

Sharing the Curbside

Advancing curbside management in the City of Toronto

Janelle Lee May 2020





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Executive summary

Effective curbside management is an essential component of transportation planning, and can contribute to decreased congestion, and the improved health and safety of citizens. With increasing congestion from online shopping and subsequent deliveries, and more cyclists and ride-hailing users, competition for the curbside is growing. This report explores how the City of Toronto is approaching the issue through its existing curbside management strategy and suggests complementary actions — specifically parking and loading-related solutions — to help the City advance this work.

In our research, we examined how different jurisdictions address curbside competition, and conducted one-on-one interviews with businesses and residents to understand opportunities and priority issues. We also considered how the COVID-19 pandemic is affecting curbside use. Based on this, we suggest additional solutions related to parking and loading that the City of Toronto can consider in the short and medium term to complement existing tactics in the curbside management strategy:

- Parking solutions:
 - Dynamic pricing
 - Parking time limits
 - Time-of-day restrictions
- Loading/unloading solutions:
 - Freight zone pricing
 - Off-peak delivery and congestion pricing
 - Microhubs and urban consolidation centres
 - o Prioritizing access for zero-emission and nimble delivery vehicles

These tactics are outlined in greater detail in Chapters 3 and 4, and in Table 1.

Improving curbside management in Toronto can support the City's broader transportation goals. Other Canadian jurisdictions could also adopt these solutions to ensure effective curbside management in their cities. Ultimately, curbside management needs to be a critical consideration in all transportation planning projects and strategies in order to support other transportation goals including improving road safety, reducing congestion, encouraging cycling and other active modes, and better facilitating goods movement.

1. Introduction

When we think about our transportation networks, we are often preoccupied with roads, sidewalks, or bike lanes — it is easy to forget about the space in between, the curbside. But this in-between space is a critical part of the transportation network and our public realm. We all need to access the curb, whether as drivers trying to parallel park; bus operators picking up and dropping off passengers; cyclists whose right-of-way is alongside the curb; truck drivers who need to deliver goods to residents and businesses; or pedestrians getting into vehicles, or in the time of COVID-19, physically distancing from others.

Toronto, like many major urban centres, is experiencing increased competition for the curbside as transportation patterns and travel behaviours change. As online shopping and the demand for fast and flexible delivery increases, we're seeing increased traffic with more delivery vans and trucks "cruising" streets looking for space to park, along with an increase in loading areas required to make deliveries in dense residential and commercial neighbourhoods. Ride-hailing services and active transportation modes, including conventional bikes, e-bikes, and electric kick-style scooters, are also becoming more common modes of transportation, which has increased the number of people competing for the same curb space.

"Curbside management is fundamentally about creating an organization scheme that improves mobility and safety for all via prioritized and optimized curb-space use." ¹

These changes are even more acutely felt with the COVID-19 pandemic. With quarantine movement restrictions, courier companies are experiencing surging numbers in online shopping deliveries. Canada Post has cited a 30% increase in the volume of package deliveries.² In an effort to address curbside "hot spots" around the city where pedestrians are crowding to line up for stores and services, in April the City

¹ Institute of Transportation Engineers, *Curbside Management Practitioners Guide* (2018), https://www.ite.org/pub/?id=C75A6B8B-E210-5EB3-F4A6-A2FDDA8AE4AA

² Christopher Nardi, "Canada Post warns COVID-19 measures and 'unprecedented' volumes are causing delivery delays," *National Post*, April 23, 2020. https://nationalpost.com/news/canada-post-warns-covid-19-measures-and-unprecedented-volumes-are-causing-delivery-delays

of Toronto introduced the CurbTO plan to allow for extra space for pedestrians lining up and those passing by.³

This experience clearly demonstrates that curbside management is not solely about facilitating goods movement, but is also about improving mobility and curb access for a variety of road users in a way that is safe from a public health and road safety perspective. Improving road safety and encouraging active transportation, for example, are contingent on our ability to better manage curbside competition and ensure that freight vehicles can safely conduct their loading/unloading activities. It's also important to note that effective curbside management solutions can work to reduce carbon and air pollution,⁴ by increasing efficiencies in goods movement.

For these reasons, curbside management should not merely be a consideration but an integral component of all transportation plans and projects in cities (including freight and goods movement strategies, complete streets studies, road safety plans, and expansion of cycling networks). Times of crisis like this heighten our awareness of the critical role that the curbside plays in all aspects of our transportation system. Failing to effectively manage curbside competition in the long term will result in increased congestion (and consequential economic costs⁵), greater road safety risks, and poorer environmental and health outcomes due to increased cruising and idling activity.

³ City of Toronto, "City of Toronto launches CurbTO plan to address more than 100 hot spots," April 27, 2020. https://www.toronto.ca/news/city-of-toronto-launches-curbto-plan-to-address-more-than-100-hot-spots/

⁴ Southern Ontario Centre for Atmospheric Aerosol Research, *Near-Road Air Pollution Pilot Study* (2019). https://www.socaar.utoronto.ca/wp-content/uploads/2019/10/SOCAAR-Near-Road-Air-Pollution-Pilot-Study-Summary-Report-Fall-2019-web-Final.pdf

⁵ Toronto Region Board of Trade, *A Green Light to Moving the Toronto Region: Paying for Public Transportation Expansion* (2013). 5.

https://www.bot.com/portals/0/unsecure/advocacy/DiscussionPaper_AGreenLight_March18_2013.pdf

2. How Toronto is approaching curbside management

The City of Toronto is currently implementing its curbside management strategy, which was approved by city council in 2017. The objective of the strategy "is to provide the strategies and tools necessary to effectively manage curbside space in a way that supports mobility and access for people and goods."⁶ It calls for 18 implementation tactics, including quick wins and short- and medium-term solutions, to improve the management of curbside space in the city. Many of these tactics focus on improving communication, monitoring, and enforcement of curbside use, and call for the provision of curb space/access dedicated to specific vehicles and uses (e.g. couriers and delivery vehicles, taxis, motor coaches, and motorcycles). Although these are important tactics to increase the supply of curbside space for specific uses, the City's curbside management strategy can be strengthened through additional actions that help manage the demand for curbside space.

One way to manage the demand for curbside space is to promote off-street use. Indeed, the City's curbside management strategy recognizes this — one of its guiding principles and overarching policies is to encourage off-street use in order to free up on-street curbside space. The strategy does include a few tactics to encourage off-street use, such as communication tools to promote off-street parking and exploring changes to commercial laneways to support off-street loading. However, additional tactics such as pricing mechanisms and curbside-use restrictions can be incorporated in the curbside management strategy to strengthen the promotion of off-street use and manage curbside demand more effectively.

At a higher level, the City could also incorporate specific language in its curbside management strategy that articulates which curbside uses should be prioritized on different street types. If the City aims to free up curbside space, particularly on main streets, then curbside uses that are temporary and have high turnover should be given priority over longer-duration uses (e.g. parking more than 20 minutes). Of course, uses that do not have the option to stop anywhere but along a main street, such as paratransit services (Wheel-Trans), must also be prioritized. Ultimately, it would be

⁶ City of Toronto, "Curbside Management Strategy: Improving How Curbside Space is Used," November 14, 2017. https://www.toronto.ca/legdocs/mmis/2017/pw/bgrd/backgroundfile-109153.pdf

useful for the City to specify which curbside uses should be prioritized on different street types in order to decide which curbside management tactics are most useful.

In addition to the City's curbside management strategy, advancements are also being made to improve active transportation in Toronto. In July 2019, city council approved the updated cycling network plan to connect, grow, and renew Toronto's existing cycling network. To support the implementation of the cycling network plan, city council directed city staff to initiate the planning, design, and consultation for a bikeway extension on Bloor Street and to provide design options for a bikeway pilot on Danforth Avenue. More recently, the City of Toronto implemented its ActiveTO program to ensure people have space to get around while respecting physical distancing during the COVID-19 pandemic. As part of this program, City Council approved several projects to rapidly expand the cycling network, including the aforementioned Bloor Street and Danforth Avenue projects, as well as bikeways on other major streets such as University Avenue.⁷

Although there is a large body of research that demonstrates the benefits of cycling infrastructure on improving road safety⁸, increasing local economic activity and employment,^{9,10,11} and reducing transportation emissions¹², some businesses and residents in Toronto remain concerned with the impacts that bikeways will have on traffic congestion, parking availability and pick-up/drop-off activities for their customers, loading activities, and accessibility for those with mobility needs. In order to address these concerns, bikeway design and implementation cannot occur in isolation from other land use and transportation planning efforts. These are all issues that are

⁷ City of Toronto, "Cycling Network Plan Installations: Bloor West Bikeway Extension & ActiveTO Projects," May 28, 2020. http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2020.CC21.20

⁸ Wesley E. Marshall and Nicholas N. Ferenchak, "Why cities with high bicycling rates are safer for all road users," *Journal of Transport & Health* 13 (2019), 295.

⁹ Daniel Arancibia, Steven Farber, Beth Savan, Yvonne Verlinden, Nancy Smith Lea, Jeff Allen and Lee Vernich, "Measuring the Local Economic Impacts of Replacing On-Street Parking With Bike Lanes," *Journal of the American Planning Association* 85, no. 4 (2019), 463.

¹⁰ Portland State University, Bennett Midland, and PeopleForBikes, *National Study of the Economic Impact of Street Improvements, Summary Report* (2020). Available at https://peopleforbikes.org/placesforbikes/resources/

¹¹ Heidi Garrett-Peltier, *Pedestrian and Bicycle Infrastructure: A National Study of Employment Impacts*, (University of Massachusetts, Amherst, 2011).

http://www.peri.umass.edu/fileadmin/pdf/published_study/PERI_ABikes_June2011.pdf

¹² Jacob Mason, Lew Fulton, Zane McDonald, *A Global High Shift Cycling Scenario: The Potential for Dramatically Increasing Bicycle and E-bike Use in Cities Around the World, with Estimated Energy, CO₂, and Cost Impacts* (Institute for Transportation & Development Policy and the University of California, Davis, 2015), 4. https://www.itdp.org/2015/11/12/a-global-high-shift-cycling-scenario/

part of the broader curbside management challenges that Toronto faces. The City of Toronto recognizes this in their study approach — consultations for the bikeway studies on Bloor Street and Danforth Avenue seek to examine and resolve competing curbside uses.

Moving forward, the City should ensure that key issues and solutions that emerge from bikeway and complete streets studies are used to inform future iterations of the curbside management strategy, Vision Zero road safety plan, and the forthcoming freight and goods movement strategy.

3. Parking solutions

Studies estimate that between 8% to 74% of traffic in major cities is attributed to cruising activity (i.e. driving slowly around an area to find a parking space), illustrating the magnitude and impact of curbside competition in cities.¹³ Cruising is also problematic from an environmental perspective — it increases carbon emissions not only because vehicles travel longer distances (drivers travel the same streets multiple times in search of parking), but because slower moving vehicles pollute more (drivers slow down to 10-12 km/h when cruising¹⁴).

Most of the City's existing tactics to manage parking seek to designate curb space/access for different uses and vehicle types (e.g. taxis, motorcycles, delivery vehicles, and motor coaches) and employ new communication, monitoring, and enforcement methods (see Table 1). There are a few tactics that aim to manage curbside demand and promote off-street parking, but additional measures can be implemented to support these tactics. Such additional measures are discussed below, and Table 1 identifies how these measures can support the City's existing curbside management tactics.

3.1 Dynamic pricing

Pricing plays a critical role in the efficient allocation of on- and off-street curbside use. In order to encourage its use, off-street parking must be priced cheaper than on-street parking, specifically at a price low enough that drivers are willing to give up the convenience of parking closer to their destination. Cities are starting to develop and implement sophisticated pricing mechanisms that optimally price on- and off-street parking spaces in order to manage curbside demand. Dynamic pricing or demand-based pricing, for example, is a parking fee system that adjusts fees during peak periods or based on real-time demand.¹⁵ This is a pricing mechanism that the City of Toronto could explore as it investigates different variable pricing options as part of its curbside management strategy (see Table 1).

¹³ Donald C. Shoup, "Cruising for parking," *Transport Policy* 13 (2006), 479.

¹⁴ Itzhak Benenson, Karel Martens and Slava Birfir, "PARKAGENT: An agent-based model of parking in the city," *Computers, Environment and Urban Systems* (2008), 432.

¹⁵ Curbside Management Practitioners Guide, 19.

In 2011, San Francisco piloted a demand-responsive pricing program for parking in congested parts of the city.¹⁶ It resulted in greater availability of on-street parking, reduced congestion, and fewer vehicle kilometres travelled due to decreased cruising. As a result of the program's success, dynamic pricing was implemented citywide and continues today. New York City also piloted a demand-based pricing model in two neighbourhoods whereby parking fees were adjusted during peak and off-peak hours.¹⁷ The pilot resulted in small reductions to double-parking incidents and cruising.¹⁸

3.2 Parking time limits

In order to encourage off-street parking and encourage quick parking turnover, parking time limits (e.g. 15 or 20 minutes) can be implemented to restrict the amount of time that vehicles can stop in areas with high curbside demand.¹⁹ A lack of on-street parking spaces for short-term activities often results in curbside conflicts such as double-parked vehicles and loading/unloading and pick-up/drop-off activities in bikeways or in 'no stopping' zones. The City of Toronto has implemented courier loading zones to provide designated space for "short stop deliveries" with a maximum stop time of 20 minutes.²⁰ Similar parking time limits could be expanded in the city and be applied to passenger vehicles to discourage long-term on-street parking, particularly in the downtown where curbside demand is high.

3.3 Time-of-day restrictions

Time-of-day restrictions are used in areas where there is a high demand for specific road or curbside uses at different times of day.²¹ During peak travel hours, for example, on-street parking may be restricted to improve traffic flow. Parking restrictions may also be implemented to prioritize other curbside uses such as pick-up and drop-off

¹⁶ Institute of Transportation Engineers, *Case Study: San Francisco Municipal Transportation Agency* (n.d.). https://www.ite.org/pub/?id=C2D66E96-FF01-0BA8-68C3-65CC9116A5AE

¹⁷ U.S. Department of Transportation, *Contemporary Approaches to Parking Pricing: A Primer* (2012), 5. https://ops.fhwa.dot.gov/publications/fhwahop12026/fhwahop12026.pdf

¹⁸ New York City Department of Transportation, "Motorists & Parking: Other Rates." https://www1.nyc.gov/html/dot/html/motorist/parksmart.shtml

¹⁹ Curbside Management Practitioners Guide, 21.

²⁰ Ontario Trucking Association, "Establishment of Courier Loading Zones in Toronto," January 4, 2015. https://ontruck.org/establishment-of-courier-loading-zones-in-toronto/

²¹ Curbside Management Practitioners Guide, 21.

activities. In Washington, D.C., a pilot project was initiated in 2017 to ban on-street parking during evening and overnight hours of specific days. This was implemented to free up curbside space for passenger pick-ups and drop-offs in an area of the city where many ride hailing trips occur. The City of Toronto recently completed a study on vehicle-for-hire trips,²² which can be used to identify areas where time-of-day parking restrictions may be useful to facilitate safe passenger pick-up and drop-off.

²² Big Data Innovation Team, *The Transportation Impacts of Vehicle-for-Hire in the City of Toronto* (City of Toronto, 2019). https://www.toronto.ca/wp-content/uploads/2019/06/96c7-Report_v1.0_2019-06-21.pdf

4. Loading/unloading solutions

Businesses and residential neighbourhoods rely on both on- and off-street loading and parking areas to receive deliveries. Given the shortage of on-street curbside space in some areas of Toronto, it is not uncommon to find delivery trucks double-parked or parked halfway up a sidewalk or in the median of a roadway. Some buildings have laneways that allow deliveries to occur off-street on dedicated loading bays/spaces. However, some delivery vehicles are too large to use the laneway (e.g. class 6 trucks and above), and some buildings do not have laneway access at all.

One of the tactics in the City of Toronto's curbside management strategy is to explore changes to commercial laneways in order to better utilize this space for deliveries (see Table 1). Other tactics to manage curbside space for commercial loading and unloading activity include off-peak delivery pilots, permit systems for delivery vehicles, delivery staging zones, and designated courier loading zones. The remainder of this section presents additional measures that the City can implement to build on these tactics. Table 1 identifies how these measures can support the City's existing curbside management tactics.

4.1 Freight zone pricing

Freight zone pricing requires payment to use areas designated for loading and unloading activity.²³ The District Department of Transportation in Washington, D.C. implemented a commercial loading zone pricing scheme in 2015 that decreased the number of double-parking violations and non-truck parking in loading by more than 50%.²⁴ Although the pricing scheme was initially met with pushback from delivery companies, they were eventually willing to pay the curbside fee once they realized the efficacy of the program (e.g. increased parking reliability, time savings). Freight zone pricing could be an effective way to manage curbside demand from delivery vehicles in Toronto by encouraging businesses to use off-street loading spaces (e.g. laneways) and reducing the amount of time that delivery vehicles spend parked along the curb.

²³ Curbside Management Practitioners Guide, 15.

²⁴ Case Study: Washington, D.C. District Department of Transportation Study and Pilot Projects, 5.

4.2 Off-peak delivery and congestion pricing

Off-peak delivery and congestion pricing can work in tandem to reduce curbside demand and improve traffic flow.²⁵ A congestion charge on peak-hour travel encourages businesses to make deliveries during designated off-peak hours, which frees up curbside space in high-demand periods. The City of Toronto's curbside management strategy calls for the expanded use of off-peak delivery, building on the City's initial pilot during the 2015 Pan Am Games. As the City pursues this, it should also consider implementing a congestion charge to increase the efficacy of off-peak deliveries.

New York City implemented an off-peak truck delivery pilot program in 2010 through which program participants agreed to conduct their deliveries between 7 p.m. and 6 a.m. To encourage participation, a congestion charge was applied to delivery vehicles entering Manhattan. The pilot resulted in more efficient operations and financial savings to businesses from lower fuel costs and fewer parking tickets.²⁶

Similarly, an off-peak delivery pilot in the Region of Peel resulted in faster delivery trips (the average speed of delivery vehicles was 18.1% higher during off-peak hours than during the day time) and reduced greenhouse gas emissions (total GHG emissions per kilometre travelled decreased by 10.6%).²⁷ Furthermore, as a response to COVID-19, the Government of Ontario postponed noise bylaws and other local delivery restrictions to allow off-peak deliveries during the pandemic.²⁸

4.3 Microhubs and urban consolidation centres

The City of Toronto should consider supporting the implementation of microhubs and urban consolidation centres (or similarly named facilities for consolidation in urban areas, e.g. micro-consolidation centres) through their forthcoming freight and goods movement strategy (see Table 1). These facilities allow for the bundling of goods at a location near the final delivery point. As identified in the Pembina Institute report

²⁵ Curbside Management Practitioners Guide, 15.

²⁶ New York City Department of Transportation, "Off-Hour Deliveries (OHD) Program" (n.d.). https://www1.nyc.gov/html/dot/html/motorist/offhoursdelivery.shtml

²⁷ Kianoush Mousavi et al., *Pilot Off-Peak Delivery Program in the Region of Peel* (Smart Freight Centre, UTTRI, Region of Peel, 2020), 11. http://smartfreightcentre.ca/wp-content/uploads/2020/02/SFC-OPDPeelPilot-FinalReport-January30_2020.pdf

²⁸ Today's Trucking, "Industry welcomes easing of delivery restrictions," *trucknews.com*, March 19, 2020. https://www.trucknews.com/health-safety/industry-welcomes-easing-of-delivery-restrictions/1003138222/

Delivering Last Mile Solutions, when businesses consolidate goods closer to the final destination, they reduce the number of vehicle kilometres travelled in an urban area.²⁹ Pairing microhubs with cargo bikes for last-mile delivery trips can also reduce GHG emissions between 24 to 52 kg CO₂ per day.³⁰ Other research shows that the use of more efficient urban delivery systems that consolidate and co-ordinate between freight carriers can result in 12% to 14% savings in operational costs for businesses.³¹

4.4 Prioritize curbside access for zero-emission and nimble delivery vehicles

In some cases, small, nimble zero-emissions delivery vehicles such as electric cargo vans and electric-assist or pedal-only cargo bikes can replace larger vehicles for lastmile delivery trips. Cargo vans and bikes take up less curbside space and are inherently safer than large delivery trucks because they have smaller blind spots and less inertia, making it easier for them to slow down and stop. As the City of Toronto implements designated parking zones for delivery vehicles and explores opportunities for a delivery vehicle permitting system (see Table 1), sole access to some of these zones and special permits could be given to electric cargo vans and cargo bikes in order to encourage businesses to adopt these types of delivery vehicles. New York City, for example, recently announced a program that would allow electric cargo bikes to park in existing commercial loading zones that are usually reserved for trucks and vans.³² The program was implemented as part of New York City's efforts to improve road safety, tackle congestion, and reduce transportation GHG emission. The City of Toronto should explore the efficacy of such programs in managing curbside competition and improving road safety.

https://www.pembina.org/reports/delivering-last-mile-solutions-june-2019.pdf ³⁰ Ibid, 39

²⁹ Janelle Lee, Carolyn Kim and Lindsay Wiginton, *Delivering Last-Mile Solutions: A feasibility analysis of microhubs and cyclelogistics in the GTHA* (Pembina Institute, 2019), 6.

³¹ Mireia Roca-Riu, Miquel Estrada and Elena Fernandez, "An evaluation of urban consolidation centers through continuous analysis with non-equal market share companies," *Transportation Research Procedia* 12(2012), 371.

³² Winnie Hu and Matthew Haag, "Park It, Trucks: Here Come New York's Cargo Bikes," *New York Times*, December 4, 2019. https://www.nytimes.com/2019/12/04/nyregion/nyc-cargo-bikes-delivery.html

Table 1. Tactics currently in the City of Toronto's curbside management strategy and suggested complementary actions

Tactics in City of Toronto's curbside management strategy	Type of approach	Complementary parking and loading solutions that could be considered in the curbside management strategy				
Quick wins						
Stands for taxicabs at hydrants pilot	Designation of curb space/access for specific uses					
Convert advisory courier loading zones to designated delivery vehicle parking zones	Designation of curb space/access for specific uses	Prioritize loading zone access for zero-emission, nimble delivery vehicles (e.g. electric vans and cargo bikes)				
Designate motorcycle/scooter parking zones	Designation of curb space/access for specific uses					
Explore delivery vehicle staging zones through a pilot	Designation of curb space/access for specific uses					
Explore automated parking enforcement methods	Communication, monitoring, and enforcement					
Facilitate taxi patron drop-off areas	Designation of curb space/access for specific uses					
Short-term (0-2 years)						
Support expanded use of off- peak deliveries	Managing peak demand for curb space	Implement a congestion charge on peak-hour travel to encourage businesses to make deliveries during designated off-peak hours				
Improve curbside signage legibility	Communication, monitoring, and enforcement					

Improve messaging of stopping, pick-up/drop-off, loading and deliveries, and parking regulations and promote off- street parking	Communication, monitoring, and enforcement Promotion of off-street use	 Encourage off-street use through the implementation of: Dynamic pricing On-street parking time limits Time-of-day parking restrictions Freight zone pricing
Improving communication, monitoring, and enforcement of motor coach parking and loading zones	Communication, monitoring, and enforcement	
Explore changes to commercial laneways to support off-street loading and deliveries in key areas	Promotion of off-street use Managing peak demand for curb space	Implement freight zone pricing in designated on-street loading areas to encourage delivery vehicles to use off-street loading spaces
Promote appropriate use of accessible parking permits and explore curbside needs of accessibility community	Communication, monitoring, and enforcement Designation of curb space/access for specific uses	
Develop a freight and goods movement strategy	New transportation policies/strategy	The freight and goods movement strategy should be integrated with other transportation plans, including the congestion management strategy. The solutions presented in this document, including supporting the establishment of microhubs and urban consolidation centres, can also be incorporated into the freight and goods movement strategy.
Medium-term (3-5 years)		
Explore a courier/delivery vehicle permit	Designation of curb space/access for specific uses	Prioritize permits for zero- emission, nimble delivery vehicles (e.g. electric vans and cargo bikes)
Explore variable pricing options	Managing peak demand for curb space Promotion of off-street use	Explore dynamic pricing as one variable pricing option so that parking fees are adjusted based on real-time demand

Rationalize motor coach parking and loading	Designation of curb space/access for specific uses	
Rationalize taxi stand placement	Designation of curb space/access for specific uses	
Advance automated parking enforcement methods	Communication, monitoring, and enforcement	

5. Conclusion

Effective curbside management is integral to the safety and efficiency of cities. As transportation patterns and travel behaviours change to necessitate greater curbside access for a growing diversity of road users, cities are challenged to manage increasing curbside competition. Through its curbside management strategy, the City of Toronto recognizes the importance of this issue and has put forward a number of tactics to better manage curbside space for a variety of users. From this solid foundation, the City's curbside management strategy can be strengthened through additional actions. These tactics and learnings can also be applied to jurisdictions across Canada.

This report has suggested complementary actions for both parking and loading/unloading zones, such as congestion charges, freight zone pricing, and parking time limits, that can be implemented to support the City of Toronto's existing curbside management tactics. By strengthening the City's approach to curbside management, it is better equipped to support broader transportation goals including improving road safety, reducing congestion, encouraging cycling and other active modes, and better facilitating goods movement. Ultimately, curbside management should not merely be a consideration but an integral component of all city-building initiatives.