

A Charged Conversation: An E-Micromobility Device Expert AMA

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[Webinar Recording](#)

Transportation and planning staff at cities are increasingly being tasked with micromobility governance. For many municipal staff, knowing what technical details matter in policies, regulations, and programming involving electric micromobility might seem daunting given the pace of the evolution of e-devices. In this Ask Me Anything (AMA) session, we provided a space with an e-device practitioner and educator to answer questions — from device specifications, to batteries, to charging, to safety.

Presenters

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Presentation Overview

E-bikes overview and technical specifications

- E-bikes offer significant value by making longer distances and commutes easier while improving accessibility for various riders. A primary advantage is their capacity to replace car trips for purposes beyond what conventional bikes often do
- Generally in Canada, two main classes of electric bikes are legal for road and path use, though classification systems and regulations vary between provinces:
 - Pedaled/Pedal-Assist: These only deliver power when the rider is actively pedaling. Riders can adjust the assistance level to maintain stamina or tackle steep hills.
 - Throttle-Powered: These can move without any pedaling, functioning similarly to a motorcycle
- Understanding e-bike performance depends on two key measurements:
 - Watt Hours (WH): This represents the battery capacity; a higher WH count indicates a larger battery capable of longer distances on a single charge.
 - Newton Metres (NM): This measures motor torque; higher NM ratings provide faster acceleration and more power, which is essential for heavy loads
- Specialized e-cargo bikes are built for heavy utility, capable of carrying loads upwards of 200kg. To manage this weight, they feature stronger frames, more powerful brakes, and reinforced wheels. Most are electrically assisted to allow users to transport cargo or children effortlessly across city environments

Financial and Infrastructural Hurdles

- E-bike batteries represent a major investment, with costs ranging from \$600 to \$1,200. While there is a desire for public charging infrastructure similar to EV stations for cars, no such network currently

exists. Some secure, registered bike garages are available at specific transit hubs in Toronto like Union and Kennedy stations, but these are frequently at capacity.

Conflicting Transit Regulations

- The discussion highlighted a significant discrepancy between transit agencies: the TTC enforces a seasonal ban on all e-devices from October to April due to fire risk concerns. Conversely, GO Transit allows e-bikes year-round provided the battery has a UL or UA safety certification sticker from a reputable manufacturer like Bosch or Shimano.

Winter Battery Management

- Battery performance drops at -5°C and may fail to power on at all between -10°C and -15°C. To preserve the battery's charge cycle lifespan, users should use neoprene covers to retain heat and must allow batteries to reach room temperature before plugging them into a charger

Global Solutions

- Participants discussed how food delivery companies like Uber and DoorDash currently offer little support for worker safety or logistics. As a solution to "range anxiety," the discussion pointed to battery-swapping models common in China and new third-party providers like Pop Wheels entering the Toronto market

Indoor Safety and Workplace Advocacy

- For those wishing to bring bikes or batteries into workplaces, Dani suggested that certified batteries from reputable producers are generally safe for indoor storage and charging. The key safety protocols involve ensuring the battery is at room temperature and using only the charger intended for that specific device.

More on E-Micromobility in Ontario Climate Action Council Series

The E-Micromobility in Ontario Climate Action Council series brings together municipal practitioners, researchers, and industry experts to explore how emerging e-micromobility modes (including e-bikes, e-scooters, other lightweight electric devices) are reshaping transportation across the province. Building on Climate Action Partnership's two decades of work supporting Complete Streets and active transportation planning, the series examines the opportunities and challenges these technologies present for municipal policy, design standards, equity, climate goals, and first and last-mile connectivity. - and last-mile connectivity

Contact Information

Please reach out to us at any time with questions, input, or for additional information.

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