

New York City  
Automated Speed Enforcement Program  
2022 Report



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# Executive Summary

In 2013, the New York State Legislature and Governor enacted Section 1180-b of New York State's Vehicle and Traffic Law (VTL), which granted New York City the authority to pilot an automated speed enforcement program to deter speeding in 20 school speed zones. The first speed camera violation was issued in January 2014. In June 2014, the pilot was expanded to a total of 140 school speed zones, in order to support the pursuit of the City's Vision Zero goal of eliminating traffic deaths and serious injuries.

In 2019, the New York State Legislature and Governor authorized the New York City Department of Transportation (NYC DOT) to deploy speed cameras in 750 school speed zones on all weekdays between 6 AM and 10 PM. The authorization is codified in Article 30 of the New York State Vehicle and Traffic Law. Cameras may be placed at any location within a quarter-mile radius of a school building. This change codified into law NYC DOT's practice of using data to guide installations to where deterrence of dangerous speeding can have the greatest impact on preventing injury and death. NYC DOT data specialists have prioritized installations at locations with the highest incidence of speeding and serious crashes. NYC DOT completed installation of at least one camera in all 750 zones by June 2020, and has been adding cameras within these zones. As of May 2022, there are over 2000 cameras operational in New York City. In Summer 2022, camera hours will be expanded to 24 hours a day, seven days a week, in recognition of the proven safety benefits of this program.

The speed camera program has proven effective and efficient in its goal of reducing both dangerous speeding and its consequences. As of December 2021, speeding at fixed camera locations had dropped, on average, 73 percent. Many large corridors, including the Grand Concourse, Amsterdam Avenue, and Amboy Road, have seen even greater decreases. When compared to similar roads outside school speed zones, corridors that received cameras after 2019 program expansions showed greater decreases in deaths and serious injuries in 2020.

DOT will continue to install cameras at data-guided locations in 2022, until a total of 2,220 cameras are operational.

This report covers data from the program from its inception through December 2021. However, crash injury and severity data is only available for calendar years 2019 and

**As of December 2021, speeding at fixed camera locations had dropped, on average, 73 percent.**

2020. This is because starting in 2019, the National Highway Safety Administration (NHTSA) mandated that all jurisdictions follow the Model Minimum Uniform Crash Criteria (MMUCC) 4th Edition guidelines for collecting serious injury crash data. They

did this to standardize what data is being collected across the country. Accordingly, the New York State Department of Motor Vehicles (DMV) changed their definition of severe, “A”-type injuries. As a result of this change, some injuries not previously attributed to the serious injury classification are now included. This has made data from 2019 and 2020 difficult to compare to previous years. Any numerical increase in severe injuries may reflect the change in formula and not an actual change in the trend of severe injuries, and so comparisons to before 2019 are not included.



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# New York City Automated Speed Enforcement Program

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## Dangerous Speeding is a Leading Cause of Serious Crashes

Excessive speed is one of the leading factors in serious crashes in New York City. The faster a vehicle is traveling, the more time and space a driver needs to react to circumstances in order to prevent a crash. A driver at 40 MPH needs 300 feet to perceive, react, and brake in the face of an unexpected event—twice as far as a driver at 25 MPH, who only needs 150 feet.

Not only does speeding make it more difficult to avoid a crash, but it also worsens the damage caused upon impact when a collision happens. Even a small difference in vehicle speed makes a big impact in terms of safety – a pedestrian who is struck by a vehicle traveling at 30 MPH is twice as likely to be killed as a pedestrian struck by a vehicle traveling at 25 MPH.

When New York City initiated its Vision Zero street safety program in 2014, speeding was one of the top concerns raised by residents during Vision Zero town halls and workshops held by the New York City Department of Transportation (DOT) and New York City Police Department (NYPD). It remains a concern of residents across the City today, despite the progress achieved through the speed camera program.

These facts inform the New York City's Vision Zero initiative's focus on speed management. The City uses a variety of approaches aside from speed cameras, including increased installation of speed bumps, focused NYPD enforcement, signal reprogramming, reduced speed limits and streeredesigns to combat speeding.

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## New York City's Speeding Solutions Toolkit

The City uses a variety of methods in addition to automated enforcement to encourage people to drive at safe speeds. DOT and NYPD frequently assess the speeding conditions in neighborhoods across the City, and identify the appropriate solutions for each context.

### Speed Limits

Speed limits promote road safety by establishing an upper limit on speed appropriate for the street's design, vehicle volume and pedestrian density. On November 7, 2014, New York City reduced the citywide default speed limit to 25 MPH, and has installed over 5,000 new speed limit signs, each with a rider alerting motorists to the use of Photo Enforcement. While some city streets remained signed for faster than 25 MPH, over the years more and more of them have been lowered. In 2021, 45 additional miles of these streets had their speed limits lowered, including Pelham Parkway and Jerome Avenue in the Bronx, Woodhaven and Cross-Bay Boulevards in Queens, Conduit Boulevard in Brooklyn, and Hylan Boulevard in Staten Island.



### NYPD Enforcement

The officers of the NYPD enforce the speed limit in order to deter dangerous driving. In contrast to speed camera notices of liability, traditional speeding summonses carry significant financial penalties, along with points on the driver's license and significant consequences for the driver's insurance. In 2021 NYPD issued approximately 107,970 speeding summonses.





### Speed Humps and Cushions

Speed humps are a raised area of a roadway, typically 3 to 4 inches, which deflects the wheels and frame of a traversing vehicle to reduce vehicle speed. On bus routes, truck routes, and key emergency corridors, where a traditional speed hump is unsuitable, a speed cushion may be used instead. These raised sections have cutouts spaced for large vehicle tires, but still require passenger vehicles to slow down. From 2014 through 2021, the City has installed 2,345 standard speed humps. Speed cushion installations became part of DOT's toolkit in 2018 and as of 2021, 53 have been built.

### Street Improvement Projects

Street redesign strategies which reduce speeding include removing excess width from existing traffic lanes or converting a lane to use for pedestrians or cyclists. This "traffic calming" is a context-dependent approach to reducing excessive speeding. The City has completed more than 800 total safety engineering projects since the start of Vision Zero. The majority of these projects have taken place at Vision Zero Priority Locations — the intersections, corridors, and areas with disproportionately high pedestrian deaths and serious injuries.

BEFORE: 188th Street & 64th Avenue, Queens



AFTER: 188th Street & 64th Avenue, Queens





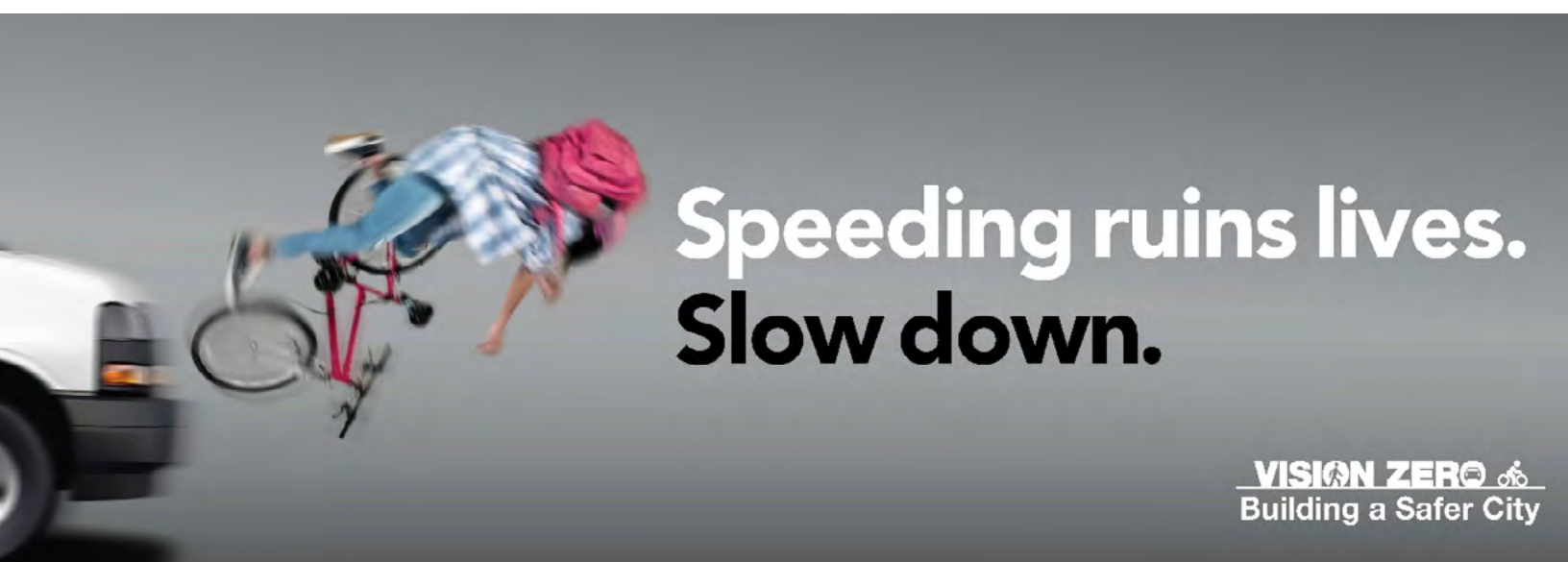


### Community Outreach

Vision Zero Street Teams are a joint outreach project of NYPD and DOT that focus on the most crash-prone corridors of New York City. In recent years, these included Northern Boulevard and Jamaica Avenue in Queens, Grand Concourse in the Bronx, portions of Lexington Avenue and Second Avenue in Manhattan, Hylan Boulevard in Staten Island, and Linden Boulevard, Bedford Avenue, and Bay Parkway in Brooklyn. Street Teams hand out postcards focused on safety tips unique to each corridor while NYPD officers focus enforcement on dangerous driving behaviors including speeding.

### Education

NYC DOT uses market research to guide its hard-hitting public education campaigns aimed at stopping dangerous driving behavior, with a particular emphasis on speeding. Advertisements on television, radio, billboards, bus stops and elsewhere alert aggressive drivers of the consequences of their behavior. These ads have proven effective: In 2021, 81 percent of drivers thought the ads encouraged them to be more responsible behind the wheel, 82 percent said they would give more thought to the speed at which they approached crosswalks and intersections, and 82 said they would pay more attention to pedestrians and cyclists while driving.





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## New York City's Speed Camera Program

In 2013, the New York State Legislature and Governor Cuomo granted New York City the authority to pilot an automated speed enforcement program to deter speeding in 20 school speed zones. In June 2014, the pilot was expanded to a total of 140 school speed zones as part of the Vision Zero program. Chapter 30 of the Laws of 2019 expanded both the number of school speed zones and the program's hours, which were previously limited to one hour before, after, or during school hours, or a half hour before, after, or during school activities. NYC DOT thereby became authorized to deploy speed cameras in 750 school speed zones on all weekdays between 6 AM and 10 PM. NYC DOT completed the expansion of at least one camera in each of the 750 zones in June 2020 and has been adding cameras within those zones. Cameras may be located on any street within a quarter-mile radius of a school, which allows NYC DOT the discretion to place the devices where they are most needed.

In June 2022, the State Legislature passed a new law permitting NYC DOT to operate the cameras 24 hours a day, seven days a week. These new hours will go into effect on August 1, 2022. This report does not include analysis relating to the new hours.

NYC's speed camera program uses the same radar and laser technology relied upon by law enforcement to measure a vehicle's speed. If the system's radar finds that the

**NYC DOT thereby became authorized to deploy speed cameras in 750 school speed zones on all weekdays between 6 AM and 10 PM.**

vehicle is exceeding the speed limit by more than ten miles per hour, images of the vehicle are recorded, including the license plate. The violation is reviewed by a trained DOT staff technician for accuracy. If the technician verifies

that the identified vehicle was exceeding the speed limit by more than ten miles per hour within a school speed zone between 6 AM and 10 PM on a weekday, the technician will issue a Notice of Liability (NOL) to the registered owner of the vehicle. Cameras do not capture an image of the individual driving the vehicle; the violation is the responsibility of the owner.

The fine associated with a speed camera NOL is \$50, regardless of the speed by which the vehicle was exceeding the speed limit, or whether it was a repeat offense. This is far less than the cost of a summons issued by a police officer for speeding in a school speed zone, which could range on the first offense from \$90-\$600, depending on the motorist's speed and prior record, plus an \$88 State surcharge. The violation is reviewed by a 88 State surcharge. In addition, a conviction on a summons issued by a

police officer will become part of the vehicle operator's driving record, adding points and influencing insurance rates. Because NYC DOT cameras cannot identify a driver, no points can be issued for a speed camera violation.

State law prohibits the City from using the speed camera program to issue violations for law-breaking speeding unless it is observed within a quarter-mile radius of a school building. In the absence of a warrant, camera footage may not be used for any purpose other than speed enforcement.

In 2021, New York City's speed cameras issued a total of 4,368,879 NOLs.



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## Results of Automated Speed Enforcement

State law requires the City to report on injuries in speed camera enforced school speed zones using State-issued data to the extent to which such data is available from the New York State Department of Motor Vehicles (NYS DMV). The crash data NYC DOT relies upon originates in motor vehicle collision reports compiled by New York City Police officers at crash scenes. The individual crash reports are sent by NYPD to the DMV and State DOT, who enter the information into electronic databases, attribute locations to the collisions, categorize traffic injuries by severity, and identify errors – a process which typically takes well over a year. The most recently available year of data is 2020.

Starting in 2019, NHTSA mandated that all jurisdictions follow the Model Minimum Uniform Crash Criteria (MMUCC) 4th Edition guidelines for collecting Serious Injury crash data, in order to standardize what data is being collected across the country. Accordingly the New York State DMV changed their definition of severe, “A”-type

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injuries. As a result of this change, some injuries not previously attributed to the serious injury classification are now included in it. This change has made some data from 2019 and 2020 difficult to compare to previous years, because any

numerical increase in severe injuries may reflect the change in the formula and not an actual change in the injuries, and so comparisons with earlier year serious injuries are not included in this report.

The “before” and “after” analysis presented below examines the corridors of 2019 camera installations and compares them to New York City at large between 2018 and 2020. A corridor is defined as the street where the camera is located, for a distance of one quarter-mile from the camera itself. In order to obtain a full-year period of data to use as the “after” scenario, the below figures only incorporate locations that had a camera installed prior to January 1st, 2020. These results therefore reflect the impact of cameras at many of the new locations installed after the State law expanded the number of school speed zones and their hours of operation in Summer 2019. Corridors with camera installations in 2018 and 2020 are excluded from the citywide control group used as a comparison, as these streets would have experienced an intervention in the “before” and/or “after” period. Also, to isolate the effect of the 2019 camera cohort only, 2019 camera installations with a 2018 or 2020 camera installation on the same corridor within ¼ mile were excluded entirely.



The type of comparison is most appropriate for determining the impact of cameras due to the unique and unprecedented changes to traffic patterns wrought by the Covid-19 pandemic beginning in 2020. From March of 2020, pedestrian and motor vehicle volumes dropped dramatically and remained below 2019 levels, particularly in Manhattan. New York City public schools shifted to remote learning in mid-March and did not return to full in-person lessons until 2021, significantly altering exposures by all modes of travel in the vicinity of speed cameras. A conventional “before” and “after” examination of just the corridors with cameras would not take into account the changes in the citywide baseline of traffic. Here, comparisons to a control group of corridors without cameras allows DOT to isolate the effects of the speed cameras as much as possible. With the speed camera program now well-established alongside a comprehensive program of Vision Zero traffic safety enhancements, it is difficult to pinpoint how much one particular intervention alone may be responsible for changes in injury outcomes, rather than these figures being the product of multiple coexisting engineering, enforcement, and education efforts occurring across the City.

With the above caveats, data indicates the corridors that received cameras in 2019 showed a greater decline in total injuries than corridors without cameras. Looking specifically at modes of transportation, while pedestrian and motor vehicle occupant casualties dramatically decreased on both types of corridor, likely due to reduced activity during the early months of the pandemic, the improvements were greater on streets with speed cameras. Cyclist injuries increased on both types of corridors, likely reflecting the increased popularity of cycling as a socially-distanced form of transportation. Overall, results continue to show a safety benefit to having speed cameras, and future analysis using full-year data from 2021 and beyond will provide a clearer picture.

### Changes in Injuries in New School Speed Zones, Before and After Camera Program Expansion

	New Camera Corridors			Control Corridors		
	2018	2020	Change	2018	2020	Change
<i>All Injuries</i>						
<b>All Modes</b>	2,116	1,369	-35.3%	23,606	16,857	-28.6%
<b>Pedestrians</b>	414	272	-34.3%	5,021	3,354	-33.2%
<b>Cyclists</b>	122	125	+2.5%	1,719	1,823	+6.1%
<b>Motor Vehicle Occupants</b>	1,580	972	-38.5%	16,866	11,680	-30.8%

Source: New York State Department of Transportation/New York State Department of Motor Vehicles

## Decline in Average Daily Speeding Violations in Camera-Enforcement School Speed Zones Along Key Corridors

**Hillside Avenue**

Dec 2021	First Month
115	1279
<b>-91%</b>	




**Grand Concourse**

Dec 2021	First Month
60	604
<b>-90%</b>	




**Amboy Road**

Dec 2021	First Month
25	201
<b>-88%</b>	




**Hylan Boulevard**

Dec 2021	First Month
47	360
<b>-87%</b>	



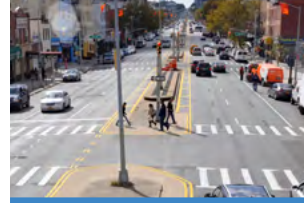
**Ocean Avenue**

Dec 2021	First Month
70	472
<b>-85%</b>	



**4th Avenue (BK)**

Dec 2021	First Month
77	463
<b>-83%</b>	



**Queens Boulevard**

Dec 2021	First Month
347	494
<b>-82%</b>	



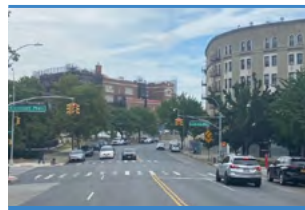
**Amsterdam Avenue**

Dec 2021	First Month
30	143
<b>-79%</b>	



**Boston Road**

Dec 2021	First Month
96	431
<b>-78%</b>	



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## Where Cameras and Violators are Located

Speed cameras are an equitable enforcement solution: They cannot identify an individual driver and do not look at anything other than the speed of the vehicle. By choosing the locations of camera installations based solely on serious crash incidence and frequency of speeding, NYC DOT can ensure that resources are directed to where they have the most benefit while also ensuring that no individual community lacks protection or has an over-concentration of cameras. Indeed, with 750 school speed zones, every part of New York City with a significant speeding problem has this safety intervention available. There is no correlation between neighborhood income or neighborhood percentage non-white population and the number of speed camera violations issued per lane mile.

An analysis of all speed camera violations issued in October 2021 found that 41 percent of violations – two out of five – were issued to a vehicle with a registered address located outside New York City. Two-thirds of all violations, or 67 percent, were issued to a vehicle with an address located more than three miles away from the camera, far from the surrounding neighborhood. This shows that overwhelmingly, it is not local residents who are receiving violations, but local vulnerable road users are receiving benefits.





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## The Extent of Dangerous Speeding in School Zones

School speed zones are the area within a quarter-mile radius of a school building. NYC DOT's cameras are drastically reducing dangerous speeding in these zones. While the vast majority of speeders are not exceeding the limit by more than 20 mpg, these speeds are still highly dangerous and greatly increase the likelihood of pedestrian death.

### Violations by Speed Over Limit, 2021

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Speed of Vehicle Over the Posted Limit	Number of Violations, 2021	Percentage of Violations, 2021
>10, but < or = 20 mph	4,269,335	97.7%
>20, but < or = 30 mph	92,228	2.1%
>30, but < or = 40 mph	6,307	0.14%
>40 mph	1,009	0.02%
<b>TOTAL</b>	<b>4,368,879</b>	<b>100%</b>

Source: New York City Department of Transportation

Speed cameras do not issue a violation unless the vehicle is traveling at least 11 miles per hour above the posted speed limit. In practice, this means that at most locations, a vehicle must be traveling at least 36 miles per hour in a 25 MPH zone. Citywide, almost all notices of liability – 97.7 percent – went to vehicles traveling at least 11 but less than 20 miles per hour above the limit.

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## Sufficiency of Speed Camera Program Hours

In 2021, about 30 percent of the 217 non-highway traffic fatalities in New York City took place in school speed zones with cameras, but at times when those cameras were not legally permitted to operate. Those times include overnight hours (10 PM through 6 AM) on weekdays, and the entirety of weekends.

Looking solely at the 143 fatal crashes that took place within school speed zones with fixed cameras, approximately 24 percent (35 crashes) happened on weekends, and another 22 percent (31 percent) happened overnight on a weekday. NYC DOT believes the expansion of the hours of operation of the speed camera program to seven days a week, twenty-four hours a day, will reduce the incidence of speeding at those times, and will hopefully in turn reduce serious injuries and fatalities.

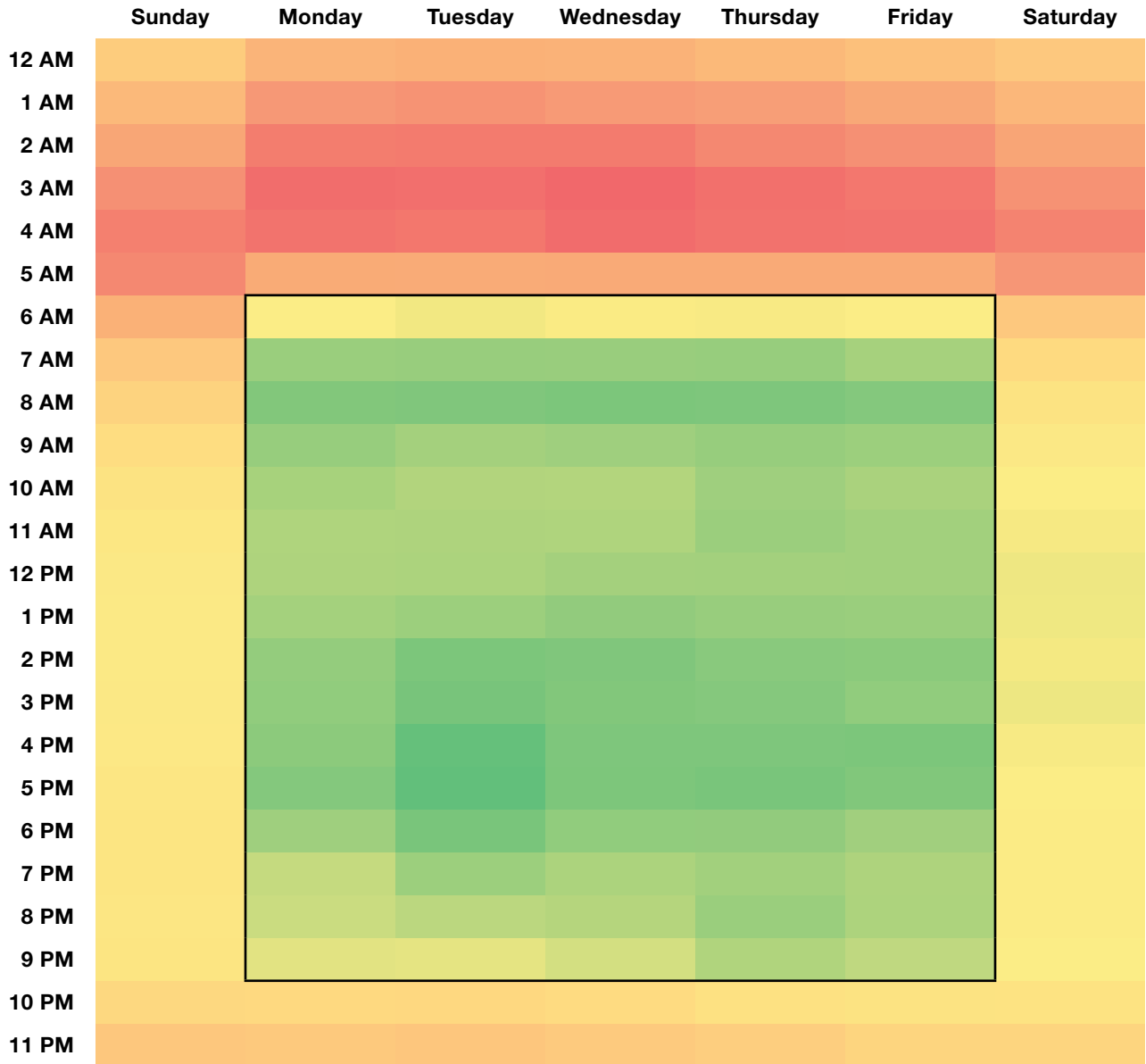
Looking at the ratio of camera trigger events to overall traffic volume can provide insights into both how the hours of operation practiced in recent years succeeded in reducing speeding and how further expansion will benefit New Yorkers. The following

**NYC DOT believes the upcoming expansion of the hours of operation of the speed camera program to seven days a week, twenty-four hours a day, will reduce the incidence of speeding at those times, and will hopefully in turn reduce serious injuries and fatalities.**

“heat map,” drawn from June 2021 data, indicates the percentage of vehicles photographed speeding by the cameras. The number of total trigger events is divided by vehicle volume in order to control for times of day when more traffic is present. Red boxes indicate larger proportions of vehicles captured exceeding the speed limit, whereas green shading indicates fewer speeders. The current hours of

operation permitted by State law are outlined in black. This indicates a pattern of relatively less speeding during camera hours of operation, and a higher proportion of vehicles speeding when the cameras were forbidden by law to issue violations.

## Ratio of Speed Camera Trigger Events to Total Traffic Volumes All Locations, June 2021



Note: Black outline indicates speed camera hours of operation under State law.

Source: NYC DOT



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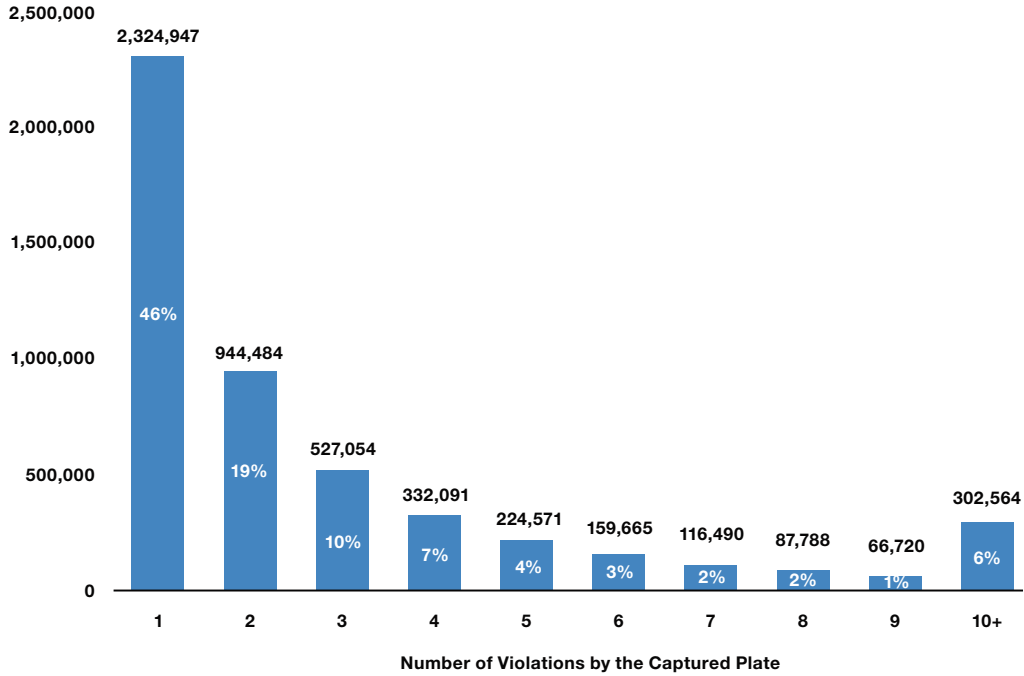
## Repeat Violators

In the eight full calendar years New York City's speed camera program has been in operation, 46 percent of plates receiving a Notice of Liability have not received a second. An additional 19 percent received no more than two over this period. In 2021, 55 percent of vehicles receiving NOLs only got one, even as the number of cameras (and therefore the odds of any speeding vehicle being captured on camera) increased.

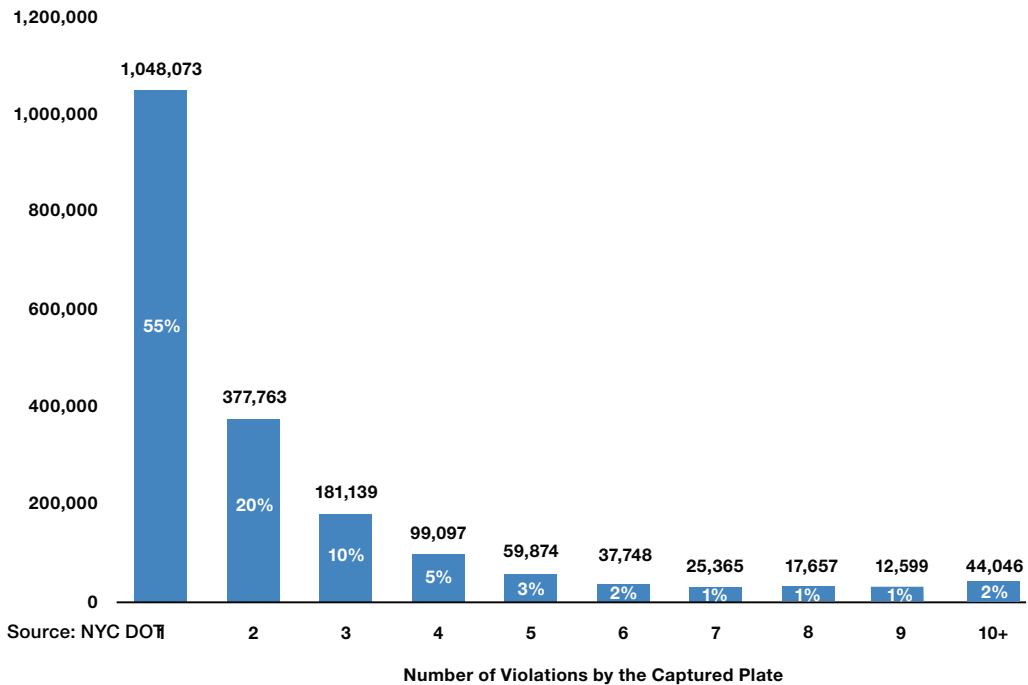
While the majority of drivers are deterred from speeding by one or two camera violations, there is a group of recidivist speeders who continue to drive unsafely despite receiving multiple NOLs. These habitual speeders will require a stronger penalty in order to change their dangerous driving behavior. The City of New York supports implementing an escalating fine regime to address this population.

Following the passage of Local Law 36 of 2020, NYC DOT has been authorized to create a Dangerous Vehicle Abatement Program. Under this law, registered owners of vehicles that received 15 or more finally adjudicated speed camera NOLs or five or more finally adjudicated red light camera NOLs within a twelve-month period may be required to take a safe driving class or else risk having their vehicles impounded by the New York City Sheriff. These classes began in Fall 2021.

## Repeat Violators, 2014 – 2021



## Repeat Violators, 2021 Only



## Adjudication of Speed Camera Violations

All individuals receiving a Notice of Liability are entitled to request a hearing by mail or in person to contest a violation believed to have been issued in error. The notice itself provides instructions as to how to request a hearing. From 2014-2021, 2.4 percent of NOLs led to requests for a hearing, and the other 97.6 percent were issued to individuals who declined the opportunity and accepted the violation after the NOL was issued.

Pursuant to Section 1180-b of the New York State Vehicle and Traffic Law and through its Parking Violations Bureau, the New York City Department of Finance (NYC DOF) is authorized to conduct hearings, either by mail or in person, in any of its five Borough Business Centers. When and if an Administrative Law Judge (ALJ) determines the NOL presents a prima facie case, the ALJ will conduct a hearing on the merits of any defense presented. The ALJ reviews witness statements as well as other types of documentary evidence to afford the recipient of the NOL the opportunity to refute the prima facie case and establish a meritorious defense. An ALJ is permitted to consider hearsay evidence, and other evidence which may not be admissible in a traditional court of law, in order to provide the individual with an opportunity to refute the NOL.

At hearing, 93.5 percent of contested NOLs have been upheld throughout the lifetime of this program. In other words, considering how few NOLs are contested in the first place, this means only about 0.15 percent of total speed camera violations issued between 2014 and 2021 were overturned by an ALJ.

### Adjudication Results

	Total	Percent of Total Violations Issued
Speed Camera NOL Issued, 2014–2021	16,284,272	100%
Hearings Requested, 2014–2021	389,134	2.4%
Outcome of NOL Hearings	Total	Percent of Challenged NOLs
NOL Upheld at Hearing	363,984	93.5%
NOL Overturned at Hearing	25,150	6.5%

Source: New York City Department of Finance

## Revenue and Expenses

In total, from January 2014 through June 2025, the City of New York has spent or has committed to spend almost \$3.9 billion in capital and expense funds in furtherance of Vision Zero.

In calendar year 2021, the City of New York collected approximately \$243,887,524 in fines from 4,216,478 speed camera notices of liability. This includes violations from previous years that were paid in 2021, and does not include those violations issued in 2021 that were not paid by the end of the year.

Unlike some other cities with automated speed enforcement programs, New York City does not have, and has never had, a contractor take any proportion of revenue from violations. NYC DOT believes such systems create perverse incentives to issue greater number of violations rather than focusing on the behavioral changes to make driving safer, and thus do not align with the ethics of Vision Zero.

As required by State law, all net revenues from the speed camera program are directed to the General Fund.

### Speed Camera Program Summary

(Fiscal Year 2014–2021)

Operating Costs	\$38,055,176
Capital Costs	\$94,588,548
Total Costs	\$327,210,525
Speed Camera Revenue	\$555,014,321
Net Revenue	\$227,803,796

### Vision Zero Program Summary, City of New York\*

(Fiscal Year 2014–2021)

Expense Costs	\$598,110,000
Capital Costs	\$1,266,326,000
Total Costs	\$1,864,436,000



## Appendix

### Number, Type, and Severity of Crashes, Fatalities, Injuries, and Property Damages in 2020

	All School Speed Zones*	School Speed Zones with Cameras Installed Prior to 2020
Injuries	36,388	19,083
Fatalities	175	94
Injury Crashes	27,513	14,250
Property Damage Crashes	32,417	16,510
Pedestrian Injuries	6,603	3,320
Bicycle Injuries	3,878	1,777
MV Occupant Injuries	25,907	13,986
Severity A Injuries	2,688	1,374
Severity B Injuries	4,520	2,250
Severity C Injuries	28,636	15,187

\* Defined as one quarter-mile from a school building

**Class A severe injuries** include skull fractures, internal injuries, broken or distorted limbs, unconsciousness when taken from the crash scene, severe lacerations, and inability to leave the scene without assistance.

**Class B moderate injuries** include visible injuries such as a lump on the head, abrasions, and minor lacerations.

**Class C slight injuries** include complaints of pain without visible signs injury, momentary loss of consciousness, limping, and nausea.