



# Understanding the modal shift to gas mopeds

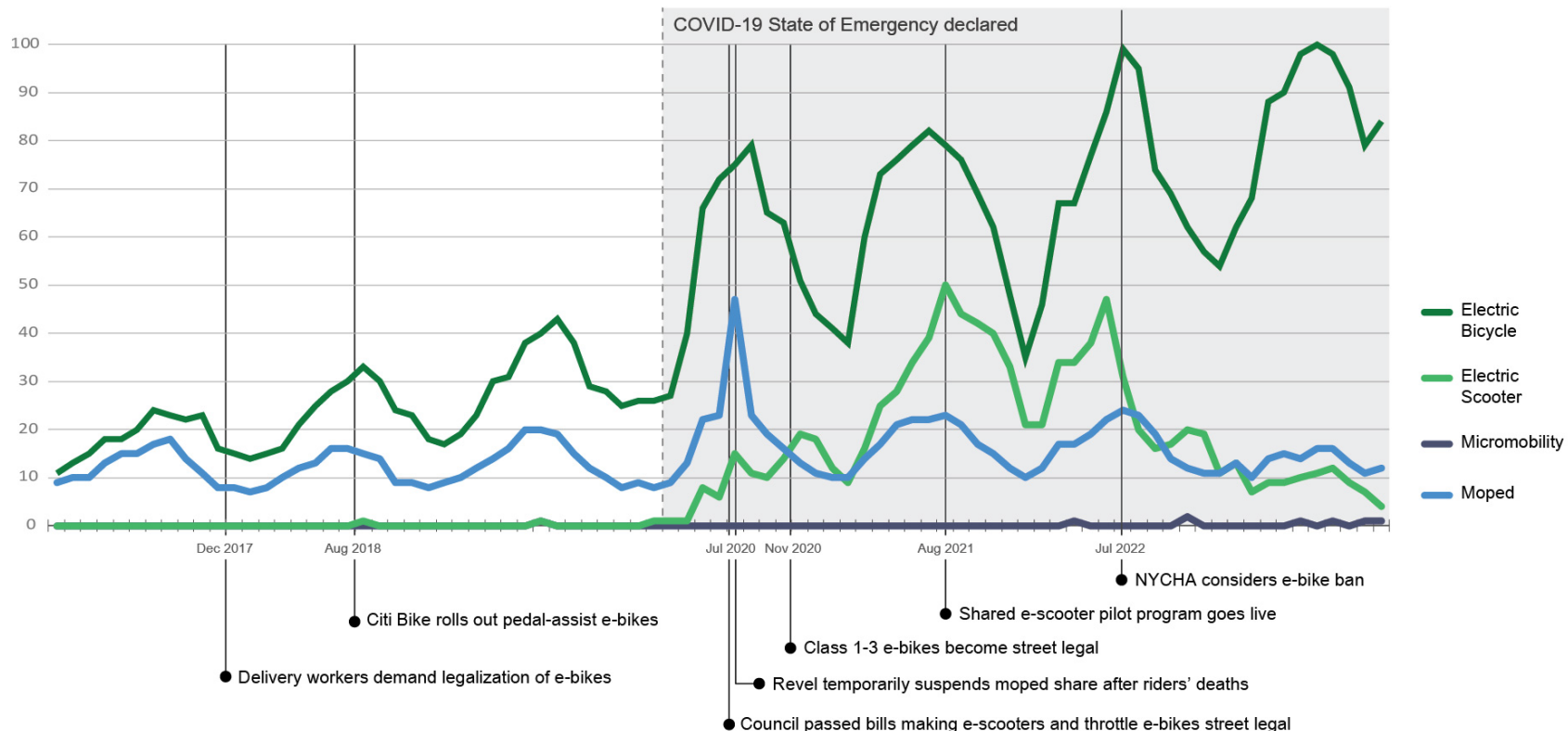
Irene Figueroa-Ortiz, AICP, Policy Advisor

November 2023



# An evolving transportation landscape

Google Trends Data (NYC searches)



# Street legal micromobility devices in NYC



## Privately-Owned Vehicles

## Publicly- Shared Fleets

Docked Bike Share (Citi Bike)  
Bike & e-bike



Dockless Bikeshare  
*\*Inactive*



Shared E-Scooter (Lime, Veo, & Bird)  
Stand-up, seated, & accessible scooters

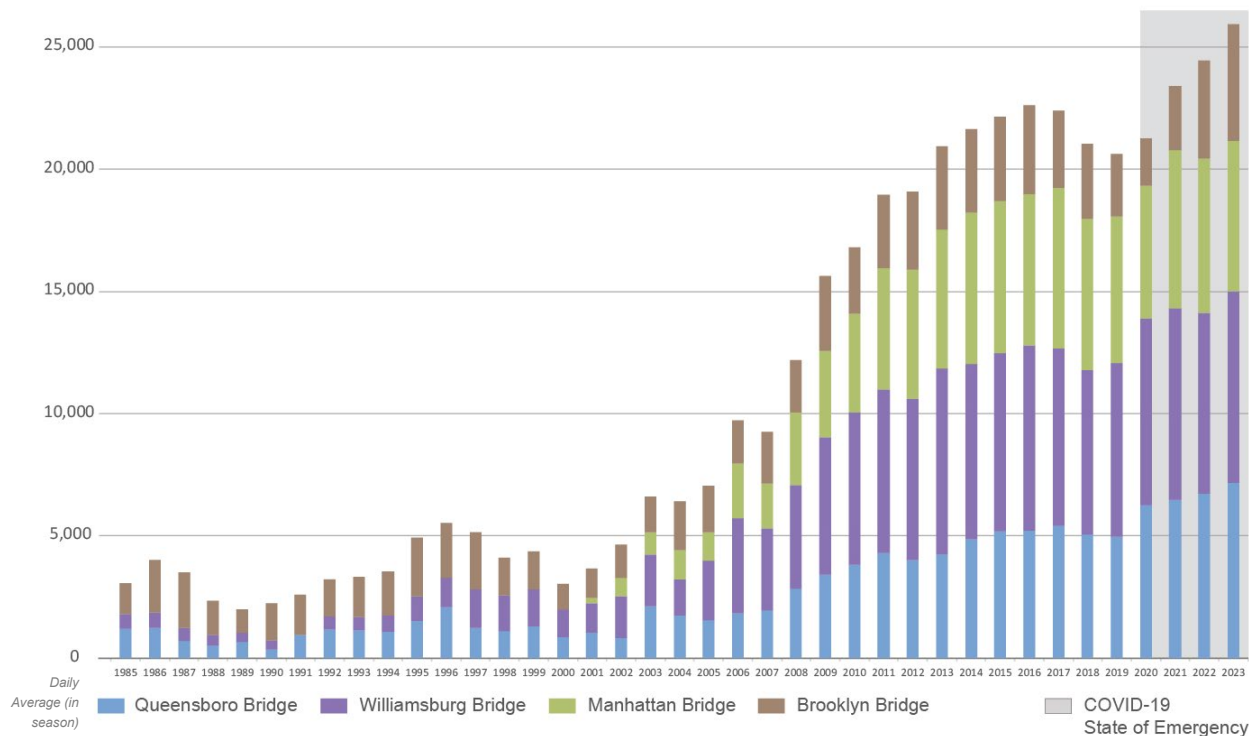


Moped share (Revel)  
*\*Inactive*



# Two-wheelers are becoming increasingly popular

East River Bridges Bike Counters (1985-2023)



Over the past year:

- > 1 M **Revel moped** trips
- 1.7 M **shared e-scooter** trips
- > 28 M **Citi Bike** trips

East River Bridges:

- 6.13% increase from 2022
- 14.57% increase over 5-yr

# Horrific Crash on Manhattan Bridge Bike Path Underscores Moped Crisis

Illegal and legal mopeds are forbidden yet are increasingly common on the span as delivery workers shift to faster vehicles to make their meager living.

9:28 AM EDT on July 27, 2023

## ‘We’re Fighting Over Inches’ New York cyclists on their near misses and crashes on the city’s bridges.

As told to John Surico

MICROMOBILITY

## The Moped Crisis — An Analysis: The City Needs a Systemic Fix, Justice for Workers and Accountability by Tech Giants

Mayhem — and, more accurately, the perception of mayhem — on the streets of the city is provoking a new backlash against delivery workers. But are poor workers really the ones to blame?

12:00 AM EDT on August 23, 2023

## Dodging mopeds on the Brooklyn Bridge

**James Groenier, 22:** I was on the Manhattan approach to the Brooklyn Bridge, and there was a moped driver that very aggressively went around me. On the bridge, that driver took the yellow dividing line as if it was their own lane. Tons of cyclists had to dodge and weave because that moped driver was taking up both lanes. That same day, there was another moped that approached and I had to get off my bike and stand next to the concrete barrier because they were not giving me space and probably going about 30 miles an hour. There’s usually a cop that sits on the Manhattan approach. I stopped and asked the officer, “Hey, that moped almost caused a dozen cyclists to get hit. He was not supposed to be on the bridge. What are you guys doing to stop this?: He said, “As long as they can fit past the bollards, they’re allowed on the bridge.” That is false and not the law, but I wasn’t gonna argue.



METRO

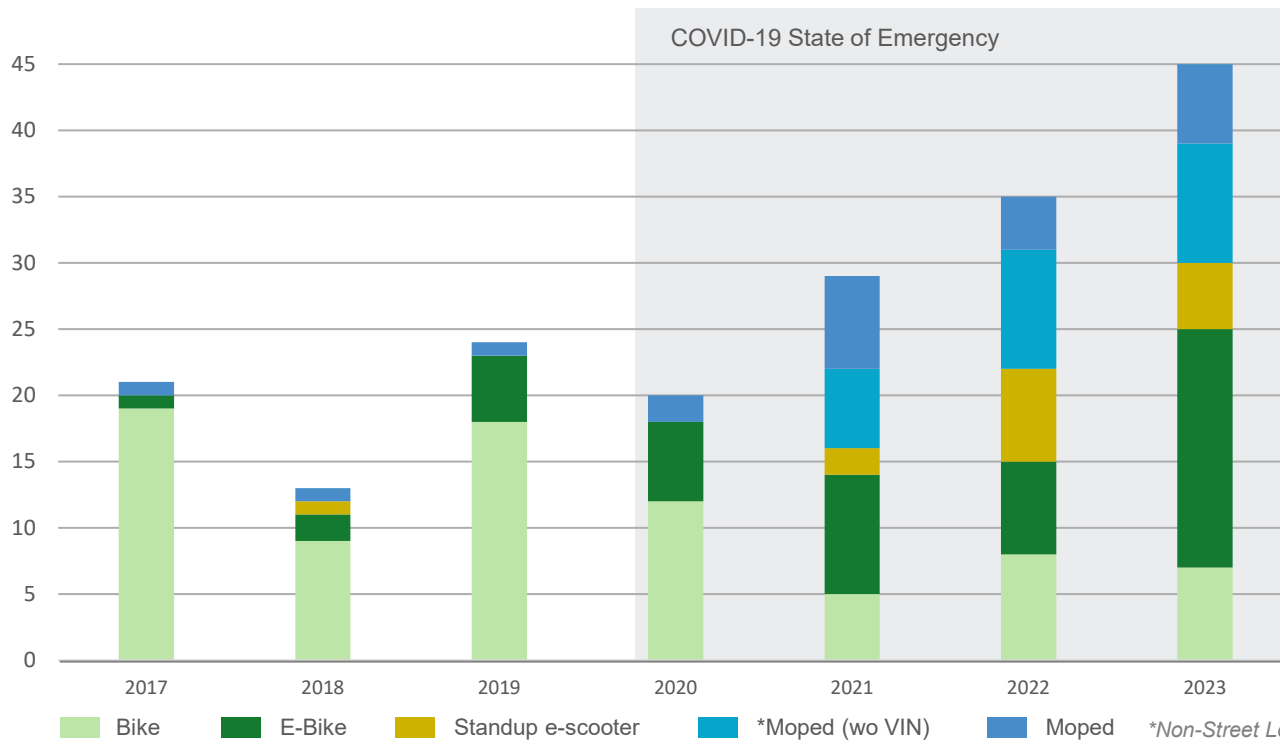
## Why pedestrians should take caution on moped-heavy Queensboro Bridge

By Ben Kessler

Published Jan. 16, 2022 | Updated Jan. 16, 2022, 3:03 p.m. ET

# Fatalities linked to motorized micromobility have gone up

Fatalities YTD 1/1-9/30



- E-bikes & standup e-scooters up very sharply
- Limited-use motorcycles up 1400%

Context: ~250 total yearly fatalities in NYC

# Many moped operators are not taking the necessary steps to operate their devices legally

- Large number of mopeds are not DMV-registered as required by law
- May be operating mopeds without VIN or license plate
- These moped riders may not have a driver's license or insurance
- 85% of vehicles "beating" DOT Speed and Red Light cameras are motorized two-wheelers without license plates

Number of registered vehicles in NYC					
Type	2019	2020	2021	2022	2023*
Moped	2,780	5,514	8,684	5,550	4,953
Motorcycle	46,169	44,877	45,398	44,372	50,357

Number of registered Revel mopeds in NYC (2023)	3,819
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\*As of October 31, 2023

# Is it a e-bike or a moped?

- Shops have been branding mopeds as e-bikes
- Some shops offering both street legal and non-street legal mopeds
- There is no DMV registration requirement at the point of sale

The screenshot shows a Google search for "Fly e-bike". The search results are displayed in a grid format, showing various models of mopeds, scooters, and e-bikes. The search bar at the top contains the text "Fly e-bike" and the Google logo. Below the search bar are navigation tabs for "All", "Shopping", "Images", "Maps", "Videos", and "More". The "Images" tab is selected. Below the navigation tabs are several category filters: "bike", "electric moped", "motorcycle", "flytron", "electric motorcycle", and "electric scooters". The main content area displays a grid of product listings. Each listing includes an image of the product, a title, and a status indicator (e.g., "In stock", "Out of stock"). The products shown include various models of mopeds (e.g., Z6, FLY PRO, FLY-7, Z6 Street Legal, Fly-Tank), scooters (e.g., FLYTRON/D6+, Go-Fly), and e-bikes (e.g., FLY-11 Red Edition). A Facebook logo and the text "Facebook Fly E-Bike" are visible in the bottom right corner of the grid.



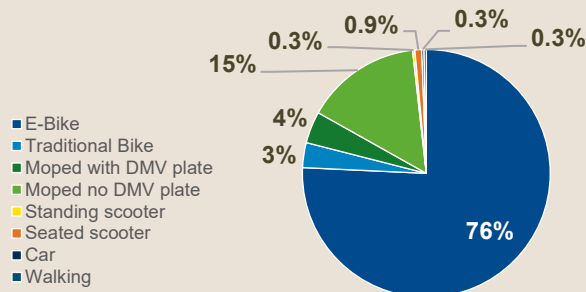
# A growing number of food delivery workers are shifting to gas mopeds

*DOT research conducted in spring-summer 2023:*

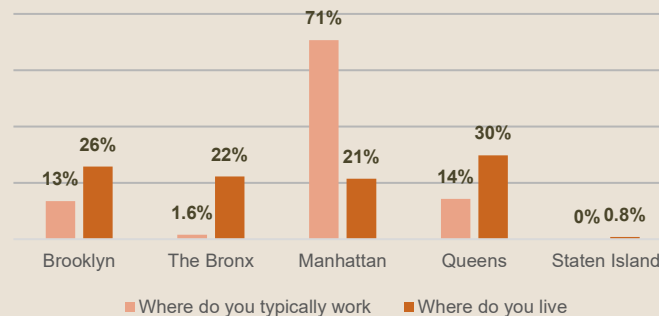
- Manhattan is primarily served by e-bikes
- Mopeds are popular in the outer boroughs
  - 44% of surveyees riding mopeds work in Brooklyn
- Gas mopeds are preferred over electric mopeds
  - 62% of surveyees on mopeds drove gas-powered ones
- 9 out of 10 devices sold in a Queens bike shop are mopeds, in contrast with last year when 9 out of 10 sales were for e-bikes

## Results: DOT's Delivery Worker Battery Survey

Surveyees' main transport mode



Where surveyees live & work

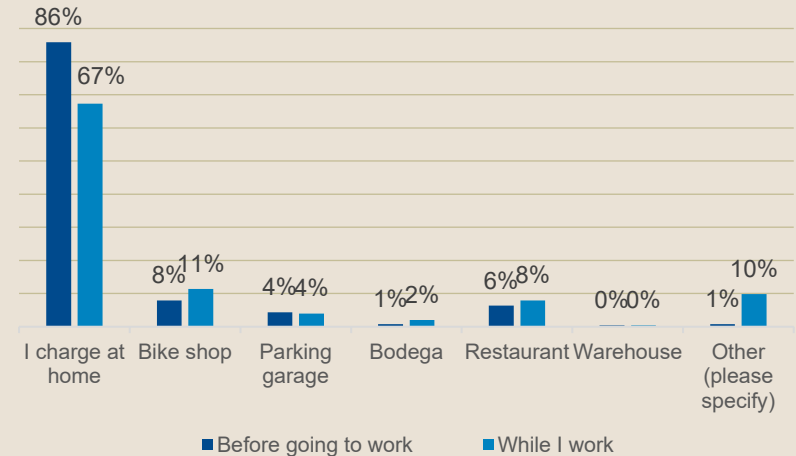


# What's powering this mode shift?

- **Less available battery charging options:**
  - Informal charging hubs are shutting down
  - Landlords are banning storage and charging of e-bikes
- **Fire safety concerns:** 239 fires in 2023
- **After LL39, fewer e-bike/batteries in stores:**
  - Bike shops have less e-bike inventory
  - No UL-certified batteries for Arrow bikes
- **Confusion over new battery laws:** Workers believed new laws would outlaw e-bikes
- **Ability to travel longer distances**

## Results: DOT's Delivery Worker Battery Survey

### Where workers charge their batteries



**83%** of surveyees recharge during work hours

# Key areas of work

## Evolve Street Designs

- Pilot-test **street designs** to safely accommodate bikes, e-bikes, and standing e-scooters in bike lanes
- Pilot public **e-bike charging** solutions
- Explore **micromobility storage** options

## Bridge Data Gaps

- Undertake **data collection & analysis** to bridge gaps in information
- Establish a network across the city of **computer vision sensors**
- Process **historical data**

## Advance Safety Policy

- Promote **training** and **educational material** on safer operation of e-micromobility
- Advocate for requiring **moped registration** at point of sale
- Engage **3rd-party delivery apps** and **other stakeholders** in promoting public and worker safety

# Thank You!

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