New York City Driver Behavior Study

The Rise in Reckless Driving 2020–2023

NEW YORK CITY DOT

VISION ZERO
Building a Safer City

This confluence of factors halted years of progress made through Vision Zero. Through the initiative's three Es—engineering, enforcement, and education—New York City had brought traffic fatalities to their lowest point in recorded history in 2018.

Thankfully, as New Yorkers return to a post-pandemic normal, the city has reharnessed the power of Vision Zero's three Es—and traffic deaths are trending back down to near historic lows.

NYPD launched an aggressive campaign that targeted "ghost" cars, while also ramping up more targeted enforcement on high-crash corridors. At DOT, we successfully advocated for the state's expansion of our automated enforcement programs — targeting the deadliest crash hours with new 24/7 speed-camera enforcement while also quadrupling the number of intersections where our red-light cameras will be deployed

We have also revamped our education efforts to target emerging micromobility options, like e-bikes and mopeds that surged in popularity during the pandemic. And we've been building out our engineering toolbox to deliver first-of-their-kind safe, people-oriented streets, to all corners of New York City—from Manhattan's Broadway to 34th Avenue in Queens.

At the same time, as this report makes clear, we have assembled a clearer picture of the pool of serial recidivists who make our streets more dangerous. We now know drivers who receive more than 20 speed camera violations in a single year are five times as likely to be involved in a crash causing death or severe injuries.

We are dedicated to utilizing the three pillars of Vision Zero to keep trends moving in the right direction. But with this pattern emerging, it is clear that moving forward, we will need new tools to hold accountable the few, most reckless drivers in the city who endanger New Yorkers every time they get behind the wheel. One idea NYC DOT has supported would require that a speed limiter, called an Intelligent Speed Assist (ISA) device, be placed on the vehicles of extreme recidivists for a period of time.

We look forward to advocating for these measures and working to build a safer, more just city together with all New Yorkers.

Ydanis Rodriguez
Commissioner

VISION ZERO

Executive Summary

Goals of this Report

To satisfy the City Council mandate pursuant to Local Law 36 of 2020: a study of driving behavior to identify specific behaviors indicating a pattern of dangerous driving associated with traffic crashes, injuries, and fatalities, convictions for traffic-related violations or crimes, driving activity of vehicles registered to people with suspended or revoked licenses, and changes in patterns of dangerous driving.

To explain the root causes of the rise in traffic fatalities and dangerous driver behavior that emerged following the onset of the COVID-19 pandemic and civil unrest of 2020.

Synopsis

In 2020 and 2021, New York City, like the United States as a whole, saw a sharp increase in road deaths, contrary to trends in the rest of the world. This spike occurred despite a decline in driving activity during the COVID-19 pandemic.

During this period, the country also experienced an extraordinary combination of a once-in-century pandemic, mass lockdowns, unemployment, social isolation, and widespread civil unrest.

These events were accompanied by both a rise in anti-social behavior and by a decline in police enforcement & legal system bottlenecks (both against crime and traffic violations) that could have mitigated some of these forces.

The sharp drop in traffic and criminal enforcement, combined with Covid-induced shutdowns of court offices expanded the pool of serial recidivists. These repeat dangerous drivers now account for a significantly greater share of traffic fatalities than before 2020.

Years of Vision Zero safety gains, driven by widespread design changes and safety-focused enforcement, were swamped by these developments, making it harder to enforce traffic laws, which deters dangerous driving and holds offenders accountable.

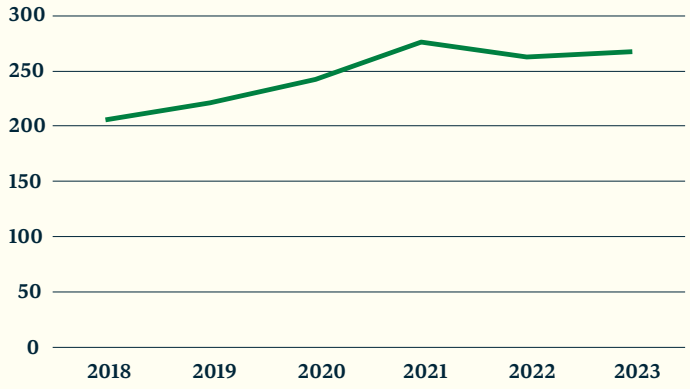
To return to pre-2020 fatality rates, the City must continue its focus on a culture of accountability and find additional ways to remove the most dangerous drivers from our streets. The City will also continue to bolster safer driver behavior via groundbreaking and data-driven street designs and remains committed to delivering broad-based culture change through tested, hard-hitting safety education.

Injury and Fatality Trends

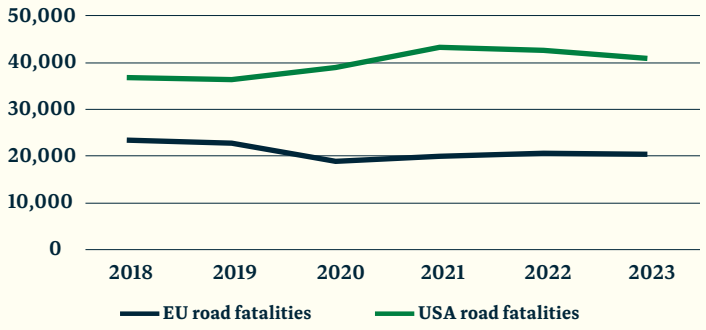
In 2020 and 2021, New York City, like the United States as a whole, saw a sharp increase in road deaths, contrary to trends in the rest of the world. This spike occurred despite a decline in driving activity during the COVID-19 pandemic.

- Between the periods of 2019 and 2021 in New York City, traffic fatalities rose 25% from 221 to 276
- The United States' road fatalities jumped 19% from 36,355 in 2019 to 43,230 in 2021.
- However, road deaths in the European Union declined 12% from 22,756 in 2019 to 19,912 in 2021.
- Between 2018–19 and 2020–21, fatalities on motorized two wheelers (defined as e-bikes, scooters, mopeds, offroaders and motorcycles) rose 95% and fatalities on motor vehicles rose 64%
- In 2018–19, there were 49 single-vehicle fatalities either on or off highways. In 2020–21, there were 96, a 96% increase.

New York City Road Fatalities

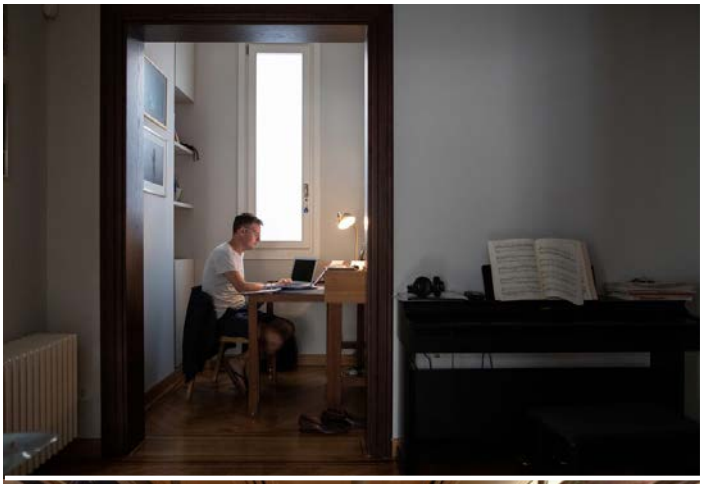


Road Fatalities in the European Union vs. United States



Potential Causes for Trends

During this period, the country experienced a once-in-century pandemic, mass lockdowns, rising unemployment, social isolation , and widespread civil unrest.

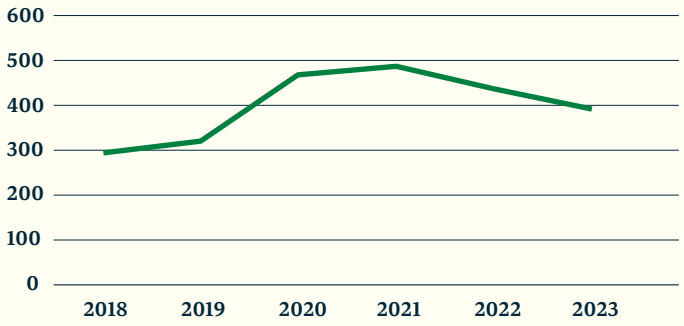


Rise in Anti-Social Behavior

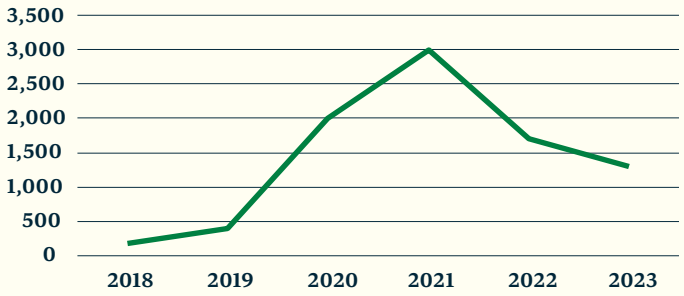
These events were accompanied by both a rise in anti-social behavior and by a decline in police enforcement and legal system bottlenecks (both against crime and traffic violations) that could have mitigated some of these forces.

- New York saw a 56% increase in homicides. Between the period of 2018–19 and 2020–21, homicides rose from 614 to 956.
- During the pandemic period, local indicators for domestic violence rose.
  - » Visits to the NYC HOPE website rose by 265% during the pandemic, and calls to their domestic violence hotline rose by 17%.
- 311 complaints for drag racing skyrocketed from 392 in 2019 to nearly 3,000 in 2021, dropping back down to 1,296 in 2023.
- Ghost plates: In 2020–2021, 61% of speed camera events were rejected due to fraud. In 2018–19, only 33% of events were rejected.

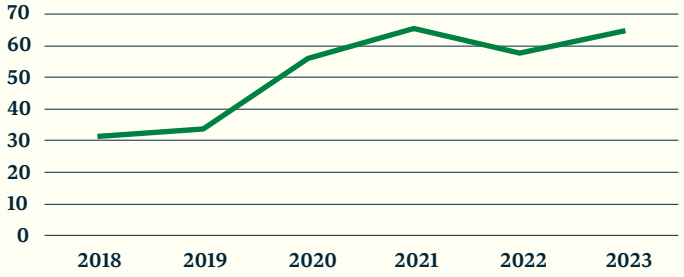
Reported Homicides Recorded by NYPD



Drag Racing Incidents Reported to 311



Percentage of Speed Camera Rejects Caused by Plate Fraud

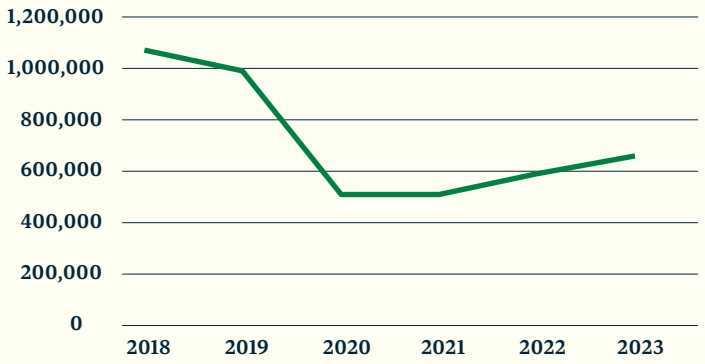


Decline of Traffic Enforcement

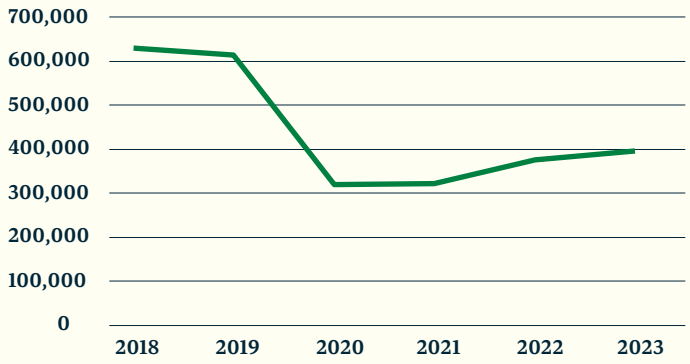
In early 2020, the coronavirus pandemic and the resulting lockdowns caused operational constraints and manpower shortages at the police department.

- From July 2020 onward, budget cuts led to the complete elimination of dedicated Vision Zero and Traffic Safety overtime funding within the NYPD, particularly hindering the Transportation Bureau. This coincided with a mass exodus of experienced personnel—losses which were not recuperated. The reduction in personnel was significant among NYPD officers tasked with traffic enforcement:
  - » Highway Unit: ~15% decrease
  - » Citywide Traffic Task Force: ~70% decrease
  - » Precinct Traffic Safety Officers: ~40% decrease
- The frequency of NYPD enforcement halved between 2019 and 2020, with the number of violations issued dropping from just under 1 million to 510,000, climbing back to around 660,000 in 2023.
- Enforcement of safety-focused Vision Zero violations also fell by nearly half in 2020 and has not yet returned to pre-pandemic levels.
- Between 2018 and 2020, the NYPD arrested around 1,100-1,200 hit-and-run drivers annually, declining to around 750 per year post-2020, even though the total number of collisions remained constant.

NYPD Traffic Enforcement



Vision Zero Violations* Issued



*includes speeding, failure to yield, cell phone usage, red light, improper turn, and disobey sign

Bottlenecks in the Legal System and Courts

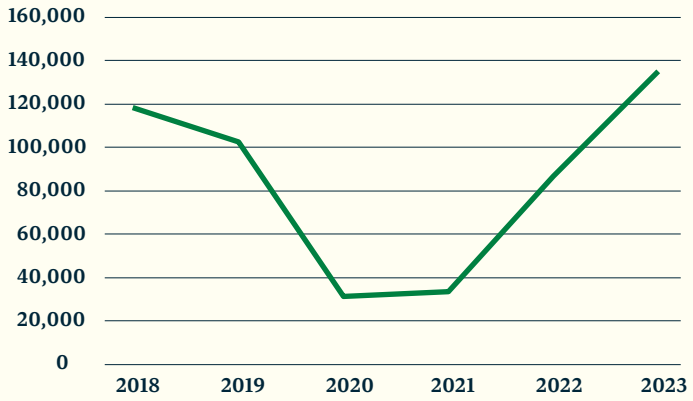
Scofflaw vehicle seizure activity by the Sheriff's office plummeted during the pandemic.

- Vehicles seized by the sheriff dropped from 118,000 seized in 2019 to around 30,000 in 2020 and 2021. The Sheriff's Office was the primary NYC enforcer of quarantines, curfews, dining restrictions, and other Covid 19 regulations
- The Scofflaw program targets the vehicles of those with substantial outstanding fines associated with their license plate.

Overall, court activity ground to a standstill.

- Between March and December of 2020, state and federal courts in the city held only nine jury trials as opposed to 800 the previous year.
- In NYC local courts between 2019 and 2021, dismissals rose from 44% to 69%, guilty pleas fell from 45% to 21%, and prosecutors in local courts were only able to meet discovery obligations on time 13% of the time.
  - » In 2019, New York significantly revised its discovery standards, requiring prosecutors to hand over more evidence in a shorter timeframe. This resulted in more cases being dismissed.

Vehicles Seized by Sheriff's Office Scofflaw Program



Injury and Fatality Trends

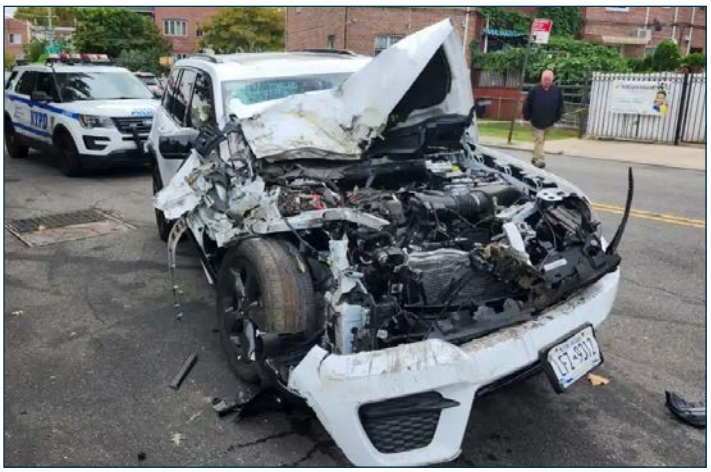
Rise in Dangerous Driving Behavior

After 2020, many metrics of dangerous and reckless driving behavior rose in New York City. These metrics have remained elevated overall, indicating that dangerous behaviors have become more commonplace on the road.

Fatalities caused by certain reckless behaviors (hit-and-runs, speeding, disobeying traffic signals, and driving while intoxicated) rose 42% between 2018–19 and 2020–21, but fatalities not associated with those reckless behaviors fell 7% overall in the same time period.

- Fatalities involving a hit-and-run grew 59% from 70 in 2018–19 to 111 in 2020–21
- Fatalities involving speeding grew 90% from 78 in 2018–19 to 148 in 2020–21
- Fatalities involving disobeying the traffic signal grew 69% from 32 in 2018–19 to 54 in 2020–21
- Fatalities involving driving while intoxicated grew 56% from 58 in 2018–19 to 84 in 2020–21

The increase in fatalities associated with these reckless behaviors made up the entirety of excess road deaths seen between 2018–19 and 2020–21. Otherwise, fatalities would have fallen.

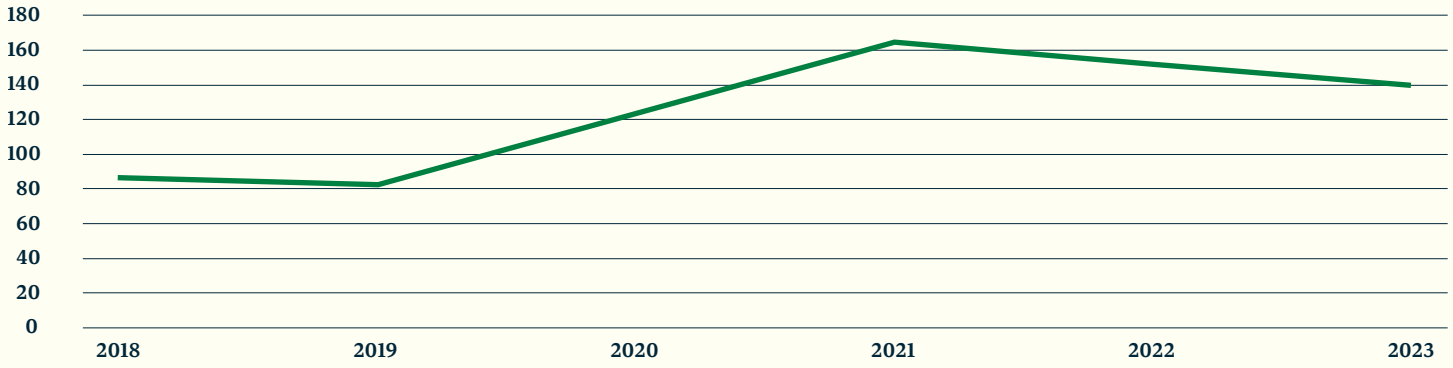


Major Violators

In particular, the sharp drop in police enforcement and the Covid-induced shutdown of the courts and legal system expanded the pool of serial recidivists. These committed dangerous drivers are now involved in more fatalities.

- "Major Violators" are drivers with one or more of the following violations:
  - Hit-and-run
  - No valid license (includes suspended licenses, does not include permit)
  - Three or more prior traffic convictions
  - Prior suspension or DWI
- Fatalities involving Major Violators grew 70% between 2018–19 and 2020–21.
- Fatalities involving drivers either without a license or valid permit doubled from 69 in 2018–19 to 138 in 2020–2021.

Fatalities Associated with Major Violators

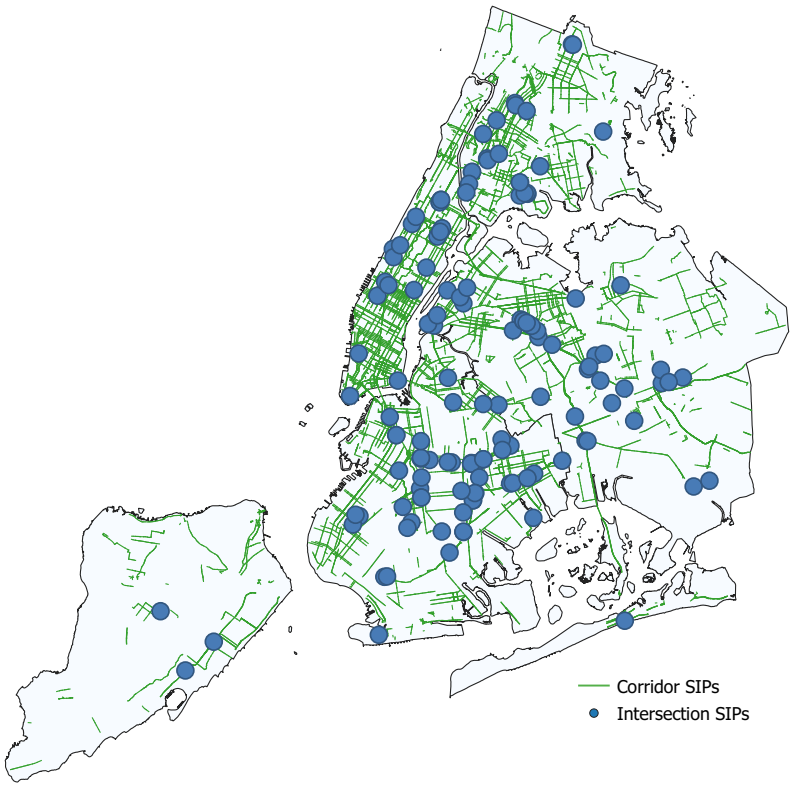


Vision Zero Safety Gains

Years of Vision Zero safety gains, driven by widespread design changes and safety-focused enforcement, were swamped by these developments, making it harder to enforce traffic laws, which deter dangerous driving and hold offenders accountable.

- From 2013–2018 fatalities declined steadily, especially among pedestrians. Overall, citywide fatalities fell from 299 in 2013 to 206 in 2018.
- During this time period, NYC took unprecedented steps to reorient city streets for safety, including:
  - » lowering the speed limit to 25MPH
  - » implementing over 650 safety engineering projects citywide
  - » implementing measures to slow the speed of turning vehicles at over 400 intersections
  - » adding pedestrian head starts (LPIs) at approximately 30% of all signalized intersections
- These are just a few examples of the proven countermeasures that have been widely deployed since 2014, shown to be effective in reducing traffic injury.
- At the same time, NYPD increased enforcement of Vision Zero Violations ~30% from 2013–2019
- In the end, street design is only guidance that can be overwhelmed by dangerous driver behavior and that behavior increased, in New York City and the USA, as traffic enforcement and other legal controls declined.

Street Improvement Projects (SIPs), 2014–Present



Other Findings

Top Four Traffic Ticket Types

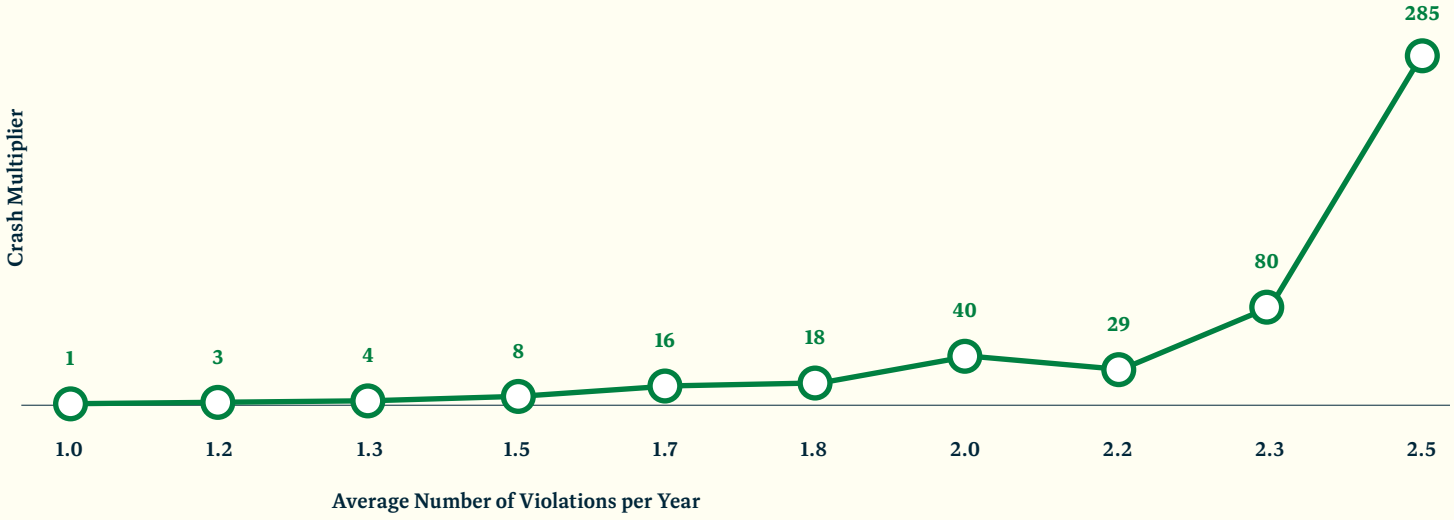
DOT found a highly predictive relationship between specific traffic violations and increased risk of fatality and severe injury. Because drivers with these violations have a higher risk of being involved in a fatality or injury crash, the reduction of police enforcement meant that fewer dangerous drivers received penalties (points on their license etc.) that would have removed their ability to drive legally, hence keeping more potentially dangerous drivers on the road.

The four most important ticket types which estimate the likelihood of a severe injury or fatality crash are:

- Disobey stop sign or traffic signal
- Improper turn
- Speeding
- Cell phone usage

A driver with two of these violations per year has a 40 times higher risk of a KSI crash than someone with one violation per year.

Relative KSI Crash Risk by Number of Violations (Top Four Tickets)



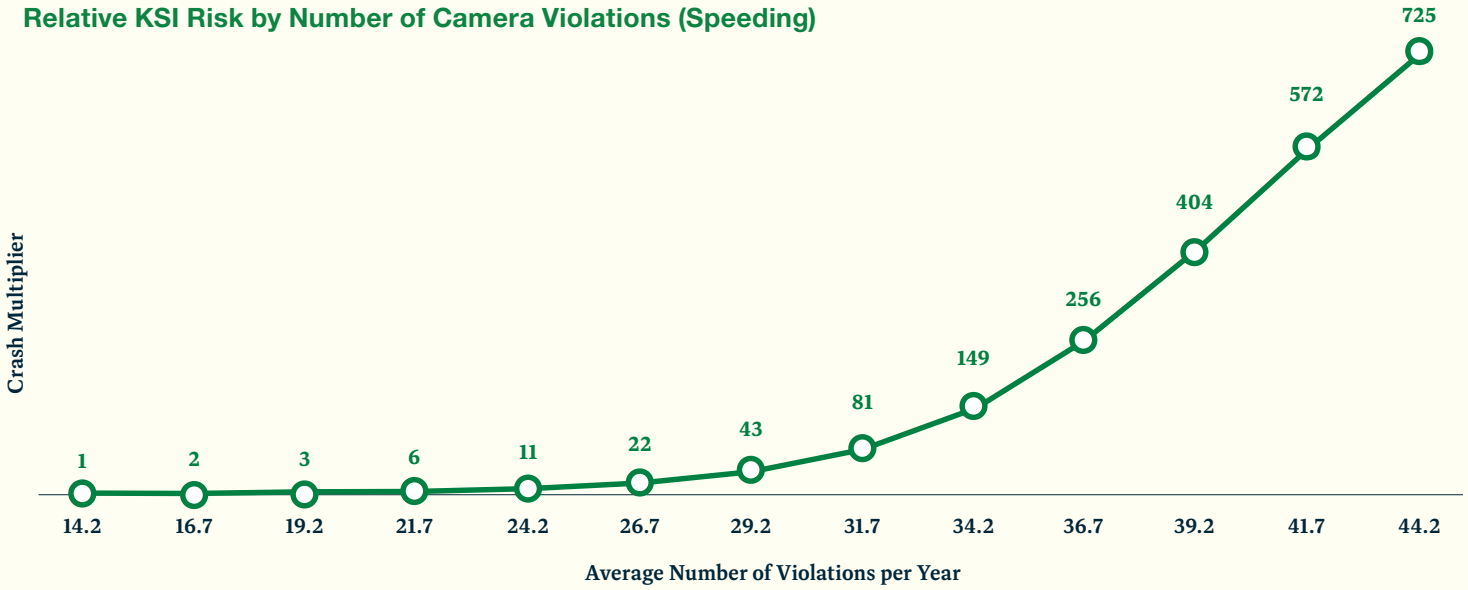
Automated Enforcement

Red light camera violations have a much stronger predictive relationship with serious injury or fatality crashes than speed camera violations.

- Speed camera violations also have a predictive relationship with KSI crashes, but to a lesser degree than red light cameras.
- A driver with an average of 3.3 red light violations per year is 5 times more at risk of a KSI crash than a driver with 2.5 per year.
- At about three violations per year for red light camera violations and approximately 18 violations per year for speed camera violations, the level of risk for causing a KSI crash increases rapidly.

Relative KSI Risk by Number of Camera Violations (Red Light)

Relative KSI Risk by Number of Camera Violations (Speeding)



Hit-and-Run and Reckless Driving (2017–2022)

Hit-and-run crashes are one of the most common fatal crash types in New York City and a disproportionate number are concentrated in the Bronx

- 19% of all crash-related fatalities in New York City were a result of hit-and-run crashes
- The Bronx shows the highest per capita rates for hit-and-run crashes at all severity levels, with fatality and KSI rates more than 30% above citywide rates per 100,000 people.
- Between 2018–2023, police were able to positively identify the driver who had left the scene in just over half of all fatal hit-and-run crashes through the study period, holding steady at 56% in 2018–19, 53% in 2020–21, and 54% in 2022–23.

Reckless Driving Tickets are most commonly issued in Staten Island and are least common in Brooklyn

- Likely due to its higher overall rate of driving, Staten Island's rate of traffic tickets per capita is about twice as high as the city average. However, Staten Islanders receive reckless driving traffic tickets at an even higher rate than overall tickets, almost triple the violations of the citywide rate (per 100,000 people).
- Brooklyn shows the lowest rate of reckless driving at more than 80% below Staten Island's rate.
- Over 76% of NYPD-issued reckless driving tickets are issued to males.

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Report Background

Report Background

Under Local Law 36 of 2020 passed by the New York City Council, the Dangerous Vehicles Abatement Program (DVAP) was established as a pilot program to target the registered owners of vehicles with excessive camera violations. These owners would either be required to take a safe driving course, or the city would begin proceedings to seize their vehicle. In total, 885 out of 1,605 owners of these problem vehicles took the course, but procedural and legal difficulties made it hard for authorities to seize vehicles to compel participation (in total, only 12 vehicles were seized).

Local Law 36 also directed the DOT to write a study of driving behavior to identify specific behaviors indicating a pattern of dangerous driving associated with traffic crashes, injuries, and fatalities, including:

- An analysis of hit-and-run police reports
- Convictions for traffic-related violations or crimes, including convictions pursuant to section 19-190 and section 1212 of the vehicle and traffic law
- MV104AN crash reports attributing dangerous conduct to the driver
- Driving activity of vehicles registered to people with suspended or revoked licenses
- Changes in patterns of dangerous driving
- Any additional interventions undertaken by the department or another city agency designed to address dangerous driving.

Methodology

There were three research methods employed in this report:

A summary statistical analysis of fatalities, injuries, and traffic violations from 2018–2023, comparing three two-year long periods.

- 2018–2019 (pre-pandemic/social unrest)
- 2020–2021 (peak pandemic/social unrest)
- 2022–2023 (return to stability).

A descriptive analysis of patterns of dangerous behavior crash types:

- defined as crashes stemming from certain dangerous behaviors—specifically hit-and-runs, U-turns, single vehicle collisions (on and off highways), and failure to yield to pedestrians.

A predictive model analysis to determine if historic driver traffic infraction accumulation showed increased risk associated with likeliness for the driver to be involved in injury crashes. Predictive modeling is a statistical technique to estimate future behavior from historical information by identifying common variables that occur across instances of a crash outcome. Two predictive models were built to identify commonalities between traffic infractions as they related to crash outcomes, the logistic regression models were developed to compare:

- Non-crash drivers to drivers involved in injury crashes.
- Non-crash drivers to drivers involved in crashes resulting in severe injury or fatalities (KSI).

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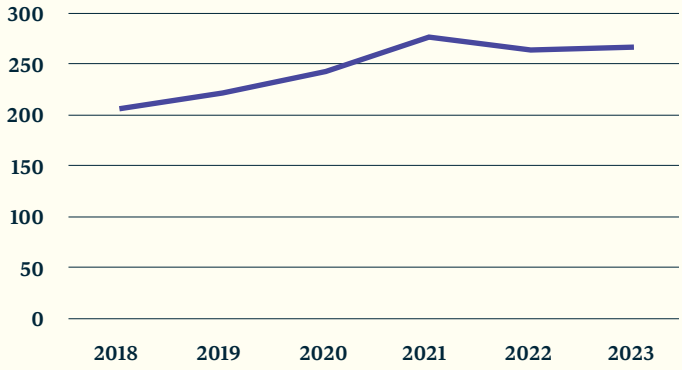
Part 1
Injury and Fatality Trends

Part 1A
New York City Injury and Fatality Trends

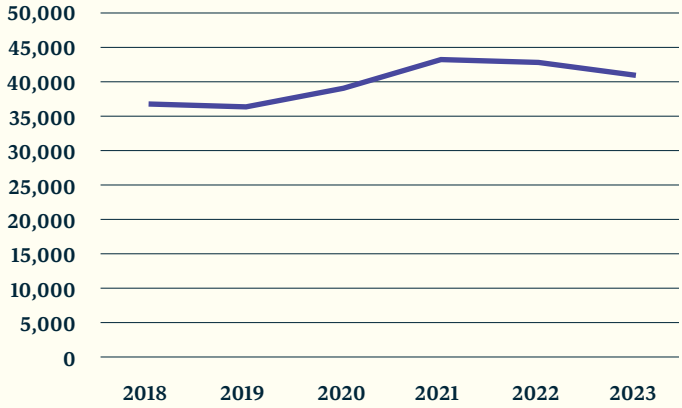
NYC Injury and Fatality Trends

In 2020 and 2021, New York City, like the United States as a whole, saw a sharp increase in road deaths, contrary to the rest of the world. This spike occurred despite a decline in driving activity during the COVID-19 pandemic.

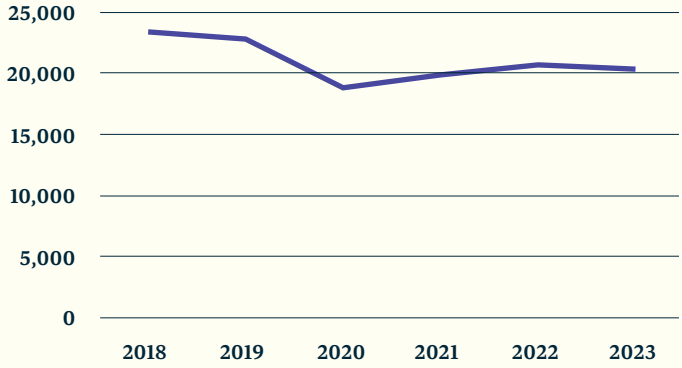
New York City Road Fatalities



United States Road Fatalities



European Union Road Fatalities



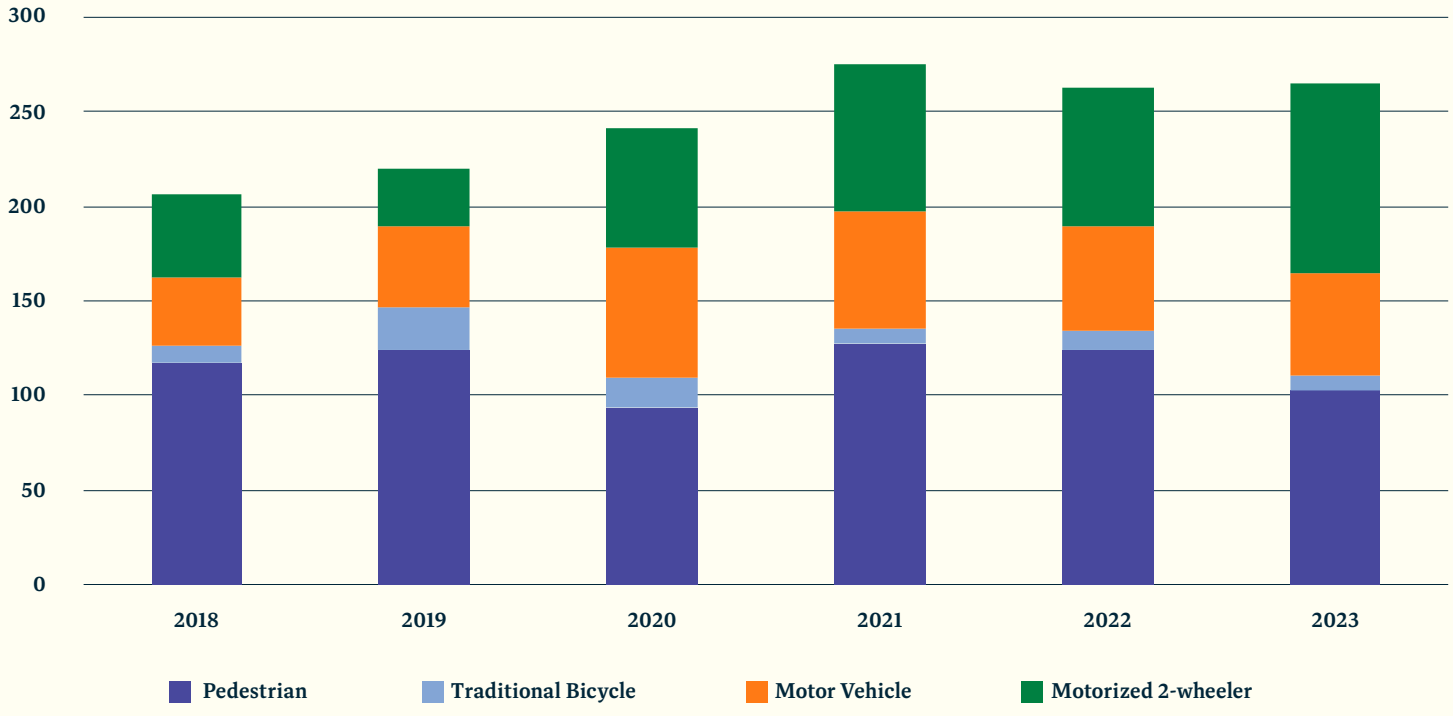
Vehicle Types

The sharp spike in fatalities in New York City after 2020 was driven by an increase in deaths among occupants of motor vehicles and riders of motorized two-wheelers.

- Between the periods of 2018-19 and 2020-21, traffic fatalities rose 21% from 426 to 517
- In that same period, deaths of riders of motorized two wheelers rose 95% and fatalities among occupants of motor vehicles rose 64%
- A new class of electric motorized two-wheelers (including e-bikes, e-mopeds, and others) were quickly adopted by the app-based delivery and commuter cyclist market. The uptick in deaths of riders of these devices contributed to the overall rise in traffic fatalities that began in 2020 and remained elevated in the years that followed.
- In 2018-19, there were 49 fatalities caused by "single-vehicle" collision.* In 2020-21, there were 96, a 96% increase. The increase in fatalities during that period (47) makes up over half the increase in overall fatalities (91) between 2018-19 and 2020-21.
  - » Pedestrian fatalities fell 8% and cyclist fatalities fell 28% during the same period.

* Single vehicle collisions only involve one vehicle and do not involve any other victims (e.g. pedestrians, cyclists)

Fatalities by Mode



Demographics

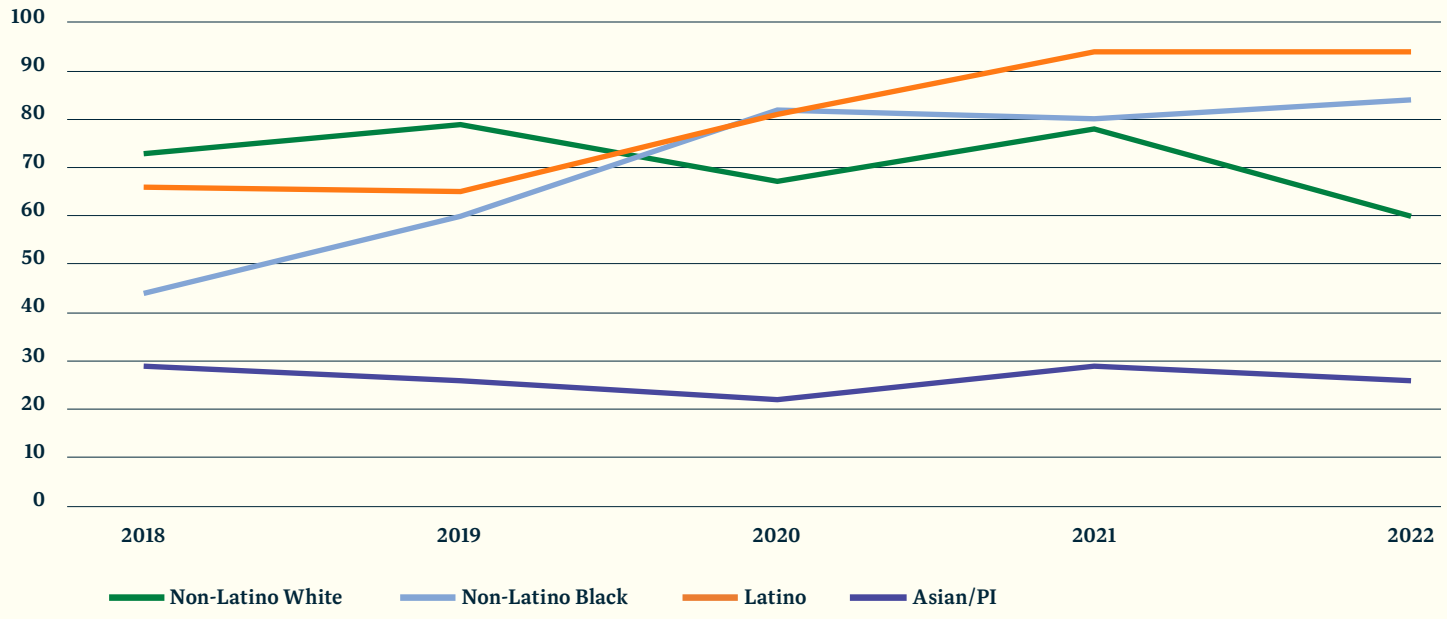
Comparing 2018–19 to 2020–2021, there was a rise in traffic deaths only amongst Black and Hispanic New Yorkers. There was a decline in traffic fatalities involving White and Asian New Yorkers.

- Black (+56%), 104 fatalities to 162 fatalities
- Hispanic (+34%), 131 to 175 fatalities
- Asian (-7%), 55 to 51 fatalities
- White (-5%), 152 to 145 fatalities

92% of the rise in fatalities in 2020-2021 involved men:

- Between 2018–19 and 2020–21, fatalities among men grew 29% from 291 to 375 while fatalities among women grew only 5% from 135 to 142

Annual Fatalities by Race*



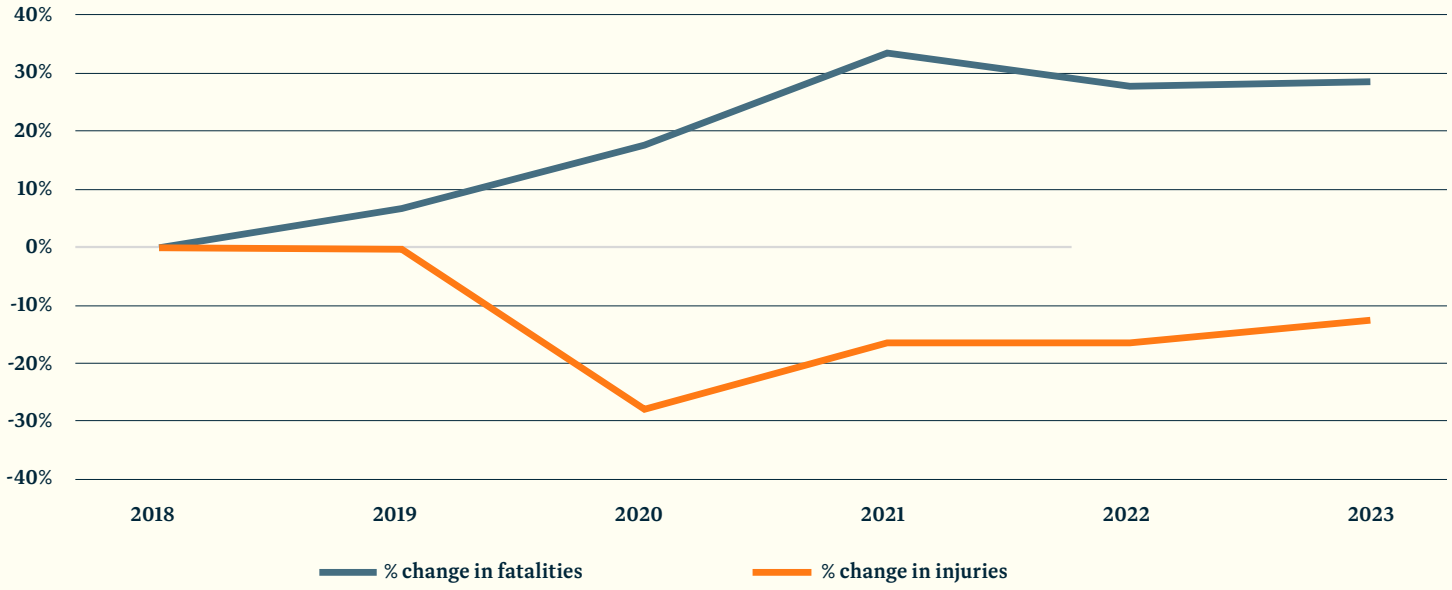
*Sourced from NYC Department of Health data

Motor Vehicles

Among motor vehicles, overall injuries declined while fatalities rose in 2020.

- As injuries fell due to decreased traffic volumes, fatalities could be expected to fall as well. Instead, fatalities rose.
- In 2020, fatalities rose 10% over the previous year, compared to injuries falling 26%.
- Relative to 2018, fatalities in 2023 were elevated by 29% while injuries were down by 13%.

Motor Vehicle Injuries and Fatalities, Indexed to 2018



Reckless Behavior

After 2020, many metrics of dangerous and reckless driving behavior rose in New York City. These metrics remained elevated in subsequent years, indicating that dangerous behaviors became more commonplace on the road.

Fatalities caused by certain reckless behaviors (hit-and-runs, speeding, disobeying traffic signals, and driving while intoxicated) rose 63% between 2018–19 and 2020–21, but fatalities not associated with those reckless behaviors fell 7% overall in the same time period.

- Fatalities involving a hit-and-run grew 58%, from 70 in 2018-19 to 111 in 2020–21
- Fatalities involving speeding grew 90%, from 78 in 2018-19 to 148 in 2020–21
- Fatalities involving disobeying the traffic signal grew 69%, from 32 in 2018–19 to 54 in 2020–21
- Fatalities involving driving while intoxicated grew 45%, from 58 in 2018–19 to 84 in 2020–21

The increase in fatalities associated with these reckless behaviors made up the entirety of excess road deaths seen between 2018–19 and 2020–21. Otherwise, fatalities would have fallen.

Severe injuries overall fell by 6% in 2020–21 compared to 2018–19. In contrast:

- Severe injuries where a hit-and-run was noted grew 38%, from 722 in 2018–19 to 994 in 2020–21
- Severe injuries where speeding was noted grew 30%, from 653 in 2018–19 to 851 in 2020–21
- Severe injuries where disobeying the signal was noted grew 59%, from 291 in 2018–19 to 463 in 2020–21

Major Violators

Fatalities rose involving drivers with substantial histories of traffic violations and heightened disregard for traffic law.

- "Major Violators" are drivers with one or more of the following violations:
  - » Hit-and-run
  - » No valid license (includes suspended licenses, does not include permit)
  - » Three or more prior traffic convictions
  - » Prior suspension or DWI
- Fatalities involving Major Violators grew 70% between 2018–19 and 2020–21.
- The quantity of fatal crashes involving drivers either without a license or valid permit doubled from 69 in 2018–19 to 138 in 2020–21.

Part 1B
National Injury and Fatality Trends

National Injury and Fatality Trends

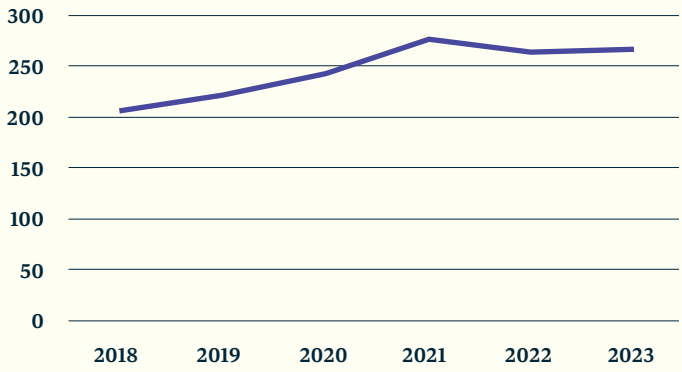
Across the US in 2020–2021, traffic fatalities rose sharply and have not returned to pre-2020 levels, contrary to the EU and other wealthy nations.

- Between the periods of 2018–19 and 2020–21 in New York City, traffic fatalities rose 21% from 426 to 517
- The United States' road fatalities jumped 19% from 36,355 in 2019 to 43,230 in 2021.
- However, road deaths in the European Union declined 12.5% from 22,756 in 2019 to 19,912 in 2021.

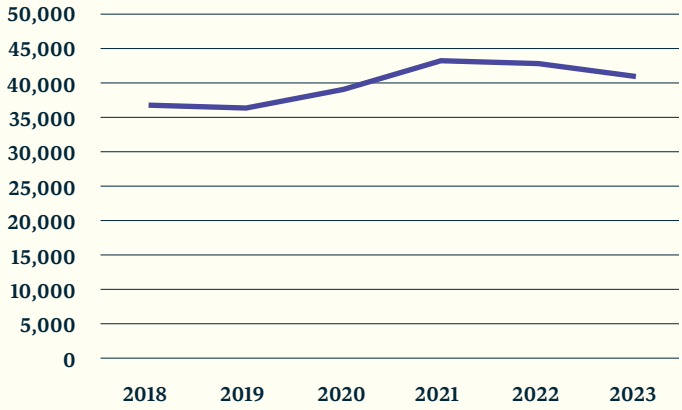
Vehicle miles travelled declined during this period due to the pandemic, so a drop in fatalities should have been expected. This is what happened in most of the industrialized world, but not in the U.S.

- The fatality rate per 100 million vehicle miles traveled in the United States was 1.11 in 2019, jumping to 1.38 in 2021, then falling to 1.26 in 2023.
- The overall vehicle miles per capita traveled by Americans declined slightly (180.7 in 2019 to 160.2 in 2020) meaning that the average vehicle trip became more dangerous per mile as fatalities rose.
- Between 2017–19 and 2022, the UK experienced a 3.7% decline in fatalities and nations in the Organization of Economic Cooperation and Development (OECD), (excluding the USA) experienced a fall of 6.4%.
  - » Between 2017 and 2022, the EU experienced a 7.4% decline in fatalities per billion km (4.845 to 4.485)

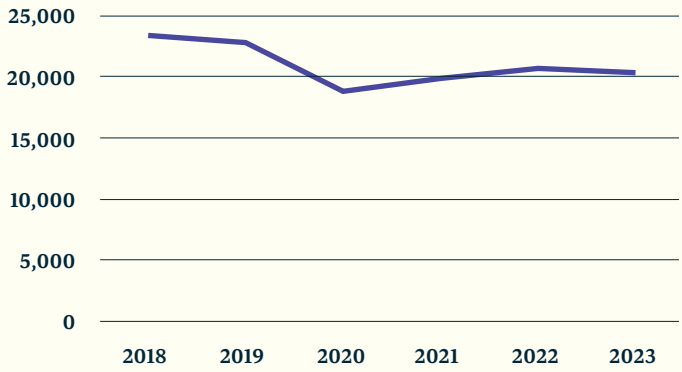
New York City Road Fatalities



United States Road Fatalities



European Union Road Fatalities



Reckless Behavior and Demographics

Nationally, the rise in fatalities was accompanied by a rise in risky behavior, including drunk driving and seatbelt non-compliance.

- A study found that 49% of Americans said people in their area drove more dangerously than before the pandemic.
- In 2022, 13,524 people were killed in drunk driving crashes, a 33% increase from 2019. Drunk driving deaths accounted for 32% of all fatalities in 2022, the highest portion since at least 2008.
- Vehicle occupants ejected from the vehicle during a crash (usually prevented by seatbelts) spiked 150% in 2020 and remain elevated.

In addition, the rise in traffic fatalities during 2020 & 2021 occurred exclusively amongst Black and Latino Americans. White and Asian fatalities declined. In the U.S. from 2017 to 2021, traffic fatalities for:

- Hispanics/Latinos rose 28% (1,569 additional deaths)
- Blacks/African Americans rose 32% (1,789 additional deaths)
- Asians fell 6% (31 fewer deaths)
- Whites fell 5% (1,252 fewer deaths)

VISION ZERO

Part 2
Potential Causes for Trends

Part 2A
Potential Causes for Trends: Enforcement (New York City)

Enforcement (National)

In 2020, the United States experienced an extraordinary combination of a once-in-century pandemic, mass lockdowns, unemployment, social isolation, and widespread civil unrest.

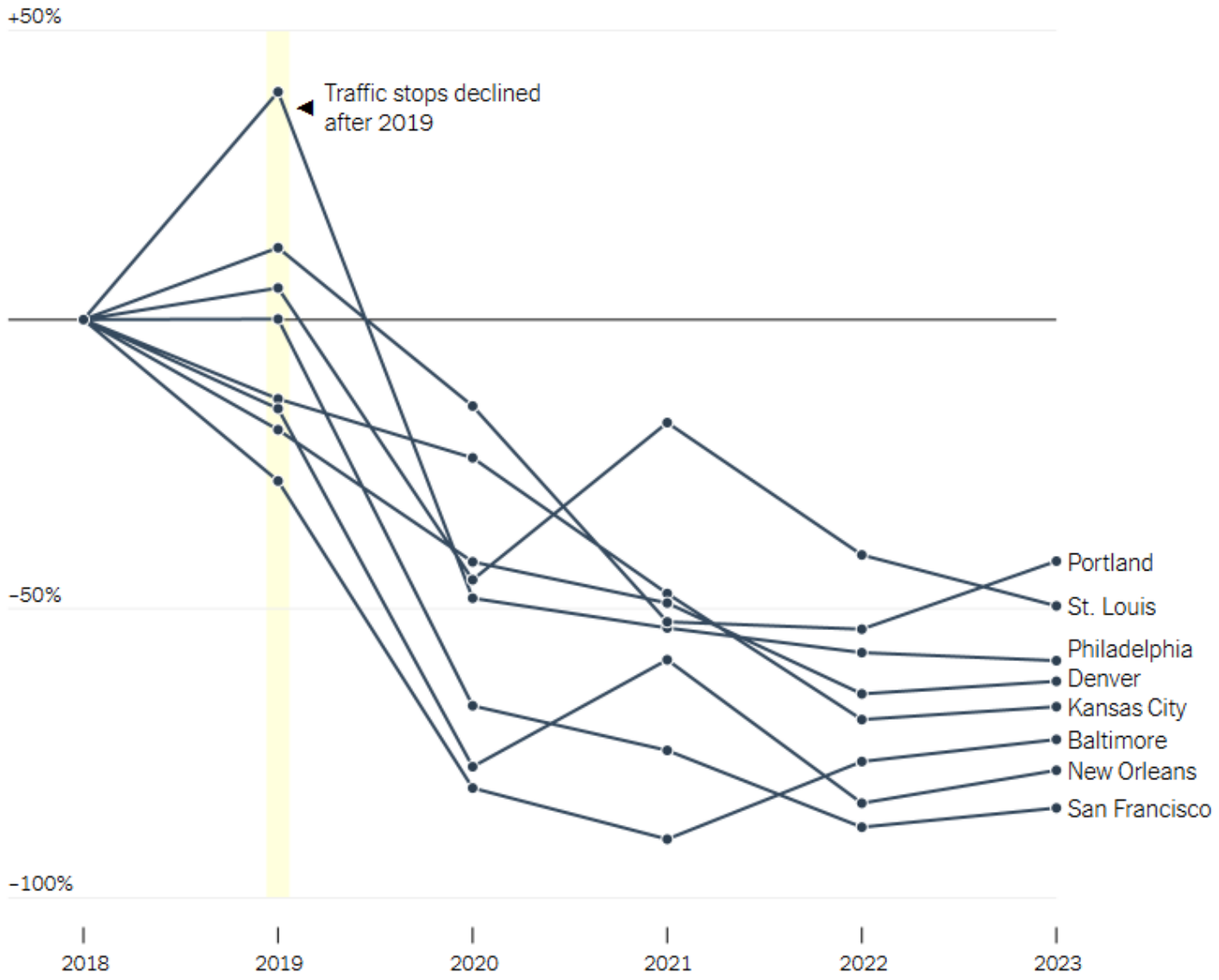
These events were accompanied by both a rise in anti-social behavior and by a decline in police enforcement and legal system bottlenecks (both against crime and traffic violations) that could have mitigated some of these forces.

Traffic Enforcement

As fatalities rose, there was a drop in traffic enforcement by police departments in many cities nationally.

- The New York Times tracked traffic stops, citations, and traffic fatality rates in major cities nationwide and found that there was a near uniform reduction in traffic citations issued and a rise in traffic fatalities.
- A survey of 1,000 police officers nationwide found that 60% said they were less likely to make traffic stops in 2021 relative to 2019.

Change in Traffic Stop Volume in Major Cities



Data covers the municipal police department in each city.

Graph: *The New York Times*

Efficacy of Enforcement

There is solid evidence that police traffic enforcement is effective at reducing bad behaviors, though the topic is understudied.

- A national research synthesis from the federal DOT found that for all targeted "bad behaviors" by drivers (aggressive driving, drinking and driving, seat belt avoidance), police enforcement campaigns like mandatory checkpoints were effective at reducing prohibited behaviors.
- When New Jersey state police reduced traffic tickets by 61% in 2023, road fatalities rose 14% statewide.

Targeting enforcement to priority corridors has shown success in NYC

- Beginning in February 2024, the NYPD designated nine priority corridors to be patrolled by the traffic enforcement teams of some 30 precincts, from 8 AM to 8 PM, seven days a week to enforce Vision Zero and other moving violations.
- Moving violations issued between 2023 and 2024 go from 46,000 to 86,000 (85% increase).
- Vision Zero Violations*: 27,000 to 55,000 (100% increase)
- Injuries: 2,832 to 2,336 (17.5% decline)
- Citywide injuries remained flat: 53,094 to 53,156 (.1% increase)

*Vision Zero violations are targeted at specific dangerous driver behaviors that put people at risk (for example: speeding, failure to yield, signal violations, improper turns, disobeying stop signage/traffic signal, texting while driving)

Part 2B
Potential Causes for Trends: Enforcement and Legal System (New York City)

Enforcement and Legal System (New York City)

In the period following 2020, the legal system was hampered at all points of procedure from frontline police enforcement to the prosecution and resolution of cases.

In particular, the sharp drop in police enforcement and the Covid-induced shutdown of the courts and legal system likely expanded the pool of serial recidivists on the road. These committed dangerous drivers are now involved in more fatalities.

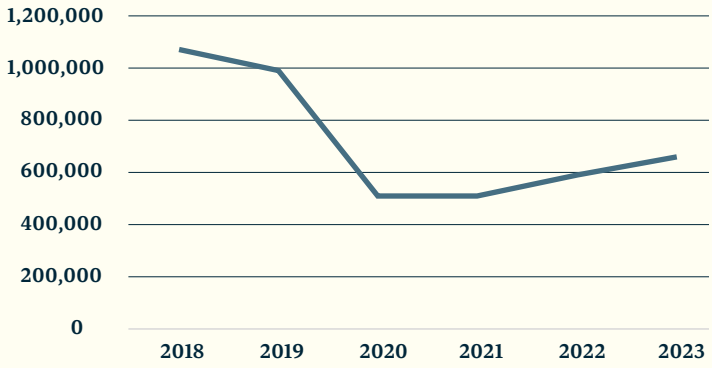
Years of Vision Zero safety gains, driven by widespread design changes and safety-focused enforcement, were swamped by these developments, making it harder to enforce traffic laws and discourage dangerous behaviors.

NYPD Enforcement

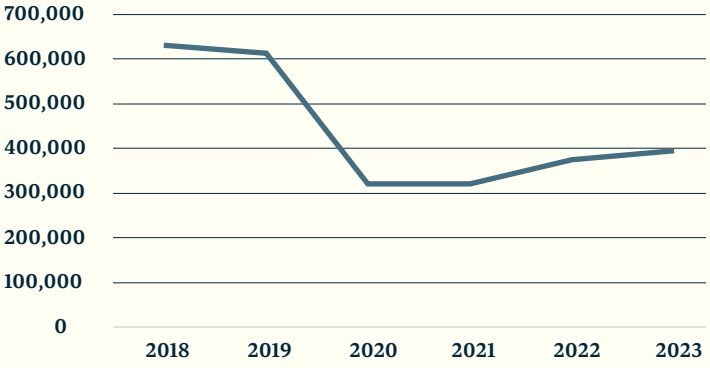
There was a broad decline in both overall and Vision Zero-focused traffic enforcement by NYPD officers. As a consequence, fewer violations are being issued even for serious crashes like hit-and-runs—furthermore, they are less likely to result in convictions.

- The frequency of NYPD enforcement halved between 2019 and 2020, with the number of violations issued dropping from just under a million to 510,000, slowly climbing back to around 650,000 in 2023.
- Overall enforcement of safety-focused VZ violations fell by nearly half during the pandemic and has recovered to only ~2/3 the pre-pandemic rate.
- Hit-and-run arrest rates are typically very low, but in 2018–19 the NYPD arrested an average of 1,156 hit-and-run drivers per year, declining to an average of 750 in 2020–21 despite the total number of hit-and-run collisions remaining constant.
- However, NYPD were able to positively identify the driver who had left the scene in just over half of all fatal hit-and-run crashes through the study period, holding steady at 56% in 2018–19, 53% in 2020–21, and 54% in 2022–23.

NYPD Traffic Enforcement



Vision Zero Violations Issued*

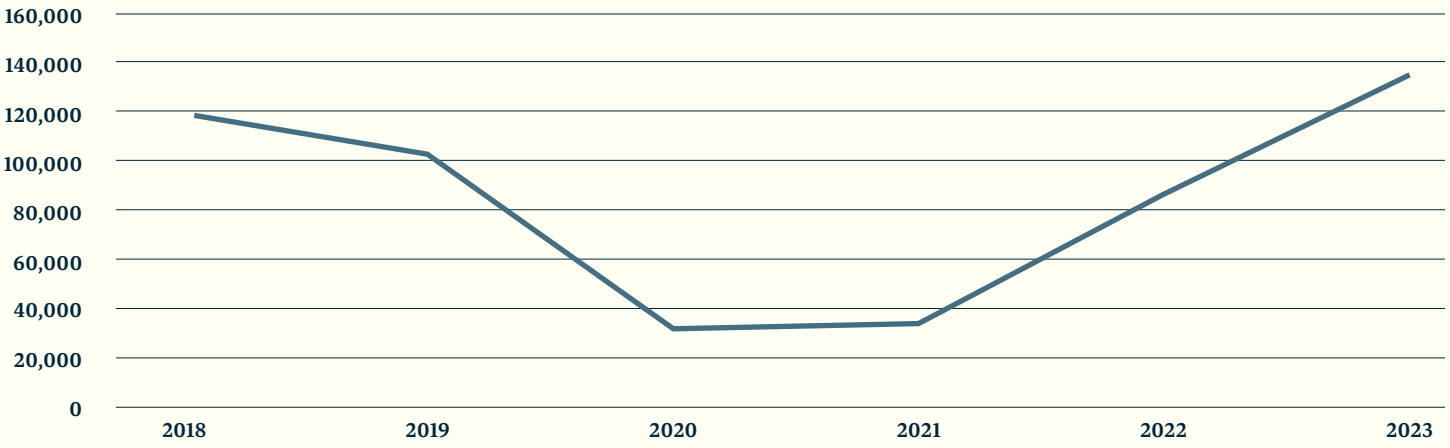


Sheriff's Office Vehicle Seizures

Vehicle seizures undertaken by the Sheriff's Office dropped by two thirds overall, keeping more dangerous scofflaw drivers on the road.

- Vehicle enforcement activity plummeted during the pandemic, with vehicles seized dropping from 118,000 in 2019 to around 30,000 in 2020 and 2021.

Vehicles Seized by Sheriff's Office Scofflaw Program



NYPD Resources

The NYPD experienced unprecedented circumstances and cutbacks.

- In 2020, early COVID-19 lockdowns led to reduced traffic volume and limited enforcement from March to June.
- From July 2020 onward, budget cuts led to the complete elimination of dedicated Vision Zero and Traffic Safety overtime funding within the NYPD, particularly hindering the Transportation Bureau.
- Simultaneously, a departure of NYPD personnel—particularly experienced experts from specialized enforcement—further diminished enforcement capacity.
- Prior to 2020, approximately 6% of NYPD officers (from Traffic Safety Teams, Citywide Traffic Task Force (CTTF), and Highway Units) were responsible for 60–65% of all summonses and over 95% of speeding enforcement. This ratio has remained consistent, but overall enforcement has decreased due to substantial personnel reductions:
  - Highway Unit: ~14% decrease
  - CTTF: ~72% decrease
  - Precinct Traffic Safety Officers (TSO): ~40% decrease
- The result: enforcement was halved between 2019 and 2020 due to operational constraints, including reduced staffing levels.
- In 2021, although there was a slight uptick in enforcement activity, staffing in enforcement units continued to decline. Traffic Safety Officers were increasingly reassigned to patrol and crime suppression duties, further hampering traffic operations

Judicial System

Policy changes in the broader judicial system caused court cases and conviction rates for dangerous driving to fall in tandem as local District Attorneys adopted blanket policies targeted at forgiving "non-violent" traffic offenses. As a result, the amount of court cases and conviction rates for crimes like suspended licenses and traffic infractions dropped. Drivers who otherwise would have faced sanctions for dangerous behavior instead saw no consequences.

- Court activity on all levels of government hit a standstill due to the pandemic. Between March and December of 2020, state and federal courts in the city held only nine jury trials as opposed to around 800 the previous year.
  - » The number of jury trial commencements in the New York State Unified Court System—responsible for both state and local trials—dropped from 3,272 in 2019 to 664 during 2020.
- The number of trials commencing in 2024 was 1,520, less than half the 2019 total.
- The New York State Division of Criminal Justice Services recorded the sentencing rate for New York City overall falling from 53% in 2019 to 32% in 2023.
- Some boroughs had an even more stark decline. In Brooklyn, the conviction rate fell from 41% to 23% in the same period.

A combination of leadership decisions and policy changes reduced the consequences for committing traffic crimes.

- The Manhattan District Attorney's Day One Memo, issued in 2022, states the office "will not prosecute certain low-level misdemeanors... unless they are part of a larger felony case. These include driving with one or two license suspensions (and), noncriminal offenses such as traffic infractions."
- On the state level, the 2021 New York Drivers' License Suspension Reform Act ended the practice of suspending the licenses of those unable to pay traffic fines.
- The Manhattan DA's data website as of August 2024 displayed that the conviction rate for Vehicle and Traffic Law (VTL) crimes had fallen from about 70% to about 30% after the pandemic and current administration. The Bronx DA's office had an 85% rate of conviction of VTL crimes in 2019, falling to 52% in 2023.

Part 2C
Potential Causes for Trends: Pandemic and Social Disorder

Pandemic and Social Disorder

During the period of 2020–21, the country experienced an extraordinary combination of a once-in-century pandemic, mass lockdowns, unemployment, social isolation, and widespread civil unrest.

These events were accompanied by both a rise in anti-social behavior and by a decline in police enforcement and legal system bottlenecks (both against crime and traffic violations) that could have mitigated some of these forces.

In the United States:

During 2020–21, social disruption and antisocial behaviors increased.

- **Unemployment**
  Nationally, the unemployment rate in February 2020 was 3%, rising to 14.8% in April and falling to an elevated normal of 6.2% by February of 2021.

- **Crime**
  According to a study of 27 American cities by the Council on Criminal Justice, homicides rose 44% between 2019 and 2021, "accounting for 1,298 additional lives lost in the cities studied."

- **Domestic violence**
  A meta-analysis of 18 papers on the pandemic period and post-pandemic period found the lockdowns were associated with a general rise in domestic violence.

In the United States:

Additionally, bad behaviors with direct effects on driver behavior rose.

- **Rise in alcohol use (and abuse):**
  Fatalities attributable to drunk driving in the United States grew 33% between 2019 and 2022, from 10,196 to 13,524

  The average annual number of deaths from excessive alcohol use, including partially and fully alcohol-attributable conditions, increased approximately 29% from 137,927 during 2016–2017 to 178,307 during 2020–2021

- **Rise in drug abuse**
  There were significant increases in many kinds of drug use in the United States after the COVID national emergency was declared in early 2020

When rates of abuse for alcohol and drugs rise along with crime, we expect risky driving to increase as well.

- A study of adolescents who reported drug and alcohol abuse in young adulthood found that as they aged, they were three to four times more likely to report they engaged in risky driving and sexual behaviors in adulthood.
  - » Where violent and risky behavior is on the rise, one could expect risky driving to follow suit.

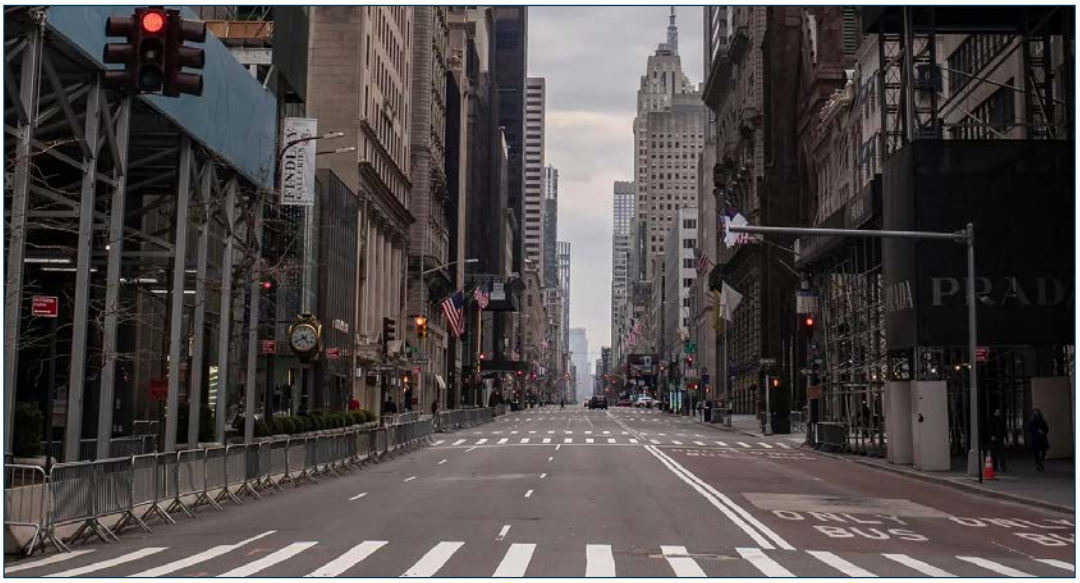
In New York City:

During 2020–21, social disruption and antisocial behaviors also increased in New York City

- **Greater effects of unemployment among young male workers:**
  Young male workers in New York City experienced a rising unemployment rate in 2020 through 2021 and an uneven recovery, with a 2022 rate of 23.6% compared to a pre-pandemic baseline of 11.8%.

- **Rise in homicides**
  Despite the decline in activity and stay-at-home orders during the pandemic, serious crimes like homicides rose overall. Between 2018–19 and 2020–21, homicides rose 56% from 614 to 956

- **During the pandemic period, local indicators for domestic violence rose.**
  Visits to the NYC HOPE website rose by 265% during the pandemic, and calls to their domestic violence hotline rose by 17%.

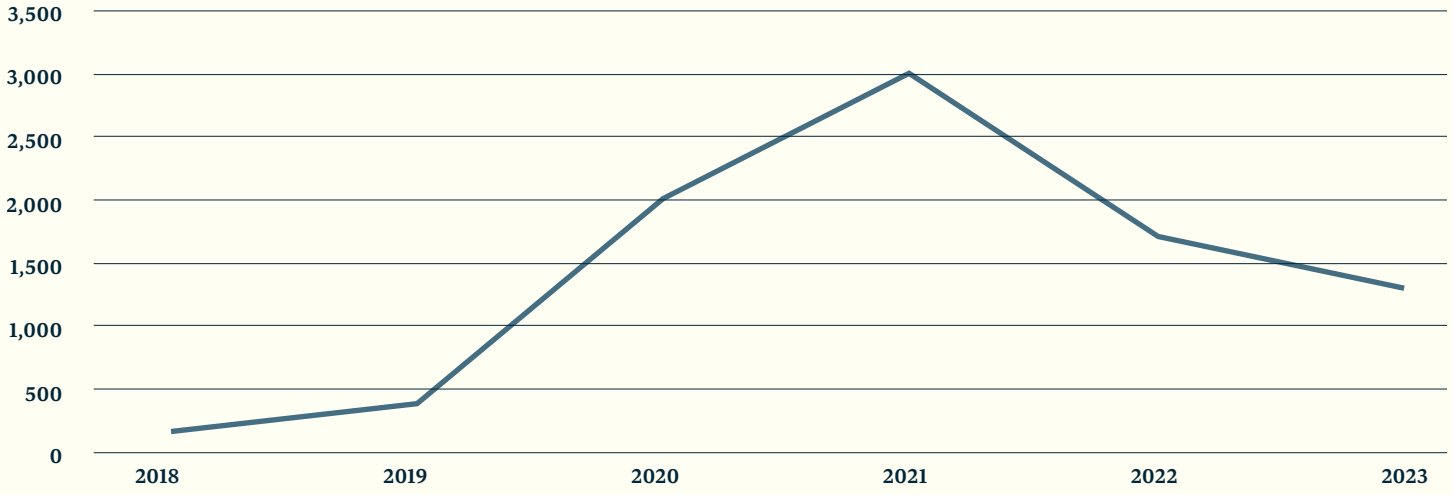


In New York City:

Reduction in the number of vehicles on the street allowed drivers to speed

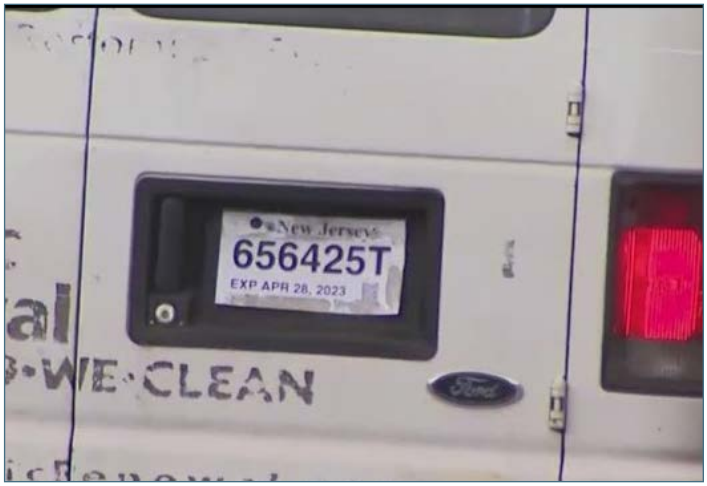
- The decline in regular driving activity during the pandemic allowed drivers the opportunity to drive at high speeds on roads that would have otherwise been full of traffic. As a result, automated speed camera violations increased despite the initial fall in traffic.
- 311 complaints for drag racing skyrocketed from 392 in 2019 to nearly 3,000 in 2021, dropping back down to 1,296 in 2023.
- Red light camera violations dropped as activity collapsed at the start of the pandemic (431,000 in 2019 vs. 390,000 in 2020) but steadily rose thereafter—to a 2023 high of 705k.

Drag Racing Incidents Reported to 311



Changes to tolling and temporary license plate issuance

- **Full automation of toll bridges coupled with the expansion of the speed camera program created an incentive to engage in plate fraud among drivers..**
  - » Additionally, a consumer goods industry sprung up to cater to the demand for camera-defeating devices like plate covers.
- During the pandemic, certain state DMVs (namely New Jersey and Texas) introduced temporary, printable paper license plates usually used for dealers to the general public as an emergency measure to allow for registrations to be issued despite staff shortages and facility closures. These plates were targeted by fraudsters who wanted to appear legitimate while driving without a valid plate due to their lack of security features.
- As a result, "ghost cars" and "ghost plates" sever the accountability link between driver and vehicle as counterfeit plates are easily available and camera-based enforcement has become more commonplace.

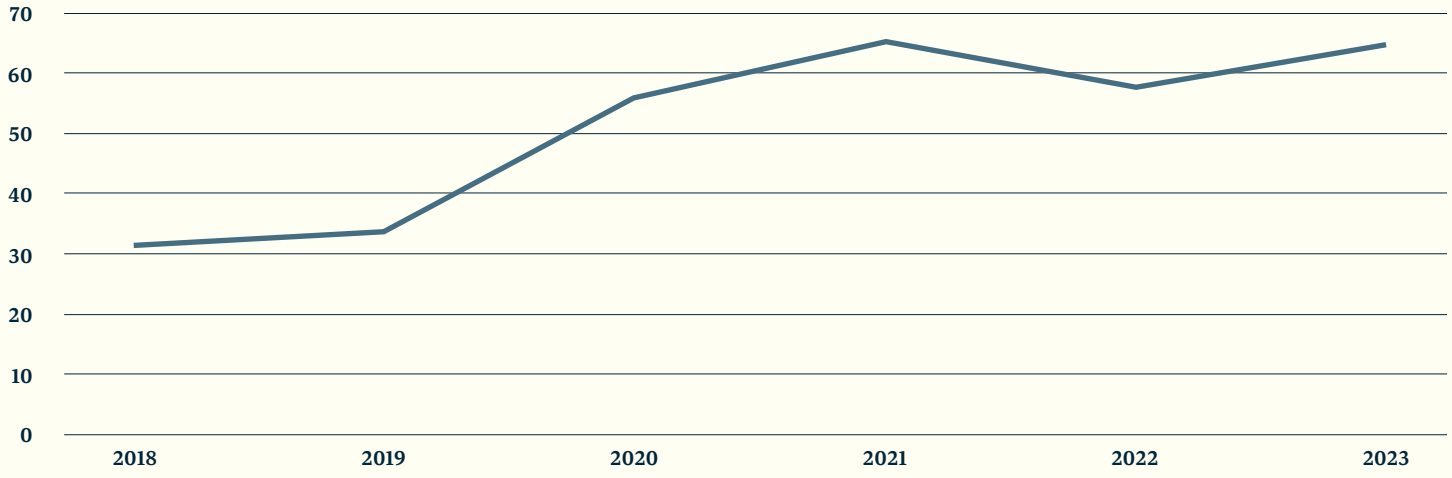


Rise of Ghost Plates

Drivers who attempt to evade automated enforcement and toll cameras by defacing or covering their license plates, using fake license plates, or having no plates at all now result in the rejection of more than three million speed camera events a year.

- An "event" occurs any time the cameras attempt to photograph something.
- At the start of the speed camera program, approximately 10 percent of events were rejected. As license plate fraud has grown, so have the number of total rejections. In 2023, 45 percent of events were rejected, of which 65 percent were due to license plate fraud.

Percentage of Speed Camera Rejects Caused by License Plate Fraud



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Part 3
Other Findings

Other Findings

In addition to the information presented in previous sections, DOT has additional findings corresponding with the legislative mandate of this paper

- Hit-and-runs
- Dangerous Behavior and Crash Risk
- Automated Enforcement Violations

Hit-and-Runs (2017–2022)

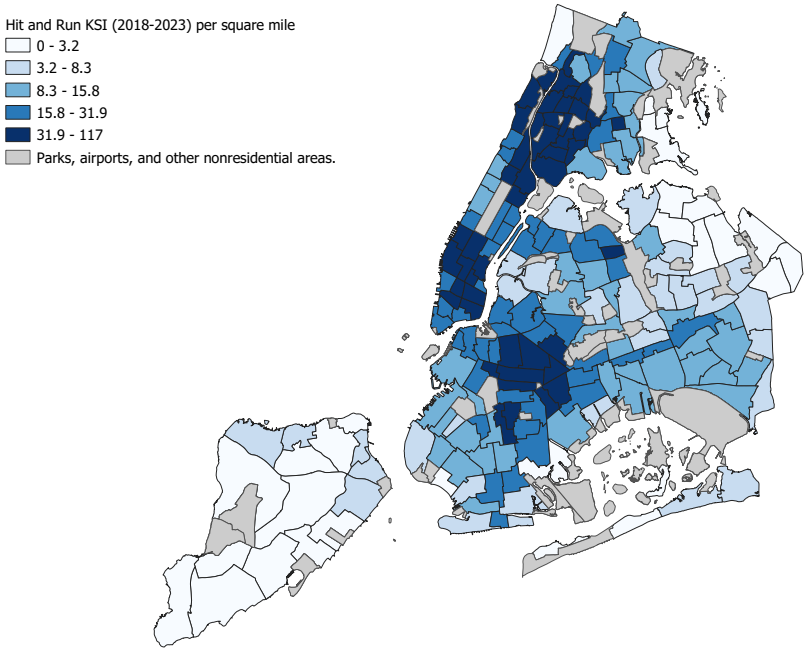
Hit-and-run crashes are one of the most common fatal crash types in New York City and a disproportionate number are concentrated in the Bronx. Just over half of drivers in fatal hit-and-run crashes are identified.

- 19% of all traffic fatalities in New York City are a result of hit-and-run crashes
- The Bronx shows the highest per capita rates for hit-and-run crashes at all severity levels, with fatality and KSI rates more than 30% above citywide rates (per 100,000).

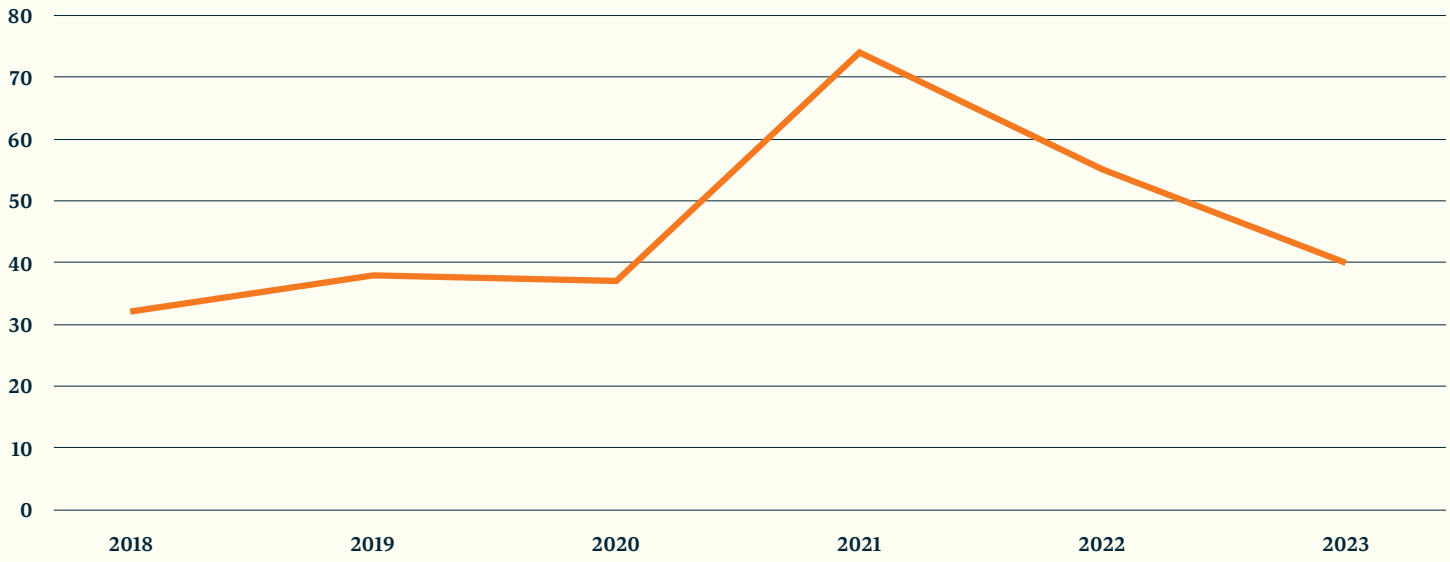
Hit-and-Runs (2018–2023)

Hit-and-Run Fatality & Injury Trends:

- Between 2018–19 and 2020–21, the number of fatalities caused by hit-and-runs grew 59% from 70 to 111.
- Between 2018–19 and 2020–21, the number of severe injuries caused by hit-and-runs grew 38% from 722 to 994.



Fatalities Attributed to Hit-and-Runs



Hit-and-Runs (Police Enforcement)

Overall Hit-and-Run Enforcement remains down:

- Hit-and-run arrests dropped to 750 a year in 2022–23 from a 2018–19 baseline of around 1,200 a year.
- Staffing issues at the NYPD also hampered the detective work necessary to investigate and prosecute hit-and-run incidents. The department's head count of just over 33,000 officers is the lowest it has been since 1990, and down 7,000 from the peak of enrollment.
- Arrest rates for hit-and-run cases which cause an injury dropped from 8.6% in 2018 to 3.6% in 2023.

Fatal Hit-and-Run Enforcement has remained stable:

- Police were able to positively identify the driver who had left the scene in just over half of all fatal hit-and-run crashes through the study period, holding steady at 56% in 2018–19, 53% in 2020–21, and 54% in 2022–23.

Top Four Traffic Tickets Linked to KSI Crashes (2017–2022)

DOT found a highly predictive relationship between specific traffic violations and increased risk of fatality and severe injury.

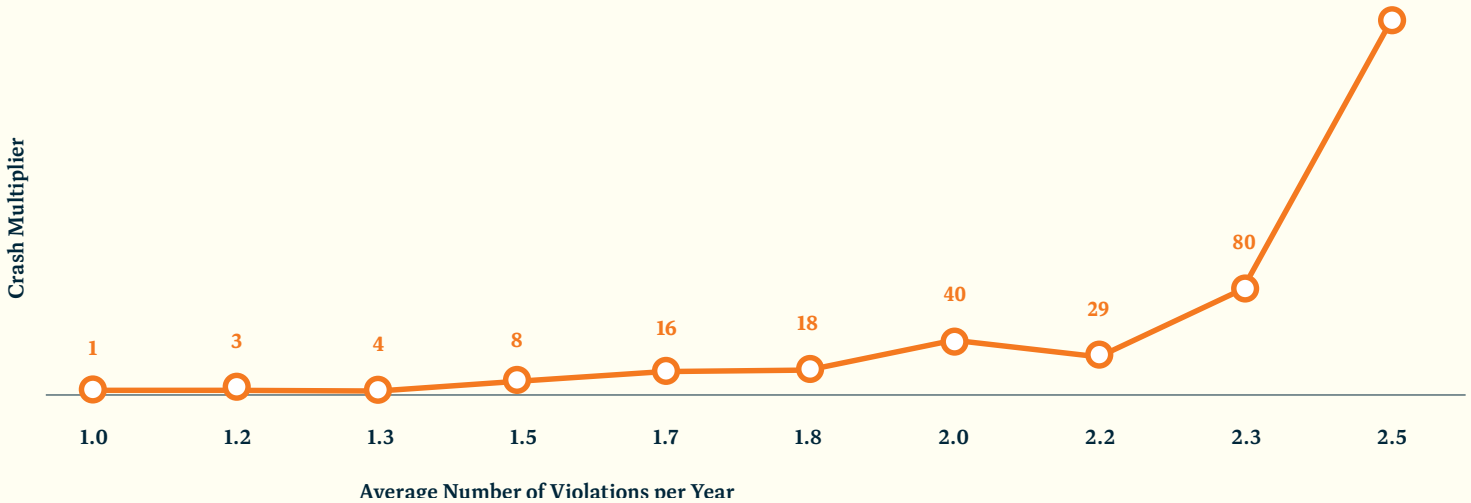
Because drivers with these violations have a higher risk of being involved in a fatality or injury crash, the reduction of police enforcement meant that fewer dangerous drivers received penalties (points on their license etc.) that would have removed their ability to drive legally, hence keeping more potentially dangerous drivers on the road.

The four most important ticket types which estimate the likelihood of a severe injury or fatality crash are:

- Disobey stop sign or traffic signal
- Improper turn
- Speeding
- Cell phone usage

A driver with two of these violations per year has a 40 times higher risk of a KSI crash than someone with one violation per year.

Relative KSI Crash Risk by Number of Violations (Top Four Types)

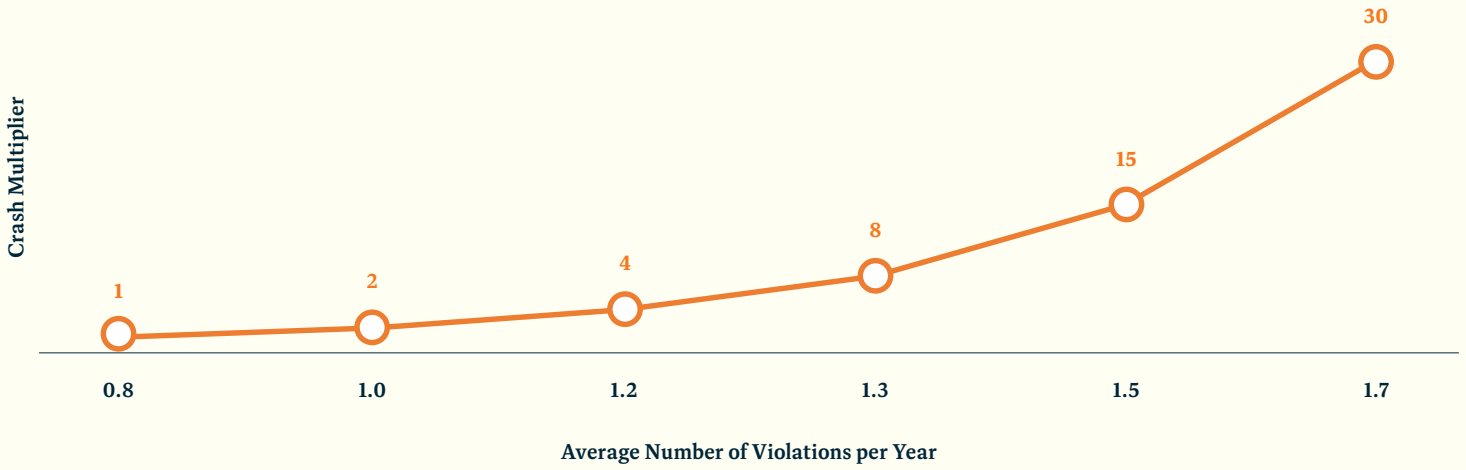


Top Four Traffic Tickets Linked to KSI Crashes (2017–2022)

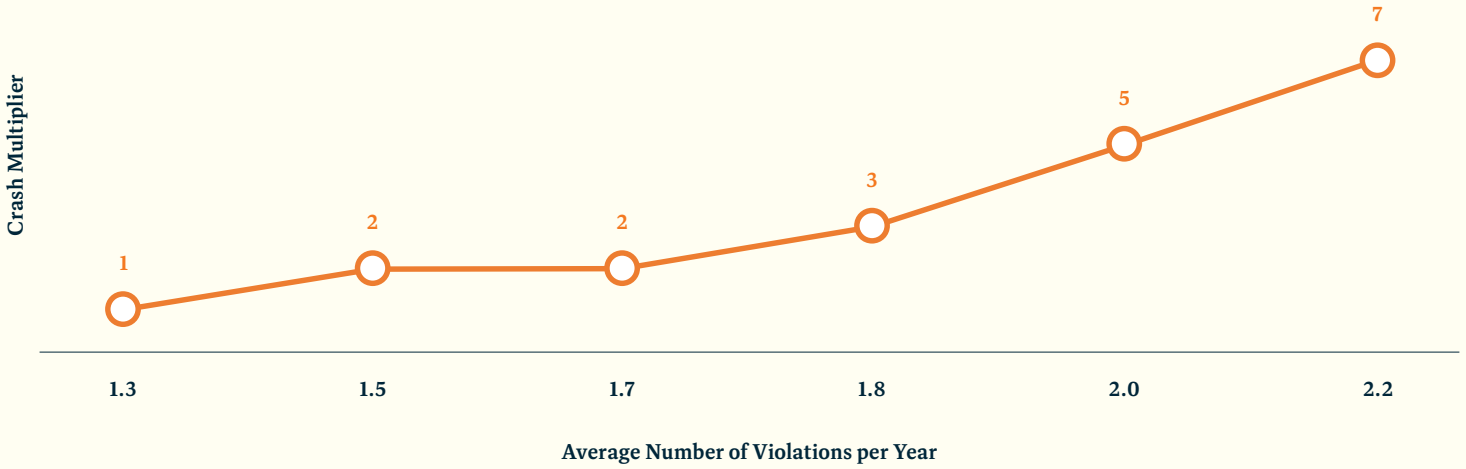
Improper turn, disobey signal, or stop sign

- The likelihood of a driver being involved in a fatal or severe crash doubles with each successive improper turn ticket after 5 tickets (an average of 0.8 violations per year).
- A driver who averages 1.7 improper turn violations per year over the study period is 30 times more likely to be involved in a KSI crash than a driver with 0.8 violations per year.
- A modest increase in disobey signal or stop sign violations from an average of 1.3 per year to 2.2 per year, can be expected to result in a seven-fold increase in risk of being involved in a KSI crash.

Relative KSI Crash Risk by Number of Violations (Improper Turn)



Relative KSI Crash Risk by Number of Violations (Disobey Signal or Stop Sign)

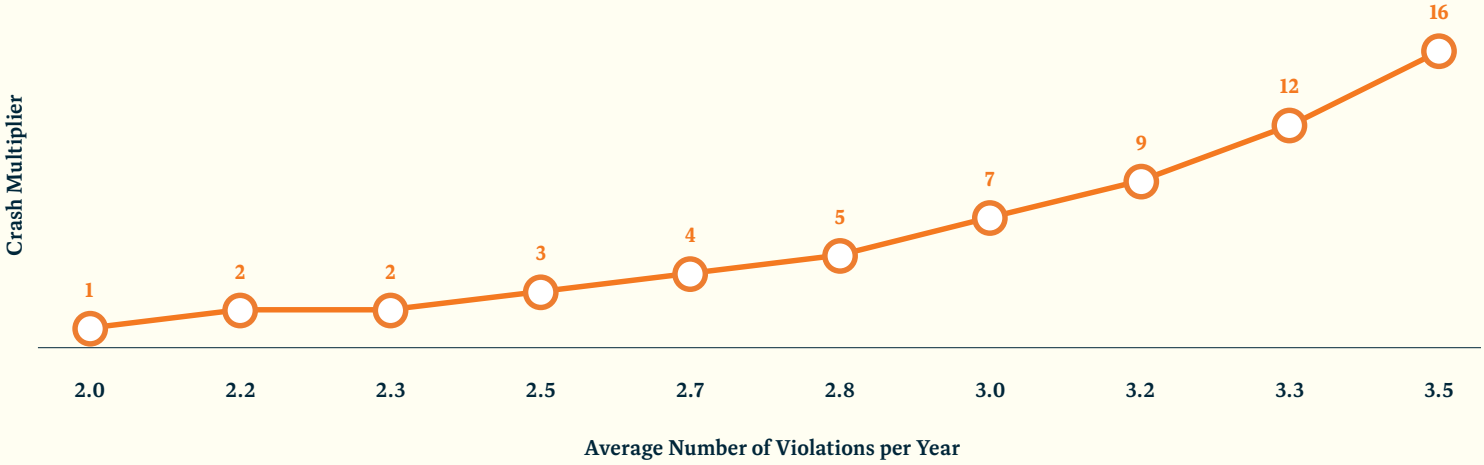


Top 4 Traffic Tickets Linked to KSI Crashes (2017–2022)

Speeding and Cell Phone

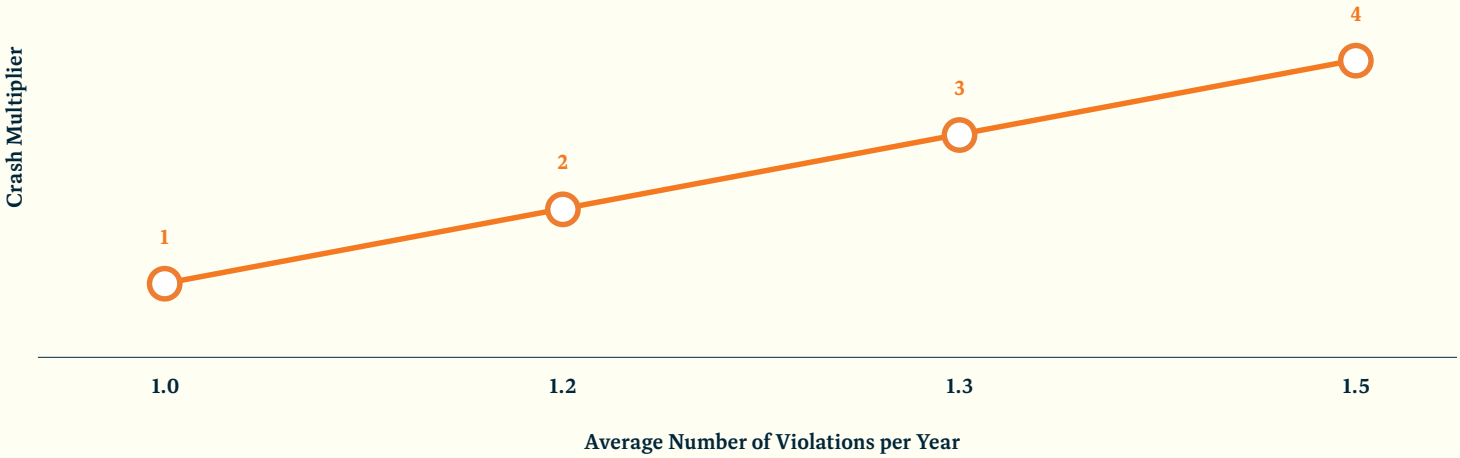
- A driver who averages 3.5 violations per year for the six-year study period between 2017–2022 is 16 times more likely to be involved in a KSI crash than a driver with an average of two violations per year.

Relative KSI Crash Risk by Number of Violations (Speeding)



- A driver who averages 1.5 violations per year or nine violations total for the six-year study period is four times more likely to be involved in a KSI crash than a driver with an average of one violation per year.

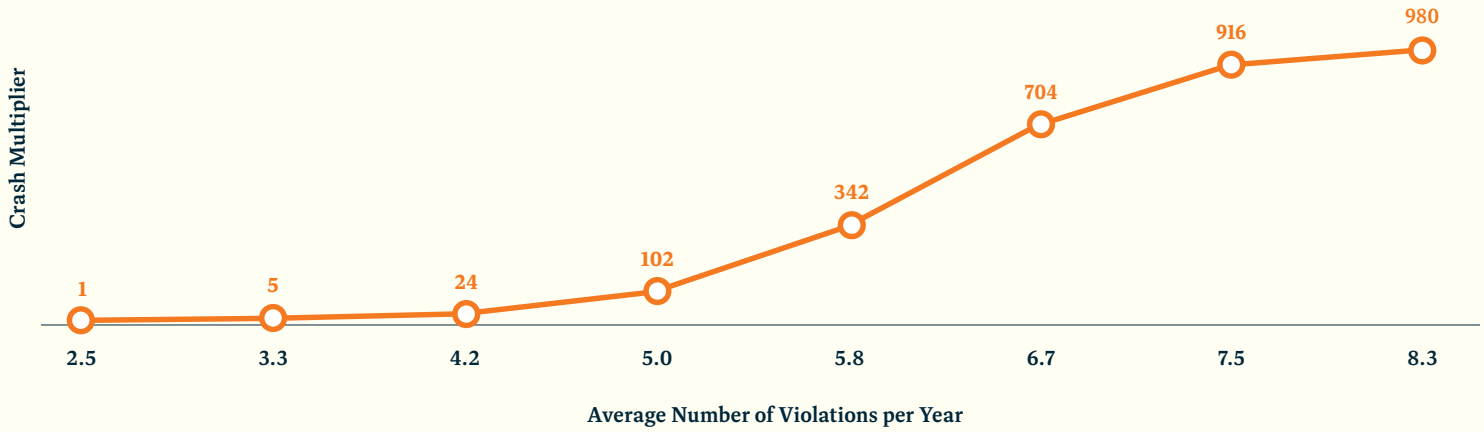
Relative KSI Crash Risk by Number of Violations (Cell Phone)



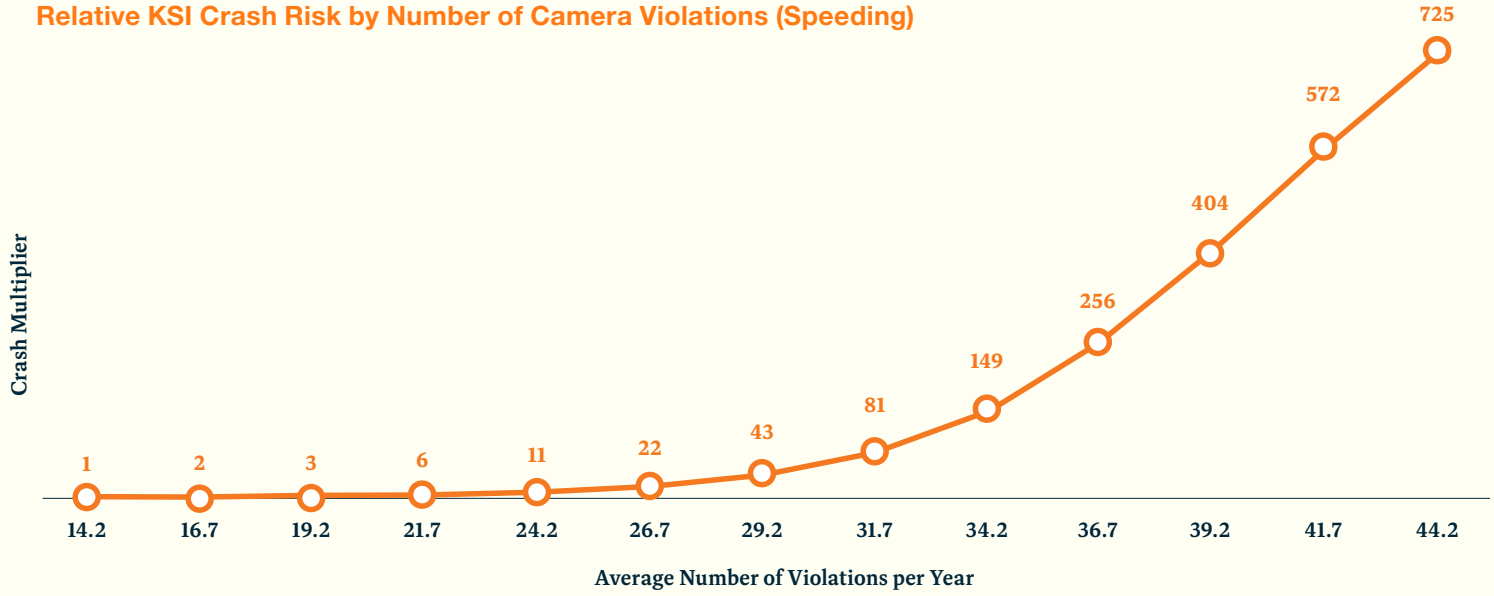
Automated Enforcement Violations linked to KSI crashes (2017–2022)

- **Red light camera violations have a much stronger predictive relationship with serious injury or fatality crashes than speed camera violations**
- **Speed camera violations also have a predictive relationship with KSI crashes, but to a lesser degree than red light cameras.**
- A driver with an average of 3.3 red light violations per year is five times more at risk of a KSI crash than a driver with 2.5 per year.
- At 3.3 violations per year for red light camera violations and 16.7 violations per year for speed camera violations, the level of risk for causing a KSI crash increases rapidly.

Relative KSI Crash Risk by Number of Camera Violations (Red Light)



Relative KSI Crash Risk by Number of Camera Violations (Speeding)



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Appendix

Appendix

In addition to reporting on specific patterns of dangerous driving behavior, Local Law 36 of 2020 also requested an analysis of

> ***convictions for traffic-related violations or crimes, including convictions pursuant to section 19-190 and section 1212 of the vehicle and traffic law; (and) MV104AN crash reports attributing dangerous conduct to the driver***

The following reporting provides these analyses as a supplement to the narrative section:

- Failure to Yield
  - Traffic Tickets
  - Civil Violations (Section 19-190)
- Reckless Driving Tickets (Section 1212)
- Dangerous Driving Behaviors

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Mandated Findings

Mandated Findings

Failure to Yield

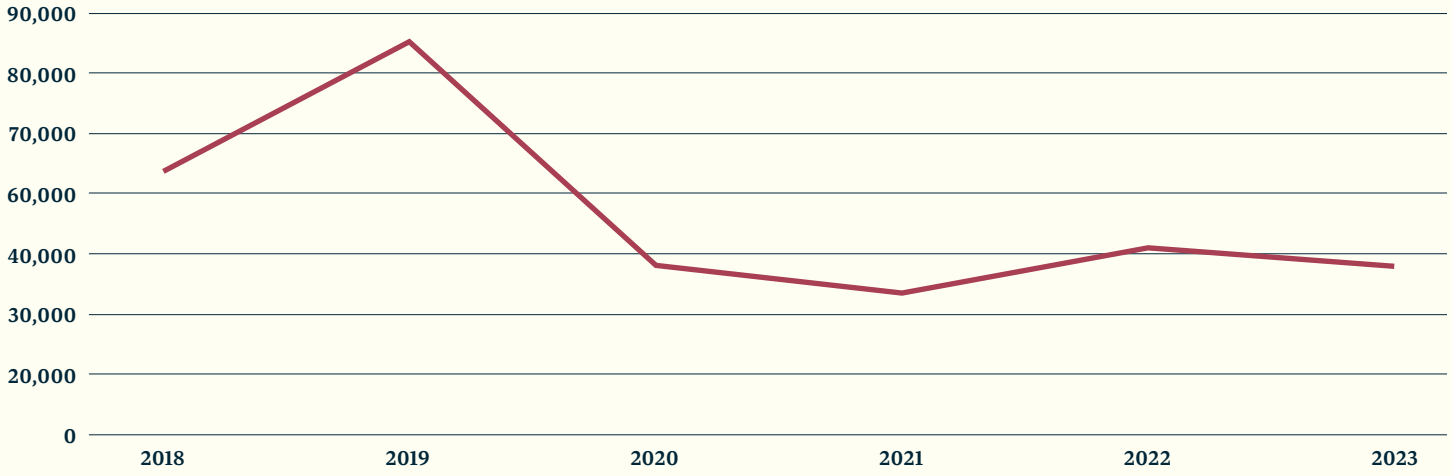
Failure to Yield violations cover instances when drivers fail to yield to a pedestrian or a cyclist with the right of way in the roadway.

- Failure to Yield penalties are commonly issued by police in two ways: one is a standard traffic ticket (or B-summons), and another is a civil violation of Section 19-190 of the City Code for damages adjudicated by the Office of Administrative Trials and Hearings (OATH), an administrative court.
- The former is more frequently issued, the latter only if there is evidence that a driver failed to yield in a case causing injury.

Failure to Yield Traffic Tickets

- B-Summonses (traffic tickets) are the primary way police enforce Failure to Yield violations.
- Between 2013 and 2014, in conjunction with the beginning of Vision Zero, the number of violations issued doubled from 14,888 to 33,577.
- In 2019, the number of tickets written peaked at 81,628.
- In 2020 tickets issued dropped to 35,270, still double the quantity of 2013, and remained consistent the next 3 years.

Failure to Yield to Pedestrians (Traffic Tickets) Issued

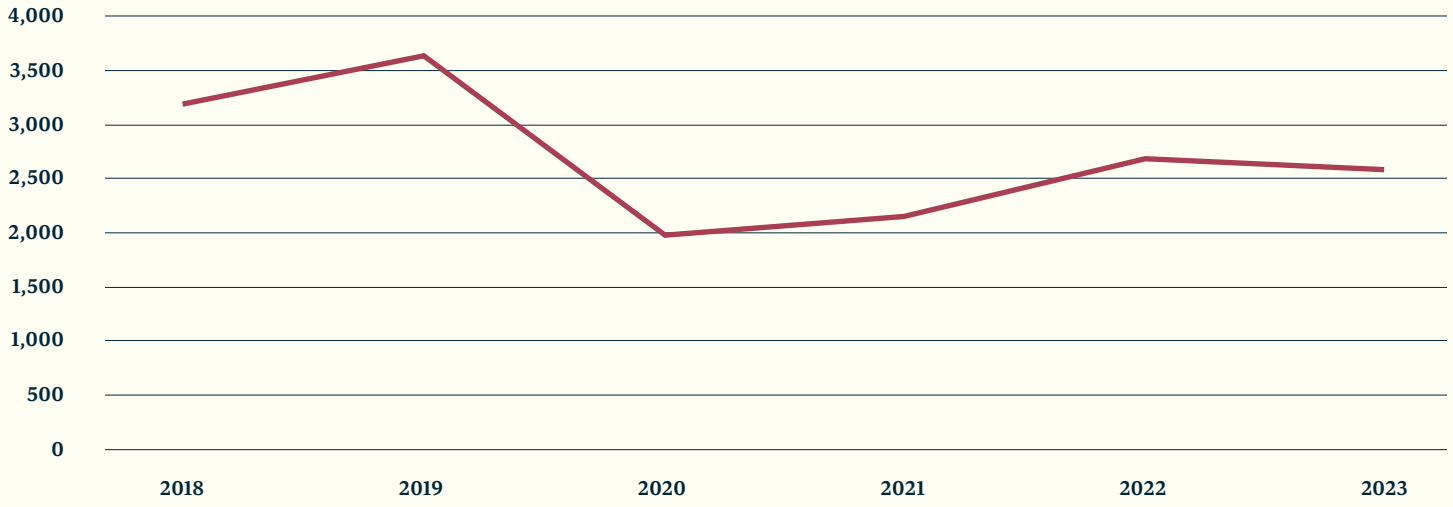


Failure to Yield Civil Violations (19-190)

A Failure to Yield 19-190 summons is issued for most applicable pedestrian injuries. However, the conviction rate is very low.

- In about 30% of pedestrian injury crashes, the driver failed to yield to the pedestrian.
- In 2019, there were ~10,300 pedestrian injuries, with summonses issued in ~35% of cases. In 2020, injuries dropped to ~6,500, with ~30% summons issuance. This summons issuance rate has remained consistent and is guided by NYPD investigation outcomes.
- Accordingly, annual 19-190 summons issued for failure to yield fell from 3,639 in 2019 to 1,971 in 2020, slowly climbing back to around 2,578 summonses issued per year by 2023.
- Officers are held accountable at citywide TrafficStat meetings, ensuring 19-190 summonses are issued when warranted.

Failure to Yield to Pedestrians 19-190 Summons Issued



Failure to Yield Civil Violations (19-190)

19-190 violations peak between October and January for the 2018–2023 period

- Additional police enforcement is part of the Dusk and Darkness initiative; a campaign focused on moving violations committed at dusk and nighttime during the Daylight Savings Time period as drivers adjust for darker environments.
- This is a possible explanation for why 19–190 violations are highest during late Fall to Winter.

Few 19-190 charges lead to a conviction.

- 2016: 7.8% conviction rate
- 2020: 2.5% conviction rate
- 2023: 1.8% conviction rate

Vehicles registered to people with suspended or revoked licenses grew in frequency and proportion of fatalities.

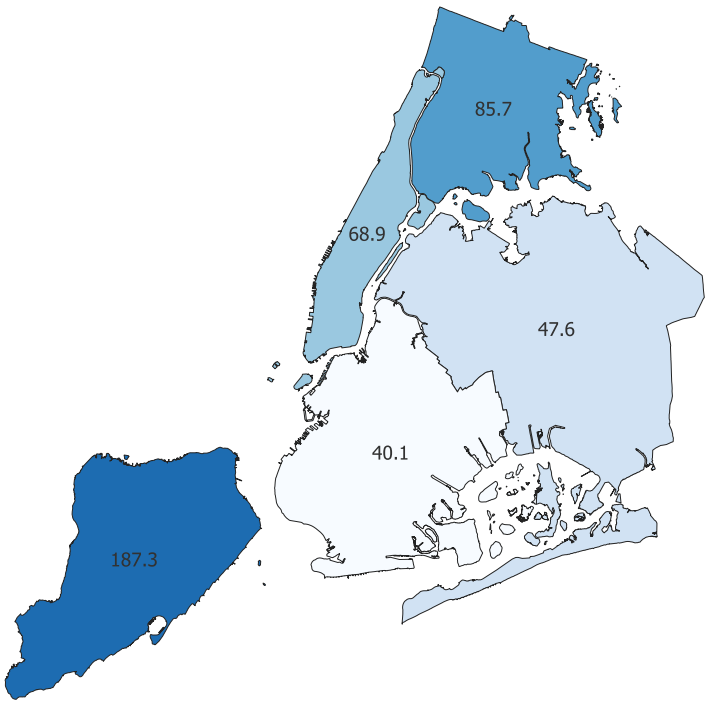
- Severe injuries for unlicensed drivers in 2018–19 were 470, climbing to 603 in 2020–21 and 569 in 2022–23 (not including suspended licenses).
- As a percentage of severe injuries, unlicensed drivers climbed from 7% in the 2018–19 period to 10% in 2022–23 (not including suspended licenses).
- Fatalities for unlicensed drivers in 2018–19 were 69, climbing to 138 in 2020–21 and 133 in 2022–23.
- As a percentage of fatalities, unlicensed drivers climbed from 16% in the 2018–19 period to 25% in 2022–23.

Reckless Driving Tickets

Section 1212 (Reckless Driving) tickets are more commonly issued to males and likely linked to land use patterns:

- Over 76% of NYPD-issued reckless driving tickets are issued to males.
- On average, there are 64 reckless driving tickets issued per 100,000 people citywide.
- Likely due to its higher overall rate of driving, Staten Island's rate of traffic tickets per capita is about twice as high as the city average (82% of Staten Islanders live in homes with cars, compared to 43% of Brooklynites)
- Staten Islanders receive reckless driving traffic tickets at an even higher rate than overall tickets, almost triple the violations of the citywide rate. (187.3 reckless driving violations per 100k people in Staten Island versus 63.9 reckless driving violations per 100k people citywide).
- In the Bronx, reckless driving violations were also higher than the city average, with a rate of 85.7 per 100k people.
- Brooklyn shows the lowest rate of reckless driving at more than 80% below Staten Island's rate (40 per 100k residents vs. 187 per 100k residents).
- While Manhattan has a slightly higher general violation rate (69 per 100k) than the City overall (64 per 100k), placing it at the second place out of all boroughs, the residents of Manhattan were the least likely to receive a reckless driving ticket at 23.2 per 100k people

Reckless Driving Tickets per 100,000 Residents, 2019–2022



Dangerous Driving Behaviors

Dangerous driver behaviors are associated with deadlier crashes, with single-vehicle crashes being particularly deadly:

- DOT analyzed a group of injury crash types that are closely related to dangerous driver behavior between 2017–2022: hit-and-runs, U-turns, failure to yield to a pedestrian, and single vehicle collisions on both highways and surface streets. These crashes are likely to involve purposeful negligence by the driver.
- They are also usually deadlier—responsible for 33% of all injuries but 48% of fatalities.
- The Bronx was the top borough for All Dangerous Crash Type injuries and KSI per 100k population (125 per 100k)
- Single-vehicle crashes (only one vehicle involved) on highways are particularly deadly—one in nine people involved in such crashes have a chance of being killed or severely injured. Despite accounting for only 1% of injuries, these crashes represent 5% of fatalities. On surface streets (local streets, arterials, and collectors), single-vehicle crashes account for about 7% of injury crashes and 10% of fatalities.

VISION ZERO

Additional Interventions to Curb Dangerous Driving

Additional Interventions to Curb Dangerous Driving

Ad/Publicity Campaigns

- The Department of Transportation has made an effort as part of the Vision Zero initiative to communicate with the public via conventional media channels as well as with interactive web-based and social media-based ad campaigns.
- In addition to carrying unified Vision Zero branding and introducing the effort to ordinary New Yorkers, each campaign targets specific driver that cause death and injury like drunk driving, speeding, reckless driving, and obeying work zone speed limits.
- Targeted Vision Zero anti-speeding billboards were placed in communities and at intersections where speed caused a large number of injuries.
- DOT started the 'Speeding Ruins Lives' awareness campaign in April 2022 and to date it has delivered $7M in media placements and earned an additional $6.4M in added value
- NYPD & DOT Street Teams visited over 958 Priority Locations since start of Vision Zero (nearly 2.4 million flyers distributed)
- These are just a few of many efforts undertaken by DOT and its partners to educate the public on Vision Zero.

Reducing the Speed Limit to 25mph and Sammy's Law

In 2014, New York City lowered its speed limit from 30 to 25 in order to support road safety and reach Vision Zero. After a successful decade, New York passed "Sammy's Law," granting the city the ability to lower speed limits to 20 miles an hour in certain locations.

Automated Speed Enforcement

Speeding accounts for about a quarter of traffic fatalities in New York City annually. The speed enforcement camera program, which began as a pilot program to deter speeding in 20 school zones has expanded to a 24-7 program with over 2200 cameras all across the city. The program is successful at reducing speeding, with the vast majority of drivers changing their behavior after one or two violations and speeding at camera locations falling 94% on average.

Expanding Red Light Camera Enforcement

In 2024, Governor Hochul signed legislation quadrupling the number of red light cameras in the city, going from 150 to 600. The law also extended the duration of the red light camera program through 2027.

Dangerous Vehicles Abatement Program (DVAP)

- The Dangerous Vehicles Abatement Program was aimed at drivers who received 15 or more red light or speed camera violations within a year. Rooted in educating dangerous drivers on the effects of their behavior, it required participants to take an instructional class or else risk having their vehicle seized.
- Due to the program's uncertain effects, high costs per participant, and its complexity, DOT recommended superseding DVAP with a two-pronged strategy to support state-level tools to remove dangerous drivers from the road and to target driver education to the people most likely to benefit from it.
- Linking impoundment of a vehicle to violations of speed and red-light cameras was a complex and lengthy process. The City of New York lacks significant authority to regulate both drivers and vehicles; responsibility for vehicle registration and driver licensing lies with the New York State DMV.
- As a result, many eligible owners who did not take the course could not be pursued for further action due to the surrender of the license plate, a change in vehicle ownership or inability to locate them.
- Even in cases where a vehicle was seized, owners typically were able to get their cars back quickly by simply taking the class.

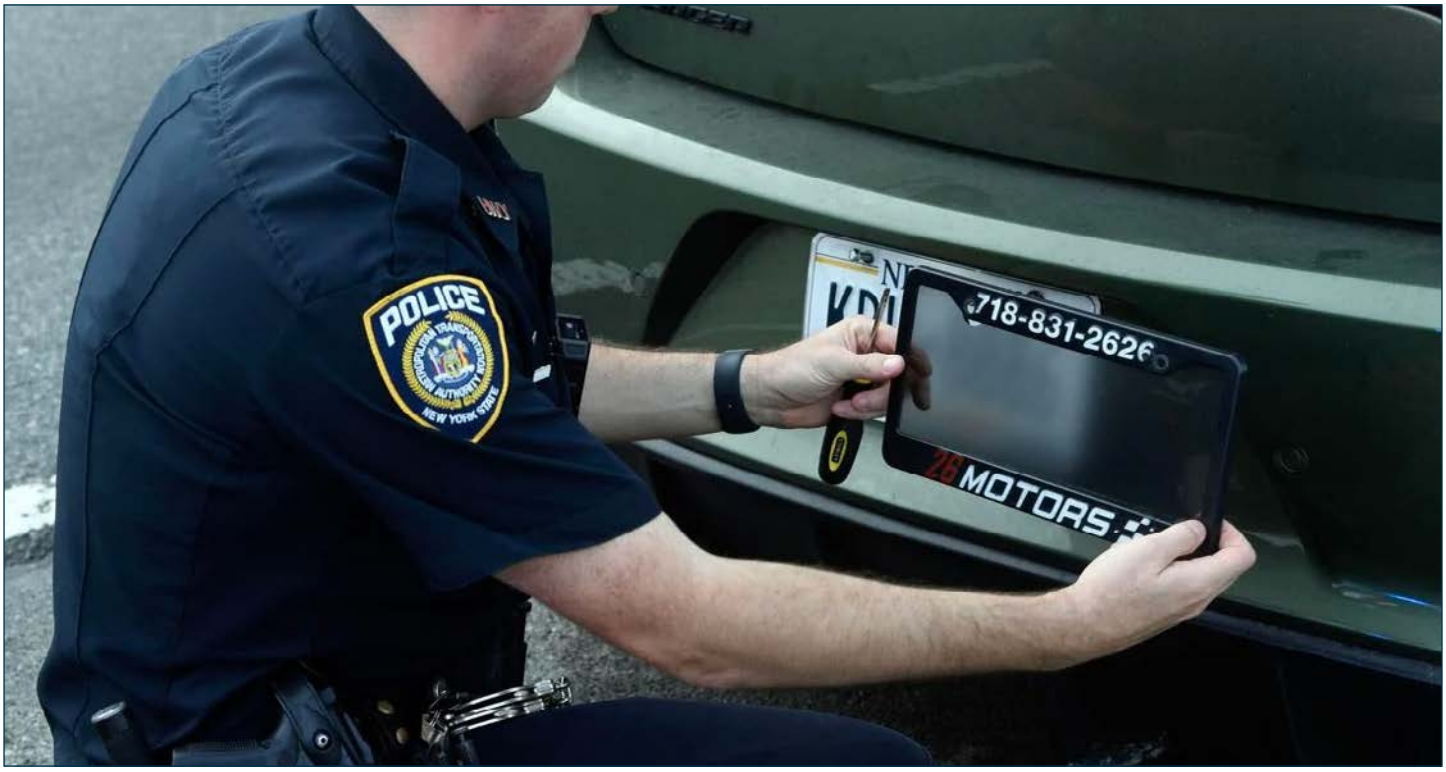
Transportation Bureau Enforcement of 2-Wheeled Vehicle Laws

- The NYPD Transportation Bureau responded to the rise in fatalities on two-wheeled vehicles at all parts of the supply chain, including point-of-sale enforcement, seizures of illegal devices, and targeted moped and ghost vehicles enforcement between 2020–2021. There was a significant increase in seizures:
- 2022: Moped seizures up 362%, motorcycles up 80% (vs. 2019)
- 2023: Moped seizures up 732%, motorcycles up 183% (vs. 2019)
- 2024: Moped seizures up 1,177%, motorcycles up 238% (vs. 2019)
- Early 2024 data also indicated a decline in two-wheeled fatalities, a promising trend that may reflect sustained enforcement efforts.

Increased Enforcement of Fraudulent and Obstructed Plate Laws by the NYPD Transportation Bureau

In 2021, the Traffic Enforcement Division (TED) achieved a 59% increase in summonses for covered plates and towed over 5,500 vehicles with fraudulent tags, and the Transportation Bureau recorded a 70% increase in covered-plate violations compared to 2020. The Bureau's Ghost Plate interagency initiative began in March 2024 yielded the following results:

- 61 total operations
- 740 arrests
- 34,319 summonses
- 3,450 vehicle seizures
- $48,778,749 money due (includes taxes, tolls and administrative fees)



VISION ZERO

Acknowledgements and Sources

Acknowledgments

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