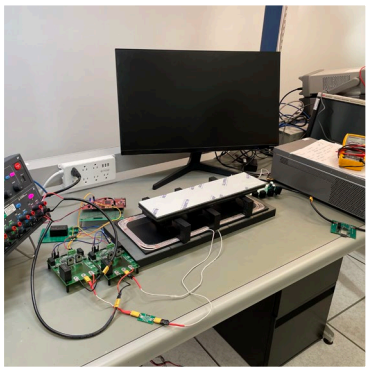
Demonstration Zone

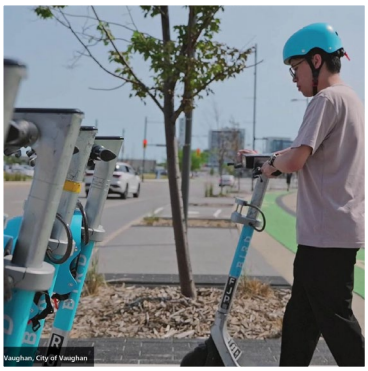
2025

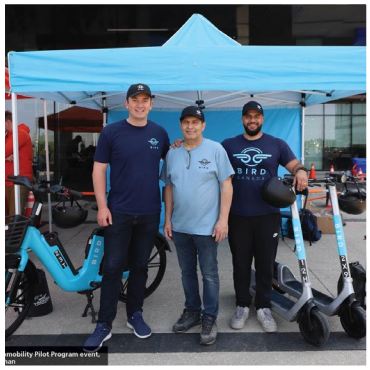
Shared Micromobility Parking

Demonstration Project: Smart Micromobility Parking & Charging

Innovator: Bird Canada Scooters Inc. in Partnership with Wireless PnC
Product: Wireless Charging Stand for Shared E-scooter Fleet
Demonstration Period: September 10 – October 10, 2025







Executive Summary

The City of Vaughan is advancing next-generation solutions to address real-world mobility and transportation challenges.

Through the Ontario Vehicle Innovation Network (OVIN) Demonstration Zone, Bird Canada partnered with Wireless PnC to test wireless charging technology for shared e-scooters. The objective was to evaluate the feasibility of wireless charging stands as a solution to reduce operational inefficiencies, enhance sustainability, and validate innovative charging technologies for municipal integration.

The OVIN Demonstration Zone is an initiative that is part of Vaughan's Transportation Innovation Program (TIP), which aims to test smart mobility and connected transportation solutions in real-world environments. This demonstration was completed in partnership with **Vaughan's Infrastructure and Corporate Asset Management (Transportation, Planning and Engineering)** team.

The Innovator

Bird Canada Scooters Inc. is a Toronto-based provider for shared micromobility services. Operating in 28 cities across Canada, from Halifax to Kamloops. The company offers shared e-scooters and e-bikes as sustainable, short-distance transportation options that complement public transit and support first- and last-mile connectivity. Bird Canada employs nearly 200 people, including 78 in Ontario, and works closely with municipalities to deliver equitable and convenient mobility options.

To advance innovation, Bird Canada actively explores research collaborations in Ontario post-secondary institutions. These partnerships aim to accelerate product development, validate emerging technologies such as wireless charging systems, and ensure compliance with safety and sustainability standards. This approach strengthens Ontario's mobility ecosystem while fostering talent development and knowledge sharing.

Overview

The demonstration project focused on integrating wireless charging technology into Bird Canada's operating shared micromobility program. This initial phase (Phase 1A) served as a proof of concept for potential future product and service demonstrations.

As part of the OVIN Demonstration Zone, Bird Canada partnered with Ontario-based company Wireless PnC to explore wireless charging solutions aimed at improving micromobility service offerings.

Bird Canada retrofitted e-scooters with wireless charging capability and deployed charging stands in a controlled indoor environment. The project aimed to:

- Reduce operational costs and staff workload.
- Enhance sustainability by minimizing vehicle trips for device collection.
- Improve service levels by increasing scooter availability.
- Support Vaughan's objectives for resilient transportation infrastructure and future mobility innovation.

Key Outcomes

Phase 1A successfully validated the technical feasibility of wireless charging stations for Bird Canada‘s shared e-scooter. The indoor demonstration confirmed compatibility between retrofitted scooters and the Wireless PnC charging stand, providing actionable insights for future improvements.

Key outcomes include:

- Bird Canada’s scooter was successfully retrofitted with the PnC Wireless charging module
- Scooter successfully connected to the wireless charging stand and held the charge in a controlled indoor environment
- Charging time from 0-80% was 8 hours, and 80-100% was 2 hours
- The modified scooter had a 2.5cm clearance

Key findings include:

- **Technical Feasibility:** Wireless charging functionality was confirmed in a controlled environment.
- **Design Improvements Needed:** Ramp adjustments are required to prevent scraping during docking; components need weatherproofing for outdoor reliability; retrofit changes reduced ground clearance, slightly affecting handling and rider stability.
- **Operational Benefits:** Potential for reduced labour costs, improved fleet uptime, and enhanced sustainability by minimizing collection trips.
- **Next Steps:** Outdoor testing is essential to validate performance under real-world conditions and assess integration with municipal infrastructure.

Exclusions

Due to resource limitations within the OVIN Demonstration Zone and the City of Vaughan’s Shared Micromobility Pilot program, operations concluded at the end of October after completing the indoor test that will be referred to as Phase 1A. Resources and timelines will need to be re-evaluated for a potential Phase 1B at a later date. As such, this report outlines the results and learnings for the initial demonstration.

The demonstration was originally designed to be delivered in the following steps:

- **Phase 1**:
  - **1A**: An indoor test to validate the technology itself.
  - **1B:** An outdoor test to validate on-site wireless charging while exposed to weather elements

Exclusions

Demonstration projects through the OVIN Demonstration Zone are temporary and limited in scope and duration due to the time constraints of the OVIN Demonstration Zone program. The project evaluated the current readiness of the technology, as determined by the Project Advisory Committee.

Conclusions and Recommendations

This demonstration successfully met its objectives by validating compatibility between Bird Canada's retrofitted e-scooter and the Wireless PnC charging stand. Phase 1A confirmed the technical feasibility of wireless charging and provided actionable insights for product improvements.

Key findings indicate the need for:

- **Ramp Design Adjustments:** Prevent scraping during docking caused by reduced ground clearance.
- **Weatherproofing:** Enhance protection against rain, snow, and temperature fluctuations for outdoor reliability.
- **Retrofit Optimization:** Minimize impact on scooter weight and balance to maintain rider stability and comfort.

Indoor testing confirmed charging functionality but emphasized the importance of real-world trials to validate performance under municipal conditions. Further demonstrations are recommended to:

- Conduct outdoor testing in Spring 2026.
- Refine product design for weatherproofing and security.
- Explore integration with municipal infrastructure.

Demonstration Zone Project Profiles: www.vaughanbusiness.ca/demozone/projects