

Challenges to Supporting Micromobility in NYC

NYC Department of City Planning

Research on the Road
November 16, 2022

Micromobility in NYC

What is micromobility?

Small, lightweight modes that run on electric batteries at low speeds

Includes:

- Electric bikes (e-bikes)
- Electric scooters (e-scooters)
- Electric cargo bikes and cargo attachments
- Other standing electric modes
- Low-speed electric mopeds

Why is micromobility important?

- Uses low levels of energy
- Can reduce greenhouse gas emissions
- Can decrease congestion
- Can improve transportation safety



Project History

Phase 1: Understanding Micromobility in NYC

Timeframe: April 2020 – March 2021

Phase 2:

Challenges to Supporting Micromobility in NYC

Timeframe: April 2021 – March 2022



Types of Micromobility

Micromobility types differ across global, national and local contexts. Each of these contexts has varying rates of adoption of different types of micromobility.

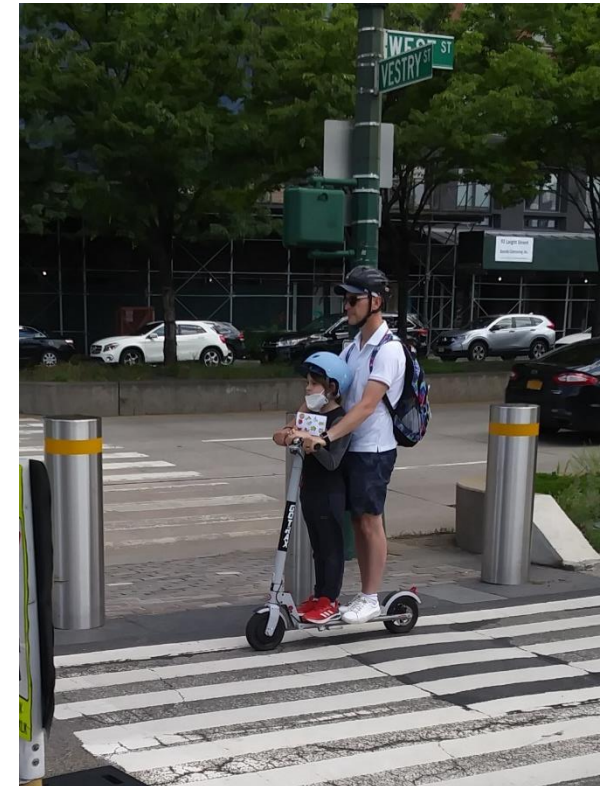
These types include clearly defined modes such as **e-bikes**; **e-scooters**; **electric cargo bikes**; and **low-speed, electric mopeds**. They also include less clearly defined emergent types such as **e-skateboards**, **Segways**, **e-unicycles**, **hoverboards** and **electric roller-skates**. This second group is more difficult to categorize because it is developing rapidly and is less regulated than the first group.



E-Bikes



Cargo Bikes



E-Scooters

Standing Modes without Handlebars

These modes are diverse, less regulated and still in development. As a result, it is more challenging to document and classify them. In our research, the modes listed here have been observed in use on NYC streets.

We expect this category of micromobility to change significantly as technology and regulatory standards evolve.



Electric Skateboard



Segway



Electric Unicycle



Hoverboard



One-wheel

DCP's Classification Scheme

Mode	Top Speed	Sharing Availability	Options for Use	Description	Weight	Speed Regulation	Other Regulatory Challenges
E-bike (NYC Class 1)	20 mph	Citi Bike	Share/Own/Subscription	Pedal-assist e-bike	Medium	20 mph speed limit in NYC	Should a 20-mph e-bike be treated differently than a 25-mph e-bike or are they effectively the same?
E-bike (NYC Class 2)	20 mph	None	Own	Pedal-assist e-bike with throttle; low-speed	Medium	20 mph speed limit in NYC	Does the addition of a throttle qualitatively change the nature of the bike if the top speed is the same?
E-bike (NYC Class 3)	28 mph	None	Own	Pedal-assist e-bike with throttle; high-speed	Medium	25 mph speed limit in NYC	
E-scooter	15-25 mph	NYC DOT Pilot starting summer 2021	Share/Own/Subscription	Standing board with handlebars	Light	20 mph speed limit in NYC	
Standing modes without handlebars	10-25 mph	None	Own	Standing board/device without handlebars; includes electric skateboards, hoverboards, Segways, One-Wheels and Electric Unicycles	Light	Not currently regulated by New York State Department of Motor Vehicles	The diversity and speed of development of this group of modes makes it challenging to keep track of and regulate.
Cargo bike or cargo attachment	12-28 mph	None	Own/Commercial deliveries	E-bike with built in cargo unit or e-bike with separate cargo unit that can be optionally attached	Heavy	NYC DOT pilot pedal-assist cargo bikes have a speed limit of 12 mph	Space for parking on the sidewalk, indoors or curbside is limited and has tradeoffs with other uses.
Moped	20-30 mph	Revel (30-mph top speed)	Share/Own	Seated electric scooter with body	Heavy	Revel mopeds (DMV Class B Mopeds) require a driver's license and have a speed limit of 30 mph in NYC	Given the speed and weight of this mode, safety is a greater challenge than with others.

Count Sheet

Name:
Date and Time:

Location:
Weather:

	Manual Bikes	E-Bikes	E-Scooters	Other Micromobility
0-15 min				
15-30 min				
30-45 min				
45-60 min				

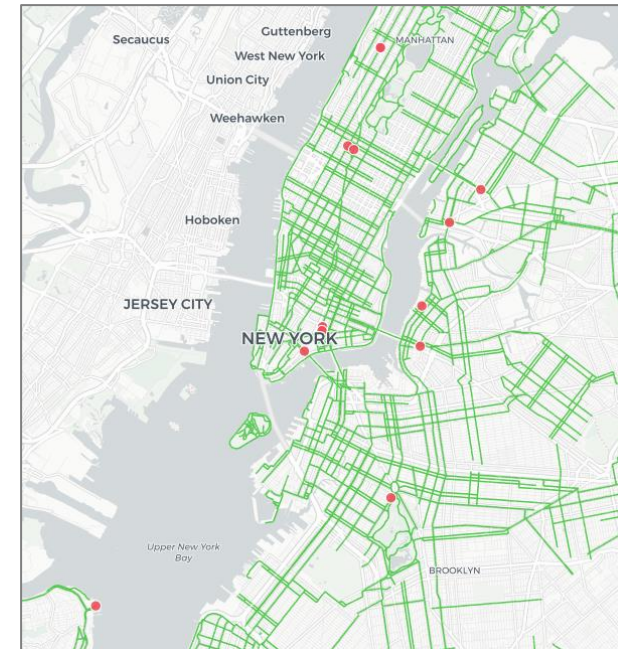
NYC Micromobility Counts

In recent years—and especially during the Covid-19 pandemic—micromobility and manual bike use have grown dramatically in NYC and around the world. Cycling grew by over one third from 2019 to 2020 by one measure. The City has also made significant progress in building an integrated and far-reaching bike lane network.

In DCP counts conducted in the fall of 2021 at existing NYC DOT automated count locations, **39% of conveyances counted as bikes were in fact micromobility devices.**

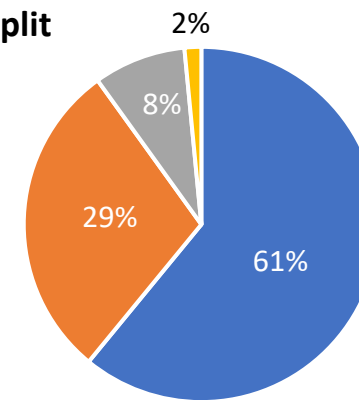
- 36 percent during morning peak (8-9 am)
- 49 percent during lunch hour (12-1 pm)
- 38 percent during evening peak (5-6 pm)

Micromobility count locations



Location	% Micromobility
Amsterdam Ave at 86th St	65%
Columbus Ave at 86th St	60%
Staten Island Ferry	58%
8th Ave at 50th St	53%
Manhattan Bridge Ped Path	53%
Broadway at 50th St	52%
Ed Koch Queensboro Bridge Shared Path	47%
Williamsburg Bridge Bike Path	35%
Prospect Park West	32%
Manhattan Bridge Bike Comprehensive	30%
Brooklyn Bridge Bike Path	30%
Pulaski Bridge	26%
Kent Ave btw North 8th St and North 9th St	23%

Mode Split



- Manual Bikes
- E-Bikes
- E-Scooters
- Other Micromobility