



Risk Management Considerations for Micromobility Devices

Micromobility devices like e-scooters and e-bikes are becoming an increasingly common sight on Canadian streets, sidewalks and trails. As their popularity grows, so too do the challenges for municipalities, including how to safely integrate these devices into public spaces while managing risk and legal liability. This article outlines key considerations for municipalities as they navigate this fast-evolving landscape.

What is Micromobility?

Micromobility refers to a broad category of lightweight, single-person transportation devices or vehicles commonly used for short-distance trips. This includes bicycles, e-bikes, e-scooters and various other human powered or electrically powered devices. They typically have limited power-assisted speeds ranging from approximately 20 to 30 km/h.

Electrically powered bicycles (“e-bikes”) and electrically powered kick-scooters (“e-scooters”) have become especially popular in the last 5 to 10 years, enabled by advancements in battery technology and smartphone applications.

Regulatory Framework for Micromobility

Micromobility regulation in Canada is governed by a patchwork of federal, provincial and municipal responsibilities, as summarized below.

Level of Government	Responsibilities Related to Micromobility
Federal	<ul style="list-style-type: none">• Sets safety standards for vehicles (however, this generally does not include micromobility devices).• Oversees product safety, product recalls and public safety advisories.• Sets motor vehicle safety standards for low-speed vehicles.
Provincial	<ul style="list-style-type: none">• Sets rules for driver licensing, vehicle registration and insurance requirements.• Administers the Highway Traffic Act (“rules of the road”).• Develops pilot project regulations to test new technologies.
Municipal	<ul style="list-style-type: none">• Responsible for local infrastructure, including active transportation infrastructure.• Develops by-laws to regulate local roadways.• May pass by-laws to regulate micromobility devices or participate in a provincial pilot project.

E-Scooters

E-scooters are currently one of the most popular forms of micromobility devices, especially in urban areas with shared systems operating. As of January 2024, 31 Canadian communities had shared e-scooter systems in place,¹ and this number continues to grow.

In Ontario, the provincial government enacted **O. Reg. 389/19**, a pilot project regulation that allows municipalities to pass a by-law to permit e-scooters on municipal roads. If a municipality does not pass a by-law to permit e-scooters, then it is illegal to operate an e-scooter on that municipality's roads or sidewalks. The provincial regulation also sets various standards and rules around e-scooters, including minimum age to ride (16), maximum speed (24 km/h) and maximum power (500 W).

There are many risks with e-scooters, as summarized below:

1. **E-scooters are vulnerable to crashes caused by uneven surfaces or potholes.** Due to their small wheels and the user's high centre of gravity, crashes are common.
2. **Helmet usage is low, and head injuries are common.** Studies have found that helmet usage is very low amongst e-scooter riders, especially users of shared e-scooters. Additionally, head injuries are common due to the nature of how e-scooters crash.
3. **Rider behaviour issues are common, including intoxicated riding, underage riding, sidewalk riding and riding with passengers.** These common behaviour issues can lead to more crashes and more injuries for e-scooter riders.

Risk Management Best Practices for E-Scooters

Due to the growing popularity of e-scooters and the elevated risk of injuries to riders, it is important for municipalities to carefully consider e-scooters within their local context.

1. **Recognize that e-scooters increase risk and liability for municipalities.** E-scooters can be potentially dangerous for riders, and when serious crashes and injuries occur, injured parties may seek financial compensation from municipalities.

2. **Decide whether to pass a by-law to permit e-scooters per the provincial regulation.** As per O. Reg. 389/19, e-scooters are illegal on municipal roads and sidewalks unless a municipal by-law is passed to permit them. Municipalities may impose additional rules within their municipal by-law.
3. **Consider the state of repair of your municipal roadways, sidewalks and trails.** Since e-scooters are vulnerable to crashes caused by uneven surfaces and potholes, it is important to ensure that the infrastructure is in a good state of repair and safe for e-scooter use.
4. **Strengthen policies and procedures for inspection, repair and maintenance.** This will ensure that, in the event of a claim, your municipality will have a solid defence against the claim.
5. **Coordinate with local police and by-law enforcement to monitor and enforce risky behaviours.**
6. **Ensure that any technology used in the rental system, such as mobile apps or payment platforms, adheres to high-security standards to protect user data and privacy.**

Insurance Considerations

Increased use of micromobility devices raises important questions about insurance coverage, both for municipalities and for users. Unlike motor vehicles, micromobility devices such as e-scooters and e-bikes do not require insurance under provincial law. This can create coverage gaps in the event of a crash, particularly when a rider causes injury or property damage to others.

From a municipal perspective, the presence of micromobility devices on roads, sidewalks and trails may increase exposure to liability, especially in cases where injuries occur due to alleged infrastructure deficiencies. Therefore, municipalities should:

1. Review their municipal liability policies to ensure they provide coverage for incidents involving micromobility devices.
2. Consult their insurers regarding any limitations or exclusions that may apply.

¹ Lipton, E. and Whitfield, K. 2025. Shared Micromobility Services in Canadian Communities. Ottawa, ON: Transportation Association of Canada.

3. If permitting a shared micromobility system from a third-party company, ensure contracts are reviewed for proper insurance and indemnity provisions.

Municipalities may also want to engage in public education efforts to help users understand the potential risks of riding uninsured.

E-Bikes

E-bikes have electric motors that provide power assistance when pedaling or when a throttle is operated (or both). In Canada, e-bikes have a maximum assisted speed of 32 km/h and a maximum power of 500 W. E-bikes are generally treated the same as bicycles, however, municipalities may pass by-laws to regulate e-bikes differently from bicycles.

Due to their faster speeds and heavier weights, municipalities may consider prohibiting e-bikes from certain facilities, such as recreational trails or multi-use paths, where they may pose a risk to pedestrians or other vulnerable road users.

Lithium-Ion Battery Fires

In recent years, there has been a significant increase in the number of lithium-ion battery fires in Canada, and many of these fires have been caused by batteries from micromobility devices. Often in these cases, someone has either modified the battery's charger, is using an after-market charger or has modified the battery itself.

When these batteries ignite into fire, a process called "thermal runaway" occurs, where individual cells of the battery combust and cause a chain reaction with other cells. These are chemical fires that burn intensely, reach very high temperatures and release toxic liquids and gases. Lithium-ion battery fires can also continue to burn and re-ignite for hours and even days, creating challenges for firefighters.

Municipalities that use equipment and devices powered by lithium-ion batteries should train staff on lithium-ion battery safety, including how to recognize signs of battery damage and protocols for battery charging and storage. Municipalities may also want to develop a policy to clearly outline roles and responsibilities for training and procedures for battery charging, storage, etc.

The following list summarizes some of the key facts and best practices to be aware of when it comes to lithium-ion battery fires:

1. **Follow the manufacturer's instructions for charging and only use the original charger.** After-market chargers may run the risk of overcharging

the battery, leading to an explosion and/or fire. If a new charger is required, purchase it from the original device/battery supplier.

2. **Inspect batteries regularly and do not use damaged batteries.** Regularly check batteries for signs of swelling, leaking or cracks. There is a term called "battery concussion," where a battery is dropped and internal components are damaged, which can lead to fires.
3. **Avoid overcharging and do not charge overnight.** Overcharging can cause the battery to overheat; do not keep it plugged in and charge at 100% for long periods.
4. **Keep batteries stored in a dry location at room temperature.** Do not leave batteries out in the sun or in a hot or cold vehicle.
5. **Make sure the batteries have a Canadian certification mark (CSA, cUL or cETL).** This indicates that they meet the Canadian electrical safety standards.

Conclusion

As micromobility devices continue to expand across Canadian communities, municipalities must strike a careful balance between enabling innovation and managing risk. These devices offer significant benefits, such as improving mobility, reducing emissions and supporting active transportation, but they also bring new safety, infrastructure and liability challenges.

Municipalities should take a proactive approach by:

- Assessing micromobility within their own local context.
- Evaluating infrastructure condition and potential risks to micromobility users.
- Strengthening infrastructure inspection and maintenance procedures.
- Developing clear policies and by-laws for micromobility.
- Coordinating with local police for enforcement as required.

Municipalities should view micromobility as an evolving area that requires continuous monitoring, flexible policy development and integration into broader transportation and risk management planning efforts. By following these risk management best practices, municipalities can support safe micromobility while minimizing exposure to liability and harm.

Additional Resources

E-scooters:

<https://www.ontario.ca/page/electric-kick-style-scooters-e-scooters>

<https://www.ontario.ca/page/ontario-e-scooter-pilot-program-guidelines-municipalities>

<https://www.ontario.ca/laws/regulation/190389>

E-bikes:

<https://www.ontario.ca/page/riding-e-bike>

<https://www.ontario.ca/page/bicycle-safety>

Lithium-ion batteries:

<https://www.canada.ca/en/health-canada/services/household-products/battery-safety/lithium-ion.html>

<https://tc.canada.ca/en/dangerous-goods/safety-advisories/lithium-batteries-be-aware-what-you-buy>

Low-speed vehicles:

<https://www.ontario.ca/page/low-speed-vehicle-pilot-program>

<https://www.ontario.ca/page/municipal-guidelines-low-speed-vehicle-pilot-program>






<https://tc.canada.ca/en/road-transportation/publications/low-speed-vehicle-information-sheet>

Other articles:





[Risk Management Considerations for E-Scooters](#)

[Risk Management Recommendations for Electric Vehicles \(EVs\)](#)

Appendix: List of Micromobility Devices

 <p>Source: canadiantire.ca</p>	E-scooter	<ul style="list-style-type: none"> • Illegal unless municipality passes a by-law to allow • Must be at least 16 years old to ride • Helmets mandatory if under 18 • Maximum speed = 24 km/h
 <p>Source: raleigh-canada.ca</p>	E-bike	<ul style="list-style-type: none"> • Pedal-assisted, throttle-assisted, or both • Maximum power = 500 W • Maximum speed = 32 km/h • Generally treated same as bicycles • Municipalities may pass by-laws to regulate
 <p>Source: urkai.com</p>	Cargo bike/e-bike	<ul style="list-style-type: none"> • Like bike/e-bikes but with more storage capacity • Often wider/longer/heavier than bikes/e-bikes • Less common
 <p>Source: windsorpolice.ca</p>	Motor-assisted bicycle	<ul style="list-style-type: none"> • Must have operable pedals • Maximum speed of 50 km/h • Licence (M), registration and insurance required • Maximum engine displacement of 50 cc • Must be affixed with compliance label under the <i>Federal Motor Vehicle Safety Act</i>
 <p>Source: powersports.honda.ca</p>	Limited- speed motorcycle	<ul style="list-style-type: none"> • Maximum speed of 70 km/h • Licence (M), registration and insurance required • Maximum engine displacement of 50 cc • Must be affixed with compliance label under the <i>Federal Motor Vehicle Safety Act</i>

Appendix: List of Micromobility Devices

 <p>Source: derandmotorsports.com</p>	<p>Electric unicycle (EUC)</p>	<ul style="list-style-type: none"> • Less common than other devices • Some models can reach high speeds • No law or regulation specifically addresses these • Municipalities may regulate through by-law
 <p>Source: amazon.ca</p>	<p>Human powered devices (skateboard, kick-scooter, rollerblades, etc.)</p>	<ul style="list-style-type: none"> • Municipalities may regulate through by-law
 <p>Source: giomobility.ca</p>	<p>Enclosed mobility scooter</p>	<ul style="list-style-type: none"> • Technically classified as a pedestrian under the <i>Highway Traffic Act</i> • Should be driven on the sidewalk • Does not require driver's licence or insurance • Problematic when used on roads like vehicles • Minimal safety/impact protection
 <p>Source: gemcar.com</p>	<p>Low-speed vehicle (LSV)</p>	<ul style="list-style-type: none"> • Safety standards under the <i>Federal Motor Vehicle Safety Act</i> • Ontario pilot program (2017-2027) • Municipalities may pass a by-law to allow LSVs • Must be registered and insured