

Electric Vehicles and Safety

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On March 20, 2023, Mayor Adams joined FDNY Commissioner Laura Kavanagh and officials across city government to announce the [Charge Safe, Ride Safe, NYC Electric Micromobility Action Plan](#) and to sign local laws aimed at safeguarding E-Bikes.



Mayor Adams, FDNY Commissioner Laura Kavanagh, NYC DOT Commissioner Ydanis Rodriguez, and other City officials at the announcement of the Charge Safe, Ride Safe, NYC Electric Micromobility Action Plan.

E-Bikes are growing in popularity and are an important part of the electrification of city transportation. However, their growth in popularity has also resulted in more fires, injuries, and deaths related to issues of unsafe charging, improper charging, or poorly manufactured battery and electric components. The new laws and initiatives will provide additional spaces for e-bikes and e-scooters to safely charge, provide educational opportunities to operators on how to safely use and charge their devices, create new regulations on charging locations that

will be inspected for compliance, and crack down on the sale of unsafe and improperly manufactured e-mobility devices.

In comparison to e-bikes, fires involving electric cars and vans remain infrequent and uncommon based on [current research](#). The City of New York is one of the nation's largest operators of electric plug-in vehicles with over 4,500 now in operation. Since 2012, fleet agencies have recorded 212 vehicle fires in the fleet management system. Of these, 95% involved gas and diesel vehicles, 5% involved hybrid vehicles, including two destroyed by an externally caused fire, and none involved an all-electric vehicle.

City of New York Fleet Reported Vehicle Fire Incidents Since 2012

Vehicle Type	Number	Percent
Diesel	175	83%
Diesel, Hopper Fires	6	3%
Diesel Hybrid	1	<1%
Hybrid Gas Electric	9	4%
Plug-in Electric (PHEV)	1	<1%
Plug-in Electric, Underground Explosion	2	1%
Gas	17	8%
All-Electric Vehicle (BEV)	0	0%
Off-Road	1	<1%
Total	212	100%

Current numbers aside, fires with electric vehicles can happen and we need to be prepared.

The large batteries in most commercially available electric vehicles are made up of thousands of smaller battery cells bundled together. If one of these cells are damaged in a collision, it could result in the cell rapidly overheating. This heat can eventually cause the battery to vent toxic gas or explode outright. The excess heat transfers to other nearby cells, putting them at risk of doing the same. This is a condition referred to as thermal runaway and can result in severe fire conditions.

Since transfer of heat is the issue, the only current solution is to continually put water on the batteries and keep their temperature down until the excess heat from damaged cells has

subsided. This can take hours of time and thousands of gallons of water. Unlike gasoline and diesel fuel fires, electric battery fires can reignite after an initial fire is doused. Even after an initial fire is out, these vehicles must be stored outside, with a safety perimeter and access restricted to trained emergency professionals.

A severe car crash may result in damage to the high voltage system of an electric vehicle. If a fleet operator of an electric vehicle is in a severe crash, they should contact 911, notify the operator that the vehicle was an electric vehicle, and stay away from the vehicle until trained emergency professionals can arrive.

In the event of a severe collision, including where airbags activate, the high voltage system is automatically cut off from the rest of the vehicle, safeguarding it for emergency response. First responders can also isolate the high voltage system by disconnecting the 12-volt battery.

If you are involved in a crash with an electric vehicle, take these steps:

- Keep a safe distance from exposed orange cables. These are part of the high-voltage system and can be dangerous.
- If you hear a popping, hissing, or whistling coming from the vehicle, or notice a strong fruity or bubblegum smell, this could be a sign of an electrolyte fluid leak from a damaged battery and could result in a thermal runaway and fire event. Keep a safe distance from the vehicle.
- If you suspect a vehicle is on fire, exit the vehicle immediately, call 911, and warn any bystanders to stay away from the car.
- If an electric vehicle is on fire, do not attempt to put it out with a fire extinguisher. Extinguishers are meant to cut a fire off from its oxygen supply. They will not work on electric battery fires and will put you at risk.

Some other safety tips for electric vehicles:

- If you notice a worn or damaged charging cable, do not use it. Contact your fleet repair garage.
- Never use an extension cord or multi-outlet power strip when charging a vehicle with a 110 volt cable.
- If you wish to use a charging location that is not City owned or authorized, please [contact DCAS](#).

Zero emissions transportation through electrification is an exciting way to clean our City's air, reduce vehicle maintenance, and improve fleet operations. Please stay alert if you are in a crash or suspect a battery fire is starting, and help keep everyone safe.

Special thanks to Captain Evan Balcombe at FDNY and Spiro Kattan at DSNY for assisting with this newsletter.

The NYC Fleet Manual and Drivers Handbook has been updated. Please see the updated version at [NYC Fleet Manual and Drivers Handbook](#).

Vision Zero Safety Notice

NYC agencies and fleet operators must set the example for safe and cautious driving and avoid crashes and injuries. Please see our [Vision Zero Safety notice for Fleet Operators](#).



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