

E-Bike Charging Pilot Program

Irene Figueroa-Ortiz

Executive Director for Policy

Department of Sustainable Delivery

NYC Department of Transportation



Department of Sustainable Delivery



Delivery Models & Worker Responsibilities

Delivery Type	Type of Business Dispatching Worker	Examples	Business Model Type	Avg Delivery Volume per Trip	*Goods Delivered	*Employment Terms	*Delivery Vehicle				*Safety Equipment
							Purchase	Maintenance	Power		
On-demand	Brick-and-Mortar Businesses	Joe's Pizza	Direct to Consumer B2C	●○	Food, groceries, laundry	Employee	Employer	Employer	Employer	Employer	
On-demand	App-Based Delivery Platforms	GruHub, InstaCart	Intermediary B2C	●○	Food, groceries, other products	Contractor	Delivery Worker	Delivery Worker	Delivery Worker	**Delivery Worker	
On-demand	Messenger Services	NPD Logistics	Intermediary B2B	●○○	Envelopes, packages	Employee / Contractor	Employer	Employer	Employer	Employer	
Logistics	Parcel Delivery	USPS, FedEx, UPS, DHL	Intermediary B2B & B2C	●●●●●	Envelopes, parcel	Employee	Employer	Employer	Employer	Employer	

* Typical

**Business required by law to provide safety equipment to workers delivering by bicycle

Setting the Scene



Delivery vehicle of choice



High delivery demand



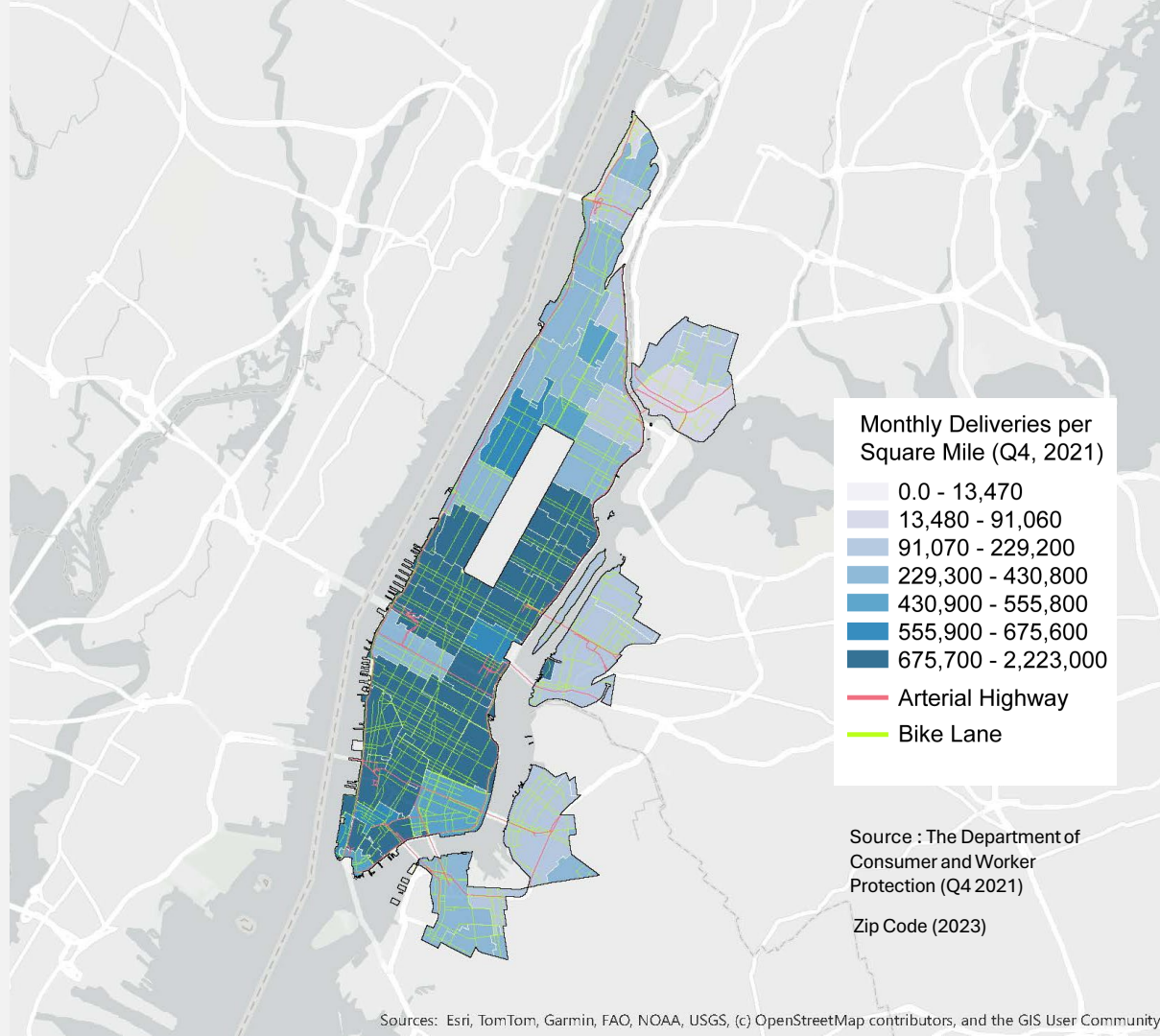
Algorithm defines delivery times & routes



Constant weather exposure



Substandard equipment



Source : The Department of Consumer and Worker Protection (Q4 2021)

Zip Code (2023)

The Challenge

Addressing a Public Safety Crisis

DELIVERY WORKERS

Deliveristas Turning to Gas-Fueled Mopeds: 'I Don't Have a Place to Charge the E-Bike'

Workers say that longer delivery distances are also prompting the switch.



How E-Bike Battery Fires Became a Deadly Crisis in New York City

NYCHA

Two Dead in NYCHA Housing Blaze Ignited by Exploding E-bike Battery, Officials Say

 New York Daily News

E-bike lithium-ion battery suspected of sparking Bronx fire

What is article sharing? ... A fire erupted in a Bronx apartment building Thursday afternoon, according to the FDNY, sending residents scrambling...



NEWS

Queens e-bike battery fire kills woman in NYC's first battery-related death of 2025, FDNY says



The Solutions

A Multifaceted Approach to Advance Fire Safety



User Safety Education



Point-of-Sale Regulations



E-Bike Charging Infrastructure



E-bike Trade-In Pilot Program

2024 E-bike Charging Pilot Program

Pilot tested e-bike battery charging technologies under a direct-to-consumer model on the street

- 6-month duration (March 7th - September 7th)
- 5 pilot sites in Manhattan & Brooklyn
- 3 battery charging technologies
- Free service for 118 food delivery workers enrolled at registration events led by NYC DOT



Technology profile

Direct e-bike charging dock
Vendor: Swiftmile



Battery swapping cabinets

Vendors:

- Swobbee (left)
- PopWheels (right)



Charging technologies at the Brooklyn Army Terminal for the E-Bike Charging Pilot

Direct e-bike charging dock



Battery swapping cabinets



Data Collection

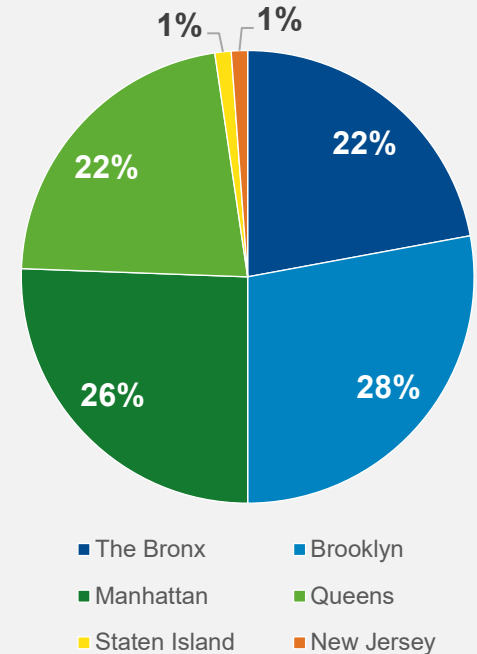
	User Surveys	Focus Groups	Stations	Customer Service	Other Data
Pilot	<p>Battery Use & Charging Practices</p> <p>1 survey 338 responses</p>	<ul style="list-style-type: none"> • Charging Practices • Technology Selection <p>4 focus group sessions 2 street events</p>			
Starts	<ul style="list-style-type: none"> • Onboarding • Midpoint • End-of-Pilot <p>3 surveys</p>	<p>User Experience</p> <p>5 sessions 30% of active users</p>	<p>Real-Time Data</p> <ul style="list-style-type: none"> • User profile • Transaction profile • Down/Up time • Charge levels • Duration <p>11 chargers</p>	<p>Customer Interactions</p> <ul style="list-style-type: none"> • NPS ratings • Complaints • Tech issues 	<p>Public Data</p> <ul style="list-style-type: none"> • 311 • FDNY
Pilot					
Ends					



Test User Profile

- 118 test users, living across NYC
- Most users deliver food in Manhattan through apps
- 81% charged batteries at home
- Over half travel with two or more spare batteries
- 41% returned home to charge between delivery shifts

Where test users live



Source: Onboarding user survey

Technology Performance

System was well utilized

Total # of sessions:

- 12,100 battery swaps:
 - Swobbee: 6,400 swaps
 - PopWheels: 5,700 swaps
- 1,300 Swiftmile charging dock sessions

Battery-swapping was the most popular technology

Swiftmile charging dock at Willoughby St., BK

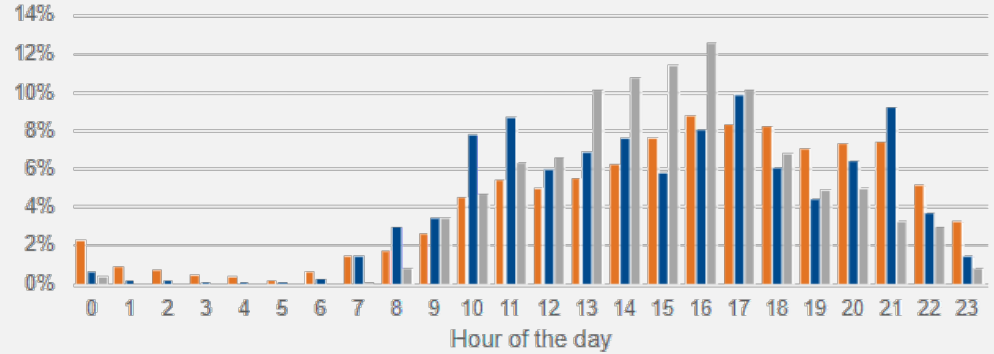


Sustained Usage

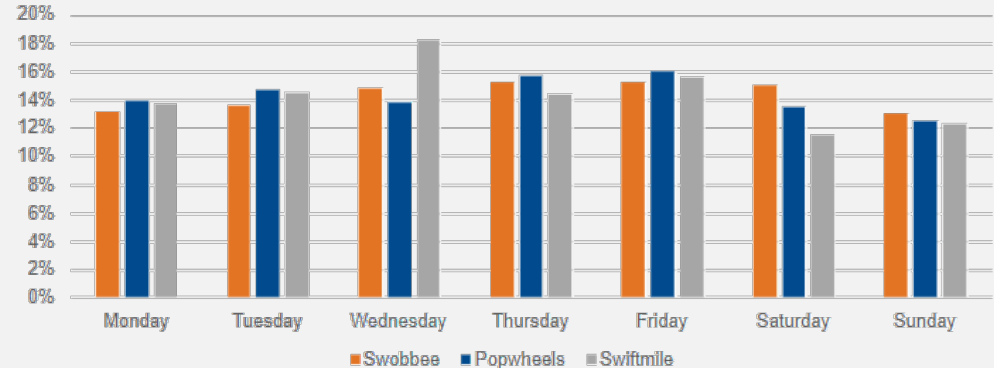
Daily and weekly usage patterns

- Late afternoon was a popular time to use the charging technologies
- Usage was consistent across the week, with a slight drop on Saturday and Sunday, and higher Swiftmile usage mid-week

Usage trend by hour of the day



Usage trend by day of the week



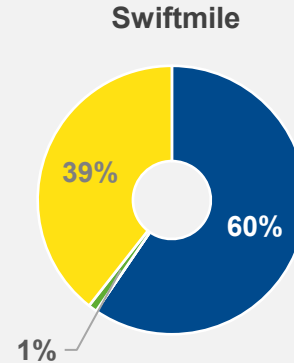
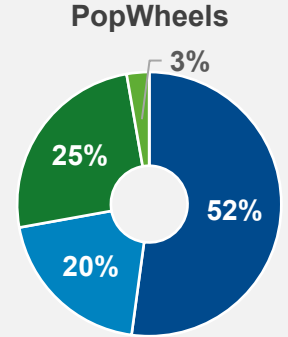
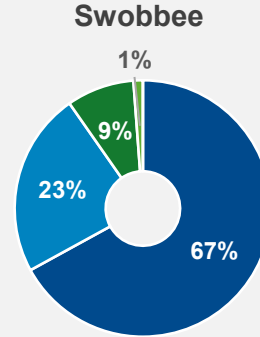
Location Matters

Hubs near commercial corridors and restaurant centers were better utilized

Cooper Square hub had 60% of battery swaps & 60% of charging sessions across all sites

High foot traffic and good lighting created a sense of security at the most visited sites

Transactions across pilot sites



- Cooper Square
- Essex Market
- Plaza De Las Americas
- Brooklyn Army Terminal
- Willoughby St

Source: Station data from companies

Increased Fire Safety

Pilot services reduced at-home charging

- **35% reduction in at-home charging across all users**
- Those still home charging did so less often than before
- Most batteries stored indoors are now high-quality and closely monitored by vendors

Access to services reduce reliance on spare batteries

- **50% decrease in traveling with spare batteries among test users**

FDNY inspects charging hub at Brooklyn Army Terminal



Quality of Life & Economic Impacts

Users feel safer not having to charge at home & having access to high-quality batteries

Pilot made them feel more productive:

- No need for a spare battery, which was exhausting and heavy
- No need to take extended breaks to charge
- Can travel longer distance



Safer Charging, Safer Deliveries

- Evaluation report summarizes program design process and lessons learned
- Pilot was successful, with no community complaints and street safety conflicts reported

Safer Charging, Safer Deliveries

Lessons from
NYC DOT's
Public E-Bike
Charging Pilot



To read the full report, please visit [our website](#).

Thank You!

Irene Figueroa-Ortiz, Executive Director for Policy

Department of Sustainable Delivery

ifigueroaortiz@dot.nyc.gov



NYCDOT



nyc_dot



nyc_dot



NYCDOT