

On-Street Logistics Mini-hub Pilot on St. George Street

Date: May 11, 2022

To: Infrastructure and Environment Committee

From: General Manager, Transportation Services

Wards: Ward 11 - University-Rosedale

SUMMARY

Over the course of the pandemic the importance of delivery options has become highlighted. Urban delivery for the courier industry is becoming more difficult due to limited commercial vehicle parking, inadequate loading facilities, available capacity to meet growing demand and road congestion. This has led to an increase in delivery times, operational costs and greenhouse gas emissions from delivery vehicles. Addressing many of these issues requires new and innovative models and methods in last-mile delivery. The City can play a significant role in eliminating many of the regulatory barriers that prevent industry from pursuing these new and sustainable delivery models which could contribute positively towards many of the City's own corporate plans and goals. Many of these actions were first identified in the City's Freight and Goods Movement Strategy, adopted by Council in October of 2020.

Transportation Services is partnering with Purolator Courier who is working with the University of Toronto Transportation Research Institute (UTTRI) to establish an electric cargo bike pilot. Purolator Courier wishes to replace delivery trucks on the St. George campus of the University of Toronto with electric cargo tricycles which will be deployed from an On-street Logistics Mini-hub that will be located in the downtown campus of the University of Toronto. Purolator's intention is to deliver more sustainably, with reduced pedestrian conflicts, truck parking and traffic impacts. At the same time, the Toronto Parking Authority is also working with Purolator to pilot a logistics mini-hub that will consist of a 40 foot container to enable delivery of packages using cargo bikes at their Lippincott Carpark, close to Bloor Street West and Bathurst Street.

Therefore, Transportation Services is seeking City Council approval to establish an On-Street Logistics Mini-hub pilot for a period of up to eighteen (18) months. The mini-hub, which is described in the report, would be located in the vicinity of 60 St. George Street in an existing parking layby located within the City's public right-of-way. In addition, the report also seeks Council approval to amend City of Toronto Municipal Code Chapter 950, Traffic and Parking to allow this new on-street use.

RECOMMENDATIONS

The General Manager, Transportation Services, recommends that:

1. City Council approve a pilot project of up to eighteen (18) months to provide on-street curb-side access to a logistics mini-hub to operate in a parking layby on the west side of St. George Street in the vicinity of 60 St. George Street, generally as described in the report dated May 11, 2022 from the General Manager, Transportation Services and request the General Manager, Transportation Services to report back to City Council on the outcome of the pilot project and recommended next steps, including an appropriate permit fee.
2. City Council amend City of Toronto Municipal Code Chapter 950, Traffic and Parking, generally as outlined in Attachment 1 to the report dated May 25, 2022 from the General Manager, Transportation Services to allow the establishment of an On-street Logistics Mini-hub.
3. City Council require that Purolator Courier compensate the Toronto Parking Authority a cost recovery amount estimated at \$131,328.00 (\$7,296.00 per month), based on TPA's Policy 2-6 'Cost Recovery - Street Occupancy Permits at On-Street Meter Locations' for the temporary long-term occupation of five (5) pay-and-display parking spaces for the duration of the eighteen (18) month pilot.
4. City Council authorize the City Solicitor to introduce the necessary bills to give effect to City Council's decision and City Council authorize the City Solicitor to make any necessary clarifications, refinements, minor modifications, technical amendments, or by-law amendments as may be identified by the City Solicitor or General Manager, Transportation Services, in order to give effect to Parts 1 and 2, above.

FINANCIAL IMPACT

Given the temporary long-term occupation of five (5) pay-and-display parking spaces for the duration of the eighteen (18) month pilot, a cost recovery, estimated at \$131,328.00 (\$7,296.00 per month) will be required to be paid to the TPA by Purolator Courier based on TPA's Policy 2-6 'Cost Recovery - Street Occupancy Permits at On-Street Meter Locations'. If the program becomes permanent, TPA requires an incremental amount in order to offset long term closure to permanent removal, at a one-time cost of \$24,952.

The City will not be establishing a permit fee for the On-Street Logistics Mini-hub at this time. Transportation Services will be reporting back to Council on the outcome of the pilot and recommended next steps, including an appropriate permit fee for this this new curbside use within the public right-of-way.

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

DECISION HISTORY

At its meeting on December 15, 2021, City Council adopted, as amended, Item IE26.11 which amended by-laws to further opt-in to a provincial pilot that runs until March 1, 2026 to allow large cargo e-bikes over 120kg unladen to operate on roads, bike lanes and cycle tracks, and to be able to park like other commercial vehicles, including in designated on-street commercial loading zones and delivery vehicle parking zones.
<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2021.IE26.11>

At its meeting on June 8-9, 2021, City Council adopted Item IE22.15 Regulatory Clarity for Cargo E-bikes that opted-in partially to the Province's pilot project to allow cargo ebikes, weighing not more than 120kg unladen, on streets, bike lanes and cycle tracks. Transportation Services was requested to report back on a micromobility strategy on all e-bike types and a pilot project for larger cargo e-bikes (over 120kg unladen) for the fourth quarter of 2021.
<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2021.IE22.15>

At its meeting on October 27, 28 and 30, 2020, City Council adopted Item IE16.1 Freight and Goods Movement Strategy that included a strategic action to implement a cargo e-bike pilot with partners such as courier companies and to promote cargo e-bike usage to reduce impacts of urban goods movement on the City's streets and a permitting program for curbside pick-up, drop-off and delivery of goods.
<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2020.IE16.1>

COMMENTS

With continued growth in e-commerce, people are purchasing goods online more than ever. As a result courier companies are experiencing challenges in last-mile logistics in urban delivery due to lack of commercial vehicle parking leading to parking violations, inadequate loading/unloading facilities, available capacity to meet growing demand and road congestion. This has created the desire by the courier industry to investigate alternative cost effective, efficient and sustainable goods and package delivery modes in dense urban centers.

E-commerce sales are anticipated to continue growing at double digit rates and the courier industry must develop and explore new delivery modals to keep up with the increasing demand. In 2020, 82% of Canadians shopped online compared to 73% in 2018 and spent \$84.4 billion in 2020 versus \$57.4 billion in 2018 (Statistics Canada, 2020)¹. This fact creates increased large truck presence and pressure on Toronto's

¹ Statistic Canada : <https://www150.statcan.gc.ca/n1/pub/11-627-m/11-627-m2021048-eng.htm>

streets. Alternative delivery modes are needed to optimize last-mile delivery while maintaining vehicles that are better scaled to their environment.

Transportation Services is partnering with Purolator Courier who is working with the University of Toronto Transportation Research Institute (UTTRI) to establish an electric cargo bike pilot which would replace delivery trucks on the St. George campus of the University of Toronto with electric cargo tricycles which will be deployed from a logistics mini-hub located nearby.

On-Street Logistics Mini-hub

This pilot is expected to demonstrate the potential for cargo tricycle deliveries from an on-street logistics mini-hub that could be replicated in others areas of downtown Toronto. This logistics mini-hub will consist of a 40 foot (approximately 12.2 metres) shipping container that has been transformed into a mini-logistics hub, which will allow for:

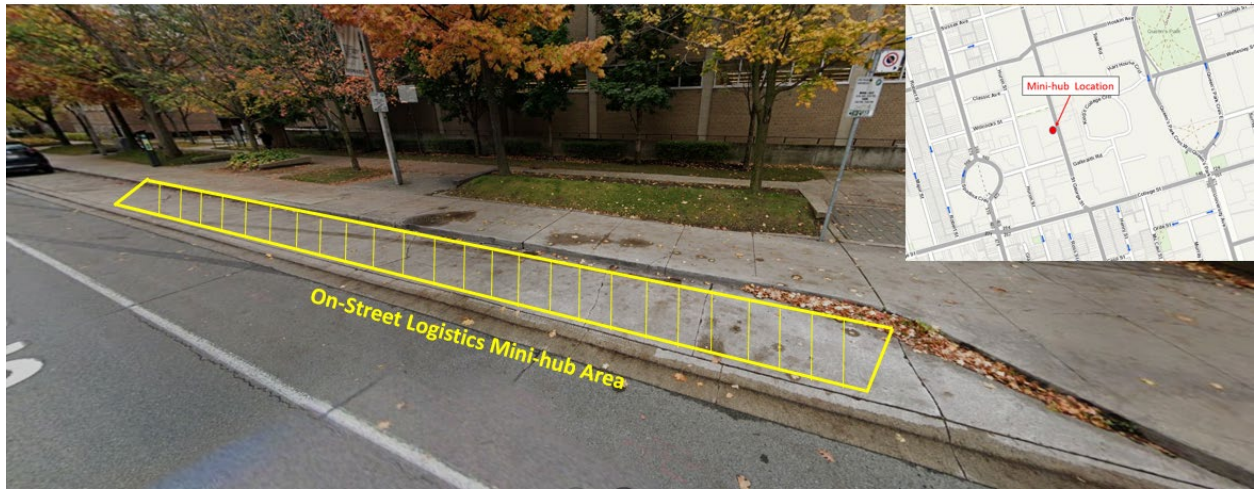
1. Electric cargo tricycle loading and overnight storage;
2. Storage of courier packages;
3. Retail Pick-up / Drop-off services for customers; and
4. Delivery of courier packages using the electric cargo tricycles around the St. George campus.

A conceptual drawing of this mini-hub is illustrated in the figure below. The retail doors would face to the sidewalk to serve customers picking up or dropping off of packages.



Source: Purolator Courier

The proposed mini-hub will require five (5) pay and display parking spots located in a parking layby, on the west side of St. George Street in the vicinity of 60 St. George Street. The exact location and placement of the mini-hub is shown in the figure below.



The displaced parking will accommodate both the mini-hub itself and short-term truck parking to allow loading and unloading activities. Having the courier truck stopped within the parking layby will ensure that other motorists and cyclists traveling within the adjacent bicycle lane are unimpeded.

Electric Cargo Tricycles

Courier packages will be delivered to the campus location by delivery van and stored at the mini-hub. Electric cargo tricycles would then deliver from the mini-hub to locations on the University of Toronto campus. Purolator owns two brands of electric cargo tricycles, as shown in Figures 1 and 2 below, and will deploy both types of tricycles from their mini-hub. The Fleximodal electric cargo tricycle weighs less than 120kg unladen, with power output less than or equal to 500 watts, while the Ester electric cargo tricycle exceeds the 120kg weight threshold, which is now permitted on City of Toronto streets.

Figure 1: Fleximodal Electric Cargo Tricycle



Figure 2: Ester Electric Cargo Tricycle



Logistic Mini-hub Pilot

Insights gained through the pilot will inform whether similar logistics mini-hubs should be considered in other areas of the city in support of courier companies facing similar challenges with last-mile deliveries and to support the pick-up and drop off of parcels close to their customers. At the time that the City and the University decided to undertake this work, Purolator was the only courier company interested in participating.

Pilot Benefits

City Council approval of the pilot will benefit each of the participating partners, as follows:

- **Contributes to City of Toronto Vision Zero goals** by removing large courier trucks from streets and replacing them with cargo tricycles. There are potential safety benefits of replacing trucks with cargo tricycles. Since these vehicles have not been extensively used in Toronto, the pilot will provide valuable insights into their use and operation on city streets.
- **Contributes to TransformTO GHG emissions reduction goals**, by replacing fossil fuel consuming courier trucks with electrically powered cargo tricycles.
- **Contributes to MoveTO goals** to manage congestion by reducing the number of courier vehicles from roadways, and replacing them with electric cargo tricycles which can operate in bicycle lanes and have reduced impact on traffic while making delivery stops.
- **University of Toronto will evaluate** and provide insights on the success of the pilot project, making use of data provided by Purolator Courier, including GHG emissions reduction, operational efficiency, parking experiences, and interactions with pedestrians. Performance metrics will be established in consultation with City of Toronto staff.

This pilot supports two University of Toronto major funded ongoing research projects focussed on e-cargo delivery, including

- **City Logistics for the Urban Economy (CLUE)**: This \$5.7 million NSERC Alliance grant includes co-funding from Transportation Services, The Atmospheric Fund, University of Toronto, and several other partners with a commitment to engage in a pilot study of e-cargo tricycles on the U of T campus and,
- **Data Intelligence for Logistics**: This NSERC Collaborative Research and Development grant, co-funded by Purolator, commits engagement in research that promotes efficient and sustainable last-mile delivery by Purolator.

TPA Cost Recovery and On-Street Logistics Mini-hub Permit Fee

Given the temporary long-term occupation of five (5) pay-and-display parking spaces for the duration of the eighteen (18) month pilot, a cost recovery, estimated at \$131,328.00 (\$7,296.00 per month) will be required to be paid to TPA by Purolator Courier as per the TPA's, Cost Recovery Policy approved by the TPA Board on August 24, 2018. If the

program becomes permanent, TPA requires an incremental amount in order to offset long term closure to permanent removal, at a one-time cost of \$24,952.

At this time, given that Purolator Courier will be required to pay the TPA for lost parking revenue during the pilot period, the introduction of a permit fee is being postponed. Once the pilot is complete, Transportation Service will report back to City Council on the outcome of the pilot, recommended next steps, including a permit fee that is commensurate with this new curbside use.

Toronto Municipal Code Amendments Required for the Pilot

If the pilot program is approved and implemented, the City will need to introduce a number of amendments to the City of Toronto's Municipal Code Chapter 950, Traffic and Parking, generally as detailed in Attachment 1 to this report.

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ATTACHMENTS

Attachment 1: Municipal Code Amendments

Attachment 1 - Municipal Code Amendments

Amendments to Municipal Code Chapter 950, Traffic and Parking

1. Amend § 950-101B as follows:

A. Insert a new definition for each of "ON-STREET LOGISTICS MINI-HUB PERMIT", "COURIER ORGANIZATION/COMPANY", "LOGISTICS MINI-HUB", and "ON-STREET LOGISTICS MINI-HUB PARKING AREA." in alphabetical order, generally as follows:

COURIER ORGANIZATION/COMPANY - An organization or company that carries out activities related to customer pick-up and drop-off of packages, and door to door delivery of packages to its customers.

LOGISTICS MINI-HUB - A temporary, mobile, and modular structure from which a courier organization/company carries out activities related to customer pick-up and drop-off of packages, and door to door delivery of packages to its customers.

ON-STREET LOGISTICS MINI-HUB PARKING AREA - An area on a street delineated by a combination of advisory/regulatory signs and pavement markings and authorized by the appropriate Community Council or Council exclusively for on-street logistics mini-hubs.

ON-STREET LOGISTICS MINI-HUB PERMIT - A permit issued by the General Manager authorizing parking of a particular logistics mini-hub in a specific logistics mini-hub parking area.

2. Insert a new subsection K and L in § 950-400 generally as follows:

K. Where authorized signs to that effect are displayed, no person shall park, stand, or stop a vehicle in an on-street logistics mini-hub parking area unless unloading packages to the logistic mini-hub.

L. Where authorized signs to that effect are displayed, no person shall park, stand, stop, or leave or permit the parking, standing, stopping, or leaving of a logistics mini-hub in an on-street logistics mini-hub parking area without a valid on-street logistics mini-hub permit for that on-street logistics mini-hub parking area and the on-street logistics mini-hub permit is affixed to the container where visible.

3. Insert a new subsection C in § 950-510 generally as follows:

"C. On-street Logistics Mini-hub permits.

(1) Applications.

(a) A courier organization/company may submit an application to the General Manager for an on-street logistics mini-hub permit for a logistics mini-hub, in accordance with this section.

(b) Application for an on-street logistics mini-hub permit by a courier organization/company for a logistics mini-hub shall contain the following:
(i) Name, address and telephone number of the courier organization/company.

(2) Issuance of on-street logistics mini-hub permit.

(a) An on-street logistics mini-hub permit may be issued only to a courier organization/company and only for a logistics mini-hub, where the requirements of § 950-510C(1) are complied with.

(b) An on-street logistics mini-hub permit, when issued, is only valid for the particular logistics mini-hub and logistics mini-hub area identified on the permit.

(c) An on-street logistics mini-hub permit is non-transferrable.

(3) Term and termination.

(a) An on-street logistics mini-hub permit will be valid for a period of one year from the date of issuance, unless terminated earlier by the General Manager.

(b) Despite Subsection 950-510C(3)(a), the General Manager may terminate for any reason any on-street logistics mini-hub permit at any time.

(4) On-street logistics mini-hub parking areas.

(a) Application

[1] A courier organization/company may submit an application to the General Manager requesting the installation of an on-street logistics mini-hub parking area in accordance with this section.

[2] Only one on-street logistics mini-hub parking area per application is permitted.

[3] An application for an on-street logistics mini-hub parking area by a courier organization/company shall contain the following:

[a] Name, address and telephone number of the courier organization/company;

[b] A drawing that clearly shows:

[i] The location where the courier organization/company is requesting the installation of an on-street logistics mini-hub parking area;

[ii] All applicable measurements between the proposed on-street logistics mini-hub parking area and the nearest intersection; and

[iii] The size of the proposed on-street logistics mini-hub parking area

(b) Applicability

On-street logistics mini-hub parking areas will only be designated where:

[1] A logistics mini-hub is able to be placed in a parking layby at all times of the day and all days of the week;

[2] The proposed on-street logistics mini-hub parking area will not be located closer than 30.5 metres to an intersection controlled by traffic control signals;

[3] The proposed on-street logistics mini-hub parking area will not be located closer than 9 metres to an uncontrolled intersection or intersection controlled by "Stop" signs or "Yield" signs;

[4] The proposed on-street logistics mini-hub parking area will not, in the General Manager's opinion, adversely impact on safe and efficient traffic operation; and

[5] The proposed on-street logistics mini-hub parking area is acceptable to the Ward Councillor.

[6] On-street logistics mini-hub parking areas are authorized on the highways at the sides, at the locations, and for the number of spaces set out in Schedule XLVII for the courier organization/company with a valid on-street logistics mini-hub permit set out in Schedule XLVII.

(5) Insurance

Where a permit has been approved for issuance, the courier organization/company, shall provide the General Manager with a certificate of insurance evidencing commercial general liability insurance with an insurance company and in a form satisfactory to the City, in an amount of not less than \$2,000,000, applying to the courier organization/company use of the designated area, On-Street Logistics Mini-hub Parking Area, at all times during which it is being used under the permit and in which the City is added as an additional insured and which contains a cross liability and severability of interest clause protecting the City against any actions, causes of actions, claims and demands which may arise resulting from or related to the City's issuance of the permit to use or the permit holder's use of the designated area, On-Street Logistics Mini-hub Parking Area.

Create and insert a new Schedule XLVII: On-street Logistics Mini-hub Parking Areas:

TORONTO MUNICIPAL CODE CHAPTER 950
§ 950-1346.Schedule XLVII: On-street Logistics Mini-hub Parking Areas

(Column 1) Highway	(Column 2) Side/Lane	(Column 3) Between	(Column 4) Number of spaces	(Column 5) Courier Organization/Company