MTA Bus Automated Camera Enforcement Violations Overview

General Description

The Metropolitan Transportation Authority (MTA) is a public-benefit corporation responsible for public transportation in the state of New York serving 12 counties in southeastern New York, along with two counties in southwestern Connecticut under contract to the Connecticut Department of Transportation (CDOT). The MTA is the largest transportation network in North America.

Bus service within New York City is operated by MTA agencies New York City Transit (NYCT) and MTA Bus Company (MTABC). (Some NYCT bus service is operated through the Manhattan and Bronx Surface Transit Operating Authority (MaBSTOA), which is a subsidiary of NYCT.)

This dataset provides details on Automated Camera Enforcement (ACE) violations that are either issued or rejected, with each row representing a unique violation record. It includes two timestamps indicating different buses captured the violations, the final status of each violation, and, if rejected, the type of rejection. The dataset also includes information on related bus routes and the geographic coordinates of the corresponding bus stops.

The 2023 New York State (NYS) Legislature passed a provision in the budget to expand Automated Camera Enforcement, or ACE. [The ACE program](#) is a bus-mounted camera system that issues violations to vehicles occupying bus lanes, to double parked vehicles along bus routes, and to vehicles blocking bus stops. The program is administered in partnership between the MTA, the New York City Department of Finance (DOF) and the New York City Department of Transportation (DOT). The goal of ACE is to make bus service faster and more reliable by keeping bus lanes and bus stops clear.

This dataset was published through [MTA's Open Data Program](#), which is committed to increasing transparency through high-quality open data and accompanying resources. We continually examine all our published and publishable data with a view to both providing datasets that can be effectively utilized by our customers and the public at large, and to providing regular, automated updates to these datasets efficiently and sustainably. Consequently, this dataset may be restructured and/or combined with other similar datasets in the future.

Data Collection Methodology

This dataset is generated through the Automated Camera Enforcement (ACE) program, which captures bus lane, bus stop, and double-parking violations using cameras mounted on buses. Vendor cameras installed on MTA buses capture and pair images and videos of potential violating behaviors, and share the information with a secondary vendor. At this stage, reviewers verify the plate number, determine the registered owner of the violating vehicle, and evaluate the footage to ensure that it constitutes a violation according to the ACE business rules before sharing the violation with DOT for an additional review. Once a violation is approved through all stages, a Notice of Liability (NOL) is issued to the violator.

There are many reasons why a vehicle captured by the ACE program as occupying a bus lane, route, or stop ultimately does not get fined for the violation. Occurrences of false triggers such as no vehicle actually present in the image and occurrences where the vehicle captured has not actually exhibited violating behavior have been filtered out of the dataset. Occurrences that have not yet been processed to determine whether or not they are valid are not included until they are assigned a violation status.

The remaining occurrences, ones that have been deemed valid in that there was in fact a vehicle double parked, in the bus lane, or in the bus stopped are then assigned one of following categories under the Violation Status field.

VIOLATION ISSUED: The violation is determined to be valid and has been issued to the registered owner of the vehicle.

DRIVER/VEHICLE INFO MISSING: The violation is determined to be valid but is unable to be issued due to missing or incorrect information from the vehicle or registration. Most commonly, this is due to no matching records for the vehicle at the DMV (i.e. ghost plates), missing or temporary plates, or inaccurate or out of date information in the vehicle's registration.

EXEMPT – BUS/PARATRANSIT: The violation occurred by a bus or paratransit vehicle exempt from a fine due to business reasons. This exempt category includes MTA buses, non-MTA buses, and dedicated paratransit vehicles, which are all permitted to use the bus lane.

EXEMPT – COMMERCIAL UNDER 20: The violation occurred by a commercial vehicle, which is exempt for a fine if stopped for less than 20 minutes.

EXEMPT – EMERGENCY VEHICLE: The violation occurred by an emergency vehicle exempt from a fine due to business reasons. Emergency vehicles include police, fire, medical technician, and other law enforcement vehicles. The data does not distinguish between whether the vehicle was stopped due to an emergency.

EXEMPT – OTHER: The violation occurred by a vehicle exempt from a fine due to business reasons. Allowed vehicles under this category include things like diplomats, federal government vehicles, street sweepers, and federal government vehicles.

TECHNICAL ISSUE/OTHER: Due to technical issues, it is not possible to confirm whether or not the occurrence is a valid violation, and thus no fine was issued. This mostly occurs due to the plate, vehicle, or lane being partially obstructed in the image(s) or issues with the image(s) being too dark or overexposed. The cause of this can be due to uncontrollable factors in the environment (such as bad weather or other environmental obstructions), or issues with the camera such as a dirty lens or other technical malfunctions.

Hashed Identifiers

To protect personally identifiable information (PII), all vehicle license plate numbers in this dataset are encrypted using SHA-256 hashing. This encryption method produces a fixed-length text that allows for the identification of unique vehicles across multiple records without revealing actual plate numbers. The use of SHA-256 is a widely adopted industry standard for securing sensitive data and enables analyses such as tracking repeat violations while maintaining individual privacy.

Recidivism

MTA considers a recidivist violator to be any vehicle that has received more than 2 violations within a given time period.

Nearest Previous Bus Stop Mapping Methodology

The goal of the mapping is to pinpoint the closest previous bus stop associated with each violation, making it easier to group and analyze violations. Each record in the dataset represents an ACE violation. Although the final dataset does not include the first and last bus identifiers—unique numeric codes assigned to individual buses and distinct from the bus route ID—these two fields, along with the occurrences, which record the timestamps for each violation, and bus route ID were used during the

mapping process to determine the closest previous bus stop. As a result, each violation is attached with the mapped stop ID, stop name, stop latitude, and stop longitude.

Given that some routes overlap—such as BX28 and BX38, which share most of their trips—the route field may combine multiple routes into one, written as "BX28-BX38". When such a record appears, it is first split into two separate entries: one for BX28 and one for BX38, each retaining the same violation ID and all other information. During mapping, these two entries are grouped together based on their shared violation ID. The mapping logic selects only one optimal match from the group, either from BX28 or BX38. This approach ensures that each violation is evaluated for every possible route it could belong to, while guaranteeing the final dataset contains unique violation IDs.

The mapping logic follows a four-stage process to match each violation with either the previous bus stop or the nearest bus stop. In the first stage, the goal is to identify the most recent bus stop that the bus passed within a 15-minute window prior to the time the violation was captured, along the same route on which the violation occurred. This step is performed separately for the first and last capture of the violation. If both mappings point to the same stop, that stop is selected. If they point to different stops, the one with the shorter time difference is selected. Once selected, the information of stop ID, stop name, stop latitude, and stop longitude is appended to the violation record. If neither the first bus nor the second bus (the last capture) has a valid match, the process moves to the second stage. In the second stage, the same mapping logic is applied, but without using the route as a filtering condition. This is useful in cases where the route assignment is inaccurate.

If no valid match is found in the first two stages, the process moves to a spatial matching approach. In the third stage, the timestamp is replaced with the violation date to broaden the search for potential stops. All stops for the bus on the same date are considered. A KD-Tree algorithm is then used to identify the bus stop with the closest Euclidean distance to the violation point. This process provides a reliable fallback when time-based matching is not possible. Finally, in the fourth stage, the mapping process relies solely on the date, using KD-Tree again to identify the closest active stop on that day, regardless of bus identifiers. This final step ensures that a location is assigned to every violation.

After completing all four stages, each violation is mapped to either a previous bus stop or a nearest spatial stop. This ensures clean and comprehensive data, making it more consistent and useful for data users.

Statistical and Analytic Issues

Some ACE-enforced corridors are covered by multiple routes, creating an inconsistency in the route label used in this dataset. The table below describes the naming conventions used for these overlapping sections. Note that this list is not comprehensive but consists of only the larger overlapping sections with higher violation volumes. There are several shorter 1-2 block sections of ACE routes that overlap that are not included in this table.

Overlapping routes	Overlapping section	Violation Type	Route Label Used*
BX28, BX38	Majority of route	Bus Lane	BX28 in addition to BX28-38 starting 1/31/25
	Majority of route	Bus Stop & Double-Parking	Either
BX35, BX36	West of Washington Bridge	All types	Either
	Wadsworth Av between W 178 St and W 181 St	All types	BX36
B25, B26	Fulton St/Classon Ave & Johnson St/Cadman Plz W	All types	B25
B26, B44 SBS	Nostrand & Bedford Avs between Halsey St and Putnam Av	All types	Either
B26, B62	Jay St between Tillary St and Fulton St	All types	Either
B41, B46 SBS	Flatbush Av between Av S & Av V	Bus Stop & Double-Parking	Either
B44 SBS, B41	Flatbush Av between Nostrand Av and Rogers Av	Bus Stop & Double-Parking	Either
M2, M4	Madison Av and 5th Ave between 32 St & 110 St, 110 St between Madison Av & Adam Clayton Jr Powell Blvd	All types	M2
M15 SBS, M34 SBS	2nd Av from 34 St to 23 St	Bus Lane	M15 SBS
		Bus Stop & Double-Parking	M34
M100, M101	Amsterdam Av/W 163 St & W 125 St/St Nicholas Ave	Bus Stop, Double-Parking	M101

M101, M60 SBS	125 St between 3 Av and Amsterdam Av	All types	M101 from 9/16/24-9/29/24 M60+ from 9/30/24-3/18/25 M101 starting 3/19/25
Q43, Q44 SBS	Sutphin Blvd between Hillside Av and Archer Av	All types	Q44 SBS
Q44 SBS, Q5	Archer Av between 150 St and 168 St	All types	Either
Q53 SBS, Q58	Broadway between Corona Av & Queens Blvd	All types	Either
B35, S46	Church Av between E 7 St and Marlborough Rd	Bus Lane	B35 violations incorrectly labelled as S46**
B35, S46	E 39 St and 1 Av to Hegeman Av and Mother Gaston Blvd (following B35 path)	Double-Parking	

*Where overlapping segments are named using either route, both routes should be included since the associated route is not necessarily the route that the bus was running when the violation was captured.

**When we are aware of incorrect route names being used in the data, they will be noted in the documentation but not corrected in the data itself.

Limitations of Data Use

There are no limitations on the data at this time.

Release Notes
Version 1.0.0 initial release (08/14/2025)