Vision Zero in NYC

Street Improvement Projects: 10+ Years of Effective Roadway Safety Enhancements

Research on the Road
November 29, 2023

Vision Zero

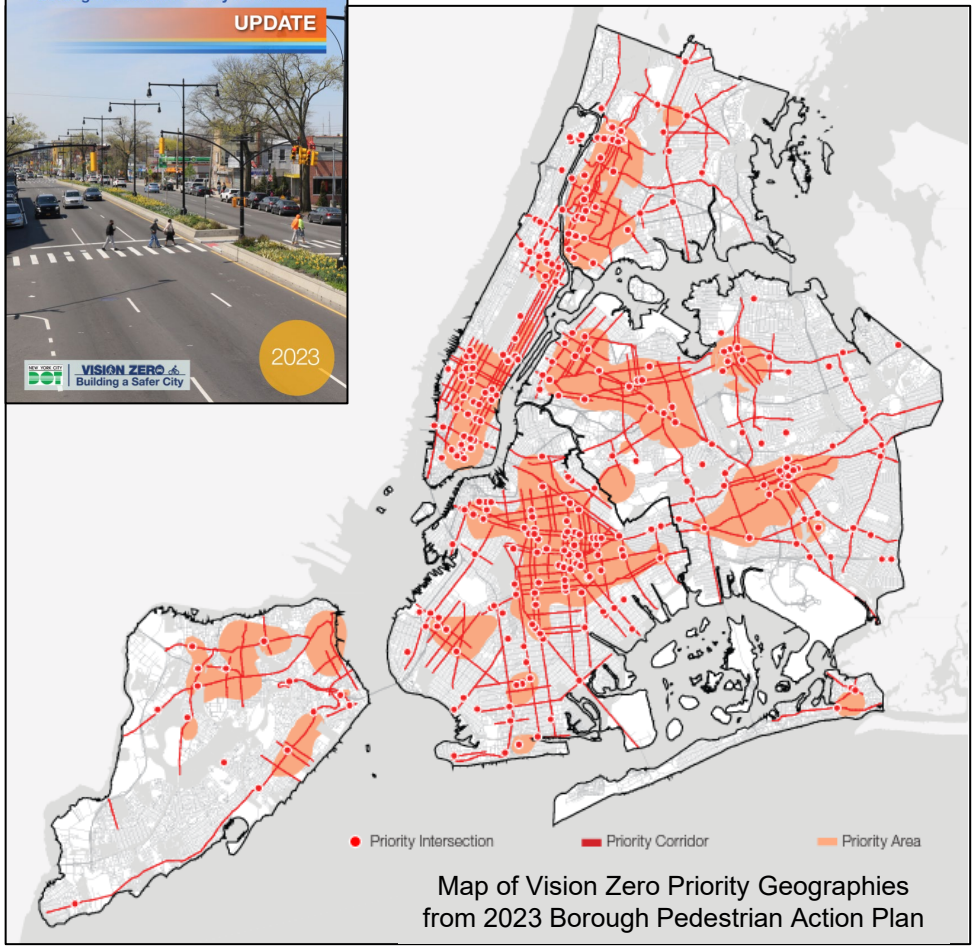
- Vision Zero started in 2014 under then mayor de Blasio with the idea that deaths and serious injuries in traffic crashes are preventable and can be eliminated
- Vision Zero focuses on achieving this goal through the 3 Es: Engineering, Enforcement, and Education – and legislative initiatives
- Focus on protecting our most vulnerable road users – children, seniors, pedestrians, cyclists, e-mobility users
- Street redesigns to reduce speeding, crashes, and injuries are a key component of the citywide Vision Zero effort

Vision Zero Complete Street design, Queens Boulevard and Woodhaven Boulevard, QN

Vision Zero

Priority Geographies

- DOT's Borough Pedestrian Safety Action Plans (released 2015, updated 2019, 2023) guide agency's Vision Zero work
- Data from 2017-2021, analyzed pedestrian fatalities and severe injuries (KSI)
- Priority Corridors are the site of 50% of pedestrian KSI citywide
- Priority Intersections account for 15% of pedestrian KSI citywide
- Provides focus for agency-wide Engineering, Education, and Enforcement actions and entry for many of DOT's safety projects



Map of Vision Zero Priority Geographies from 2023 Borough Pedestrian Action Plan

Vision Zero Trends

1

Fatality Trends Under Vision Zero

	Pre-Vision Zero (2009 – 2013 average)	Most Recent 5-year period (2018 – 2022 average)	Change
Total Fatalities	272	239	-14.8%
Pedestrian Fatalities	158	116	-26.6%
Pedestrian Fatalities (at Vision Zero Priority Geographies)	98	62	-36.6%

Implementation Trends Under Vision Zero

	Pre-Vision Zero 5-year (2009 – 2013) average	Most recent 5-year period (2018 – 2022) average	Change
Total Safety Projects	50	114	+128%
Bike Lane Mileage	26	55	+112%
Leading Pedestrian Intervals (LPIs)	17	720	+4,235%
Automated Enforcement Notice of Violations	0	3.54 Million	N/A

Safety Treatments

2

Street Improvement Projects

- Street Improvement Projects (SIPs) are installed using in-house resources like markings, signage, vertical elements, signal work, and concrete construction

- In the last 5 years, DOT SIPs have reclaimed 200,000 to 550,000 square feet of roadway space from vehicles and repurposed it for pedestrians and added over 250 miles of bike lanes

- NYC DOT SIPs have constantly shown reductions in injuries for roadway users

Vision Zero SIP installed on Cropsey Ave installed a bus boarding island, pedestrian space, turn bans, and markings upgrades

Great Streets Capital Projects

- Long term program involving total street reconstruction, more permanent design and beautification features on Vision Zero Priority Corridors across NYC
- Projects are sponsored by DOT while design and construction management is overseen by the Department of Design and Construction
- City has provided NYC DOT with nearly $900 million as part of Great Streets Projects
- Examples of Great Street Corridors include Atlantic Ave, BK, Queens Blvd, QN, Grand Concourse, BX, and 4th Ave, BK

Atlantic Ave Great Streets Capital Project

Treatment Evaluation

- DOT study released in 2022 evaluated over 1,000 Street Improvement Projects to determine the relative effectiveness of treatments in reducing injuries

- Results show that our toolkit of safety improvements has substantial safety benefits citywide

Treatment	Injury Change	KSI Change	Ped Injury Change	Ped KSI Change
Road Diet	↓ 17%	↓ 30%	↓ 13%	↓ 32%
Conventional Bike Lane	↑ 1%	↓ 15%	↓ 1%	↓ 16%
Protected Bike Lane	↓ 15%	↓ 18%	↓ 18%	↓ 29%
Pedestrian Island	↓ 15%	↓ 36%	↓ 10%	↓ 34%
Curb and Sidewalk Expansion	↓ 10%	↓ 34%	↓ 17%	↓ 45%
Turn Calming	↓ 0%	↓ 16%	↓ 18%	↓ 33%
Leading Pedestrian Interval (LPI)	↓ 14%	↓ 30%	↓ 18%	↓ 34%

Safety Projects

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Morris Park Ave, BX

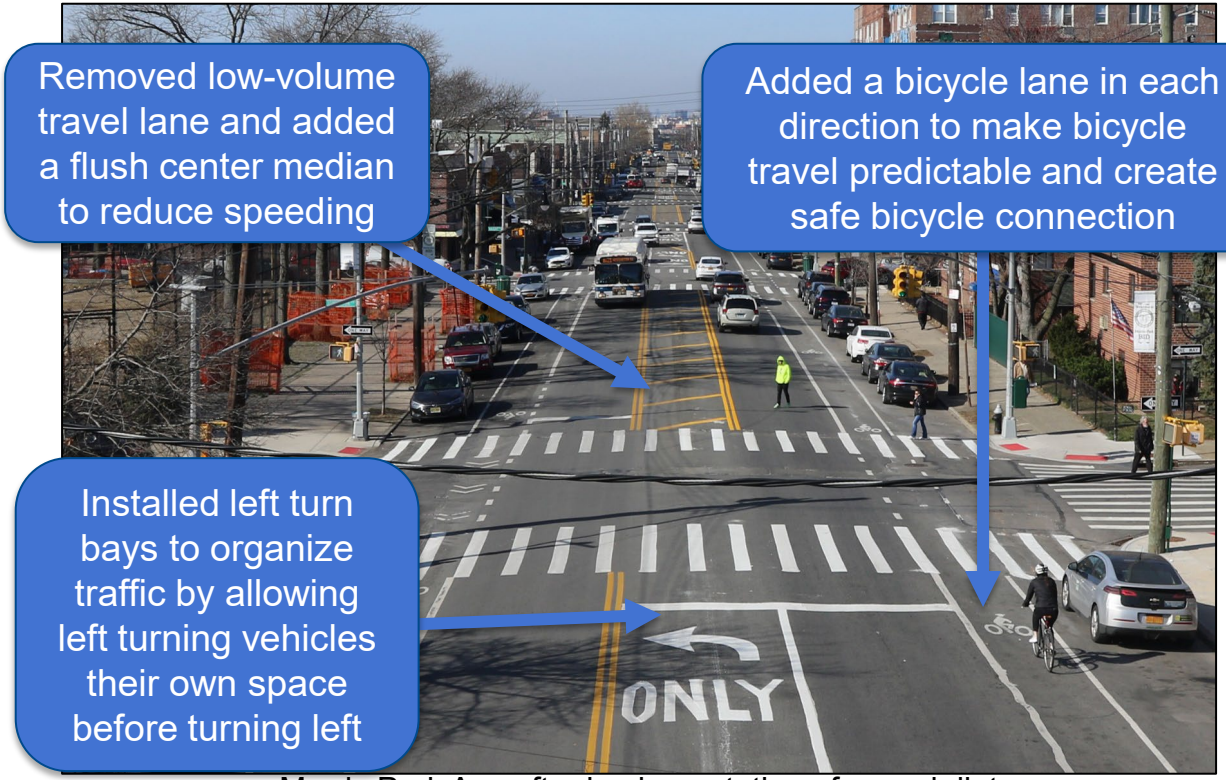
- Morris Park Ave was a Vision Zero Priority Corridor with 7.6 Pedestrian KSI per mile, 367 total injuries, and 24 total KSI over

- The 1.7-mile-long corridor had two travel lanes in each direction, a high rate of drivers failing to yield to pedestrians, and suffered from frequent off-peak speeding

Morris Park Ave is a 60’ wide roadway that had two travel lanes and parking in each direction

Morris Park Ave, BX

- Road diet involved removing a travel lane in each direction and replacing it with a center-running flush median and standard bike lanes
- There has been a 20% decrease in injuries in the three-years post implementation



Morris Park Ave after implementation of a road diet

White Plains Road, BX

- White Plains Road is a Vision Zero Priority Corridor with 411 injuries and 29 KSI over five-year study period
- Corridor is a busy commercial stretch under an elevated subway line with columns in the roadway
- Design resulted in unorganized roadway and parking, unpredictable movements, low visibility, and inaccessible bus stops,

White Plains Road before, inaccessible bus stop required riders to board in the roadway

White Plains Road, BX

- Project installed a curbside Protected Bike Lane, the first one in NYC under an elevated train, as well as constructed bus boarding islands, and organized the roadway

- In the first full year after implementation, injuries decreased by 15% and DOT has adjusted design to further improve operations

Gerritsen Ave, BK

- Gerritsen Ave was a wide, high-crash corridor with numerous fatalities due to low traffic volumes and high rates of speeding
- The street was 60’ wide with one lane in each direction and a wide center median
- The street dead-ends at the water and parallels the west edge of Marine Park

Gerritsen Ave is a 60’ wide road that had wide center medians, infrequent signals, and high rates of speeding

Gerritsen Ave, BK

- Project involved installation of a two-way Protected Bike Lane, new traffic signals, bus boarding islands, and pedestrian refuge islands
- There have been no fatalities since implementation, and injuries have decreased by 43%

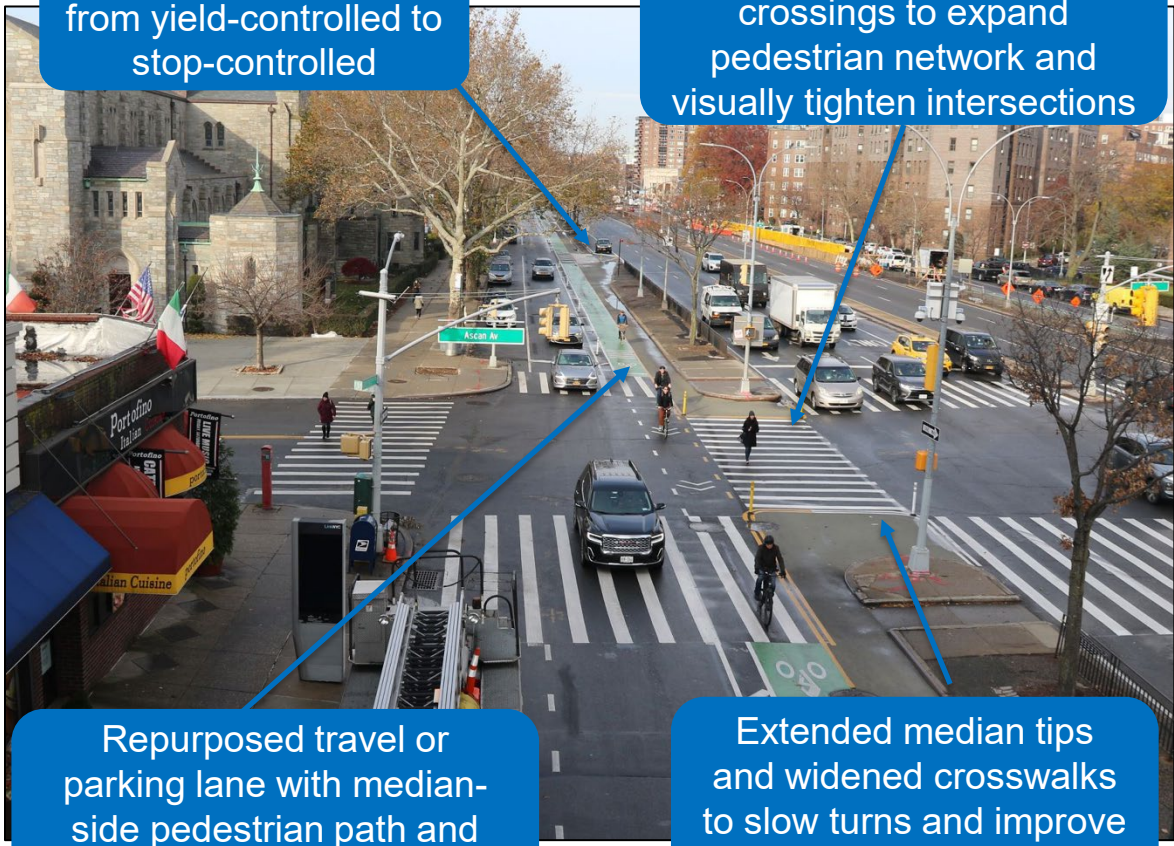
Queens Blvd, QN

- Queens Boulevard was a Vision Zero Priority Corridor with 146 KSI over the 5 miles between Roosevelt Ave and Union Turnpike famously referred to as the Boulevard of Death
- The corridor is separated into a main road and a service road, with slip lanes in between, large intersections, and speeding drivers
- Queens Blvd is a NYC Great Street location, this project laid the groundwork for a future Capital project, and has been installed in phases starting in 2015

Queens Boulevard, before. The wide street and open design resulted in high speeds and numerous injuries

Queens Blvd, QN

- Project involved removing a second travel lane or parking lane and installing a Protected Bike Lane and pedestrian path, redesigned and closed slip lanes, installation of median tips, and new and wider crosswalks
- In the most recent five-year period, severe injuries and fatalities on the corridor have decreased by 56% and bike ridership has more than tripled



Amsterdam Ave, MN

- Amsterdam Ave was a wide street with high rates of speeding and multiple fatalities
- Eight local schools are located on or adjacent to the corridor
- High pedestrian volumes due to Highbridge Park, buses, and schools

Amsterdam Ave, before. Wide roadway with faded markings encouraged speding near numerous schools

Amsterdam Ave, MN

- Project involved adding a two-way Protected Bike Lane, bus-boarding and pedestrian refuge islands, curb extensions, and speed cushions

- Project has reduced speeds, increased bike ridership, and created a safer street

Vision Zero Moving Forward

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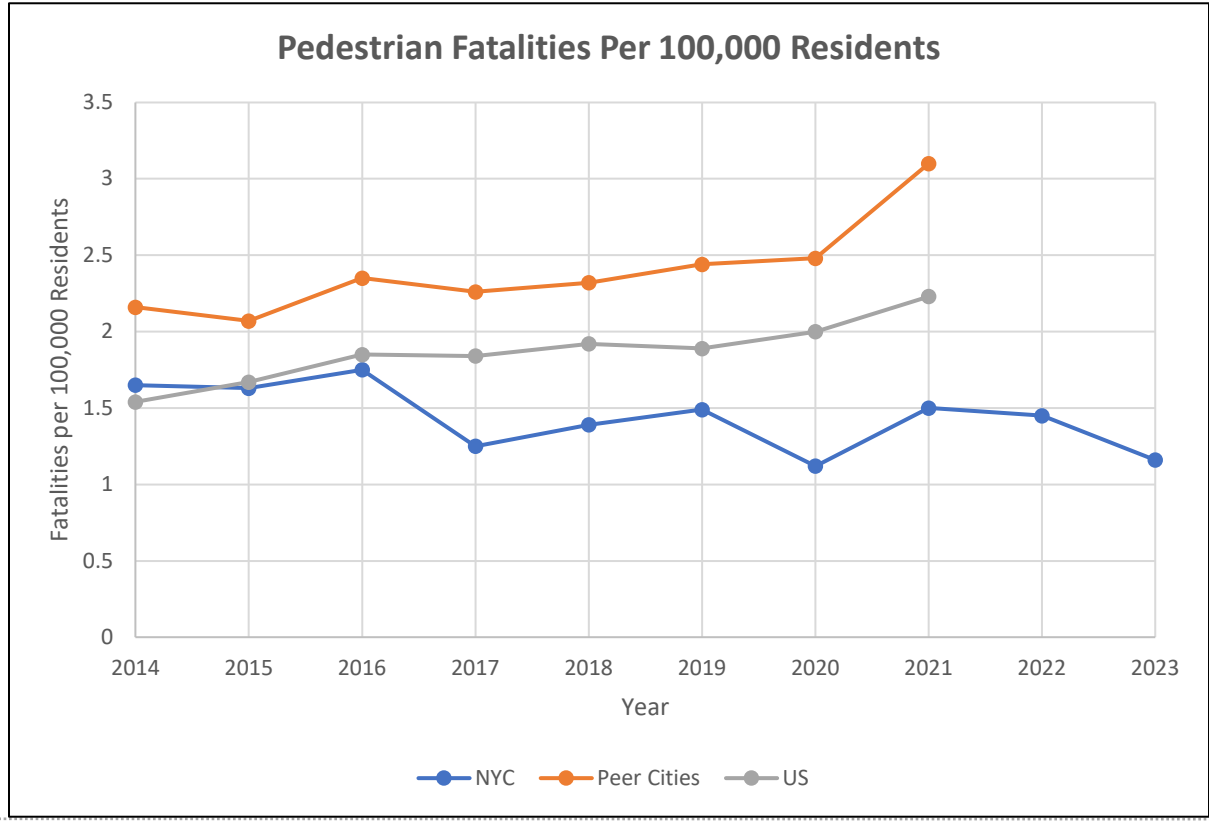
Pedestrian Fatality Trends

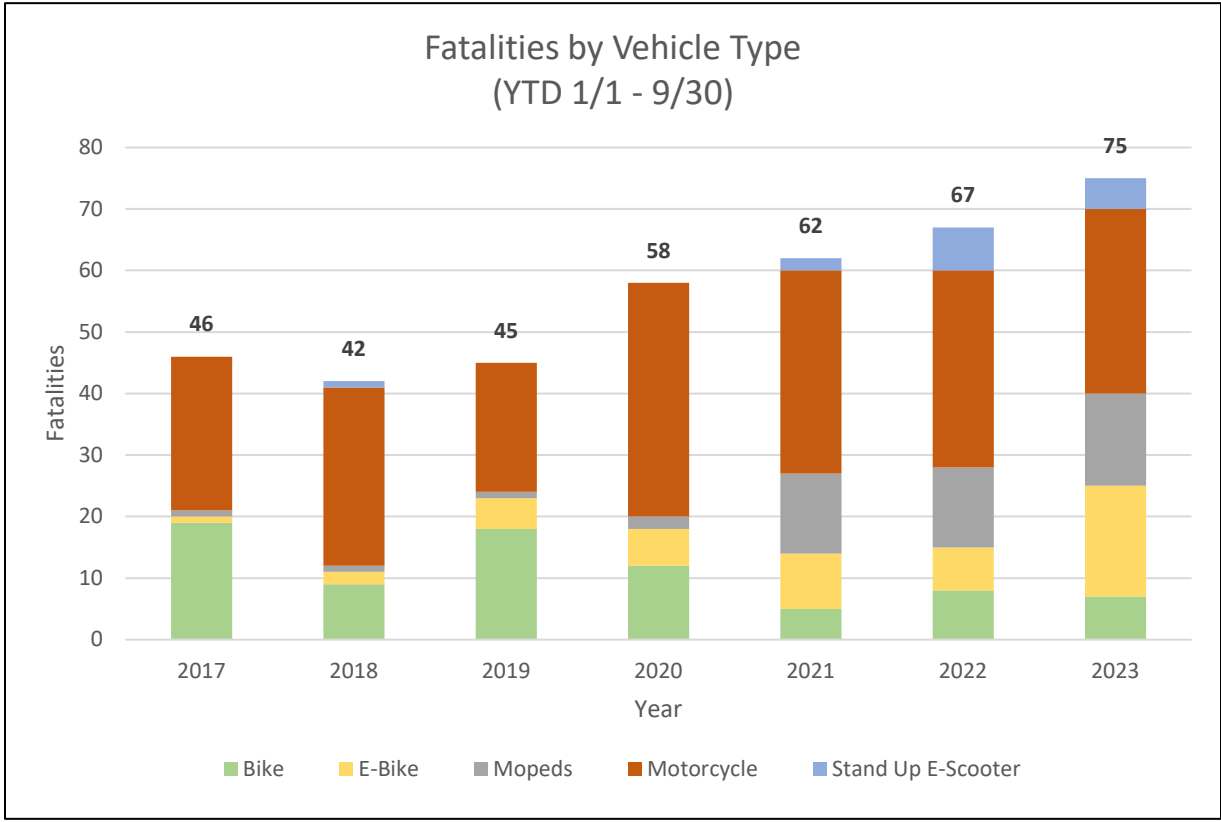
- Despite rising pedestrian fatality rates nationwide and across peer cities in the US, 2023 is on track to have the fewest pedestrian fatalities in New York City's history except for 2020 (as of 10/31/23)

- Pedestrian fatalities have decreased from 52% of NYC fatalities in 2014 to 36% as of 10/31/2023



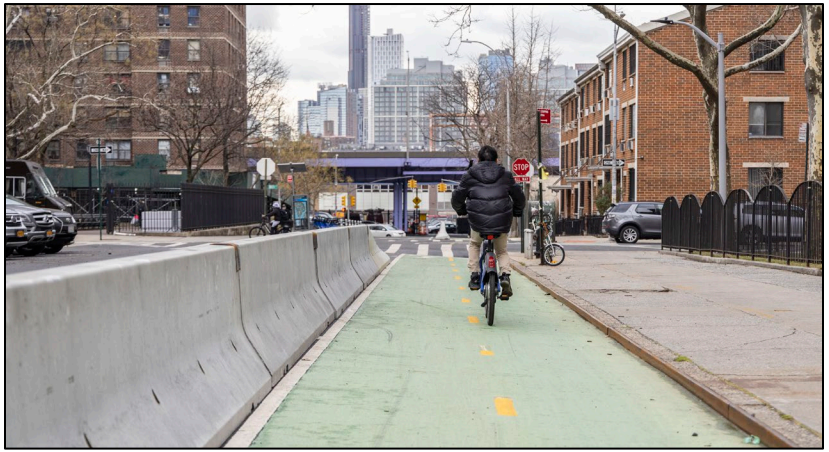
Micro-mobility Trends

- In recent years, micromobility devices (e-bikes, scooters, mopeds, etc.) have proliferated on New York City's streets, both legal and illegal
- Fatalities across motorized two-wheelers are up approximately 150% since 2017, while traditional bike fatalities have decreased
- Motorized two-wheelers now account for 38% of citywide fatalities (up from 16%) in 2014



Moving Forward

- In response to changing trends on New York City's Streets, NYC DOT is implementing new treatments to improve roadway safety
- NYC DOT is expanding the width of Protected Bike Lanes and providing additional physical protection for them
- NYC DOT is studying daylighting to determine how to most effectively design, utilize, and prioritize this treatment
- NYC DOT is working with NYPD and other city agencies on education and enforcement efforts as motorized two-wheelers gain popularity



Above: Extra Wide Protected Bike Lane, 9th Ave, MN
Below: Jersey-Barrier Protected Bike Lane, Clinton St, MN

Thank You!

VISION ZERO
Building a Safer City

NEW YORK CITY DOT

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Pedestrian Fatalities

Year	NYC Pedestrian Fatalities per 100,000 residents	Peer Cities Pedestrian Fatalities per 100,000 residents	US Pedestrian Fatalities per 100,000 residents
2014	1.65	2.16	1.54
2015	1.63	2.07	1.67
2016	1.75	2.35	1.85
2017	1.25	2.26	1.84
2018	1.39	2.32	1.92
2019	1.49	2.44	1.89
2020	1.12	2.48	2
2021	1.5	3.1	2.23
2022	1.45	N/A	N/A
2023	1.16	N/A	N/A

Peer Cities include all US cities with populations over 500,000 and either 5,000 residents per square mile, or 20% non-car commuting: Baltimore, Boston, Chicago, Detroit, Los Angeles, Milwaukee, Portland, San Francisco, San Jose, Seattle, and Washington D.C. Data as of 10/31/2023

Micro-Mobility Fatalities

Year	Bike	E-Bike	Mopeds	Motorcycle	Stand Up E-Scooter	Total
2017	19	1	1	25	0	**46**
2018	9	2	1	29	1	**42**
2019	18	5	1	21	0	**45**
2020	12	6	2	38	0	**58**
2021	5	9	13	33	2	**62**
2022	8	7	13	32	7	**67**
2023	7	18	15	30	5	**75**

Data as of 9/30/2023