



REIMAGINING PUBLIC SPACES

New Shared Mobility Solutions

A Practitioner's Toolkit
October 2022

ACKNOWLEDGEMENT OF INDIGENOUS LANDS AND TREATIES ACROSS CANADA

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Civic commons is a term to describe a network of public places and facilities that enable communities to learn, celebrate, express collective actions, collaborate and flourish, together. Can include libraries, parks, community centres, squares and more.

PREFACE

Communities across Canada are rich in public spaces of all kinds and sizes. These spaces are essential social and environmental infrastructure that can become a powerful lever towards building more sustainable communities for all. At their best, these physical spaces, part of the **civic commons**, foster greater livability, vibrancy, belonging and engagement. Positive outcomes range from stronger connection, wellbeing and community, to improved climate resilience, safety, inclusion and diversity. However, it can be challenging for communities to understand how to better tap into the potential of these spaces in ways that work for them.

The Reimagining Public Spaces toolkits are intended to help communities move forward in some key aspects around public spaces, and to realize the benefits. This toolkit, first in a suite of four, provides a simple starting point for communities to explore innovative approaches for public spaces, to accelerate their potential to meet the unique challenges of their own context, and to better address the diverse needs of all. For more resources and learnings about how to solve for your community's biggest challenges in innovative ways, visit the [Community Solution Portal](#).

Public Spaces are....

Areas or places that are open and accessible to all people, including streets, public squares, parks, beaches and civic spaces. Successful public spaces are designed with all residents in mind and allow people to interact with these spaces in different ways. Great spaces enhance livable cities by supporting a sense of connection, individual and social wellbeing, and community expression, identity and diversity.

WHY THIS TOOLKIT

You know how important mobility is for the people in your community. In a rapidly changing world, finding effective and innovative approaches, and better connections, can help your community to thrive. Streets, pathways, and trails are essential elements in the public realm, as they connect people to their work, social lives, and play. Traditional transportation modes, like buses and taxis are changing and evolving, and shared mobility is a rapidly emerging strategy to meet mobility needs, reimagining how we move. Building your understanding of what **shared mobility** actually is, and why you might implement it, can help you assess your own potential objectives. Exploring the wide range of new modes, new business models and the technologies that enable them can further help your community to explore all the options and assess what might be best for your needs. In particular, lower carbon transportation solutions are essential for tackling climate change impacts. This can help you to be better equipped to move forward with your shared mobility initiative with a deeper understanding of the concepts. Finally, exploring best practices from pioneers in shared mobility will help to set you up for success in implementation.

The **New Shared Mobility Solutions** toolkit is designed to support you and your team in exploring the world of shared mobility options and benefits, along with key considerations to keep in mind for your own context. It includes easy-to-understand tools for you to work through and act upon as you work towards shared mobility solutions. These tools cover three main themes:

- 1 **The what and why of shared mobility**
- 2 **Options for shared mobility**
- 3 **Principles for success with shared mobility**

Shared mobility is transportation shared among users. A range of mobility solutions and business models shared either concurrently or sequentially by users. Any form of transportation that is not people using their own personal vehicles (like a private car or bicycle) is a form of shared mobility.

HOW TO USE THIS TOOLKIT

This toolkit is best used in the early stages of considering shared mobility solutions in your community. It can be helpful in framing your long-term mobility strategies, as well as building on strategies you already have in place. It is most useful to work through with your team and key stakeholders collaboratively, bringing in a range of perspectives to build alignment and understanding. It is also important to involve your community members in these early stages, as they will become the future customers of any new or adjusted service. You will want to find authentic ways to understand their needs, priorities and preferences, as well as their concerns.

This toolkit is intended for leaders in Canadian communities of all sizes who have an interest in shared mobility solutions. These include municipal staff, elected officials and leaders at other organizations who are working on urban issues, connected technologies or data. It is meant to be an introduction and springboard for your shared mobility journey, rather than a comprehensive or technical guide ([see resources](#) at the back for more detailed guides).

We know each community is unique, with its own strengths, assets and challenges. Communities and their leaders are invited to use the tools as they wish (they complement each other), to explore a range of options and craft their own shared mobility initiative. Use what works for you and feel free to adapt or expand along the way. You are encouraged to explore the wide range of options and get creative in your unique approach to move your project forward.

Bringing shared mobility to your community is an exciting opportunity to foster faster, greener and more affordable ways for people to get around in and between your public spaces.

Let's explore the new shared mobility.

THE WHAT AND WHY OF SHARED MOBILITY

Tool 1: Shared Mobility Overview



The emerging landscape of shared mobility can be exciting and overwhelming. Traditional transit and taxi may be familiar but a host of new modes have arisen to complement, and sometimes compete with these. Each comes with its own benefits and limitations, and communities will have their own specific motivations for deploying one or more of these solutions. Underlying it all, new connected and electric technologies are enabling new business models and players to transform existing and new mobility modes into innovative and **smart** solutions. Globally, trends towards sustainability and a move away from private ownership are further accelerating the shared mobility movement.

ABOUT THIS TOOL

The Shared Mobility Overview is designed to help you to develop a foundational understanding of shared mobility and the technology that undergirds it, along with helping you and your community clarify your own goals for shared mobility. As Simon Minelli of CUTA highlighted, “Like any problem, you need to start with what your ultimate end goal is – that will inform where it’s deployed, how, when, etcetera. Ask ‘what are we trying to achieve by doing this?’. That answer can influence a lot of decisions.”

Clearly articulated objectives and priorities will help build alignment, guide future choices and provide a framework for measuring impact. This will also help support your engagement with key stakeholders and your community as you roll out the implementation. This tool includes three components:

- Shared Mobility Explained: what is shared mobility?
- Setting your Priorities: what are your goals for shared mobility?
- Key Technology Terms: what do some common terms mean?

TIPS

- ✓ Engage diverse stakeholders in establishing your priorities—think creatively on which perspectives should be included (e.g., community agencies, parking authority, parks department, schools, major employers, tourism). Consider who may be missing and how you might engage them.
- ✓ Community members are key stakeholders—their needs should be at the heart of your shared mobility solutions.
- ✓ Reach out to other communities who have implemented shared mobility and talk to subject matter experts to learn more.
- ✓ Think broadly – shared mobility solutions can help to address not only mobility needs but your broader goals around economic development, **sustainability** and more.

Smart describes the integration of data and tech for a variety of community solutions.

Sustainability is an approach that aims to satisfy the needs of today without compromising conditions for future generations to meet their needs. Considerations include natural resources as well as social and economic ones.

Deep Engagement Towards Access for Everyone in Vancouver

In Vancouver, British Columbia, TransLink, Metro Vancouver's transportation network, conducted its largest-ever public engagement process to inform its ambitious "[Transport 2050](#)", the region's transportation strategy. Over 4,000 ideas were shared through surveys, hundreds of events (in-person and virtual), from multiple municipalities. This deep and meaningful engagement was essential towards a human-centred strategy for their regional transportation that aims to be convenient, reliable, affordable, safe and comfortable, and carbon-free. Shared mobility is a key element of the plan. [Pilot projects](#) are helping to test and learn from innovative ideas for the future, such as an integrated mobility pass (Compass Card) and on-demand transit on Bowen Island.

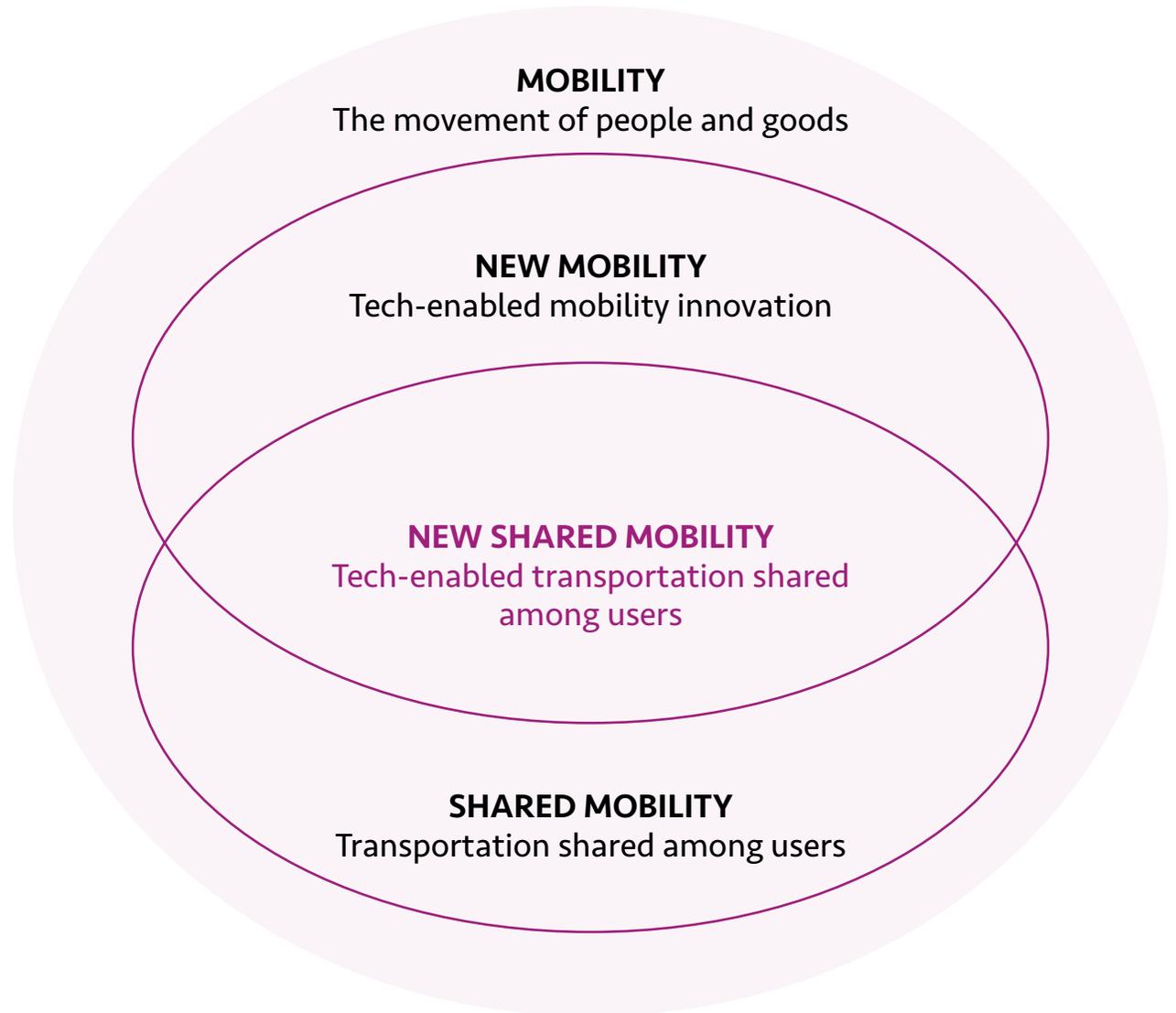
A Master Plan for a City in Motion in Hamilton

Catalyzed by a growing and aging population, economic shifts, emerging technologies, and emerging shared mobility, the City of Hamilton, Ontario, revisited and updated its [Transportation Master Plan](#). Aligning with the City's strategic plan, the updated master plan sets clear direction with a holistic approach, balancing various mobility modes, including shared. Measurable goals, based on feedback, included a sustainable and balanced transportation system, healthy and safe communities and economic prosperity and growth.



1. Shared Mobility Explained¹

At the intersection of shared mobility in general and the new mobility landscape, you will find the emergence of new shared mobility. All of these are part of the overall mobility eco-system, that includes the movement of people and goods. More details on specific modes will be outlined in [Tool 2](#), including new and traditional shared mobility options.



¹ Definitions adapted from: City of Guelph, Transportation Technology and New Mobility Options: City of Guelph Transportation *Master Plan, Background Paper Series*, 2022. <https://guelph.ca/wp-content/uploads/GuelphTMP-TransportationTechBackgroundPaper.pdf>; 2022]; Metrolinx, Shared Mobility in the Greater Toronto and Hamilton Area: A backgrounder on industry trends and a summary of stakeholder discussions, 2017, 8, https://www.metrolinx.com/en/regionalplanning/rtp/technical/12_GTHA_Shared_Mobility_Report_EN.pdf; Rebecca Karbaumer & Friso Metz, A Planner's Guide to the Shared Mobility Galaxy, 2022, https://share-north.eu/wp-content/uploads/2022/05/Shared-Mobility-Guide_ENGLISH.pdf; Shared-Use Mobility Center, "What is Shared Mobility?", 2022, <https://sharedusemobilitycenter.org/what-is-shared-mobility/>.

NEW MOBILITY

Tech-enabled mobility innovation.

A range of rapidly emerging transportation services, solutions and business models enabled through the development and convergence of digital, connected, automated and electric vehicle technologies. These innovations are changing how we are moving and reshaping our communities.

SHARED MOBILITY

Transportation shared among users.

A range of mobility solutions and business models shared either concurrently or sequentially by users. Any form of transportation that is not only people using their own personal vehicles (like a private car or bicycle) is a form of shared mobility.

NEW SHARED MOBILITY

Tech-enabled transportation shared among users.

The new shared mobility is both a strategy and a transport mode that gives access to shared mobility when users want it, moving away from ownership to usage. Sharing may happen concurrently or one after the other. Powered by new technologies, new business models and new modes of mobility, this suite of new transportation-related innovations are growing rapidly. See examples in [Tool 2: Shared Mobility Navigator](#).



ESTABLISHING YOUR PRIORITIES

Each community has its own reasons to implement new shared mobility solutions. It is important for your community to clarify your vision, and objectives for shared mobility, to address the unique needs and challenges for your community and its members. Strategies may “address challenges such as urbanization, population growth, climate change, and digitization. To best develop those strategies and address these needs, it is important to ask city residents how they live, how they move, and how their mobility can be improved.”² Clear goals and objectives will help in advocating for shared mobility solutions and help inform the choice of solutions you choose to pursue.

A. Overarching community strategy and goals

Review your community’s key strategies and goals. How might shared mobility solutions be part of implementing and supporting your strategic direction.

B. Key Objectives for Shared Mobility

Which of these common (and interconnected) shared mobility objectives are important for your community?

First-mile last-mile (FMLM) refers to the challenge of people getting to transit stations and other mobility locations from where they live, work or play.

Greenhouse gas emissions (GHGs) are gases in the atmosphere that trap energy from the sun and cause the Earth’s temperature to rise. The burning of fossil fuels has accelerated this effect, through the emission of large amounts of carbon dioxide, methane and nitrous oxide to the Earth’s atmosphere.

Net-zero is used to describe strategies and targets aimed at eliminating the emissions of greenhouse gases in various regions around the world.

Common Objectives for Shared Mobility ³ [consider these potential objectives for shared mobility]	Rank the importance for your community HIGH/MEDIUM/LOW	Notes [add supporting notes to explain]
Provide more mobility choices Make mobility more flexible & convenient.		
Address gaps in public transit Expand the when, where and who of service to address gaps; serve specific demographics (e.g., older adults, equity-deserving groups, students).		
Improve access to mobility Consider better access to healthcare, education, work, recreation and more.		
Add shared service where none exists Introduce mobility solutions where there is a void.		
Offer first/last-mile solutions Bridge the gap to other existing modes of mobility like transit.		
Reduce traffic congestion Decrease single-occupancy vehicle use, car dependency and ownership, converting drivers to other modes.		
Reduce greenhouse gas emissions Support net-zero strategies through zero emission, sustainable modes.		
Improve efficiency And shorten travel times for users.		

Continuation

B. Key Objectives for Shared Mobility Which of these common (and interconnected) shared mobility objectives are important for your community?

Common Objectives for Shared Mobility ³ [consider these potential objectives for shared mobility]	Rank the importance for your community HIGH/MEDIUM/LOW	Notes [add supporting notes to explain]
Create more equitable and accessible mobility Support your equity goals and support people with limited mobility options.		
Make mobility more affordable for users Reduce user costs and provide options for those who do not own a personal vehicle.		
Increase quality of life Contribute to healthier and greener public spaces.		
Reduce municipal transportation costs Right-size your mobility solutions to your needs.		
Be more resilient Allow for densification and open up space, while enhancing the natural infrastructure.		
Support business Address mobility needs for businesses and commuters and support local business.		
Attract tourists Provide appealing and easy ways to get around.		
Improve safety, health and wellness Support active transportation and healthier communities and move towards "Vision Zero".		
Other [describe]		

C. Intended impact Building on the objectives above, articulate the impact you envision from your shared mobility initiative.

We want to implement a shared mobility initiative so that we can improve [goals/challenges]:

1. _____,
2. _____, and
3. _____ are true.

We especially want to improve mobility for residents who [demographic/geographic location/other target group]:

1. _____,
2. _____, and
3. _____.

We will know if the initiative is successful if [goals/challenges]: [measurable impacts]:

1. _____,
2. _____, and
3. _____ are true.

KEY TECHNOLOGY TERMS³

The new shared mobility is technology-enabled, with some key terminology that is useful to know.

Automated mobility or autonomous vehicles (AVs) relates to automated functions that assist drivers (fully automated would be an autonomous vehicle). Transit, private and commercial vehicles have more and more of these technologies such as lane keeping assist, adaptive cruise control and self-parking. Machine learning and artificial intelligence (AI) are key components of automated mobility.

Connected mobility is the use of wireless networks to connect vehicles, traffic signals, phones and more to enhance mobility. For example, the ability to give transit the priority to respond to real-time traffic and to adjust traffic signals.

Electrification is the shift of vehicle propulsion from the legacy propulsion systems of fossil fuels to the new propulsion with electricity. Electric vehicles (EVs) can include all types of vehicles.

E-commerce describes commercial activities like selling and purchasing that happen over the internet and online, using computers, smart phones and other technologies. E-commerce supports the payment for various forms of shared mobility.

GPS (Global Positioning System) provides real-time information about locations from connected vehicles and smart phones to provide data for routing and scheduling in real-time.

Mobility-as-a-service (MaaS) & Integrated Mobility are emerging user-oriented approaches that aggregate information and integrate a range of mobility services and modes for customers through a single digital point of access. Linking mobility modes, it optimizes personal mobility through a digital platform, to create one unified and seamless travel experience. It can include integrated trip planning, seamless digital fare payment and mobility pricing packages. They leverage big data analytics and may bridge between public and private services.

Mobility hub is a strategically located physical transfer point that feature facilities for multiple mobility modes, supporting seamless multi-modal transportation and connections at key nodes.

Multi-modal mobility describes transportation for users that uses more than one mode of transportation, such a cycling and transit, in one single trip.



³ Adapted from: City of Guelph, Transportation Technology; Metrolinx, "Shared Mobility in the GTHA; Shared-Use Mobility Center, Shared-Use Mobility Toolkit for Cities, 2016, <https://sharedusemobilitycenter.org/wp-content/uploads/2016/07/SUMC-Toolkit-Final-Report.pdf>.

SHARED MOBILITY OPTIONS

Tool 2: Shared Mobility Navigator



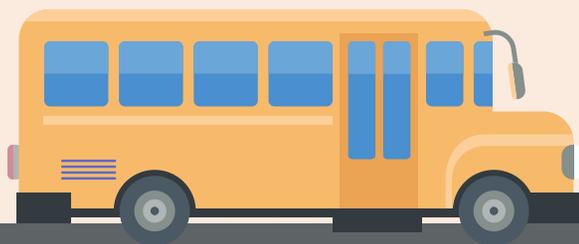
The new shared mobility landscape offers a wide range of options to consider. Each mode can support a range of mobility goals and can be used in combination to help work towards a robust and inter-connected mobility experience. Increased usage of shared mobility creates a positive reinforcing loop to use more shared mobility modes. By digging into the rich constellation of options for shared mobility, and their related considerations, you can be better equipped to advocate for, plan and implement the right solutions for your community.

ABOUT THIS TOOL

The Shared Mobility Navigator was created to provide a robust overview of shared mobility solutions for consideration, including both traditional modes and new innovations. It will help you to understand the key shared mobility modes to consider, and their advantages and disadvantages. It then gives you the opportunity to assess how each mode might support your own shared mobility objectives, as articulated through Tool 1. The mobility landscape is evolving rapidly and this tool will help you to navigate it better, to help chart your own community's journey.

TIPS

- ✓ Keep an open mind—you may have some ideas going in but bring your curiosity to consider additional shared mobility solutions to meet your needs.
- ✓ Many communities in Canada have ventured out as explorers in this new world – learn from others and their experiences.
- ✓ Find ways to use shared mobility to enhance and complement your existing mobility modes, minimizing competition where it makes sense.
- ✓ In the shared mobility landscape, with the variety of different modes, business models, and partners, things are changing rapidly. You may hear different terms or classifications from different sources. Not to worry—the concepts are the same.
- ✓ Shared mobility can come in the form of vehicle sharing or ride-sharing.
- ✓ Remember that shared mobility modes are also sharing the space with private vehicles, including cars and bicycles, as well as pedestrians and people using assistive devices like wheelchairs. Consider this in your overall planning approach.



Riding into the Future in Cochrane

In a rapidly growing town not far from Calgary, Alberta, the Town of Cochrane has launched an innovative solution with [COLT](#), an on-demand transit option using eight accessible low-floor buses for 21 passengers, with a designated stop model (riders still catch their ride at set stops). Starting with seed funding (and an estimated cost of just a third of fixed route for the same service), a Transit Task Force and input from the public, they focused on key riders by need, offering an affordable and accessible service, with some reduced rates available.

Promoting the service everywhere they could, uptake has been very positive, mostly through an app (with website and call-in options) and expansion is in the works, including integration with a Park-and-Ride location to more regional transit hubs. Devin LaFleche from COLT highlighted that *“People are saying they can stay in the community and come back [return after moving away]. It is easier for people to live in the community without the barrier of cost”*. In addition to this innovation, Cochrane is piloting shared [e-scooters](#), and [regional service integration](#) into Calgary in partnership with Southland Transportation. To pull it all together, they are exploring a Mobility as a Service (MaaS) model that offers trip information and bookings for a wide range of public and private transit options all in one application.

Multiple Modes in Montreal

Home to one of North America’s first bike share systems in 2009, the City of Montreal, Quebec, is a [leading Canadian centre for shared mobility](#). Non-profit BIXI, operates the bike-share program with over 9,600 bikes (some electric) and celebrated 50 million trips to date in 2022. A popular roaming carshare service, [Communauto](#), is active there with supportive bylaws, while [shared taxibus](#) services augment the fixed route transit and can be booked online or by phone. Currently updating their [Transportation Plan](#), the City of Montreal and surrounding areas are striving to reduce greenhouse gases and traffic congestion, while also reducing car usage.



PUBLIC TRANSIT

Fleets of buses, trains, subways, trams, ferries, facilities and rights of way operated by a public entity. Public transit is often the foundation for much of shared mobility in community, and in essence is a form of ride-sharing.

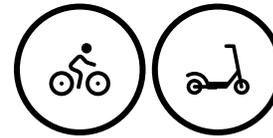


Fixed route public transit is the traditional form of public transit, with a predetermined fixed-route and schedule, rates, along with para-transit services. The new shared mobility capabilities are helping to transform fixed route public transit into more effective and efficient service for users.



On-demand/micro-transit (ODT) is a new way to provide transit where passenger demand informs vehicle routes and schedules, through a smart phone app, a website, kiosk and/or a phone call. With this reimagined form of “dial-a-ride” or paratransit, vehicle routing and dispatch management happen autonomously, with continuous re-optimization and efficient route sharing, utilizing a host of connected technologies and data analytics. Routing may be fixed or dynamic and may deploy designated stops or door-to-door. Vehicles are generally vans or small buses (although sedans are used too) for 5-25 passengers with professionally trained drivers, through an arrangement with a transit agency.

SHARED MICROMOBILITY



Shared micromobility is a rapidly expanding mode in Canada, with fleets of smaller, lower-speed vehicles for personal transportation that are either human or electric-powered. The most common types of shared micromobility are bikes, e-bikes and e-scooters, mostly found in urban areas with medium to high density. In 2021, 19 communities in Canada had at least one shared micromobility system, boasting 12.9 million trips⁵. Bikes or scooters may be docked (station-based) or dockless (floating/flexible), and are typically used for shorter trips of 5-60 minutes. These modes generally rely on new technologies to manage locations, re-balancing to stations, payments, etc., although docked models may be more “tech-light” and peer-to-peer or community/employer based micromobility may not need connected technology at all.

4 Key sources used for this tool: Shared-Use Mobility Centre, “What is Shared Mobility?”; Metrolinx, “Shared Mobility in the GTHA”; CUTA & Metrolinx, *On-Demand Toolkit*; Karbaumer & Metz, *A Planner’s Guide*; Ivus & Taillon, *Smart Mobility in the Smart City*.

5 NABSA (North American Bikeshare & Scootershare Association), 2021 Shared Micromobility State of the Industry Report, 2022, Available from: <https://nabsa.net/about/industry/>.



VEHICLE-BASED MODES

These modes involve the use of vehicles such as sedans and minivans, driven by non-professional licensed drivers.

Ride-hailing/ride-sourcing, also called “rides on demand” is a newer, and very popular generation of services operated by transportation network companies (TNC’s) also known as Private Transportation Companies (PTCs) (e.g. Lyft, Uber). Through this service, drivers can utilize their own non-commercial passenger vehicles (usually up to 6 passengers) to provide rides for others, through an app. Similarly, customers reserve and pay for trips via the online platform, which connects them to available drivers. The traditional taxi model, another form of ride-hailing, allows riders to “hail a ride” without an app. More recently, ride-splitting is being offered as an option for customers, allowing them to share rides (and costs) sourced through these platforms, and merging into the realm of ride-sharing.



Carsharing provides a fleet of cars for short-term use to members who are pre-screened, and hold licenses. Members access vehicles, usually hourly, self-serve through an app, and trips may be one-way (free-floating or point-to-point and more spontaneous) or round-trip (station-based and more planned). Smart apps and transponders, along with connected technologies, support the operations of the fleets. Additionally, carsharing may also operate on a peer-to-peer model or even a community-based one.

COMMUTE-BASED MODES

These modes focus on groups of workers combining commute trips to and from workplaces. Some companies also provide shuttles for their employees.



Ride-sharing/Vehicle pooling builds on the long-standing modes of car- and van-pooling, when additional passengers are added to a trip that will already take place, filling empty seats, often for commuting. Facilitated in the past through ride-matching programs or ad hoc, dynamic ride-sharing now allows for real-time pooling arrangements using technology for matching based on convenient origin/destination on the driver’s route.

SHARED MOBILITY OPTIONS

Shared Mobility Mode	Examples	Benefits & Challenges	Alignment to your Strategy & Objectives? - describe
Fixed route public transit 	Most medium to large centres in Canada operate some kind of fixed transit system. This can include buses, streetcars, subways, trains and ferries.	<ul style="list-style-type: none"> ✔ Good for high density communities and routes with high capacity ✔ Professional and familiar ✔ Provides a backbone for mobility in a community with potential for smart integrations ✘ Can be limited in coverage ✘ Can be expensive to operate 	
On-demand transit/ micro-transit 	Cochrane, AB (COLT on-demand) Innisfil, ON (UBER for on-demand) Longueuil, QC (on-demand taxi) Vancouver, BC (on-demand pilot) Wellington County, ON (RIDEWELL pilot)	<ul style="list-style-type: none"> ✔ Can expand coverage, frequency and service times in areas with lower transit demand or density, filling service gaps ✔ May be cheaper to operate than fixed-route transit ✔ Good for moderate-density environments with limited pedestrian or fixed route connectivity between activity nodes (e.g., suburbs) ✘ Complex to find most efficient routes ✘ May be challenging to get people on-board to this unfamiliar model 	
Shared micro-mobility 	Cochrane, Red Deer & St. Albert, AB (e-scooters) Hamilton ON (Sobi bikeshare) Montreal, QC (BIXI bikes) Toronto, ON (Bike Share – bikes + e-bikes) Windsor, ON (e-bikes + e-scooter share through Bird Canada)	<ul style="list-style-type: none"> ✔ Good for short distances in the urban core (first mile/last mile option), complementing other modes. Can be faster, more convenient and more flexible. ✔ Generally low cost for users ✔ Zero emissions, enhanced physical activity & fun ✘ Safety concerns for people with disabilities (e.g., blocking sidewalks) ✘ Redistribution challenges 	
Ride-hailing / ride-sourcing 	Many communities have existing taxi services. Now, many also allow for private ride-hailing companies such as Uber and Lyft.	<ul style="list-style-type: none"> ✔ Can help bridge the first-mile/last-mile gap ✔ Possibility to partner with transit agencies with low cost ✔ Convenient and flexible and easy to use ✘ Can be less accessible for users with usually higher user fees than other modes, requirement for smart phones, and few vehicles for people with disabilities ✘ May increase congestion 	
Carsharing 	Carsharing is available in larger Canadian cities in various models: station-based (e.g. Zipcar, Toronto, ON), floating (e.g. Communauto, AB, NS, ON, QC) and peer-to-peer (e.g. Turo, Toronto, Vancouver, Montreal)	<ul style="list-style-type: none"> ✔ Cost savings for users compared to ownership – reduce car ownership ✔ Good for longer trips, groups & cargo ✔ Formalized systems can be more reliable, credible & safe ✘ Users must have driver's license and be members ✘ Unreliable access to vehicles 	
Ride-sharing/ vehicle pooling 	BC, AB, ON, QC (inter-city carpool through poparide) Hamilton, ON (carpool match) Manitoba (Go Manitoba platform for ride-sharing in the province) Renfrew County, ON (AV winterized ride-share/on-demand pilot with RideShark)	<ul style="list-style-type: none"> ✔ Increase vehicle occupancy while reducing car traffic during peak hours ✔ Fewer parked cars at destinations ✔ Lower cost to implement and for users ✘ Finding matches can be hard ✘ Limited routing 	

Overarching Considerations

Determine the technology requirements for any potential shared mobility approaches – many require strong wireless, internet and/or cell coverage and may also need digitally skilled talent. This can be a barrier for smaller communities, causing delays in new shared mobility initiatives. Explore alternate strategies, such as light tech solutions or low data apps.

Strive for inclusion: users have varying access to or literacy in digital technologies so find alternates to meet the needs of all.

Remember to consider the cost to users. Some modes tend to be more expensive. Consider subsidies or other approaches to ensure everyone can make use of the shared mobility solution, regardless of income.

Keep accessibility for different abilities top of mind – including physical, vision, hearing and cognitive disabilities.

Integrate your mobility as much as possible across the different modes – through integrated mobility technology and mobility hubs.

Mobility is one key part of your overall urban planning and infrastructure – take a **systems approach** in your planning, and coordinate across areas in your community. For example, think about curb management, right-of-way management and safe mobility corridors like protected bike lanes.

Data is essential to most new mobility initiatives. Policies and strategies for data security, privacy and collection are essential. Become data literate.

Consider the seasonality of some modes (e.g. shared micromobility) and gaps that may result in inclement weather

Systems approach means thinking about any challenge in the context of the whole system, made up of interconnected subsystems and parts. A systems approach provides the bigger picture and clearer understanding of problem spaces.

Typical Trip Lengths





SUCCESS WITH SHARED MOBILITY

Tool 3: Principles for Shared Mobility⁶

As communities have implemented new shared mobility projects, much has been learned along the way. Sometimes, there has been smooth sailing and at other times, there have been bumps along the road. There is great value in learning from the insights of experience to set your own team and initiative up for success.

ABOUT THIS TOOL

The **Principles for Shared Mobility** provides a curated list of top priorities to keep in mind for shared mobility, gleaned from past projects, research reports and experts in the field. This tool will help you to consider each principle and how you will address it for your own context. Leaders are encouraged to explore and plan in collaboration with key stakeholders to ensure a fulsome application of the concept. The hope is that these principles will provide some guiderails to direct and steer you on your shared mobility journey.

⁶ Key resources: Bridgeable, “Unlocking shared mobility in the GTHA”, 2022, <https://www.bridgeable.com/work/unlocking-shared-mobility-in-the-gtha/> & “Seven ways to win at shared mobility” (blog post), 2022, <https://www.bridgeable.com/ideas/7-ways-to-win-at-shared-mobility/>; CUTA & Metrolinx, On-Demand Toolkit; Sara Ditta & Michael Crawford Urban with Sunil Johal, Sharing the Road: The Promise and Perils of Shared Mobility in the GTHA, 2016. https://www.metrolinx.com/en/regionalplanning/rtp/research/Sharing_the_Road.pdf; Karbaumer & Metz, A Planner’s Guide; Translink, Shared Micromobility Guidelines; Phillips, Sandra, “Sharing the road: Which Canadian cities are driving progress on shared mobility?”, Corporate Knights (blog post), May 31, 2019, [https://www.corporateknights.com/perspectives/guest-comment/sharing-road-canadian-cities-driving-progress-shared-mobility/#:~:text=Montreal%20is%20the%20top%2Dranked,%2Dto%2Dpeer%20car%20sharing](https://www.corporateknights.com/perspectives/guest-comment/sharing-road-canadian-cities-driving-progress-shared-mobility/#:~:text=Montreal%20is%20the%20top%2Dranked,%2Dto%2Dpeer%20car%20sharing;); Shared-Use Mobility Center, Shared-Use Mobility Toolkit; Stantec, “A Smart(ER) MobilityTM approach”, 2022, <https://www.stantec.com/en/markets/transportation/smart-mobility>.

TIPS

- ✓ Traditional car ownership and driving are deeply rooted in our society – it will take time and effort to raise awareness in the new shared mobility, and to get people to transition to this new approach. Help customers see the value of shared mobility by highlighting benefits and advantages over other modes.
- ✓ Build alignment and trust with stakeholders. Camile Machado of TransLink notes “[if] you actually share things across partners, and work toward the same goal, [rather than] seeing everyone as a competitor, you can change to a mindset of trust. It is not easy and a long process but after two years, we are in a much better position. You can look at all the shared mobilities as helping people to not own a car and everyone benefits – traffic, the environment, the city.”
- ✓ Help prepare your community and future users get ready for your shared mobility. Communication and marketing should be engaging and consistent over a long period of time. The services need to be easy, attractive and timely to support behavioural change and get people ‘on board’.
- ✓ Catalyze a virtuous cycle—awareness builds attractiveness increasing usage. This helps expand shared mobility options, creating positive impacts to increase awareness, feeding a positive reinforcing cycle.
- ✓ Learn from other communities and municipalities that have already implemented idea(s) you are interested in. Build your network with other communities to foster shared learning and best practices together.

Towards Integrated Mobility in Halifax

In Halifax, Nova Scotia, an Integrated Mobility Plan has set a bold goal to having at least 30% of trips made by transit and active transportation, where residents will have a choice of connected, healthy, affordable, and sustainable travel options. Rooted in public engagement, with a focus on moving people, not vehicles, it prioritizes shared mobility options such as transit, ride-sharing, car-sharing and active transportation. Halifax is currently studying shared micromobility as an option while also moving forward with a mobile payment app.

Shared Micro-Mobility Pilots in Windsor

In Canada's south, Windsor, Ontario has introduced a pilot project to introduce e-scooters and e-bikes to their community, in partnership with Bird Canada. In 2021, the first year, riders embraced the easy, low-cost e-scooter option, travelling an average of 2.8 km. The community learned a lot along the way, including addressing safety concerns related to scooters on sidewalks (issuing many warnings and suspensions) and theft. The 2022 edition includes re-focusing on some key areas in town, and incentives are in the works to promote this innovative shared mobility mode.



Principle	How will you apply?
<p>1. Engage your community Involve your community early in the planning to understand needs and preferences and foster ongoing engagement for feedback and future improvements. Use a variety of approaches in your engagement plan to ensure that you are connecting with people with varying ages, abilities and geographical locations.</p>	
<p>2. Plan & pilot Building on your objectives (see Tool 1), experiment with solutions from which you can learn and improve from. Run shorter-term pilot projects to test ideas and build engagement.</p>	
<p>3. Engage partners often and early Collaboration with private partners is critical and you should provide clear guidelines for them. Partner across modes and regions too.</p>	
<p>4. Strive for a seamless customer experience Put customer needs first. Trips are a single experience for customers so apply MaaS -thinking by connecting modes, minimizing wait times, and supporting coordinated trip planning. Consider passenger amenities and travel patterns too.</p>	
<p>5. Prioritize equity and accessibility Ensure affordable access for target populations, and apply new shared mobility approaches to improve paratransit too. Require vendors to use common technology platforms in RFPs. Require accessible options for all.</p>	
<p>6. Evaluate and improve Collect data and feedback to measure usage and impact and inform continual mobility improvements for now and the future.</p>	
<p>7. Incentivize shared mobility Offer benefits for shared mobility modes such as parking privileges for responsible carshares or prioritization of traffic signals.</p>	
<p>8. Establish policies and guidelines Consider aspects such as legislation, data standards, interoperability, build guidelines, operations licensing, permitting, right of way guidelines, equity.</p>	
<p>9. Make it safe Prioritize personal security and safety through guidelines, safe street infrastructure, right of way guidelines, mapping tools and more. Be aware of potential negative impacts on users with disabilities (e.g., maintain accessible sidewalks and pathways).</p>	
<p>10. Be innovative Get creative and explore new ideas. Accept and encourage new technologies and new ways of doing things. Look to the future.</p>	

Congratulations! You have now completed the **New Shared Mobility Solutions Toolkit**. Together with your team and key stakeholders, you have taken some important steps toward exploring potential shared mobility solutions and keys to success. You have familiarized yourself with the language and the landscape around shared mobility and the various modes for consideration, giving you a stronger foundation for moving forward. We hope that this toolkit has inspired and motivated you to implement shared mobility solutions as innovative and impactful options to meet your community's needs and goals now and into the future.

With this foundation in place, it is time to put your learnings into practice and to move forward with making your shared mobility initiative(s) a reality.



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GLOSSARY

Visit our [Smart Cities Glossary](#) on the Community Solutions Network Portal to explore more definitions.



Automated mobility or autonomous vehicles (AVs) relates to automated functions that assist drivers (fully automated would be an autonomous vehicle). Transit, private and commercial vehicles have more and more of these technologies such as lane keeping assist, adaptive cruise control and self-parking. Machine learning and artificial intelligence (AI) are key components of automated mobility.

Carsharing provides a fleet of cars for short-term use to members who are pre-screened, and hold licenses. Members access vehicles, usually hourly, self-serve through an app and transponders, along with connected technologies, support the operations of the fleets.

Civic commons is a term to describe a network of public places and facilities that enable communities to learn, celebrate, express collective actions, collaborate and flourish, together. Can include libraries, parks, community centres, squares and more.

Connected mobility is the use of wireless networks to connect vehicles, traffic signals, phone and more to enhance mobility. For example, the ability to give transit the priority to respond to real-time traffic and to adjust traffic signals.

Electrification is the shift of vehicle propulsion from the legacy propulsion systems of fossil fuels to the new propulsion with electricity. Electric vehicles (EVs) can include all types of vehicles.

E-commerce describes commercial activities like selling and purchasing that happen over the internet and online, using computers, smart phones and other technologies. E-commerce supports the payment for various forms of shared mobility.

First-mile last-mile (FMLM) refers to the challenge of people getting to transit stations and other mobility locations from where they live, work or play.

Fixed route public transit is the traditional form of public transit, with a predetermined fixed-route and schedule, rates, along with para-transit services.

GPS (Global Positioning System) provides real-time information about locations from connected vehicles and smart phones to provide data for routing and scheduling in real-time.

Greenhouse gas emissions (GHGs) are gases in the atmosphere that trap energy from the sun and cause the Earth's temperature to rise. The burning of fossil fuels has accelerated this effect, through the emission of large amounts of carbon dioxide, methane and nitrous oxide to the Earth's atmosphere.

Mobility-as-a-service (MaaS) & Integrated Mobility are emerging user-oriented approaches that aggregate information and integrate a range of mobility services and modes for customers through a single digital point of access. Linking mobility modes, it optimizes personal mobility through a digital platform, to create one unified and seamless travel experience. It can include integrated trip planning, seamless digital fare payment and mobility pricing packages. They leverage big data analytics and may bridge between public and private services.

Mobility hub is a strategically located physical transfer point that feature facilities for multiple mobility modes, supporting seamless multi-modal transportation and connections at key nodes.

Multi-modal mobility describes transportation for users that uses more than one mode of transportation, such as cycling and transit, in one single trip.

Net-zero is used to describe strategies and targets aimed at eliminating the emissions of greenhouse gases in various regions around the world.

On-demand/micro-transit (ODT) is a new way to provide transit where passenger demand informs vehicle routes and schedules, through a smart phone app, a website, kiosk and/or a phone call. Vehicle routing and dispatch management happen autonomously, with continuous re-optimization and efficient route sharing, utilizing a host of connected technologies and data analytics

Public spaces are areas or places that are open and accessible to all people, including streets, public squares, parks, beaches and civic spaces. Successful public spaces are designed with all residents in mind and allow people to interact with these spaces in different ways. Great spaces enhance livable cities by supporting a sense of connection, individual and social wellbeing, and community expression, identity and diversity.



Ride-hailing/ride-sourcing, also called “rides on demand” is a service where drivers can utilize their own non-commercial passenger vehicles (usually up to 6 passengers) to provide rides for others, through an app. Customers reserve and pay for trips via the online platform, which connects them to available drivers.

Ride-sharing/Vehicle pooling is when additional passengers are added to a trip that will already take place, filling empty seats, often for commuting. Dynamic ride-sharing now allows for real-time pooling arrangements using technology.

Shared micromobility is a rapidly expanding mode in Canada, with fleets of smaller, lower-speed vehicles for personal transportation that are either human or electric-powered. The most common types of shared micromobility are bikes, e-bikes and e-scooters, mostly found in urban areas with medium to high density.

Shared mobility is transportation shared among users. A range of mobility solutions and business models shared either concurrently or sequentially by users. Any form of transportation that is not people using their own personal vehicles (like a private car or bicycle) is a form of shared mobility.

Smart describes the integration of data and tech for a variety of community solutions.

Sustainability is an approach that aims to satisfy the needs of today without compromising conditions for future generations to meet their needs. Considerations include natural resources as well as social and economic ones.

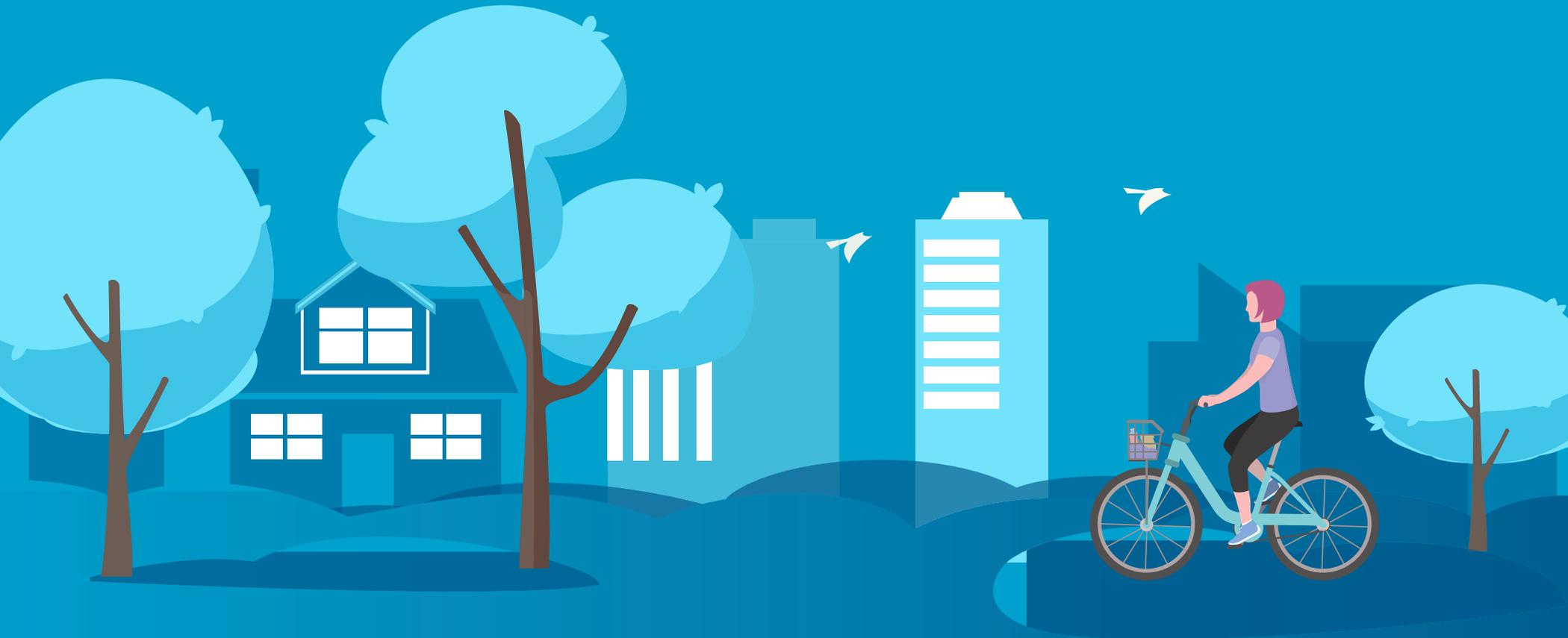
Systems approach means thinking about any challenge in the context of the whole system, made up of interconnected subsystems and parts. A systems approach provides the bigger picture and clearer understanding of problem spaces.

Vision zero is a strategy that aims to eliminate all traffic fatalities and serious injuries, creating safer, healthier and more equitable mobility for everyone.

⁷ Definitions adapted from: CUTA & Metrolinx, *On-Demand Toolkit*; Karbaumer & Metz, *A Planner's Guide*;



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