



City Crash Rates

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METHODOLOGY

Throughout the COVID-19 pandemic, traffic fatalities and serious injuries have increased despite a drop in the amount people drive. In 2019, there was 1.07 fatalities per 100 million vehicle miles traveled (VMT) <u>per the National Highway Traffic Safety Administration (NHTSA)</u>. Through the first half of 2022, that increased to 1.27 fatalities per 100 million VMT, a 19% increase.



Figure 1: Traffic Fatality Rate, 2011-Present, NHTSA

In the 2020 report, "<u>COVID-19 Effect on Collisions on Interstates and Highways in the US</u>," INRIX Research found that travel speeds significantly increased on interstates and arterials while vehicle-miles traveled dropped. While congestion has returned to many roads, many city streets are still seeing significantly less congestion. Per the <u>INRIX Traffic Scorecard</u>, last mile speeds in U.S. cities increased 17% between 2019 and 2021. Faster travel speeds may exacerbate injuries when a collision occurs.

That's why governments have worked to reduce both the number and the severity of collisions. By identifying potentially problematic intersections, transportation and safety professionals can specifically target key intersections that may pose a safety risk to the traveling public.

Signals Data: INRIX Signal Analytics provides key metrics like arrival on green, split failures, volumes and control delay on more than 240,000 traffic signals across the United States. For this analysis, INRIX used data on 7,194 traffic signals across Chicago, Dallas, Los Angeles, Seattle and Washington D.C. to determine traffic volumes during the following periods:

•October 4-10, 2020 •December 13-19, 2021 •March 7-20, 2022 •June 13-26, 2022

METHODOLOGY (CONT.)

These sample volumes were then scaled to a monthly total to be paired with local crash data. To eliminate variation, the lowest-volume quintile of signals was removed from the analysis. A full count of signals analyzed is provided in Figure 2 below.

City	Chicago	Dallas	Los Angeles	Seattle	Washington D.C.
Total Signals	2,642	1,001	2,202	600	749
Signals for Analysis	2,114	801	1,762	531	426
Total Crashes in City	34,729	7,276	8,096	2,321	5,505
Total Crashes Near Signals	20,171	4,742	4,639	1,124	2,745
Crashes for Analysis	18,030	3,903	3,896	1,105	2,396

Figure 2: Study Inputs

Safety Data: INRIX downloaded publicly available crash data from each of the five cities analyzed for the months of October 2020, December 2021, March and June 2022. The number of total crashes and crashes near signals are provided in Figure 2 below.

Processing: Signal and crash locations were then loaded into Geographical Information Systems software to match crash locations to signals. Crashes residing more than 400 feet from an intersection were removed from the analysis. Individual crash locations were then paired to the nearest signal, and only one match could be made. Figure 2 reveals the total number of signals and crashes in each city that moved forward in the analysis, indicated by the amber band.

Crash Rate: The crash rate was determined by dividing the number of crashes by monthly traffic volume. To provide an easier-to-read number, it was then multiplied by 100,000, to give an overall crash rate per 100,000 vehicle estimated volume.

Challenges: Due to differences in reporting and data collection efforts, comparing crash rates between cities, like comparing intersections in Washington D.C. to intersections in Seattle, is not advised.

In addition, some cities offer information that others do not, like whether the crash is related to the intersection or mid-block. For this analysis, we chose to move forward with the 400-foot limit, though a more in-depth analysis could determine the degree the intersection played a role in a particular crash.

CHICAGO RESULTS

Out of the five cities analyzed, Chicago recorded the largest number of crashes. Given the sheer number of crashes compared to other cities, it's likely Chicago simply has a more robust crash reporting system than Los Angeles or Dallas.

South Rockwell & West Cermak Road has the most crashes per 100,000 vehicles – followed by North Fairbanks Court & East Erie, with West Diversey ranking third.

It's important to know how this differs from the total number of collisions. For example, East 95th Street & South Stony Island Ave saw 75 collisions over the four months analyzed, followed by East 79th Street and South Stony Island Ave with 63 collisions. When adjusting for vehicle volumes, however, those areas dropped to 18th and 14th, respectively.

Nationally, 40% of collisions occur at intersections, <u>according to NHTSA</u>. Within Chicago, however, INRIX data reveals a higher proportion of crashes near intersections. During the four months analyzed, Chicago reported 34,729 crashes, with 20,171 occurring within 400 feet of a signal, representing 58% of reported collisions.



DALLAS RESULTS

Canton Street & South Malcolm X Boulevard has the most crashes per 100,000 vehicles – followed by Exposition Avenue & Parry Avenue, with North Hall Street & Main Street ranking third.

Canton Street & South Malcolm X Boulevard also had the most number of crashes within 400 feet, with 34. North Walton Walker Boulevard & West Davis Street had the second-most with 23 (ranked 9th in crash rate) while North Buckner Boulevard & Casa Linda Plaza saw the third-most (ranked 51st in crash rate).

Nationally, 40% of collisions occur at intersections, <u>according to NHTSA</u>. During the four months analyzed, Dallas recorded 7,276 crashes, with 4,742 occurring within 400 feet of a signal, representing 65% of reported collisions.



LOS ANGELES RESULTS

West 76th Street & South Broadway has the most crashes per 100,000 vehicles – followed by West 69th Street & Figueroa Street, with Figueroa Street & 4th Street ranking third.

West 76th St & South Broadway along with West 69th St & Figueroa St had 10 crashes occur in the timeframe analyzed, while Figueroa St & 4th St had 9 collisions. West Slauson Avenue & South Western Avenue, ranked 16th by crash-rate, also had 10 collisions.

Nationally, 40% of collisions occur at intersections, <u>according to NHTSA</u>. Within Los Angeles, however, INRIX data reveals a higher proportion of crashes near intersections. During the four months analyzed, Los Angeles recorded 8,096 crashes, with 4,639 occurring within 400 feet of a signal, representing 57% of reported collisions.



SEATTLE RESULTS

East John Street & East Madison Street has the most crashes per 100,000 vehicles – followed by South Albro Place & 13th Avenue South, with Beacon Avenue South & 15th Avenue South ranking third.

While E John & E Madison had the highest crash rate, the most crashes (12) occurred near the intersection of Aurora Ave N & North 105 St, which ranked 34th by crashes per 100,000 vehicles. The second-most collisions (9) also occurred on Aurora Ave N, near the intersection of N 85th Street.

Nationally, 40% of collisions occur at intersections, <u>according to NHTSA</u>. During the four months analyzed, Seattle recorded 2,321 crashes, with 1,124 occurring within 400 feet of a signal, representing 48% of reported collisions.



WASHINGTON D.C. RESULTS

Grant Street Northeast & Minnesota Avenue Northeast has the most crashes per 100,000 vehicles – followed by 1st Street Northwest & Louisiana Avenue Northwest, with Benning Road Northeast & Minnesota Avenue Northeast ranking third.

While Grant Street NE & Minnesota Ave NE had the highest crash rate, the most crashes (35) occurred near the intersection of Minnesota Ave SE & Pennsylvania Ave SE, which ranked 19th by crashes per 100,000 vehicles.

Nationally, 40% of collisions occur at intersections, <u>according to NHTSA</u>. During the four months analyzed, the District of Columbia recorded 5,505 crashes, with 2,396 occurring within 400 feet of a signal, representing 44% of reported collisions.

