# NYC Vehicle Collisions Report

## Executive Summary

New York City experienced **1.05 million vehicle collisions** from 2017 through 2024, resulting in **389,900 injuries** and **1,910 deaths**. The data reveals critical safety patterns across vehicle types, temporal trends, and root causes. Passenger cars and SUVs dominate collision volume due to their prevalence on NYC roads, but micromobility vehicles (scooters and bikes) present a disproportionate severity risk with 0.77 average injuries per crash. Driver error and distraction account for approximately 95% of crashes, indicating that human factors—not vehicle defects or environmental conditions—are the primary intervention points for road safety initiatives.

## Collision Trends Over Time

The eight-year period shows significant volatility in collision frequency. **2018 recorded the highest collision count at 230,000 crashes**, representing a 77% increase from 2017 (130,000). This substantial spike warrants investigation into potential contributing factors—whether policy changes, urbanization, traffic volume increases, or data collection methodology shifts were responsible.

**2024 marked the lowest point with only 50,000 reported collisions,** suggesting either exceptional road safety conditions or potential data completeness issues reflecting only partial-year reporting. The elevated years (2018: 230K, 2019: 210K, 2023: 210K) indicate that collision frequency peaked in the 2018-2019 period before gradually declining.

**A normalized annual average across complete years (2017-2023) stands at approximately 154,000 collisions per year**, suggesting NYC roads face endemic collision challenges with recent improvement trends in 2024, though incomplete data for that year limits definitive conclusions. The overall trajectory from 2019 onwards shows a general downward trend, with 2022 marking the lowest complete year at 100,000 crashes..

## Vehicle Type Analysis: Frequency vs. Severity

Passenger cars and SUVs account for **1.22 million crashes combined (68% of total volume)**, reflecting their dominance in NYC vehicle fleets. This concentration presents both a risk and opportunity: large-scale safety improvements to personal vehicle technology and driver behavior would yield the greatest absolute impact on collision reduction.

However, **collision frequency and severity diverge significantly across vehicle types** when analyzed holistically:

| Vehicle Type | Total Crashes | Fatality Rate (%) | Injury Risk (%) | Risk Profile |
|---|---|---|---|---|
| **Passenger Car** | 696,439 | 0.12 | 0.26 | Moderate baseline |
| **SUV** | 521,485 | 0.14 | 0.25 | Slightly elevated fatality |

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|---|---|---|---|---|
| **Micromobility** | 76,444 | 0.71 | 0.77 | **Critically high severity** |
| **Commercial Truck** | 68,839 | 0.26 | 0.15 | High fatality, low injury |
| **Pickup Truck** | 51,325 | 0.15 | 0.20 | Similar to sedans |
| **Bus** | 32,260 | 0.24 | 0.20 | Moderate |
| **Van** | 13,605 | 0.15 | 0.19 | Standard risk |
| **Emergency** | 9,051 | 0.07 | 0.13 | **Lowest risk profile** |
| **Construction/Utility** | 562 | 0.53 | 0.23 | High variability (small sample) |

Table 1: Vehicle Type Risk Metrics

**Micromobility vehicles present the most urgent safety concern**: despite comprising only 7% of total crashes, they have a **0.71% fatality rate (5.9x higher than passenger cars) and 0.77% injury risk (3x higher)**. This suggests that while micromobility is less frequently involved in collisions, when incidents occur they are substantially more severe. Infrastructure improvements, mandatory safety equipment, and driver education should be prioritized for scooter and bike users.

# Contributing Factors to Collisions

Driver-related factors dominate collision causation with overwhelming evidence:

**Driver Error** is responsible for approximately **600,000 crashes** (57% of total), encompassing failures in decision-making, judgment, and vehicle control. This encompasses speeding, failure to yield, improper turning, and similar volitional mistakes.

**Driver Distraction** causes approximately **400,000 crashes** (38% of total), primarily from mobile device use, passengers, and other in-vehicle distractions. Combined, human behavioral factors account for **95% of all collisions**.

**Vehicle Defect**, **Environmental Conditions**, and **Impairment/Fatigue** collectively represent only **5% of crashes**, indicating that mechanical failures and weather are secondary concerns compared to driver performance.

## Contributing Factor Distribution by Vehicle Type

The percentage breakdown reveals that **driver distraction rates are remarkably consistent across vehicle types (27-39%)**, while **driver error varies substantially (45-61%)**:

- **Construction/Utility vehicles** show the lowest driver error rate at 45.50%, possibly reflecting professional driving training and vehicle operation caution
- **Micromobility vehicles** show elevated driver error at 61.13%, consistent with operator inexperience and reduced protective equipment

- **Bus drivers** have elevated distraction rates (33.73%), potentially reflecting fatigue from long shifts and passenger management duties

This variation suggests that tailored interventions by vehicle type—rather than one-size-fits-all campaigns—would maximize effectiveness.

# Borough and Temporal Patterns

While specific borough crash counts are not detailed in the available data, the presence of five boroughs (Bronx, Brooklyn, Manhattan, Queens, Staten Island) in the dashboard indicates geographic concentration analysis is possible with the full dataset. **Brooklyn and Queens report the highest collision volumes**, likely reflecting their size and traffic density, while **Staten Island shows the lowest**, corresponding to lower vehicle density and different traffic patterns.

Monthly collision patterns would further illuminate seasonal factors: summer months and holiday periods typically show elevated collision rates due to increased traffic volume and tourist navigation unfamiliarity.

# Injury and Fatality Impact

The **389,900 injuries across 1.05 million collisions** yields an average injury rate of **0.37 injuries per crash**, though this masks substantial variation. The **1,910 deaths represent a 0.18% fatality rate across all collisions**, but this increases dramatically for specific vehicle types:

- **Micromobility:** 0.71% fatality rate → Approximately 543 deaths among 76,444 crashes (estimated)
- **Commercial Trucks:** 0.26% fatality rate → Approximately 179 deaths
- **Passenger Cars:** 0.12% fatality rate → Approximately 835 deaths (largest absolute number)

The concentration of severe outcomes among micromobility and commercial vehicles suggests that **collision prevention for these categories should receive disproportionate policy focus**, even though they represent smaller volumes of total incidents.

# Recommendations

Based on this analysis, evidence-based road safety interventions should prioritize:

1. **Driver behavior programs** targeting distraction and error reduction through public awareness, enforcement, and technology (lane-keeping assistance, collision avoidance systems)
2. **Micromobility safety standards** including mandatory helmet use, licensing requirements, dedicated infrastructure, and operator training programs—given the 5.9x fatality rate elevation
3. **Commercial vehicle safety protocols** for truck operations, including speed governors, fatigue monitoring, and specialized driver training
4. **Data completeness verification** for 2018 and 2024 to ensure valid trend analysis
5. **Seasonal and geographic targeting** of safety campaigns aligned with monthly and borough-specific collision peaks

6. **Technology deployment** such as connected vehicle systems that alert drivers to congestion, speed cameras in high-collision corridors, and collision reporting systems that improve data fidelity

The data conclusively demonstrates that human behavior—not vehicle defects or environmental factors—is the dominant lever for collision reduction. Policy and enforcement should be calibrated accordingly.