

## CASE STUDY

# How Cities Are Reducing E-Bike Fires with Standards



### Problem:

Ownership of e-bikes and scooters has [soared](#) since the pandemic, offering a cost-effective, and environmentally friendly way to get from point A to point B. However, the lithium-ion batteries that power these devices and allow them to be rechargeable have the potential to cause extreme damage if they go into thermal runaway, an uncontrollable, self-heating state that can result in fire or even explosion.

Lithium-ion battery fires are intense, fast, and difficult to extinguish. The Fire Safety Research Institute of UL Research Institutes conducted an e-bike fire test in partnership with the FDNY, finding that it took less than 20 seconds from when the first smoke appeared from the e-bike to completely engulf the room in flames.

Instances of these devastating fires have been reported across the country. They present a unique risk in cities, as more densely populated areas can result in fires that spread quickly from apartment to apartment or building to building.

### Solution:

At UL Standards & Engagement, we are working with stakeholders to achieve a safer, more sustainable world through standards. Standards are guidance documents for manufacturing and testing a product's safety, developed by a committee of experts from industry, manufacturing, government, academia, and more.

For e-bikes and scooters, ULSE has three standards that cover the devices and the batteries that power those devices: UL 2849, the standard for e-bikes; UL 2272, for personal e-mobility devices; and UL 2271, the standard for lithium-ion batteries in e-mobility devices. These standards are designed to protect against thermal runaway and the devastating fires it can produce.

## How are cities handling this issue?

Cities are taking different approaches to curbing deadly lithium-ion battery fires. While each solution is unique, leveraging UL standards as part of the solution is common to all of them.



### New York City, NY

In New York City — where fires [more than doubled](#) from 2021 to 2022 and have become the [leading cause](#) of deadly fires — the increasing problem required action. The signing of [Local Law 39](#) on March 30, 2023, took a critical step forward in protecting consumers by prohibiting the sale, lease, or rental of e-mobility devices and their batteries that did not meet specific ULSE's safety standards ([UL 2849](#), [UL 2272](#), and [UL 2271](#)).

In an effort to remove e-mobility devices that do not conform to safety standards, the city council approved a trade-in program for residents which will allow them to purchase certified products at a lower cost. Additionally, the city approved a separate e-bike trade-in program specifically for delivery workers so that they can safely do their job without worrying about a cost burden.



### Washington, D.C.

To make e-mobility devices more accessible and safe, the D.C. Council unanimously passed legislation on September 19, 2023, to create financial incentives for e-bike buyers, primarily lower-income residents, with vouchers ranging from \$75 for bike locks to \$2,000 for an e-bike.

D.C.'s legislation seeks to protect consumers from dangerous products by shrinking the proportion of non-certified e-mobility devices on streets throughout the nation's capital. The legislation's safety mandates that e-bikes eligible for a discount must meet specific ULSE standards for battery safety, ultimately helping to reduce the risk of fires.



### Denver, CO

Similar to Washington, D.C., Denver recently created an e-bike and e-cargo bike instant [rebate program](#), which launched in 2022. The program allows residents to save up to \$1,400. This legislation allows qualified e-mobility devices to be certified to specific ULSE standards for battery safety, further protecting consumers from dangerous fires.