
Securing the Micromobility Moment with Bike Boulevards

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SUMMARY

QUESTION: WHY SHOULD NEW YORK INCLUDE “BIKE BOULEVARDS” – ROADWAYS THAT PRIORITIZE BIKES AND OTHER FORMS OF MICROMOBILITY – IN FUTURE TRANSPORTATION PLANS?

WHY IMPORTANT:

1. *The Pandemic has caused an exponential increase in human-scaled vehicles (bikes, scooters, etc.) – including an increased use by essential workers.*
 2. *Lower income areas of the city often lack adequate subway service. Micromobility options would close a gap in this service, but the solutions need good infrastructure to be functional.*
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RECOMMENDATIONS:

1. *Increase micromobility usage in and near low-transit neighborhoods*
 2. *Increase safety for bikers and micromobility users.*
 3. *Make sure new solutions assist people of all creeds and consider diversity.*
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CONSTRAINTS:

1. *Street use (different agencies, parking constraints, etc.).*
2. *Will there be different transit patterns in the full post-COVID world?*
3. *How will lower income riders afford new micromobility solutions?*





INTRODUCTION

To facilitate safe travel for essential workers, and a growing number of New Yorkers, the City should include “bike boulevards” — roadways that prioritize bikes, scooters and other two- and three-wheeled vehicles — as key components in future transportation plans.

The popularity of micromobility, the suite of human-scale vehicles like bikes and scooters, has dramatically increased worldwide in recent years, especially in tandem with the COVID-19 pandemic. Jakarta reported a 500% increase in cycling during the spring of 2020¹; the state of Minnesota recorded a 72% increase within the first month of lockdown. Here in New York City, Citi Bike ridership initially fell, with ridership 61% lower in April 2020 than in April 2019. However, the following month, ridership resumed to 2019 levels, preceding both transit and cars’ returns to pre-pandemic levels. Average trip duration during March 2020 also grew, from 13 to 19 minutes, indicating an increased reliance on Citi Bike as a substitute for transit.² Now in 2021, Citi Bike ridership continues to grow, setting new ridership records frequently: on May 15, 2021, the system recorded 118,590 rides, its highest ever one-day ridership.³

The micromobility boom — punctuated by bike sales of up to 200% more than the previous year — is a logical result of the COVID-19 pandemic: bikes and scooters provide direct, socially-distanced transport, while public transportation can be circuitous and crowded. Two- and three-wheeled vehicles are more appealing than car ownership in both cost and environmental sustainability terms. Furthermore, new modes emerge constantly; micromobility is no longer limited to bikes and scooters. New vehicles, both human and electrically powered, evade the traditional taxonomy: onewheels, hoverboards, e-mopeds, e-skateboards, disability-assistive scooters, and

¹ Institute for Transportation & Development Policy, “During Coronavirus, Jakarta’s Cycling Grows As Does Police Backlash,” *Transport Matters*, July 10, 2020, <https://www.itdp.org/2020/07/10/during-coronavirus-cycling-grows-as-does-police-backlash/>.

² Joao Filipe Teixeira and Miguel Lopes, “The link between bike sharing and subway use during the COVID-19 pandemic: the case study of New York’s Citi Bike,” *Transportation Research Interdisciplinary Perspectives*, 6 (July 2020): 100166. <https://www.sciencedirect.com/science/article/pii/S2590198220300774>.

³ Jake Offenhartz, “Bike Boom Shows No Signs of Slowing As Citi Bike Sets New Ridership Records,” *Gothamist*, May 18, 2021, <https://gothamist.com/news/bike-boom-shows-no-signs-slowng-citi-bike-sets-new-ridership-records>.



outdoor elliptical bikes. Devices are under development for use by people with limited mobility.

Micromobility was especially useful to essential workers during the COVID-19 pandemic. By July 2020, 30,000 New Yorkers signed up for Citi Bike's Critical Worker Program, a free membership program for frontline workers at hospitals, daycare centers, and other vital facilities. They also made use of a similar benefit from Revel mopeds; essential workers, especially restaurant delivery workers, took 12% of all Revel trips during the spring. Transportation choices were especially helpful to the 11,000 shift workers who commute overnight to jobs at hospitals, airports, and package sorting facilities, but were unable to do so when the subway shut down overnight during the pandemic. Furthermore, in a massive policy change, e-bikes, which had previously been deemed illegal and often confiscated due to their perceived dangers, were abruptly labeled essential, as their riders benefited New Yorkers sheltering in place by delivering food and goods. However, whether cyclists are food delivery workers, office commuters, or schoolchildren, New York City streets are hazardous on two wheels. On average, 20 cyclists were killed annually from 2016 to 2020. Even during the COVID-induced lockdown of 2020, streets were deadly. New York City's speed cameras issued four million speeding tickets in 2020, double from the year before (although more cameras had been installed).

The danger is even more profound for cyclists in and from below-average income areas, according to analysis by *Streetsblog*; these riders are disproportionately represented in injury and fatality numbers.⁴

However, low-income areas of New York City often lack adequate subway service. As shown in the NYU Rudin Center for Transportation report "Mobility, Economic Opportunity, and New York City Neighborhoods," insufficient transit access is linked to lower incomes and higher unemployment rates.⁵

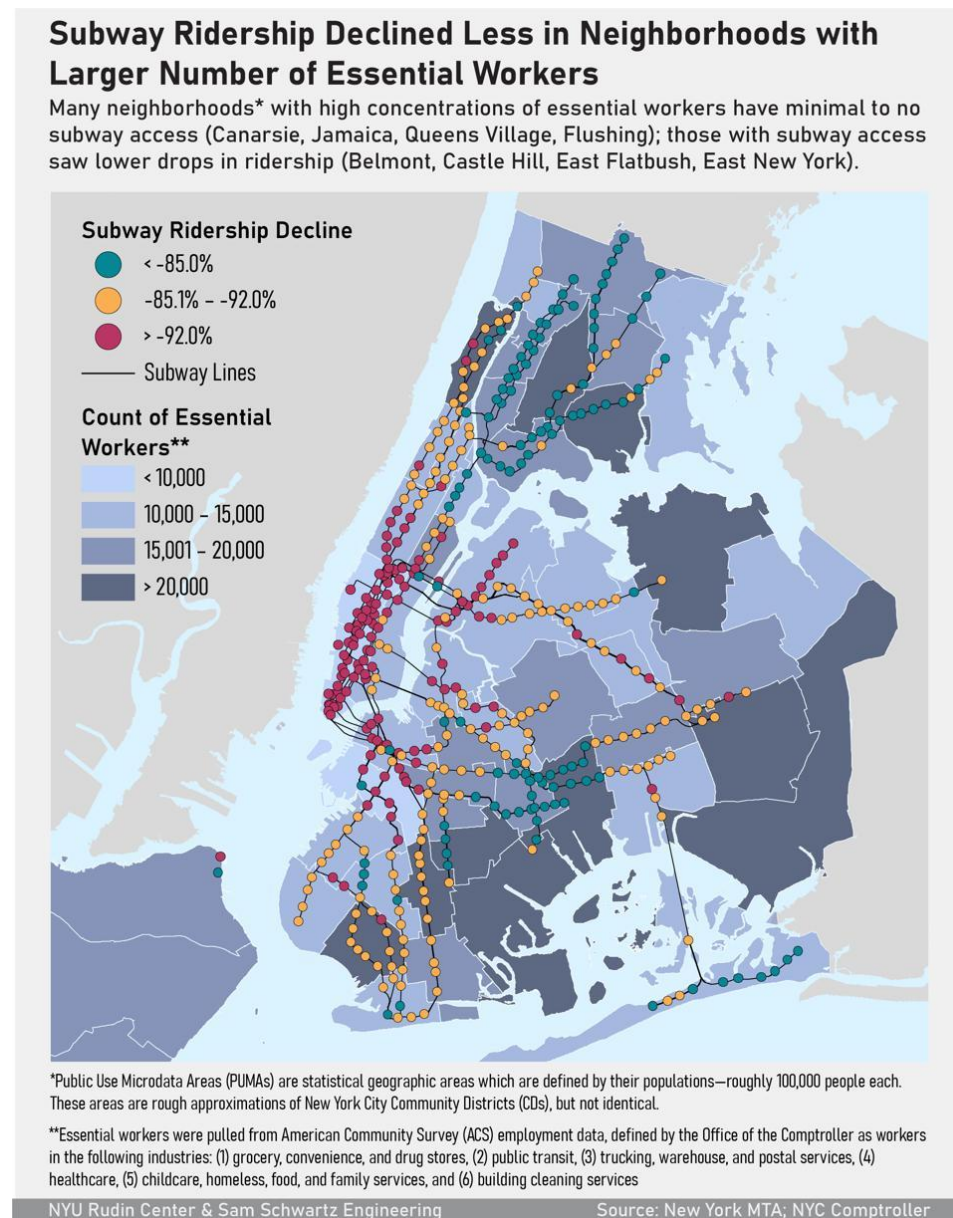
During the COVID-19 pandemic, New York City's one million essential workers depended heavily on a weakened transit system. Four neighborhoods housing more than 20,000 essential workers (Canarsie, Jamaica, Queens Village and Flushing) have minimal to no subway access. In other neighborhoods housing large concentrations of essential workers that also have some subway access, there was a relatively small drop in subway usage during the pandemic compared to the rest of the City (as

⁴ Julianne Cuba, "POST-MORTEM: Cyclist Victims Killed In 2020 Were Low-Income, Essential Workers," *Streetsblog NYC*, January 22, 2021, <https://nyc.streetsblog.org/2021/01/22/post-mortem-cyclist-victims-killed-in-2020-were-low-income-essential-workers/>.

⁵ Sarah Kaufman, Mitchell Moss, Jorge Hernandez, and Justin Tyndall, "Mobility, Economic Opportunity and New York City Neighborhoods," *NYU Rudin Center for Transportation Policy and Management*, November 2015, <https://wagner.nyu.edu/files/rudincenter/2015/11/JobAccessNov2015.pdf>.



shown in the map below).⁶ The difference in subway usage demonstrates that these essential workers continued to rely on transit, despite service cuts leading to prolonged, unpredictable commutes.



⁶ Sarah Kaufman et al., “Transportation During Coronavirus in New York City,” *NYU Rudin Center for Transportation Policy and Management*, July 2020, <https://wagner.nyu.edu/files/faculty/publications/Full%20Report.pdf>.

OPPORTUNITIES IN MICROMOBILITY

Without reliable subway and bus service, micromobility can fill a gap, offering transportation options that are crucial to hourly workers.

However, safe infrastructure is a key ingredient to maintaining the safety of New Yorkers, particularly those who are essential and low-income workers.

Leaders have installed 1,069 miles of bike lanes throughout the City. Approximately half of those lanes are protected from vehicle traffic with physical barriers, such as curbs or parking lanes. The remainder only use green paint, an ineffective barrier to swerving vehicles. In addition, the lanes are often not contiguous, dropping cyclists off in the midst of vehicular traffic. Nearly 90% of cyclist fatalities happened on streets without bike lanes, according to the City's Green Wave Plan from 2019.⁷

Thirty new miles of protected bike lanes are planned by the end of 2021, as well as five bike boulevards — one several-block stretch per borough.⁸ Bike boulevards are segments of roads that prioritize micromobility and offer multiple lanes so that different street users may sort by speed. They reduce street conflicts by filtering these riders completely away from vehicular traffic, which is permitted on a limited basis.

The City's commitment to build bike infrastructure is laudable. However, it does not keep pace with the popularity of micromobility, focus on transit-starved neighborhoods, or account for the multitudes of travel modes, with varying widths and speeds that do not conform to the traditional four-foot-wide bike lanes.

Instead, New York City should build a robust network of bike boulevards, connecting low-transit neighborhoods with larger networks. Initial neighborhoods can include several areas with high concentrations of essential workers and low access to subways, including Canarsie, East New York, and Flushing.

Bike boulevards have demonstrated success in other global cities, including Paris, Milan, and London, which all implemented bike-priority routes during the 2020 pandemic. According to German researchers, who studied 106 European cities that

⁷ New York City Department of Transportation, "Green Wave: A Plan for Cycling in New York City," *City of New York*, July 2019, <https://www1.nyc.gov/html/dot/downloads/pdf/bike-safety-plan.pdf>.

⁸ Office of the Mayor of New York, "Streets Week! Mayor de Blasio Announces Record Creation of Bus and Bicycle Lanes Planned for 2021," *City of New York*, May 11, 2021, <https://www1.nyc.gov/office-of-the-mayor/news/347-21/streets-week-mayor-de-blasio-record-creation-bus-bicycle-lanes-planned-2021>.



introduced an average of seven miles of new bike lanes during the first four months of the COVID-19 lockdown, cycling increased between 11 and 48 percent. In addition, they found the health benefits will subsidize the costs of infrastructure by improving the health of riders and city residents and reducing traffic-related injuries and fatalities.⁹

New York City, like many European cities in density, would experience similar benefits, including:

- A viable transportation option to areas where New Yorkers, especially essential and shift workers, endure long commutes on off-peak transit, pay heavily for car services, or face hazardous bike commutes among vehicular traffic.
- Improvements to road safety for cyclists as well as pedestrians, who are safer when bike lanes are present.
- Increased the diversity of cyclists, who are currently overwhelmingly male, reportedly due to women's safety concerns.

To be sure, bike boulevards will not completely solve street safety issues: without contiguous protected lanes, end-to-end trip safety is not ensured. In addition, shared micromobility often depends on apps or other cashless solutions, preventing cash-based potential users, who are often low-income residents. Furthermore, New York City apartments, especially walk-up buildings, do not offer adequate storage space for micromobility. Popular bike boulevards would necessitate secure, on-street storage options; the infrastructure demands further land uses.

Investing in New York City's micromobility future will boost the health of residents, improve air quality, and alleviate traffic congestion. To assess the success of this program, New York City should track three policy impacts:

- **1. Micromobility usage in and near low-transit neighborhoods:** A viable transportation option to areas where New Yorkers, especially essential and shift workers, endure long commutes on off-peak transit, pay heavily for car services, or face hazardous bike commutes among vehicular traffic.
- **2. Safety:** How have injury and fatality numbers of cyclists and pedestrians been impacted by the implementation of bike boulevards? Do improvements proportionately apply to lower-income neighborhoods? This metric will be measured by NYPD crash reports.
- **3. Diversity:** Are micromobility users diverse in their use cases? Users should include office commuters, families biking together, cargo bike delivery workers, and people with varied physical abilities. This metric will be measured through

⁹ Sebastian Kraus and Nicolas Koch, "Provisional COVID-19 infrastructure induces large, rapid increases in cycling," *Proceedings of the National Academy of Sciences of the United States of America*, 118, no. 15 (April 13, 2021): e2024399118, <https://www.pnas.org/content/118/15/e2024399118>.



user surveys on the boulevards. A welcoming environment for a diverse population will indicate a successful use of space.

For New York City to succeed in accommodating the growing popularity of micromobility, leaders should develop a program that recognizes the need for a new approach. All New Yorkers will benefit from the increased focus on safety, air quality and reduced congestion.

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