2025 NYC Safe Fleet Transition Plan Update

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14. ABSTRACT

As a leader in adopting fleet safety technologies and countermeasures, New York City (NYC) Department of Citywide Administrative Services (DCAS) adopted a New York City Safe Fleet Transition Plan (SFTP) in 2017. The SFTP formalized a set of best-practice vehicle-safety technologies for all City vehicles to prevent and mitigate crashes, in direct support of Vision Zero. Periodically reviewed, the last SFTP update was developed and issued in 2019. The 2025 SFTP update proposal has been developed with input from NYC DCAS and fleet representatives from major NYC agencies and proposes several changes to prioritized safety countermeasure implemented across the nearly 30,000 NYC fleet units. Notably, given the completion of a successful pilot program, Intelligent Speed Assistance (ISA) is proposed to be reclassified as a Tier 2 technology. Categorization of safety technologies was based on technology maturity, results of pilot testing, strategic initiatives, and NYC policy actions such as recent executive orders.

15. SUBJECT TERMS

Vehicle technology, Vision Zero, Safe Fleet Transition Plan, safer vehicles, best practices, safety.

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Contents

1 Introduction

1.1 Background

The New York City (NYC) Department of Citywide Administrative Services (DCAS) operates the largest municipal fleet in the United States, with over 28,500 vehicles, and assists with the oversight of a 10,000-vehicle NYC-contracted school bus fleet. As a leader in adopting fleet safety technologies and countermeasures, DCAS adopted a New York City Safe Fleet Transition Plan (SFTP) in 2017. The SFTP formalized a set of best-practice vehicle-safety technologies for all City vehicles to prevent and mitigate crashes, in direct support of Vision Zero. The U.S. Department of Transportation's (USDOT) John A. Volpe National Transportation Systems Center (Volpe) partnered with DCAS to research these technologies in 2017, and subsequently, to update the SFTP in the 2018 – 2019 update cycle. Volpe has also partnered with DCAS to assess truck sideguards, complete SFTPs for the trade waste sector and school transportation, analyze the effectiveness of the DCAS nation-leading intelligent speed assistance (ISA) initiative, as well as a Clean Fleet Transition Plan for fleetwide decarbonization. These reports are required of DCAS through Mayoral Executive Order 53 of 2020.

This update revisits the municipal fleet's SFTP to reflect the evolving state of technology and best practices for safe fleet procurement and operation, as well as two Local Laws and two NYC Executive Orders, three of which were established after the previous edition of the SFTP:

- Local Law 56 of 2015,
- Local Law 108 of 2021,
- Executive Order 39, February 15, 2024
- Executive Order 41, March 28, 2019

Per DCAS, the updated SFTP will now apply not only to owned municipal vehicles but also to long-term vehicle rentals that are one year or longer.

The SFTP's sustained progress in reducing crashes depends on cross-agency communication, agency willingness to pilot new safety technologies, working collaboratively with OEMs and suppliers, and regular revision of the Plan itself. As technologies and techniques for fleet safety evolve with time, the SFTP is expected to be regularly reviewed and revised by DCAS, in conjunction with the City's Fleet Federation agencies. This memo presents the proposed 2025 revisions and updates to the SFTP. As with previous SFTP editions, DCAS requires *Tier 1* technologies, encourages adoption of *Tier 2*, and seeks to further study *Tier 3*.

1.2 Current deployment in NYC

Since 2017, NYC DCAS has made numerous investments in safety technology. Table 1 shows the estimated tally of OEM and retrofit safety technologies in the NYC fleet as of December 2024. Categories

have been color-coded to reflect classification in the 2025 SFTP update –green for Tier 1, blue for Tier 2, and purple for Tier 3. Not all technologies listed in the SFTP appear in the safety investments summary, and the investments summary may undercount some technologies due to unreported installations. DCAS is working in 2025 to link its safety investment reporting in the NYC Fleet Focus reporting system directly to the SFTP Tiers Table so to improve tracking of safety investments.

Table 1. NYC Fleet safety investments; FY 2017-2024

Safety Investment	Light-duty	Medium-duty	Heavy-duty	Total
Automatic lights/daytime running lights	7,159	1,822	3,388	12,369
Backup camera	7,009	1,705	3,507	12,221
Live telematics (City vehicles)	12,544	4,932	8,291	25,767
Live telematics (school buses)	-	10,349		10,349
Multifrequency backup alarm	-	-	629	629
Safety lights	-	784	3,411	4,195
Side guards (lateral protective devices)	-	80	4,530	4,610
Surround vision camera	401	-	1,547	1,948
High Vision (EO39 Definition)			456	456
Volume adjusting backup alarm	-	-	2,367	2,367
Driver alerts (LDW and/or FCW)	3,780	1,201	67	5,048
Automatic emergency braking (AEB)	4,491	1,125	40	5,656
Backup sensors (retrofit)	1	290	711	1,002
Blind spot monitoring	4,011	860	182	5,053
Intelligent Speed Assistance (ISA) (retrofit)	345	82	73	500
Navigation systems (OEM, not upfit or plug in)	1,064	512	944	2,520
Pedestrian turn alerts (retrofit)	-	42	158	200
Power and heated mirrors	-	805	1,696	2,501
Power Windows (Heavy, Medium)		463	298	761
Rear AEB	872	240	125	1,237
Speed governors	-	850	3,604	4,454
Connected vehicles (CV) – US DOT Federal Grant project; no longer active (Not included in totals)	*1,842*	*747*	*387*	*2,976*
Total	41,677	26,142	36,024	103,843

1.3 Feedback process

The present SFTP update proposal was developed in draft form in consultation with DCAS Fleet staff and subsequently workshopped on September 12, 2024, at the Fleet Federation standing meeting. All major NYC fleet agencies were represented at the Fleet Federation meeting, and Volpe staff accepted fleet stakeholder feedback during the discussion to develop a consensus updated tiers table.

2 Summary table

The following pair of summary tables shows the proposed changes. Table 2 highlights the changes from the previous edition of the Safe Fleet Transition Plan, including proposed additions, promotions, and demotions. Table 3 displays the proposed final table.

Table 2. SFTP 2025 update (with edits)

Tier 1	Tier 2 Best Practice Technologies	Tier 3 Exploratory Technologies
High vision truck cabs where competitively available and operationally feasible *§‡	Intelligent Speed Assistance (ISA) §	Alcohol touch ignition interlock §
Truck surround cameras for new truck acquisitions when high vision truck cabs are not available *‡	~~Pedestrian~~ AEB for medium-duty vehicles with pedestrian detection where available ~~(Class 3-8) *~~ §	Cell phone physical or app-based lock box/ docking station ignition interlock §
~~Appropriate technologies and techniques to see behind vehicle, such as but not exclusive to~~ Backup cameras where rear view is not otherwise included by surround cameras	Blind spot monitors	Seatbelt assurance ignition interlock systems §
Forward Collision Warning (FCW) and Pedestrian Collision Warning (PCW) for Class 1 and 2	Enhanced Seat Belt Reminder systems (ESBRs)	~~Surround cameras *~~
Automatic Emergency Braking (AEB) for light-duty vehicles (Class 1-2) with ~~Advanced Pedestrian Monitoring~~ pedestrian detection ~~as preferred option~~ where available §	Navigation systems	~~Turning alarms *~~
Automatic headlights where available	Power mirrors and heated mirrors *	Universal design
Enhanced truck rear underride guards *	Speed governors * §	~~Rear Automatic Emergency Braking (AEB) for light-duty vehicles (Class 1-2) §~~
Safety lights for work trucks, such as but not exclusive to side-visible turn signals and roadwork lights (amber)	~~Connected vehicle, or vehicle-to-vehicle (V2V), communication technology~~	~~Intelligent Speed Assistance (ISA) §~~
Side underride guards * consistent with Local Law	~~Broadband backup alarms †~~	Automatic Emergency Braking (AEB) for ~~medium-~~ and heavy-duty vehicles ~~(Class 3-8) *~~ §
Self-adjusting volume and/or multifrequency backup alarms †	Turning alarms *	Connected vehicle, or vehicle-to-vehicle (V2V), communication technology
Additional mirrors/lenses where applicable including Fresnel lenses *	Rear Automatic Emergency Braking (AEB) for all vehicle classes ~~heavy-duty vehicles with air brakes *~~ §	License plate readers
Telematics to enable utilization, collision, speed, and safety reporting, among other uses ‡¶	Forward Collision Warning (FCW) and Pedestrian Collision Warning (PCW) for Class 3 and above	Minimum sound detectability of electric MD/HD vehicles
Warning decals *	External Cameras and Recording	Telematics to enable siren use ‡¶
Power windows where available *	Training where feasible in appropriate use of technologies	
Lane departure warnings for light-duty vehicles	Lane departure warnings for medium- and heavy-duty vehicles	
	Backup sensors	

* Only apply to vehicles with gross vehicle weight rating over 10,000 lbs.

† Only apply to vehicles with limited or no direct rear vision (e.g., passenger/cargo vans and trucks) and to vehicles and trailers with gross vehicle weight rating of 10,000 lbs. or greater.

§ Only apply to non-emergency response vehicles

‡ NYC Executive Order 39, February 15, 2024: https://www.nyc.gov/office-of-the-mayor/news/39-003/executive-order-39

¶ NYC Executive Order 41, March 28, 2019: https://www.nyc.gov/assets/home/downloads/pdf/executive-orders/2019/eo-41.pdf

Table 3. 2025 SFTP update

Tier 1	Tier 2 Best Practice Technologies	Tier 3 Exploratory Technologies
High vision truck cabs where competitively available and operationally feasible *§‡	Intelligent Speed Assistance (ISA) §	Alcohol touch ignition interlock §
Truck surround cameras for new truck acquisitions when high vision truck cabs are not available *‡	AEB for medium-duty vehicles with pedestrian detection where available §	Cell phone physical or app-based lock box/ docking station ignition interlock §
Backup cameras where rear view is not otherwise included by surround cameras	Blind spot monitors	Seatbelt assurance ignition interlock systems §
Forward Collision Warning (FCW) and Pedestrian Collision Warning (PCW) for Class 1 and 2	Enhanced Seat Belt Reminder systems (ESBRs)	Universal design
Automatic Emergency Braking (AEB) for light-duty vehicles (Class 1-2) with pedestrian detection where available §	Navigation systems	Automatic Emergency Braking (AEB) for heavy-duty vehicles* §
Automatic headlights where available	Power mirrors and heated mirrors *	Connected vehicle, or vehicle-to-vehicle (V2V), communication technology
Enhanced truck rear underride guards *	Speed governors * §	License plate readers
Safety lights for work trucks, such as but not exclusive to side-visible turn signals and roadwork lights (amber)	Turning alarms *	Minimum sound detectability of electric MD/HD vehicles
Side underride guards * consistent with Local Law	Rear Automatic Emergency Braking (AEB) for all vehicle classes §	Telematics to enable siren use ‡¶
Self-adjusting volume and/or multifrequency backup alarms †	Forward Collision Warning (FCW) and Pedestrian Collision Warning (PCW) for Class 3 and above	
Additional mirrors/lenses where applicable including Fresnel lenses *	External Cameras and Recording	
Telematics to enable utilization, collision, speed, and safety reporting, among other uses ‡¶	Training where feasible in appropriate use of technologies	
Warning decals *	Lane departure warnings for medium- and heavy-duty vehicles	
Power windows where available *	Backup sensors	
Lane departure warnings for light-duty vehicles		

∗ Only apply to vehicles with gross vehicle weight rating over 10,000 lbs.

† Only apply to vehicles with limited or no direct rear vision (e.g., passenger/cargo vans and trucks) and to vehicles and trailers with gross vehicle weight rating of 10,000 lbs. or greater.

§ Only apply to non-emergency response vehicles

‡ NYC Executive Order 39, February 15, 2024: https://www.nyc.gov/office-of-the-mayor/news/39-003/executive-order-39

¶ NYC Executive Order 41, March 28, 2019: https://www.nyc.gov/assets/home/downloads/pdf/executive-orders/2019/eo-41.pdf

3 Updated designations

3.1 Tier 1

3.1.1 Additions

3.1.1.1 Backup cameras where rear view is not otherwise included by surround cameras.

In the 2019 iteration of SFTP, Tier 1 included "appropriate technologies and techniques to see behind vehicle, such as but not exclusive to backup cameras",[1] and this update clarifies that the focus is ensuring that all NYC Fleet vehicles have backup camera capability. This category is expanded to also reference surround cameras. This is because NYC Executive Order 39 now requires surround cameras (combining video inputs from four cameras mounted on the front, left, right, and rear of a vehicle) for City-contracted trucks without high vision cabs, and surround cameras also provide backup camera functionality when the vehicle is in reverse gear. Note that backup cameras are already federally required on vehicles with a GVWR of up to 10,000 lbs. manufactured in 2018 or later.[2] Backup cameras offer a documented safety benefit, with one study reporting that they reduce the likelihood of backover pedestrian crashes by 41%.[3] Combining light, medium, and heavy-duty vehicle categories, approximately 12,221 NYC fleet vehicles have backup cameras as of December 2024, and 1,948 NYC fleet vehicles have surround cameras, with hundreds more on order.

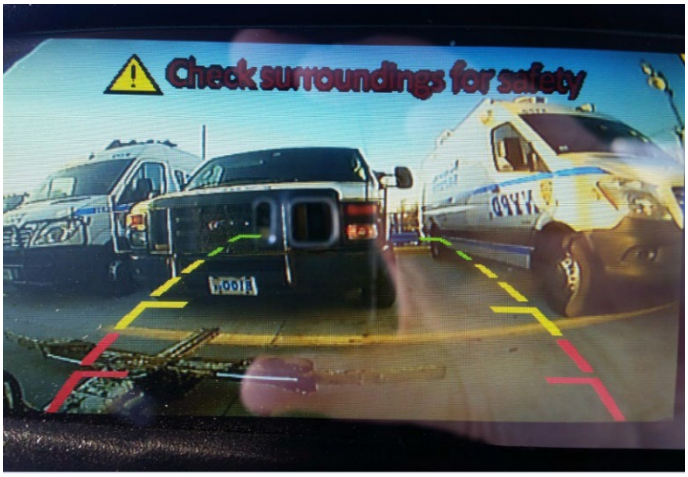

Figure 1. Backup camera display on an NYPD vehicle (Source: NYC DCAS)

[1] https://www.nyc.gov/assets/dcas/downloads/pdf/fleet/VOLPE_Recommendations_for_Safe_Fleet_Transition_Plan_SFTP.pdf

[2] https://www.federalregister.gov/documents/2014/04/07/2014-07469/federal-motor-vehicle-safety-standards-rear-visibility

[3] https://www.sciencedirect.com/science/article/pii/S0001457516303992

3.1.1.2 Power windows when available

When heavy-duty vehicles are used in densely populated areas, it is critical for drivers to remain aware of their surroundings. Power windows (compared to traditional manual crank window systems) allow drivers to easily lower all vehicle windows to listen for auditory signals from workers or other people outside the vehicle, improving safety and potentially helping prevent collisions. Note that this addition only applies to vehicles with GVWR over 10,000 lbs.

3.1.1.3 Lane departure warnings for light-duty vehicles

New to the SFTP is lane departure warnings (LDW) for light-duty vehicles. LDWs provide the driver an alert if the vehicle approaches the lane boundary without a turn signal on. This technology has the potential to prevent certain crash types, such as sideswipes, drifting out of one's lane, and single-vehicle rollovers resulting from veering off the road shoulder. Over the past decade, LDW has become increasingly common in new light-duty vehicles. For example, LDW now comes standard on nearly all new Toyotas, Hondas, Fords, and Chevrolets. A 2018 Insurance Institute for Highway Safety analysis of passenger vehicles, comparing the crash involvement rates of vehicles with LDW and of vehicles without LDW, indicated that the technology reduced relevant crashes of all severities by an estimated 11% and reduced injury crashes by 21% after controlling for driver demographics.[4] Further, LDW systems have been reported to have an increasingly high level of driver use when installed on vehicles: in a recent observational study of over 2,000 vehicles, 87% of vehicles equipped with LDW had the technology turned on.[5]

Figure 2. Lane departure warning system dashboard display example (Source: IIHS)

[4] https://www.sciencedirect.com/science/article/pii/S002243751730556X
[5] https://www.iihs.org/topics/bibliography/ref/2314

3.1.2 Recategorization

3.1.2.1 Truck surround cameras, when high vision truck cabs are not available

Previously categorized as a Tier 3 "exploratory" technology, surround cameras can now also satisfy the City's backup camera Tier 1 requirement. Truck surround cameras represent an aftermarket approach to increase driver situational awareness of other road users in proximity to the driver's large vehicle, when it is not feasible to procure a high vision truck. NYC Executive Order 39 established that all City-contracted trucks, other than high vision trucks,[6] are required to be outfitted with truck surround cameras. Surround cameras can also be used in tandem with cab over and/or high vision trucks. Approximately 1,547 heavy-duty vehicles in the NYC fleet are equipped with surround cameras, and a pilot study on 30 fleet vehicles examined the feasibility of incorporating a vulnerable road user (VRU) detection system integrated into the camera view.[7] Surround cameras to date have been implemented on City vehicles as four-pane split-screen displays, with each pane showing the video input from one of the four cameras mounted on the front, left, right, and rear of the vehicle. Surround cameras can also be implemented with a stitched, single-pane display that shows the vehicle and surroundings in a top-down view, also known as 360-degree or bird's eye view.[8] Both configurations, with either part or all the surround camera display switching to rear view when the vehicle gear is in reverse, satisfy the City's Tier 1 requirement.

Figure 3. Surround view camera (Source: NYC DCAS)

[6] Executive Order 39 defines a "high vision truck" as follows: "The distance from the forward of the center of the vehicle bumper at which the driver can first see the top of a 3-foot cone shall not exceed eight feet and the distance beyond the exterior of the passenger side door at which the driver can first see the top of a 4-foot cone shall not exceed six feet."

[7] https://togetherforsaferroads.org/wp-content/uploads/sites/341/TOF-VOLPE-REPORT-FINAL-4.11.24.pdf

[8] For example, the City of Boston recently retrofitted 360-degree camera monitoring systems on 100 of its heavy trucks.

3.1.2.2 Self-adjusting volume and/or multifrequency backup alarms

Self-adjusting volume and multifrequency (also known as white noise or broadband) backup alarms are consolidated under this update into a single Tier 1 technology. While self-adjusting backup alarms constantly measure ambient noise and adjust the alarm sound level accordingly (e.g., the alarm will be quieter in areas with less ambient noise), multifrequency backup alarms broadcast multiple tones in the alarm sound. Multifrequency backup alarms provide improved spatial cueing to people outside of the vehicle compared to traditional or tonal backup alarms. In other words, it is easier for a person walking or biking to locate the direction and therefore the source of the alarm.[9] In addition, both self-adjusting and multifrequency backup alarms can reduce noise pollution[10] while providing safety benefit when vehicles are operated in reverse. Note that this item only applies to vehicles with limited or no direct rear vision (e.g., passenger/cargo vans and trucks) and to vehicles and trailers with GVWR in excess of 10,000 lbs.

3.2 Tier 2

3.2.1 Additions

3.2.1.1 Lane departure warnings for medium- and heavy-duty vehicles

As described above in 3.1.1.3, LDWs have the potential to decrease crashes and enhance safety in light-duty passenger vehicles. Further, the safety benefit of LDW appears to extend to heavy-duty vehicles, with one study estimating that installed LDW systems resulted in a 48% reduction in LDW-related truck crashes, such as lane departure crashes.[11] While medium- and heavy-duty vehicles are not commonly fitted with LDW, several truck OEMs offer custom installations of LDW technology, such as Kenworth[12] and Volvo[13].

3.2.1.2 Backup sensor retrofits

Backup sensors notify drivers of potential obstacles while reversing their vehicle. These sensors detect obstacles using ultrasonic waves or radar, and emit audible warnings at an increasing rate as the vehicle approaches the obstacle.[14] When studying the reduction in blind zones of backup sensors and cameras in 8 light-duty vehicles, one 2014 study found that backup sensors expand the area of detection of

[9] https://journals.lww.com/nohe/fulltext/2013/15670/comparison_of_sound_propagation_and_perception_of.7.aspx
[10] https://clocs-a.org.au/wp-content/uploads/2023/08/Tier-Individual-Specifications-V7.pdf
[11] https://www.sciencedirect.com/science/article/pii/S0022437514001145
[12] https://www.kenworth.com/innovation/driver-assistance-technologies/#:~:text=LANE%20KEEPING%20ASSIST,the%20direction%20of%20the%20truck
[13] https://www.volvotrucks.us/our-difference/safety/active-driver-assist/
[14] https://umatechnology.org/aftermarket-back-up-sensors-and-cameras-and-more/

backup cameras in the area close to the rear of the vehicle, where backover crash risk is greatest.[15] They additionally found that backup sensors and cameras together reduced the blind zone of those vehicles by 90% on average. DCAS has retrofitted over 1,000 fleet vehicles, mostly heavy-duty, with radar-based backup sensors. The installs on heavy-duty vehicles were largely accompanied by backup camera installations (see reported benefits of backup cameras as described in 3.1.1.1). This approach is also consistent with the Australian CLOCS-A truck safety rating program, which combines backup sensor retrofits, backup cameras, and multifrequency backup alarms as "Bronze" category technologies (comparable to the SFTP's Tier 1 category).[16]

3.2.2 Recategorization

3.2.2.1 Intelligent Speed Assistance (ISA)

Given that 29% of U.S. traffic fatalities are at least partially attributable to speeding,[17] and considering that Safer Speeds is one of the pillars of the Safe System Approach, mitigating speeding behavior is an important road safety strategy.[18] Since 2022, NYC DCAS has equipped 500 NYC fleet vehicles with active intelligent speed assistance (ISA) and plans to install ISA in an additional 1,600 fleet vehicles, comprising the largest single deployment of active ISA in the United States. In the pilot, ISA resulted in a 64% relative decrease in the amount of time that drivers exceeded the speed limit by at least 11 mph.[19] The relative decrease in time spent speeding over 11 mph was even greater in areas with higher speed limits (Figure 4). With sufficient evidence that ISA is effective at reducing severe speeding, the technology has been recategorized from "exploratory" to a Tier 2 "best practice" technology.

[15] https://www.sciencedirect.com/science/article/pii/S0001457514000104
[16] https://clocs-a.org.au/wp-content/uploads/2023/08/Tier-Individual-Specifications-V7.pdf
[17] https://www.nhtsa.gov/risky-driving/speeding
[18] https://www.transportation.gov/NRSS/SafeSystem
[19] https://www.nyc.gov/assets/dcas/downloads/pdf/fleet/nyc-intelligent-speed-assistance-pilot-evaluation-2024-oct.pdf

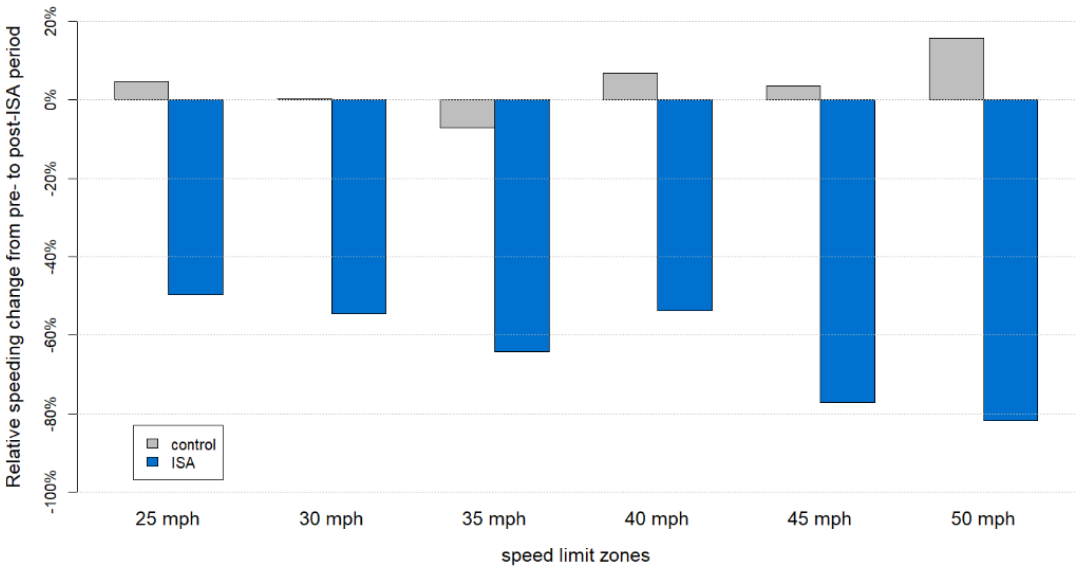

Figure 4. Relative speeding change by speed limit zones for control and ISA vehicles.

3.2.2.2 Automatic Emergency Braking (AEB) for medium-duty vehicles

Automatic emergency braking (AEB) is intended to help prevent forward collisions by automatically activating a vehicle's brakes to slow or stop the vehicle. A 2021 study, examining event data of Class 8 trucks on highway driving, found that that AEB was associated with a 41% reduction in front-to-rear crashes and a 12% reduction in overall crashes.[20] Starting in 2029, federal regulations will require all new passenger vehicles and light-duty trucks be equipped with AEB[21]; a similar rule has been proposed by the Federal Motor Carrier Safety Administration (FMCSA) and National Highway Traffic Safety Administration (NHTSA) that would also require heavy-duty vehicles to be equipped with AEB.[22] Approximately 1,125 medium-duty NYC fleet vehicles are equipped with AEB; relatedly, there are 40 heavy-duty City vehicles equipped with AEB.

3.2.2.3 Turning alarms

Turning alarms are external alarms that alert VRUs when a vehicle is making a turn. Alerts tend to be auditory (either with simple beeps or spoken warning), although visual alerts can be used as well. In one Portland, OR pilot study of auditory turning alerts installed on buses, about 30% of bus operators reported that the alerts reduced the number of "close calls" with pedestrians.[23] The same study found that the majority (65%) of pedestrians surveyed did not find the auditory alerts to be intrusive to the

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20 https://www.iihs.org/topics/bibliography/ref/2211#:~:text=AEB%20also%20was%20associated%20with,these%20interventions%20involved%20autobrake%20activations.

21 https://www.nhtsa.gov/press-releases/nhtsa-fmvss-127-automatic-emergency-braking-reduce-crashes

22 https://www.nhtsa.gov/press-releases/heavy-vehicles-automatic-emergency-braking-proposed-rule

23 https://www.transit.dot.gov/sites/fta.dot.gov/files/FTA_Report_No._0084.pdf

environment, although spoken warnings were considered to be more intrusive compared to beeping warnings. In the NYC Truck of the Future (ToF) pilot, vehicles were equipped with external auditory and visual alerts that signaled pedestrians when the vehicle was turning.[24] One of the ToF fleets saw a 50% reduction in VRU alerts over the first three months; one possible explanation for the decrease was that the external alerts discouraged pedestrians from approaching the vehicle while it was turning. Approximately 200 NYC fleet vehicles are currently equipped with pedestrian turning alarms.

3.2.2.4 Rear AEB for light- and medium-duty vehicles

Rear automatic emergency braking (AEB) can prevent low-speed backup collisions by automatically engaging a vehicle's brakes to slow or stop the vehicle after its driver does not respond to initial audible warnings of detected objects. While rear AEB is already categorized as a tier 2 technology for heavy-duty vehicles, there are also potential benefits for other vehicles: the Highway Loss Data Institute (HLDI) found a 26% reduction in the frequency of claims filed under property damage liability (PDL) coverage among Cadillacs equipped with rear AEB compared to Cadillacs without.[25] Further, an American Automobile Association study, testing whether rear AEB systems would prevent backup crashes into a child standing behind the vehicle, found that four 2023 crossover SUV models automatically applied brakes in 15 of 20 test runs (75%) and prevented a collision with the child-sized target in 10 of 20 test runs (50% crash reduction).[26] As of July 2023, this feature is standard or optional in about 30% of cars in the United States.[27] Approximately 900 NYC light-duty vehicles, and almost 280 medium-duty vehicles are currently equipped with rear AEB.

3.3 Tier 3

3.3.1 Additions

3.3.1.1 License plate readers

To help reduce automotive theft, reduce toll evasion, and identify vehicles involved in criminal activity such as hit-and-runs, license plate readers have been used by both the NYPD[28] and Port Authority of New York and New Jersey.[29] Whereas the Port Authority's license plate readers are static and stationed at various bridges, the NYPD has access to mobile license plate readers installed on patrol vehicles. Automatic license plate readers can be used to identify "ghost cars"–vehicles that have forged or altered license plates and remain untraceable to traffic cameras and toll readers. In September 2024, a joint

[24] https://togetherforsaferroads.org/wp-content/uploads/sites/341/TOF-VOLPE-REPORT-FINAL-4.11.24.pdf
[25] https://www.iihs.org/news/detail/gms-rear-autobrake-reduces-crashes
[26] https://newsroom.aaa.com/wp-content/uploads/2024/02/UPDATED-Reverse-AEB-Report-FINAL-2.24-2.pdf
[27] https://www.jdpower.com/cars/shopping-guides/what-is-rear-automatic-braking
[28] https://abc7ny.com/nyc-crime-auto-thefts-mayor-eric-adams-plan-growing-in/13744536/
[29] https://gothamist.com/news/watch-out-scofflaws-new-license-plate-readers-are-coming-to-staten-island-bridges

City-State task force aimed at removing ghost cars from the streets was announced,[30] and as of December 2024, twelve weeks after the start of the task force, over 5,000 ghost cars have been removed.[31] Although license plate readers can help law enforcement in identifying vehicles that are operating illegally (either via license plate alterations or because it is a stolen vehicle), this technology is categorized as an exploratory entry in Tier 3, to encourage further study on the benefits and costs of expanding license plate readers across the entire NYC fleet and the resulting impact on traffic safety.

Figure 5. Automatic license plate reader on an NYPD vehicle

3.3.1.2 Minimum sound detectability of electric medium- and heavy-duty vehicles

In 2016, NHTSA established Federal Motor Vehicle Safety Standard (FMVSS) 141, which defines minimum sound requirements for hybrid and electric vehicles when traveling 30 km/h or less.[32] However, this rule only applies to light-duty vehicles, those a with a GVWR of 10,000 pounds or less. As of December 2024, no standard on sound detectability for medium- or heavy-duty vehicles has been established,[33] and available research on sound detectability for medium- and heavy-duty (MDHD) vehicles has remained limited. Although MDHD vehicles typically generate more noise than light-duty vehicles, some pedestrians (including blind and vision-impaired individuals) may have more difficulty in detecting certain quieter MDHD vehicles. For example, in one study, researchers determined that most noise standards detailed in FMVSS 141 could apply to an electric Class 8 truck.[34] The same study noted that sound requirements when heavy-duty vehicles are reversing would need to be considered and

[30] https://www.nyc.gov/office-of-the-mayor/news/189-24/mayor-adams-governor-hochul-launch-largest-intraagency-city-state-task-force-to#/0
[31] https://www.nyc.gov/office-of-the-mayor/news/914-24/mayor-adams-governor-hochul-removal-73-000-ghost-cars-illegal-motorized#/0
[32] https://www.federalregister.gov/documents/2018/02/26/2018-03721/federal-motor-vehicle-safety-standard-no-141-minimum-sound-requirements-for-hybrid-and-electric
[33] https://www.nhtsa.gov/sites/nhtsa.gov/files/documents/812347-minimumsoundrequirements.pdf
[34] https://doi.org/10.4271/2023-01-1036.

potentially adjusted in the context of existing backup alarms, which are louder than minimum sound requirements under FMVSS 141. While backup alarms are a Tier 1 technology in the SFTP, they are federally required by OSHA regulations only on vehicles with obstructed rear view when operated on job sites, not on public roads.[35] NYC fleet agencies could consider piloting and evaluating different minimum sound-detectability levels and tones on current and future large vehicles as the Clean Fleet Transition Plan to electrify all non-emergency, non-specialized fleet units by 2035 is implemented.[36]

3.3.1.3 Telematics tracking of siren use

NYC has been required to utilize telematics to track its vehicles since Executive Order 41 was signed in March 2019. Approximately 17,990 NYC fleet vehicles are equipped with live telematics, not including NYPD vehicles or school buses which also utilize the technology. Including NYPD and school buses, over 36,000 telematics units are in use. And thanks to Executive Order 39 of 2024, City-contractor vehicles will also be required to utilize telematics when in service of the contract. However, the current SFTP iteration now specifically identifies siren use for tracking driver behavior as a Tier 3 technology to be further developed. Monitoring siren use, in conjunction with other metrics like speed, would allow managers to differentiate driver behavior in emergency and non-emergency situations and to review potentially unsafe driver behavior in the appropriate context.

3.3.2 Recategorization

3.3.2.1 Connected vehicle (CV) or vehicle-to-vehicle (V2V) communication technology

NYC's five-year connected vehicle (CV) pilot, led by NYC Department of Transportation, was aligned with other City initiatives to support traffic safety, and concluded in 2021.[37] As part of the project, approximately 3,000 vehicles were equipped with Dedicated Short Range Communication (DSRC) and 457 roadside units were placed at key intersections.[38] Both vehicle-to-infrastructure (V2I) applications (e.g., speed compliance, curve speed compliance, red light violation warning) and vehicle-to-vehicle (V2V) applications (e.g., forward collision warning, emergency electronic brake light, lane change warning, intersection movement assist) were tested.[39] Although the NYC CV pilot demonstrated the feasibility and potential safety benefits of leveraging CV communication, the technology still is not widely available and is not being further installed in NYC fleet units at this time. As such, it has been reclassified as a Tier 3 technology. The original pilot project is no longer active.

[35] https://www.osha.gov/laws-regs/regulations/standardnumber/1926/1926.601
[36] https://www.nyc.gov/assets/dcas/downloads/pdf/fleet/clean-fleet-transition-plan-october-2022.pdf
[37] https://cvp.nyc/
[38] https://www.its.dot.gov/pilots/pilots_nycdot.htm
[39] https://rosap.ntl.bts.gov/view/dot/63319

4 Conclusion

The 2025 SFTP update proposes several new additions to the Tiers table, along with the recategorization of several technologies. This update is based on targeted research by Volpe as well as review of current operational experience and consultation with NYC DCAS and other major NYC fleet agencies at the forefront of fleet safety technology adoption. This SFTP will continue to serve as a living document. As safety technologies and best practices develop, and as the availability of technology evolves, the document will be updated and revised in future cycles.

Among the key safety improvements outlined in this second update of the DCAS fleet SFTP are:

- Recategorizing Intelligent Speed Assistance (ISA) from a Tier 3 Exploratory Technology to a Tier 2 best Practice Technology. DCAS has completed 500 retrofits with 1,600 more planned.
- Recategorizing surround cameras or high vision truck design as Tier 1 technologies for trucks consistent with NYC Mayoral Executive Order 39 of 2024. DCAS currently has 2,003 trucks that qualify either as cab over/high vision or are outfitted with surround cameras, with 782 trucks on order with surround cameras.
- Recategorizing external auditory turning alerts for pedestrians to a Tier 2 best practice technology. DCAS has completed 200 retrofit installations in a first rollout of these alerts.
- Adding backup sensors as a Tier 2 technology. DCAS has completed a retrofit rollout of 1,002 units with backup sensors, focusing on trucks.
- Moving automatic emergency braking (AEB) for medium duty trucks from Tier 3 to Tier 2. DCAS has now introduced 1,125 medium duty trucks with AEB and 5,656 total vehicles with AEB.
- Recategorizing rear AEB as Tier 2 for all vehicle classes. DCAS has now introduced 1,253 vehicles of all sizes with rear AEB. Nearly 6,900 total vehicles now employ either frontal and/or rear AEB.
- Adding lane departure warnings as Tier 1 for light-duty and Tier 2 for medium- and heavy-duty vehicles. DCAS has 5,048 vehicles with driver alerts including lane departure and/or forward collision warnings.
- Adding license plate readers, telematics tracking of lights and sirens, and minimal sound detection for large electric vehicles to Tier 3 technologies for further research.

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