and replaces it with the following:

“2.2.1 All commercial uses listed in section 2.1 of this schedule must be carried on wholly within a completely enclosed building, except for the following:
(a) arts and culture event;
(b) child day care facility;
(c) display of flowers, plants, fruits and vegetables;
(d) farmers’ market;
(e) gasoline station - full serve;
(f) gasoline station - split island;
(g) neighbourhood public house;
(h) outdoor eating area in combination with a cabaret, club, grocery or drug store or retail store, subject to any conditions that the Director of Planning considers necessary, having regard to the area and location of the eating area with respect to adjoining sites, the hours of operation and the intent of this schedule;
(i) parking and loading facilities;
(j) public bike share;
(k) restaurant;
(l) shared e-scooter system; and
(m) urban farm - class B.”.
25. Council inserts “(l) shared e-scooter system;” after “(k) restaurant;” in section 2.2.1 of the C-7 and C-8 District Schedule and renumbers the following subsections (l), (m) and (n) as (m), (n) and (o) respectively.
26. Council inserts “(xii) shared e-scooter system;” after “(xi) retail store;” in section 2.2.1 of the FC-2 District Schedule and renumbers the following subsections (xii) and (xiii) as (xiii) and (xiv) respectively.
27. Council inserts “(x) shared e-scooter system;” after “(ix) public bike share;” in section 2.2.1 of the MC-1 and MC-2 District Schedule and renumbers the following subsections (x), (xi) and (xii) as (xi), (xii) and (xiii) respectively.
28. Council strikes “and” following “public bike share;” and the comma “,” following “refreshment facilities” in section 2.2.1 of the HA-1 and HA-1A District Schedule, and inserts “; and” following “refreshment facilities” and “(k) shared e-scooter system,” in correct alphabetical order.
29. Council strikes “and” following “public bike share;” and the comma “,” following “restaurant” in section 2.2.1 of the HA-2 District Schedule, and inserts “; and” following “restaurant” and “(h) shared e-scooter system,” in correct alphabetical order.

30. Council strikes section 2.2.1 in the HA-3 District Schedule, and replaces it with the following:
- “2.2.1 All non-dwelling uses listed in section 2.1 of this schedule must be carried on wholly within a completely enclosed building, other than the following:
- (a) arts and culture event;
 - (b) grocery store or drug store;
 - (c) farmers’ market;
 - (d) neighbourhood public house;
 - (e) outdoor eating area in combination with a club, grocery or drug store, or restaurant – class 2, subject to any conditions that the Director of Planning considers necessary, having regard to the area and location of the eating area with respect to adjoining sites, the hours of operation and the intent of this schedule;
 - (f) park or playground;
 - (g) parking and loading facilities;
 - (h) public bike share;
 - (i) restaurant - class 1;
 - (j) retail store; and
 - (k) shared e-scooter system.”.
31. Council strikes subsection 2.2.1(a) in the I-1C District Schedule and replaces it with the following:
- “(a) except for park or playground, aircraft landing place, outdoor eating area in combination with a grocery or drug store, neighbourhood public house, public bike share, restaurant, retail store, and shared e-scooter system must be carried on wholly within a completely enclosed building unless appropriate measures are taken, to the satisfaction of the Director of Planning, to eliminate any dangerous, injurious, noxious or otherwise objectionable impact that could adversely affect the surrounding area and adjoining non-industrial districts and, in the case of outdoor eating area, subject to any conditions that the Director of Planning considers necessary, having regard to the area and location of the eating area with respect to adjoining sites, the hours of operation and the intent of this schedule;”
32. Council inserts “, Shared E-Scooter System” following “Public Bike Share” in section 2 of CD-1 (46) or By-law No. 4356.
33. This By-law is to come into force and take effect on the date of its enactment.

ENACTED by Council this _____ day of _____, 2024

Mayor

City Clerk

- **Sign By-law**

**A By-law to amend the
Sign By-law Regarding E-Scooters**

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

1. This by-law amends the indicated provisions of the Sign By-law.
2. Council adds the following definitions to section 1.3 of the By-law, in correct alphabetical order:
 - “**Shared E-Scooter Station** means an electric kick scooter sharing facility where electric kick scooters are stored and from which the general public may rent and return electric kick scooters and other objects or equipment as part of the operation of a Shared E-Scooter System.”,
 - and
 - “**Shared E-Scooter System** means a use of premises that provides the general public with an opportunity to rent electric kick scooters through an automated system, on a short-term basis for use within the City as part of a network comprised of no fewer than 50 Shared E-Scooter Stations located on separate sites on streets, and public and private real property.”.
3. Council strikes the definitions of Public Bike Share Program and Public Bike Share Station from section 1.3 and replaces them with the following:
 - “**Public Bike Share** means a service that provides the general public with an opportunity to rent bicycles through an automated system, on a short-term basis for use within the city as part of a network comprised of no fewer than 50 Public Bike Share Stations located on separate sites on streets, and public and private real property.”,
 - and;
 - “**Public Bike Share Station** means a bicycle sharing facility where bicycles are stored and from which the general public may rent and return bicycles and other objects or equipment as part of Public Bike Share.”.
4. Council strikes section 6.15 and replaces it with:
 - “**6.15 Public Bike Share Signs:**
 - A sign permit is not required for a sign related to the operation of a public bike share station that:
 - (a) has a sign area no greater than 3.0 m² ;
 - (b) is no more than 3.0 m in height, excluding any associated solar panel and related components; and
 - (c) may include sponsorship acknowledgement.

6.15A Shared E-Scooter Signs

A sign permit is not required for a sign related to the operation of a shared e-scooter station, that:

- (a) has a sign area no greater than 3.0 m2 ;
- (b) is no more than 3.0 m in height, excluding any associated solar panel and related components; and
- (c) may include sponsorship acknowledgement.”.

- 5. 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.

- 6. This By-law comes into force and takes effect upon enactment.

ENACTED by Council this day of , 2024

_____ Mayor

_____ City Clerk

- **City Land Regulation By-law**

**A By-law to amend the
City Land Regulation By-law regarding E-scooters**

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

1. This by-law amends the indicated provisions of the City Land Regulation By-law.
2. Council adds a new section 4AA as follows:

“4AA Despite anything to the contrary in this By-law, a person operating a shared e-scooter station on City Land does not require a permit under this By-law, provided the shared e-scooter station
 - (a) does not include any enclosed structures;
 - (b) is automated;
 - (c) does not interfere with any public works, facilities or amenities; and
 - (d) is part of a network comprised of no fewer than 50 shared e-scooter stations”.
3. 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.
4. This By-law comes into force and takes effect upon enactment.

ENACTED by Council this day of , 2024

Mayor

City Clerk

- Building By-law

**A By-law to amend the
Building By-law regarding E-scooters**

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

1. This By-law amends the indicated provisions of the Building By-law.
2. In section 1.1.1.1.2) of Part 1 Division A, Council:
 - (a) strikes the “and” at the end of section 1.1.1.1.2) j);
 - (b) strikes 1.1.1.1.2) k) iii) and rennumbers 1.1.1.1.2) k) iv) as iii);
 - (c) replaces the “.” at the end of section 1.1.1.1.2) k) with “, and”; and
 - (d) inserts a new section 1.1.1.1.2) l) as follows:

“l) structures necessary for the operation of an e-scooter station if the e-scooter station

 - i) does not interfere with any public works, public facilities or public amenities,
 - ii) does not include any enclosed structures,
 - iii) does not obstruct the exit path of an existing building and the firefighter’s access path to an existing building.”.
3. In section 1.4.1.2.1) of Part 1 of Division A of Book I, Council strikes and the definition of “Public Bike Share” and replaces it with:

“Public Bike Share means a service that provides the general public with an opportunity to rent bicycles through an automated system, on a short-term basis for use within the city as part of a network comprised of no fewer than 50 Public Bike Share Stations located on separate sites on streets, and public and private real property.”.
4. In section 1.4.1.2.1) of Part 1 Division A, Council adds the following definitions in correct alphabetical order:

“E-scooter system means a service that provides the general public with an opportunity to rent e-scooters through an automated system, on a short-term basis for use within the city as part of a network comprised of no fewer than 50 *e-scooter stations* located on separate sites on streets, and public and private real property.”; and

“E-scooter station means an e-scooter sharing facility where e-scooters are stored and from which the general public may rent and return e-scooters and other objects or equipment necessary the operation of an e-scooter system.”.
5. A decision by a court that any part of this By-law is illegal, void, or unenforceable is not to affect the balance of the By-law.

- **License By-law**

**A By-law to amend the
License By-law regarding e-scooters**

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

1. This by-law amends the indicated provisions of the License By-law, being By-law No. 4450.
2. Council strikes the definitions of Public Bike Share and Public Bike Share Station from section 2 of the By-law and replaces them with the following:

““Public Bike Share” means a service that provides the general public with an opportunity to rent bicycles through an automated system, on a short-term basis for use within the city as part of a network comprised of no fewer than 50 Public Bike Share Stations located on separate sites on streets, and public and private real property.”; and;

““Public Bike Share Station” means a bicycle sharing facility where bicycles are stored and from which the general public may rent and return bicycles and other objects or equipment as part of Public Bike Share.”.

3. Council adds the following definitions to section 2 of the By-law, in correct alphabetical order:

““Shared E-Scooter System” means a use of premises that provides the general public with an opportunity to rent electric kick scooters through an automated system, on a short-term basis for use within the City as part of a network comprised of no fewer than 50 public Shared E-Scooter Stations located separate sites on streets, and public and private real property.”; and

““Shared E-Scooter Station” means an electric kick scooter sharing facility where electric kick scooters are stored and from which the general public may rent and return electric kick scooters and other objects or equipment as part of a Shared E-Scooter System.”.

4. Council adds a new subsection 3(8) as follows:

“(8) Notwithstanding any other provision of this by-law, a shared e-scooter system shall only require one license under this by-law to operate any number of shared e-scooter stations.”.

5. Council amends Schedule A by inserting in correct alphabetical order:

“Shared E-Scooter System Per annum \$2,868.00”.

6. Council strikes the definitions of Public Bike Share and Public Bike Share Station from section 2 of the By-law and replaces them with the following:

““**Public Bike Share**” means a service that provides the general public with an opportunity to rent bicycles through an automated system, on a short-term basis for use within the city as part of a network comprised of no fewer than 50 Public Bike Share Stations located on separate sites on streets, and public and private real property.”; and;

““**Public Bike Share Station**” means a bicycle sharing facility where bicycles are stored and from which the general public may rent and return bicycles and other objects or equipment as part of Public Bike Share.”

- **Street Vending By-law**

**A By-law to amend the
Street Vending By-law**

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

1. This by-law amends the indicated provisions of the Street Vending By-law.
2. Council adds a new section 2.2.A, as follows:

“Shared E-Scooter station

2.2.A Despite anything to the contrary in this By-law, a person operating a shared e-scooter station on city streets does not require a permit or written permission under this By-law, if the shared e-scooter station:

- (a) does not include any enclosed structures;
 - (b) provides short term rentals of electric kick scooters and related equipment through an automated system intended to be accessible 24 hours a day;
 - (c) is part of a network comprised of no fewer than 50 public shared e-scooter stations located on separate sites in the city; and
 - (d) does not interfere with any public works, facilities or amenities.” .
3. 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.
 4. This By-law comes into force and takes effect upon enactment.

ENACTED by Council this _____ day of _____, 2024

Mayor

City Clerk

• **Vehicles for Hire By-law**

**A By-law to amend the
Vehicles for Hire By-law**

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

1. This by-law amends the indicated provisions of the Vehicles for Hire By-law.
2. Council strikes the definitions of Public Bike Share and Public Bike Share Station from section 2 of the By-law and replaces them with the following:

“Public Bike Share” means a service that provides the general public with an opportunity to rent bicycles through an automated system, on a short-term basis for use within the city as part of a network comprised of no fewer than 50 Public Bike Share Stations located on separate sites on streets, and public and private real property.”; and;

“Public Bike Share Station” means a bicycle sharing facility where bicycles are stored and from which the general public may rent and return bicycles and other objects or equipment as part of Public Bike Share.”.
3. Council adds the following definitions to section 2 of the By-law, in correct alphabetical order:

“Shared E-Scooter System” means a use of premises that provides the general public with an opportunity to rent electric kick scooters through an automated system, on a short-term basis for use within the City as part of a network comprised of no fewer than 50 public Shared E-Scooter Stations located on separate sites on streets, and public and private real property.”; and

“Shared E-Scooter Station” means an electric kick scooter sharing facility where electric kick scooters are stored and from which the general public may rent and return electric kick scooters and other objects or equipment as part of a Shared E-Scooter System.” .
4. Council amends section 4 of the By-law by:
 - (i) striking “and” from the end of subsection (d),
 - (ii) striking the period “.” at the end of subsection (e) and replacing it with “; and”,
and
 - (iii) adding as a new subsection (f), as follows:

“(f) the operation of any electric kick scooter that is part of a shared e-scooter system.”.
5. 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.
6. This By-law comes into force and takes effect upon enactment.

ENACTED by Council this _____ day of _____, 2024

Mayor

City Clerk

- **Granville Mall By-law**

**A By-law to amend the
Granville Mall By-law**

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

- 1. This by-law amends the indicated provisions of the Granville Mall By-law.
- 2. Council strikes sections 16 and replaces it as follows:

“Prohibition on vehicles

- 16. A person must not drive any vehicle on the transitway except for:
 - (a) a vehicle displaying a valid permit issued under this By-law,
 - (b) a bus,
 - (c) a taxi,
 - (d) an emergency vehicle,
 - (e) a bicycle, or
 - (f) an electric kick scooter.”.

- 3. 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.
- 4. This By-law comes into force and takes effect upon enactment.

ENACTED by Council this day of , 2024

_____ Mayor

_____ City Clerk

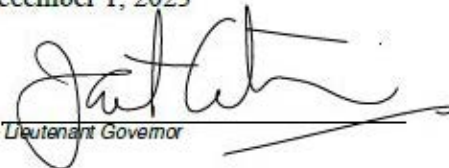
APPENDIX B
PROVINCIAL ELECTRIC KICK SCOOTER REGULATION

PROVINCE OF BRITISH COLUMBIA

ORDER OF THE LIEUTENANT GOVERNOR IN COUNCIL

Order in Council No. 640

, Approved and Ordered December 1, 2023




Lieutenant Governor

Executive Council Chambers, Victoria

On the recommendation of the undersigned, the Lieutenant Governor, by and with the advice and consent of the Executive Council, orders that

- (a) sections 12 (a) to (i) and (k) to (m) and 13 to 17 of the *Motor Vehicle Amendment Act, 2023*, S.B.C. 2023, c. 17, are brought into force,
- (b) effective April 5, 2024, the following provisions of the *Motor Vehicle Amendment Act, 2023*, S.B.C. 2023, c. 17, are brought into force:
 - (i) sections 1, 2, 4, 6 to 10 (e), 11, 12 (j) and (n) and 23;
 - (ii) section 24, except as it enacts section 182.1 of the *Motor Vehicle Act*;
 - (iii) sections 25 to 29;
 - (iv) section 32, except as it enacts section 210 (3.2) (b) (iii) of the *Motor Vehicle Act*;
 - (v) sections 33, 34, 36 and 38 to 42,
- (c) effective April 5, 2024, the Electric Kick Scooter Pilot Project Regulation, B.C. Reg. 90/2021, is repealed, and
- (d) effective April 5, 2024, the attached Electric Kick Scooter Pilot Project Regulation is made.



Minister of Transportation and Infrastructure



Presiding Member of the Executive Council

(This part is for administrative purposes only and is not part of the Order.)

Authority under which Order is made:

Act and section: *Motor Vehicle Amendment Act, 2023*, S.B.C. 2023, c. 17, s. 43; *Motor Vehicle Act*, R.S.B.C. 1996, c. 318, s. 210

Other: OIC 184/2021

R10718710

ELECTRIC KICK SCOOTER PILOT PROJECT REGULATION

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**PART 1 – INTERPRETATION,
ESTABLISHMENT OF PILOT PROJECT AND GENERAL PROHIBITIONS**

Definitions

1 In this regulation:

“**Act**” means the *Motor Vehicle Act*;

“**cycle lane**” means a portion of a highway designated for use of persons operating cycles, either exclusively or alongside one or more of the following:

- (a) persons operating designated personal mobility devices;
- (b) persons on skateboards, kick scooters, roller skates, in-line roller skates or other devices that are only capable of being propelled by human power;

“**electric kick scooter**” means a device that meets all of the criteria set out in section 3 [*electric kick scooter criteria*];

“**participating community**” means the following, as applicable:

- (a) the Nisga’a Government or Nisga’a Lands, but only if the pilot project is authorized, under section 306 (1) [*pilot projects within Nisga’a Lands*] of the Act, to take place on highways within Nisga’a Lands;
- (b) a treaty first nation or the treaty lands of the treaty first nation, but only if the pilot project is authorized, under section 306 (2) [*pilot projects within treaty lands*] of the Act, to take place on highways within the treaty lands;
- (c) a municipality, but only if the pilot project is authorized, under section 307 [*opt-in pilot projects in municipalities*] of the Act, to take place within the municipality;

“**pilot project**” means the pilot project established under section 4 (1) [*Electric Kick Scooter Pilot Project established*];

“**pilot project highway**” has the meaning set out in section 5 [*meaning of “pilot project highway”*];

“**section 19.07 highway**” means a highway named in Schedule 1 of section 19.07 [*schedule 1 highways restrictions*] of the Motor Vehicle Act Regulations;

“**transportation minister**” means the minister responsible for the administration of the *Transportation Act*.

Definitions in section 119 of Act apply

- 2 (1) If a word or expression used in this regulation is defined in section 119 [*definitions for Part 3*] of the Act, the word or expression has the same meaning as in that section.
- (2) For certainty, in this regulation, “**traffic control device**”, in relation to a participating community or the transportation minister, includes a traffic control device placed or erected by a person authorized by the participating community or transportation minister.

Electric kick scooter criteria

- 3 (1) An electric kick scooter is a device that
- (a) is designed to be
 - (i) solely self-propelled, or
 - (ii) self-propelled with the capability to be propelled by human power,
 - (b) has up to 4 wheels, each of which is not more than 430 mm in diameter, placed along a longitudinal axis, with one to 2 wheels at the front of the device and one to 2 wheels at the rear,
 - (c) has a platform for standing along the longitudinal axis between the front wheels and the back wheels of the device and is designed to be operated while the operator is standing on the platform,
 - (d) has a steering handlebar that acts directly on the steerable wheels at the front of the device,
 - (e) is designed to transport one person,
 - (f) is not a motor assisted cycle or another device that has pedals, and
 - (g) does not have
 - (i) a seat, or a surface or structure that could be used as a seat, or
 - (ii) a structure that encloses the electric kick scooter.
- (2) In addition to the criteria set out in subsection (1), the device must have one or more electric motors that
- (a) are powered solely by one or more electric batteries,
 - (b) are not capable of propelling the device at a speed exceeding 25 km/h when the device is being operated on a clean, paved and level surface, and
 - (c) have a continuous power output rating that, in total, does not exceed 500 W.

Electric Kick Scooter Pilot Project established

- 4 (1) The Electric Kick Scooter Pilot Project is established for the purposes of researching, testing and evaluating the regulation of electric kick scooters.
- (2) The pilot project is a province-wide pilot project.
- (3) For the purposes of the pilot project, an electric kick scooter is deemed to be a designated personal mobility device.

Meaning of “pilot project highway”

- 5 A pilot project highway is any highway or portion of a highway located within the Province, other than the following:
- (a) a highway or portion of a highway located within Nisga’a Lands, unless the Nisga’a Government is a participating community;
 - (b) a highway or portion of a highway located within the treaty lands of a treaty first nation, unless the treaty first nation is a participating community;
 - (c) a highway or portion of a highway located within a municipality, unless the municipality is a participating community;
 - (d) a structure, portion of a structure or approach to a structure in relation to which any of the following provisions of the Provincial Public Undertakings Regulation under the *Transportation Act* apply:
 - (i) section 3 [*farm vehicles, bicycles and pedestrians*];
 - (ii) section 4 [*slow vehicles and bicycles*];
 - (iii) section 9 [*prohibited vehicles, bicycles and tire chains*];
 - (e) a highway or portion of a highway on which the operation of electric kick scooters is prohibited by
 - (i) a traffic control device, law or bylaw referred to in section 8 [*prohibited highways located within participating communities*], or
 - (ii) a traffic control device referred to in section 14 [*prohibited highways located outside participating communities*].

Operation prohibited except on pilot project highways

- 6 A person must not operate an electric kick scooter on a highway except on a pilot project highway in accordance with this regulation.

Operation prohibited if under 16 years of age

- 7 (1) A person under 16 years of age must not operate an electric kick scooter on a highway.
- (2) A parent or guardian of a person under 16 years of age must not authorize or knowingly permit the person to operate an electric kick scooter on a highway.

**PART 2 – OPERATING ELECTRIC KICK SCOOTERS
IN PARTICIPATING COMMUNITIES**

**Prohibited highways
located within participating communities**

- 8 Despite any other provision of this Part, the operation of electric kick scooters on a highway or portion of a highway located within a participating community may be prohibited by
- (a) a traffic control device of the transportation minister, or
 - (b) a traffic control device, law or bylaw of the participating community.

**Section 19.07 highways
located within participating communities**

- 9 If a pilot project highway located within a participating community is a section 19.07 highway, a person must not operate an electric kick scooter on the highway unless the transportation minister causes signs to be erected permitting the use of electric kick scooters on either of the following:
- (a) a footpath constructed adjacent to the travelled portion of the highway;
 - (b) the shoulder of the travelled portion of the highway.

**Highways that have
speed limit over 50 km/h**

- 10 If a pilot project highway located within a participating community has a speed limit of more than 50 km/h, a person may operate an electric kick scooter on the highway as follows:
- (a) if the highway has a cycle lane, the person must operate the electric kick scooter in the cycle lane;
 - (b) if the highway does not have a cycle lane, or if the operation of electric kick scooters is prohibited in the cycle lane, the person may operate the electric kick scooter on another portion of the highway, but only if a traffic control device of the transportation minister, or a traffic control device, law or bylaw of the participating community, permits or requires electric kick scooters to be operated on the other portion of the highway.

**Highways that have
speed limit not over 50 km/h**

- 11 If a pilot project highway located within a participating community has a speed limit of not more than 50 km/h, a person may operate an electric kick scooter on the highway as follows:
- (a) if the highway has a cycle lane, the person must operate the electric kick scooter in the cycle lane;
 - (b) if the highway does not have a cycle lane, or if the operation of electric kick scooters is prohibited in the cycle lane, the person may operate the electric kick scooter as follows:
 - (i) on another portion of the highway, if a traffic control device of the transportation minister, or a traffic control device, law or bylaw of the participating community, permits or requires electric kick scooters to be operated on the other portion of the highway;
 - (ii) as near as practicable to the right side of the highway, if a traffic control device of the transportation minister, or a traffic control device, law or bylaw of the participating community, does not require electric kick scooters to be operated on another portion of the highway.

Sidewalks located within participating communities

- 12 A person must not operate an electric kick scooter on the sidewalk of a pilot project highway located within a participating community unless

- (a) a traffic control device of the participating community permits the operation of cycles or electric kick scooters on the sidewalk, or
- (b) a traffic control device of the transportation minister permits the operation of electric kick scooters on the sidewalk.

Crosswalks located within participating communities

- 13** A person must not operate an electric kick scooter on the crosswalk of a pilot project highway located within a participating community unless
- (a) a traffic control device of the participating community permits the operation of cycles or electric kick scooters on the crosswalk, or
 - (b) a traffic control device of the transportation minister permits the operation of electric kick scooters on the crosswalk.

**PART 3 – OPERATING ELECTRIC KICK SCOOTERS
OUTSIDE PARTICIPATING COMMUNITIES**

Prohibited highways located outside participating communities

- 14** Despite any other provision of this Part, a traffic control device of the transportation minister may prohibit the operation of electric kick scooters on a highway or portion of a highway located outside the following areas:
- (a) Nisga'a Lands;
 - (b) the treaty lands of a treaty first nation;
 - (c) a municipality.

**Section 19.07 highways located
outside participating communities**

- 15** If a pilot project highway located outside a participating community is a section 19.07 highway, a person must not operate an electric kick scooter on the highway unless the transportation minister causes signs to be erected permitting the use of electric kick scooters on either of the following:
- (a) a footpath constructed adjacent to the travelled portion of the highway;
 - (b) the shoulder of the travelled portion of the highway.

Other highways located outside participating communities

- 16** A person may operate an electric kick scooter on a pilot project highway located outside a participating community as follows:
- (a) if the highway has a cycle lane, the person must operate the electric kick scooter in the cycle lane;
 - (b) if the highway does not have a cycle lane, or if the operation of electric kick scooters is prohibited in the cycle lane, the person may operate the electric kick scooter on another portion of the highway, but only if a traffic control device of the transportation minister permits or requires electric kick scooters to be operated on the other portion of the highway.

**Sidewalks located
outside participating communities**

- 17 A person must not operate an electric kick scooter on the sidewalk of a pilot project highway located outside a participating community unless a traffic control device of the transportation minister permits the operation of electric kick scooters on the sidewalk.

**Crosswalks located
outside participating communities**

- 18 A person must not operate an electric kick scooter on the crosswalk of a pilot project highway located outside a participating community unless a traffic control device of the transportation minister permits the operation of electric kick scooters on the crosswalk.

PART 4 – DUTIES OF OPERATOR

Duty to wear safety helmet

- 19 Unless exempted by a regulation made for the purposes of section 184 (6) (b) [*bicycle safety helmets*] of the Act, a person who operates an electric kick scooter on a pilot project highway must properly wear a bicycle safety helmet that meets the requirements under section 184 (1) (a) or (b) of the Act.

Operation near pedestrians

- 20 A person operating an electric kick scooter on a pilot project highway must sound the bell or horn that the electric kick scooter is required to be equipped with under section 35 [*bell or horn required*] if
- (a) it is reasonably necessary to do so in order to notify a pedestrian that the electric kick scooter is approaching the pedestrian, or
 - (b) the person intends to pass a pedestrian.

Operation near other devices

- 21 (1) A person operating an electric kick scooter on a pilot project highway must sound the bell or horn that the electric kick scooter is required to be equipped with under section 35 [*bell or horn required*] if
- (a) it is reasonably necessary to do so in order to notify the operator of a cycle or other device that the electric kick scooter is approaching the operator of the cycle or other device, or
 - (b) the person intends to pass a cycle or other device.
- (2) A person operating an electric kick scooter on the roadway portion of a pilot project highway must not operate the electric kick scooter abreast of another person who is operating a cycle, electric kick scooter or other device.

Duty to signal right turn

- 22 (1) In this section and section 23 [*duty to signal left turn*], “**turn signal lights**” means red, yellow or white turn signal lights that are visible from both behind and in front of an electric kick scooter.

- (2) If a person operating an electric kick scooter on a pilot project highway intends to turn right and the electric kick scooter is not equipped with turn signal lights, the person must signify the right turn by doing either of the following:
 - (a) extending the person's left hand and arm out and upward from the electric kick scooter so that the upper and lower parts of the arm are at right angles;
 - (b) extending the person's right hand and arm horizontally from the electric kick scooter.
- (3) If a person operating an electric kick scooter on a pilot project highway intends to turn right and the electric kick scooter is equipped with turn signal lights, the person must signify the right turn by doing either of the following:
 - (a) activating the right turn signal light;
 - (b) extending the person's hand and arm in the manner described in subsection (2) (a) or (b).

Duty to signal left turn

- 23**
- (1) If a person operating an electric kick scooter on a pilot project highway intends to turn left and the electric kick scooter is not equipped with turn signal lights, the person must signify the left turn by extending the person's left hand and arm horizontally from the electric kick scooter.
 - (2) If a person operating an electric kick scooter on a pilot project highway intends to turn left and the electric kick scooter is equipped with turn signal lights, the person must signify the left turn by doing either of the following:
 - (a) activating the left turn signal light;
 - (b) extending the person's left hand and arm in the manner described in subsection (1).

Duty to make hook turn to turn left at Intersection

- 24**
- (1) Subject to subsection (2), if a person operating an electric kick scooter on a pilot project highway intends to turn left at an intersection, the person must cause the electric kick scooter to make a hook turn as follows:
 - (a) first, approach and enter the intersection in the portion of the highway that is as near as practicable to the right side of the highway;
 - (b) second, proceed through the intersection, keeping as near as practicable to the right side of the intersection;
 - (c) third, after reaching the other side of the intersection, stop and become positioned in the intended direction of travel;
 - (d) fourth, enter and proceed through the intersection as described in paragraphs (a) and (b).
 - (2) If it is not practicable or safe for the person referred to in subsection (1) to make a hook turn at the intersection, the person must dismount the electric kick scooter and cross the intersection in accordance with provisions under the Act applicable to pedestrians.

Duty to signal stop or decrease in speed

- 25 (1) If a person operating an electric kick scooter on a pilot project highway intends to stop or decrease the speed of the electric kick scooter, the person must signify the stop or decrease in speed by extending the person's left hand and arm out and downward from the electric kick scooter so that the upper and lower parts of the arm are at right angles.
- (2) Subsection (1) does not apply if
- (a) the electric kick scooter is equipped with a visible red light at the rear, and
 - (b) the visible red light is activated when the person applies the brakes.

Passengers and towing prohibited

- 26 A person operating an electric kick scooter on a pilot project highway must not do any of the following:
- (a) transport another person on the electric kick scooter;
 - (b) use the electric kick scooter
 - (i) to tow another person, or
 - (ii) to tow a vehicle, cycle or other device;
 - (c) use the electric kick scooter to be towed by a cycle or other device.

Operating without due care and attention prohibited

- 27 A person must not operate an electric kick scooter on a pilot project highway
- (a) without due care and attention, or
 - (b) without reasonable consideration for other persons using the highway.

Operator must be in standing position

- 28 A person operating an electric kick scooter on a pilot project highway
- (a) must be in a standing position on the platform of the electric kick scooter, and
 - (b) must keep at least one hand on the steering handlebar of the electric kick scooter.

Leaving electric kick scooter in traffic prohibited

- 29 A person operating an electric kick scooter must not leave the electric kick scooter attended or unattended in a location intended for the movement of traffic.

Duties under Part 3 of Act apply

- 30 Except as otherwise provided in this regulation, a person operating an electric kick scooter on a pilot project highway has the same rights and duties under Part 3 of the Act that apply to the driver of a vehicle.]

PART 5 – ELECTRIC KICK SCOOTER REQUIREMENTS

Operation prohibited unless electric kick scooter meets requirements

- 31 A person must not operate an electric kick scooter on a pilot project highway unless the electric kick scooter meets all of the requirements set out in this Part.

Weight restriction

- 32 The weight of the electric kick scooter, including its motors and batteries, must not be more than 45 kg when the electric kick scooter is unladen.

Motors and batteries

- 33 (1) The motors of the electric kick scooter must cease to propel the electric kick scooter forward when the operator releases the accelerator or applies the brakes.
- (2) The batteries and motors of the electric kick scooter must be securely fastened to the electric kick scooter in order to prevent the batteries and motors from moving, relative to the electric kick scooter, when the electric kick scooter is operating.

Brake performance

- 34 The electric kick scooter must be equipped with a braking system that is capable, when the electric kick scooter is being operated at a speed of 25 km/h on a clean, paved and level surface, of bringing the electric kick scooter to a complete stop within 7.5 m of the point at which the brakes are applied.

Bell or horn required

- 35 The electric kick scooter must be equipped with a bell or horn.

Lights required at night

- 36 (1) When the electric kick scooter is being operated between 1/2 hour after sunset and 1/2 hour before sunrise, the following equipment is required:
- (a) at the front of the electric kick scooter, a lighted lamp displaying a white or amber light that, under normal atmospheric conditions, is visible from at least 150 m in the direction the electric kick scooter is pointed;
 - (b) at the back of the electric kick scooter, a lighted lamp displaying a visible red light.
- (2) The lighted lamps required under subsection (1) may be
- (a) attached to the electric kick scooter, or
 - (b) carried or worn by the operator.

Electrical terminals

- 37 All electrical terminals on the electric kick scooter must be completely insulated or covered.

Flashing red light permitted

- 38 Despite any other provision of the Act or regulations, an electric kick scooter may be equipped with a flashing red light.

PART 6 – ACCIDENTS

Duties of operator if accident occurs

- 39** If a person is injured, or property is damaged, as a direct or indirect result of an accident that occurs due to the presence or operation of an electric kick scooter on a highway, the operator must do the following:
- (a) remain at or immediately return to the scene of the accident;
 - (b) render all possible assistance;
 - (c) give to a person who sustains loss or injury
 - (i) the operator's name and address, and
 - (ii) the name and address of the owner of the electric kick scooter.

Duties of police officer

- 40** (1) This section applies in relation to an accident if
- (a) the accident occurs due to the presence or operation of an electric kick scooter on a highway, and
 - (b) the accident causes, directly or indirectly,
 - (i) death or injury to a person, or
 - (ii) damage to property causing aggregate damage apparently exceeding an amount prescribed for the purposes of section 249 (1) (b) [*accident reports by police officer*] of the Act.
- (2) A police officer who attends an accident to which this section applies must do the following:
- (a) complete a written report of the accident in the form established by the Insurance Corporation of British Columbia under section 249 (1) of the Act;
 - (b) promptly forward the report to the Insurance Corporation of British Columbia.

Power to obtain information

- 41** A person involved in an accident referred to in section 40, or that person's authorized representative, is entitled to obtain the following on request:
- (a) the names of persons involved in the accident;
 - (b) the name of any witness.

PART 7 – GENERAL PROVISIONS

Reports to minister

- 42** (1) The minister may require any of the following to provide records and information, including personal information, relating to the operation of electric kick scooters:
- (a) a participating community;
 - (b) a person who rents electric kick scooters to other persons;
 - (c) the BC Injury Research and Prevention Unit.

- (2) Records and information provided under subsection (1) must be in the form and include the content required by the minister.
- (3) For the purposes of the pilot project, the minister and the Insurance Corporation of British Columbia may collect, use and disclose to each other records and information, including personal information.

Inconsistent bylaws

- 43 A bylaw of a municipality that is a participating community is inoperative and of no force and effect to the extent that the bylaw conflicts with or is inconsistent with this regulation.

Offences

- 44 A person who contravenes any of the following provisions commits an offence:
- (a) section 6 [*operation prohibited except on pilot project highways*];
 - (b) section 7 (1) or (2) [*operation prohibited if under 16 years of age*];
 - (c) section 9 [*section 19.07 highways located within participating communities*];
 - (d) section 10 (a) or (b) [*highways that have speed limit over 50 km/h*];
 - (e) section 11 (a) or (b) [*highways that have speed limit not over 50 km/h*];
 - (f) section 12 [*sidewalks located within participating communities*];
 - (g) section 13 [*crosswalks located within participating communities*];
 - (h) section 15 [*section 19.07 highways located outside participating communities*];
 - (i) section 16 (a) or (b) [*other highways located outside participating communities*];
 - (j) section 17 [*sidewalks located outside participating communities*];
 - (k) section 18 [*crosswalks located outside participating communities*];
 - (l) any of the provisions of Part 4 [*Duties of Operator*];
 - (m) section 31 [*operation prohibited unless electric kick scooter meets requirements*];
 - (n) section 39 [*duties of operator if accident occurs*].

Repeal of regulation

- 45 This regulation is repealed on April 5, 2028.

APPENDIX C
JURISDICTIONAL REVIEW OF PERMITTED ROAD TYPES FOR E-SCOOTER

Jurisdictional Review of Where E-Scooters Can Operate

City/Town	Sidewalks	Protected Bike Lanes & Bike Pathways	Local Streets	Major Streets (50kmh or less)
Vancouver (Current)	x	√ ³	✓	x
Vancouver (Proposed)	x	✓	✓	✓
Coquitlam	x	✓	✓	✓
Richmond	x	✓	✓	x
North Vancouver (City)	x	✓	✓	x
North Vancouver (District)	x	✓	✓	x
Kelowna	x	✓	✓	✓
Vernon	✓	✓	✓	✓
Osoyoos	x	✓	✓	✓
Calgary ²	√ ¹	✓	x	x
Edmonton ²	x	✓	✓	✓
Toronto	x	x	x	x
Montreal	x	✓	✓	✓
Seattle	x	✓	✓	✓
Portland	x	√ ³	✓	✓
San Francisco	x	✓	✓	✓
Denver	x	✓	✓	✓
Chicago	x	√ ³	✓	✓
New York	x	✓	✓	✓
Philadelphia	x	x	x	x

¹ Quiet Sidewalks only

² Rules shown apply for shared e-scooters

³ Particular parks or pathways where e-scooters are prohibited

APPENDIX D UBC RESEARCH - IMPLICATIONS OF HEHV – VANCOUVER SEAWALL

Human-Electric Hybrid Vehicles on the Vancouver Seawall

By Amir Hassanpour (amirh@student.ubc.ca) and Alex Bigazzi (abigazzi@civil.ubc.ca)

Prepared for City of Vancouver on June 30th, 2022

This memo, on micromobility devices along the Vancouver seawall, is created upon request from City of Vancouver staff as a complement to the [Human Electric Hybrid Vehicle report](#) prepared by Dr. Alex Bigazzi and Amir Hassanpour. The data presented in this memo are to help inform policy regarding regulating micromobility devices along the seawall in Vancouver.

Classified count and speed data were collected at 4 locations along the seawall in Vancouver. These locations are at Stanley Park, Charleson Park, Margaret Pigott Park, and Hastings Mill Park. The comfort web intercept survey was only conducted at the Hastings Mill Park location, therefore, the findings regarding comfort are mainly representative of the population in that area. See the exact location of data collection on [this webpage](#). After data cleaning, a total of 9,157 vehicles were observed at these locations. The following table presents more information such as number of observations, hourly vehicle traffic, average temperature, and average speed of vehicles, on each day and location of data collection. These locations were among the highest traffic locations in this study, consisting approximately a third of all vehicle observations. The highest hourly traffic was observed at Stanley Park on Wednesday, September 25, 2019, with approximately 1 vehicle passing the pneumatic tubes at every 13 seconds. There is a positive relationship between temperature and traffic as days with lower temperature show lower traffic. The average speed at the following locations varies from 12 km/h to 20 km/h while not factoring the effects of grade.

Date of Data Collection	Thursday, August 8, 2019	Saturday, August 17, 2019	Wednesday, August 21, 2019	Wednesday, September 18, 2019	Wednesday, September 25, 2019	Wednesday, November 6, 2019	Sunday, November 24, 2019	Thursday, February 13, 2020	Sunday, March 1, 2020	Monday, April 20, 2020
Number of Observations	1086	1321	450	2792	1014	415	503	105	302	1169
Hours of Data Collection	8	5	8	10	9	9	6	6	6	8
Average Hourly Vehicle Traffic	136	264	56	279	113	46	84	18	50	146
Average Temperature (°C)	21.1	20.3	17.2	17.1	15.5	10.1	9.3	7.0	5.8	15.8
Average Speed of Vehicles (km/hr)	19.1	17.8	19.5	14.6	20.3	12.5	18.0	12.4	12.0	11.9
Location of Data Collection	Hastings Mill Park	Charleson Park	Charleson Park	Stanley Park	Margaret Pigott Park	Hastings Mill Park	Hastings Mill Park	Hastings Mill Park	Hastings Mill Park	Hastings Mill Park

The data are further disaggregated by type of vehicle in the following table to present the mode share of the 19 different vehicle types observed at these locations. Conventional bicycles are the most dominant mode of transportation with mode share of 86% to 95%. The next most prevalent vehicles are electric

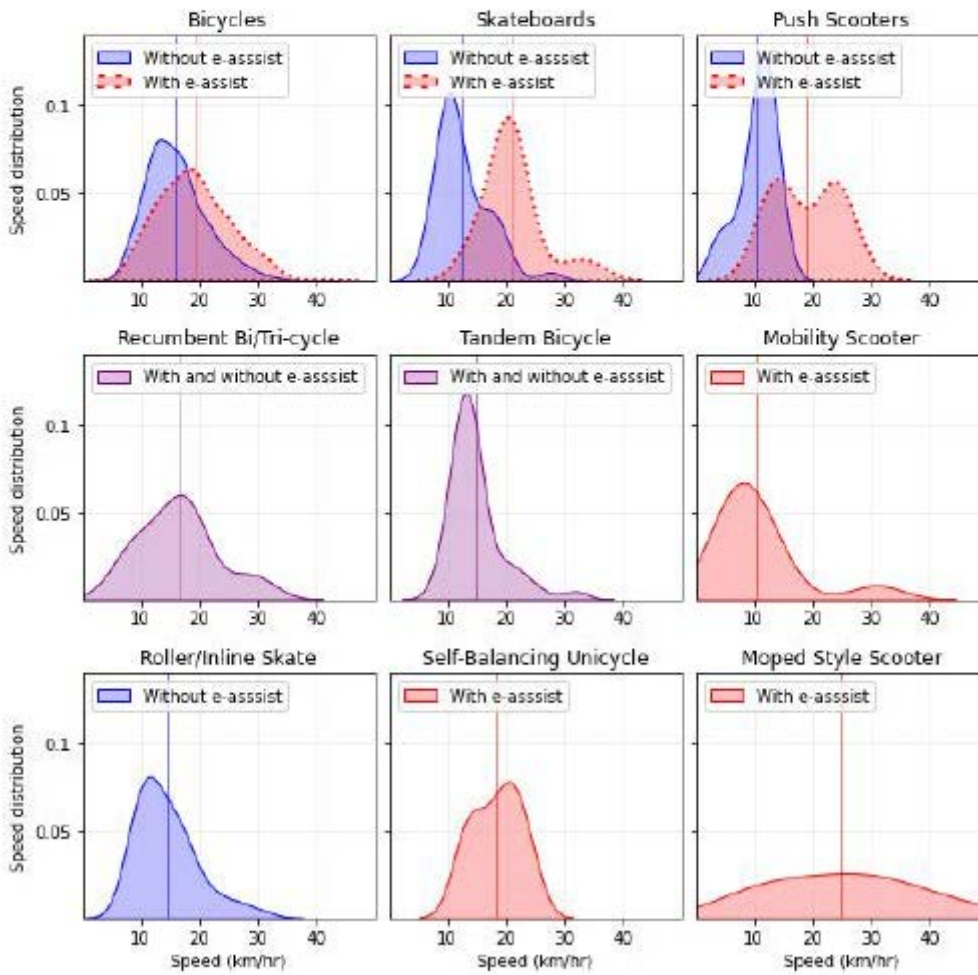
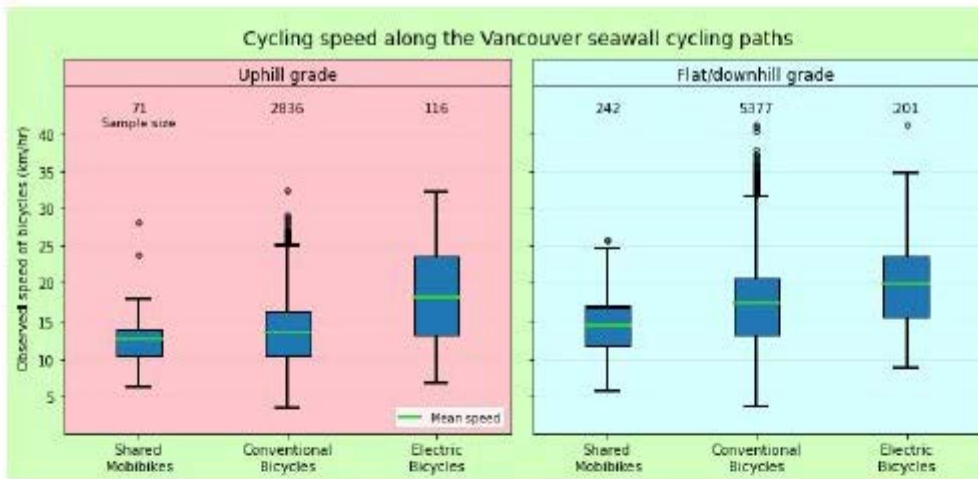
bicycles and Mobibikes, each with equal mode share of 3.5% on average. All other micromobility devices have a mode share of less than 1%. The cumulative mode share of skate, (e-)skateboards, (e-)push scooters, and (e-)unicycles is 1.8%. This mode share distribution is consistent with the rest of the locations studied in this project.

Sampling Locations	Conventional Bicycle	Electric Bicycle	Shared Bicycle	Roller/Inline Skate	Tandem Bicycle (E/non-E)	Conventional Skateboard	Electric Kick Scooter	Electric Skateboard	Recumbent Bicycle	Mobility Scooter	Self-Balancing Stand-Up Unicycle	Conventional Kick Scooter	Sit-Down Electric Scooter (Moped)	Golf Cart	Tricycle (E/non-E)	Recumbent Tricycle (E/non-E)	Strider Bicycle	Electric Wheelchair	Conventional Unicycle	All Vehicle Types
Hastings Mill Park	3,324	166	14	4	4	30	11	2	6	5	0	5	4	0	2	1	1	1	0	3,580
	92.8%	4.6%	.4%	.1%	.1%	.8%	.3%	.1%	.2%	.1%	.0%	.1%	.0%	.0%	.1%	.0%	.0%	.0%	.0%	100%
Stanely Park	2,456	49	165	48	32	5	8	5	5	1	9	0	0	0	3	3	2	0	1	2,792
	88.0%	1.8%	5.9%	1.7%	1.1%	.2%	.3%	.2%	.2%	.0%	.3%	.0%	.0%	.0%	.1%	.1%	.1%	.0%	.0%	100%
Charleson Park	1,535	61	134	4	5	3	6	11	0	3	0	2	0	6	0	1	0	0	0	1,771
	86.7%	3.4%	7.6%	.2%	.3%	.2%	.3%	.6%	.0%	.2%	.0%	.1%	.0%	.3%	.0%	.1%	.0%	.0%	.0%	100%
Margaret Pigott Park	960	42	3	0	0	2	3	0	0	1	0	0	3	0	0	0	0	0	0	1,014
	94.7%	4.1%	.3%	.0%	.0%	.2%	.3%	.0%	.0%	.1%	.0%	.0%	.3%	.0%	.0%	.0%	.0%	.0%	.0%	100%
All Locations	8,275	318	316	56	41	40	28	18	11	10	9	7	7	6	5	5	3	1	1	9,157
	90.4%	3.5%	3.5%	.6%	.4%	.4%	.3%	.2%	.1%	.1%	.1%	.1%	.1%	.1%	.1%	.1%	.0%	.0%	.0%	100%

The speed distribution of shared bicycles (Mobibikes), and private conventional and electric bicycles are presented in the figure below. The average speed of shared bicycles, private conventional and electric bicycles when riding on a flat or downhill path is 15, 17, 20 km/h, respectively. The average speed of shared bicycles, private conventional and electric bicycles on uphill path (grade of higher than 3 %) is 13, 14, and 18 km/h, respectively.

The effect of electric assist on average speed on a flat or downhill path is 3 km/h. This effect increases to 4 km/h on uphill path as travellers with electric assist can maintain their speed better with the help of electric assist. The magnitude of the effect of e-assist on speed is consistent with the rest of the locations in this project; however, in general vehicles travelled at a lower speed than in other locations.

On uphill paths, bicycles both conventional and electric were observed at speeds of up to 32 km/h and on downhill/flat paths, up to 41 km/h. The maximum observed speeds of conventional bicycles and electric bicycles are both equally high, however, such high-speed events are rare as the 85th percentile speed of both conventional and electric bicycles does not exceed 25 km/h. The speed distribution of vehicle types with more than 5 observations are presented as well along with their mean speed as vertical lines in the figure.



Information on comfort level of travellers at Hastings Mill Park is available from 141 survey responses at this location. A quarter of the respondents were people walking or running, and the rest of the respondents were people rolling (people on a vehicle). The average comfort rating of people walking/running, from -10 (very uncomfortable) to 10 (very comfortable), on the cycling facility were zero while the average comfort rating of a people rolling was +2.

The comfort ratings at Hasting Mill Park are similar to that of all 12 sampling locations in the report. People walking/running are most comfortable sharing path with other people walking/running and people on (e-)wheelchairs/mobility scooters. On the other hand, people walking/running are uncomfortable sharing path with e-assist devices such as electric scooter, electric bicycle, electric unicycle, and especially sit-down electric scooter (moped style motorcycle with no pedals) which are as reported earlier, are an outlier in speed in cycling facilities. People rolling are comfortable sharing path with the majority of path users, except for people on sit-down electric scooters. It is also worth noting that people rolling are more comfortable sharing path with e-bikes than they are sharing path with people walking/running. Cyclists rather share path with people on e-assist devices than with pedestrians. The perceived comfort differences between people walking/running and people rolling reinforces the importance of separating walking and cycling paths on the seawall. E-assist devices can comfortably be accommodated on cycling facilities; however, they should be separated from pedestrians where possible in the interest of pedestrians' comfort.

