CITY AND COUNTY OF SAN FRANCISCO
BOARD OF SUPERVISORS

BUDGET AND LEGISLATIVE ANALYST

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Policy Analysis Report

To: Supervisor Myrna Melgar
From: Budget and Legislative Analyst's Office
Re: Economic Costs and Fiscal Impacts of Traffic Collisions in San Francisco
Date: April 23, 2025

Summary of Requested Action

Your office requested that the Budget and Legislative Analyst conduct an analysis of the economic costs and fiscal impact of traffic collisions in San Francisco over the past five years, including total costs such as medical care, property damage, and loss.

For further information about this report, contact Fred Brousseau, Director of Policy Analysis, at the Budget and Legislative Analyst's Office.

Executive Summary

- The National Highway Traffic Safety Administration estimates that 53.2 percent of all vehicle crashes in the United States go unreported. Applying that estimate to reported crashes in San Francisco, we estimate that there were 92,799 total crashes, or an average of 18,560 per year between 2018 and 2022. Applying other national crash characteristics to San Francisco's 92,799 crashes for the five-year period, we calculate that there were: 113,428 vehicles damaged with no injuries occurring, 33,302 injuries, and 193 fatalities resulting from crashes in the City, as shown in Exhibit A below.
- Our estimates are based on the number of crashes reported by the City for incidents on City streets and roads and by Caltrans for incidents on freeways and state highways and roads in San Francisco such as 19th Avenue (State Highway 1). The City data is compiled and reported by the San Francisco Municipal Transportation Agency (SFMTA) and the state data is compiled and reported by Caltrans.

Exhibit A: BLA Estimated Reported and Unreported San Francisco Vehicle Crashes 2018-2022*

	Number of Crashes	Vehicles Damaged (in crashes without injury)	Number of Injuries	Number of Fatalities
Citywide Total	92,799	113,428	33,302	193
Average per year	18,560	22,686	6,660	39

Source: BLA estimates based on National Highway Traffic Safety Administration study of nationwide crashes.

* 2022 data for SF crashes on interstates and State highways available through 2021 only; BLA estimated 2022 crashes under State jurisdiction based on ratios of City reported crashes to State reported crashes for 2017-2021.

- To determine the economic costs of all vehicle crashes in San Francisco, we applied nationwide cost estimates prepared by the National Highway Traffic Safety Administration (NHTSA) to San Francisco crash data. NHTSA reported that the economic cost per collision nationally in 2019 ranged from approximately $5,251 for a crash in which a vehicle was damaged, but the driver and any passengers were not injured to $1,606,644 for a fatality. For injuries, the cost per injury ranged from approximately $19,344 to $979,328 depending on injury severity, with an average cost of $36,950. Applying these costs to our estimated number of crash incidents detailed in Exhibit A, total costs amounted to $2.5 billion (in 2024 dollars) for the five-year period between 2018 and 2022, as shown in Exhibit B.

Exhibit B: Estimated San Francisco Traffic Crash Economic Costs, 2018-2022

	Vehicles Damaged (in crashes without injury)	Injuries	Fatalities	Total Costs (2019 $)	Total Costs (Adjusted to 2024 $)
Total costs	$595,610,428	$1,230,483,527	$309,746,018	$2,135,839,973	$2,524,990,016
# incidents	113,428	33,302	193	n.a.	n.a.
Avg. cost/incident	$5,251	$36,950	$1,604,902	n.a.	n.a.

Note: Average cost per fatality slightly less than NHSTA amount due to rounding.

- The 2019 NHTSA study found that of the $339.8 billion in costs incurred nationally due to traffic crashes, the largest shares were attributable to property damage (33.9 percent), market productivity losses (22.2 percent), congestion (10.6 percent), medical costs (9.1 percent), and household productivity (9.1 percent). A breakdown of total economic costs in the NHTSA study is shown in Exhibit C.

Exhibit C: Breakdown of U.S. Traffic Collision Cost Components, NHTSA Study, 2019

Category	Costs (in Billions)	% of Total
Medical	$30.900	9.1%
Emergency Medical Services	$1.348	0.4%
Market Productivity	$75.459	22.2%
Household Productivity	$30.816	9.1%
Insurance Administration	$29.540	8.7%
Workplace Costs	$3.795	1.1%
Legal Costs	$16.698	4.9%
Congestion	$35.954	10.6%
Property Damage	$115.297	33.9%
Total	**$339.809**	**100.0%**

- NHTSA estimated that of the approximately $339.8 billion in total nationwide costs, approximately 54 percent is paid by private insurers, 23 percent is paid by individual crash victims, 14 percent is paid by third parties (such as uninvolved parties in traffic delays, charities, and healthcare providers), and nine percent is paid by public revenues. Of the costs paid by public revenues, approximately 4.8 percent is paid by federal revenues, 3.2 percent is paid by state and local revenues, and 0.7 percent is paid by subsidized programs for which the specific source could not be determined. State and local government costs are typically attributed to market productivity losses, medical costs, and emergency services.

- Applying the 3.2 percent of national traffic crash costs paid by state and local governments to San Francisco's total traffic crash costs of $2.5 billion, state and local government costs would be approximately $80 million over the five-year period between 2018 and 2022.

- One component of City costs related to traffic crashes is claims and litigation costs. According to the City Attorney's Office, the City paid approximately $61.4 million in settlements and judgements from claims and litigation related to traffic collisions involving City vehicles over the five-year period from 2020 through 2024, for an average of $12.3 million per year. Over this period, the City settled 1,628 claims and settled or paid judgements in 129 lawsuits, for a total of 1,757 incidents. Additional City costs for settlements and judgements stemming from collisions caused by the City's street design and infrastructure were $243,500 for 2020 through 2023.

- Though many of its projects have goals of reducing congestion and collisions, the SFMTA does not separately track and report such projects and related initiatives. The Agency reports that their FY 2024-25 operating budget for streets-related activities is approximately $85.8 million. Excluding $52.4 million for parking enforcement, the

remaining amount is approximately $33.4 million, which includes any efforts aimed at reducing collisions. The Agency's FY 2024-25 capital budget for streets, which likely includes but is not limited to projects aimed at reducing collisions, is approximately $60 million, including some carryforward funding for projects started in prior years.

- In May 2024, the American Journal of Public Health (AJPH) published a study to evaluate the impact of Vision Zero policies in New York City. The study compared traffic collision data between New York City, which had adopted Vision Zero policies, and surrounding counties, which had not, from the period of 2009-2021. The study found that after implementing Vision Zero in 2014, Medicaid enrollees within New York City had fewer injuries than those in surrounding counties, resulting in approximately $90.8 million in Medicaid cost savings over the five-year period from 2014-2018. Representatives from the San Francisco Department of Public Health (SFDPH) report that they are planning to replicate the APJH study to evaluate the impact of Vision Zero in San Francisco, but they remain in the early stages of planning this study.

- In a 2019 meta-analysis from the University of Adelaide, nine out of 11 studies on this topic reviewed found a positive relationship between congestion and collisions. Two of the studies reviewed did not come to this conclusion. A 2021 study from the University of Barcelona analyzed data from 129 European cities from 2008 through 2017 and found a concave relationship between congestion and traffic deaths in which fatalities decreased until travel times increased to approximately 30 percent greater than a free flow situation, at which point they increased.

Policy Options

The Board of Supervisors should:

1. Request that the San Francisco Municipal Transportation Agency (SFMTA) and the San Francisco Department of Public Health enhance their current reporting on traffic crashes by producing annual reports detailing the number of reported crashes, injuries, and deaths in San Francisco so the Board of Supervisors, other City officials, and the public can stay informed on the totals and trends.

2. Request that SFMTA and/or other City staff prepare estimates for the Board of Supervisors of the costs of street safety measures that could offset City and County of San Francisco costs associated with traffic collisions, injuries, and deaths.

Project Staff: Fred Brousseau, Reuben Holober

Traffic Collisions in San Francisco

Vision Zero

Vision Zero is an international effort to eliminate traffic fatalities and serious injuries. The concept started in Sweden in 1997 and has since been adopted by many national and local governments. Vision Zero concepts include reducing speed limits and designing streets to enhance pedestrian and bicycle safety. Vision Zero approaches traffic safety as an ethical issue, rather than through a cost-benefit analysis approach.

San Francisco adopted a Vision Zero policy in 2014. The program is managed by the San Francisco Municipal Transportation Agency (SFMTA) and the San Francisco Department of Public Health (SFDPH), which produce annual reports on traffic fatalities and strategies to improve safety. Additionally, there is a Vision Zero SF Coalition, which includes approximately 40 organizations that advocate for traffic safety.

City Collision Data

The City tracks data regarding traffic collisions on City streets in the Data SF system. Data for reported collisions is collected by the San Francisco Police Department (SFPD) from police reports taken on the scene. The officer responding to a reported collision fills out a CHP-555 form with details of the location of the incident, the parties involved, vehicle damage, and injuries. Injuries are categorized by "complaint of pain," "other visible injury, "severe injury," or "fatal injury," based on the officer's observation. This data does not include crashes on state highways and roads, which are managed by Caltrans, or in the Presidio, which is owned by the National Park Service.

Using the traffic collision data from Data SF, SFMTA compiled a report in 2023 titled "2017-2022 San Francisco Traffic Crashes Report," which provides an overview of annual reported crashes, injuries, and fatalities.[1] Annual collision data for the six-year period from 2017 through 2022 from SFMTA's report is shown in Exhibit 1 below.

As can be seen in Exhibit 1, over the six years between 2017 and 2022, there were a total of 44,198 traffic crash calls reported to the City, 17,996 of which involved injuries to one or more persons, resulting in 22,656 individuals injured and 168 fatalities. On average, there were 7,366 traffic crashes reported to the City each year between 2017 and 2022. Exhibit 2 shows the same information for crashes as recorded by the California Department of Transportation because

[1] SFMTA provides annual traffic crash data that is slightly different than the data we obtained from the Data SF system. We were unable to reconcile the differences, so we have deferred to the SFMTA data for the analysis in this report.

they occurred on freeways and roadways that are not under the City's control such as Interstates 80 and 280, Highway 101, and Highway 35.

Exhibit 1: San Francisco Vehicle Crashes Reported to City, 2017-2022

Year	Estimated 911 Traffic Crash Calls	Reported Injury Crashes	Reported Victims Injured	Victim Fatalities
2017	8,773	3,396	4,238	20
2018	8,111	3,262	4,090	23
2019	8,338	3,433	4,323	29
2020	5,803	2,405	2,938	30
2021	6,514	2,713	3,457	27
2022	6,659	2,787	3,610	39
Total	**44,198**	**17,996**	**22,656**	**168**
Average	7,366	2,999	3,776	28

Source: SFMTA, "2017-2022 San Francisco Traffic Crashes Report,"

Of the traffic injuries and fatalities in the Data SF system, approximately 65.1 percent of injuries were categorized as "complaint of pain," 26.1 percent were "other visible injury," 8.1 percent were "severe," and 0.7 percent were fatalities.

Caltrans Collision Data

The California Department of Transportation (Caltrans) tracks traffic collisions on state highways and freeways, including Highways 80, 101, and 280. Collisions on roads in San Francisco that are part of the state highway system but are not freeways, such as Highways 1, 35, and 82, may be tracked by the City or by Caltrans, depending on if the responding officer is an SFPD officer or a California Highway Patrol (CHP) officer. Responses to freeway collisions are the responsibility of the CHP. Caltrans tracks whether collisions have property damage, injuries, and/or fatalities, but does not track the severity levels of injuries.

Annual collision data for the five-year period of 2017 through 2021 from Caltrans is shown in Exhibit 2 below. 2021 is the most recent year for which Caltrans has complete traffic collision data. As shown, there were 8,484 reported collisions on interstates and state highways during the five years shown, 3,118 of which involved injuries with 4,479 victims injured. These crashes also resulted in 39 fatalities over the five-year period.

Exhibit 2: San Francisco Crashes on Interstates and State Highways Reported to Caltrans, 2017-2021

Year	Reported Crashes	Reported Injury Crashes	Reported Victims Injured	Victim Fatalities
2017	2,050	754	1,092	6
2018	1,843	688	984	5
2019	1,761	635	915	10
2020	1,286	493	720	7
2021	1,544	548	768	11
Total	**8,484**	**3,118**	**4,479**	**39**
Average	1,697	624	896	8

Source: Caltrans

In both the SFMTA and Caltrans data, traffic crashes declined in 2020, presumably due to the COVID-19 pandemic and shelter-in-place orders. However, collisions began to increase in 2021 as restrictions were eased and more people returned to in-person work, school, and other activities.

Exhibit 3 shows the combined totals for traffic crashes reported to the City and to Caltrans between 2017 and 2022 for City data and through 2021 only for State data. As can be seen, there were 52,682 reported collisions for those years, 21,114 of which involved injuries, with 27,135 victims injured and 207 fatalities.

Exhibit 3: Combined San Francisco Crashes Reported on City Streets and State Highways, 2017-2022*

Year	Reported Crashes	Reported Injury Crashes	Reported Victims Injured	Victims Killed
City total	44,198	17,996	22,656	168
State total (Caltrans data)	8,484	3,118	4,479	39
Citywide Total	**52,682**	**21,114**	**27,135**	**207**

Sources: SFMTA and Caltrans.

* Caltrans data is for the five-year period of 2017-2021.

National Study on the Costs of Traffic Collisions

In 2023, the National Highway Traffic Safety Administration (NHTSA) published a study estimating the costs of vehicle crashes in the United States in the year 2019.[2] The study estimated both the economic costs and non-economic costs of the crashes. Economic costs include medical costs, ambulatory transport costs, lost market and household productivity,[3] insurance administration costs, workplace costs, legal costs, congestion costs,[4] and vehicle damage. Non-economic costs were based on quality-adjusted life years (QALYs), which represents short- and long-term pain and impairment sustained from injuries and lost life from premature death. Our analysis for this report focuses on the economic costs found in this study.

The NHTSA study found that the cost per crash in 2019 ranged from approximately $5,251 for a property damage only (PDO) vehicle, in which a vehicle was damaged but the driver and passengers were not injured, to $1,606,644 for a fatality. For injuries, the cost per incident ranged from approximately $19,344 to $979,328 depending on injury severity. Injuries were categorized based on the Maximum Abbreviated Injury Scale (MAIS), which rates injuries on a scale of 1 (minor) to 5 (critical).[5]

The NHTSA study estimated that there were approximately 14.2 million total crashes nationally in 2019. As shown in Exhibit 4 below, approximately 6.6 million of these crashes, or 46.8 percent, were reported crashes, and approximately 7.5 million, or 53.2 percent, were unreported crashes. The study also estimated that there were approximately 4.5 million injuries and 36,500 fatalities from traffic collisions. Of the injuries, approximately 3.1 million, or 68.1 percent, were reported, and approximately 1.4 million, or 31.9 percent, were unreported. The multipliers shown in Exhibit 4 (ratios of total crashes and injuries to reported crashes and injuries) were used in preparing our estimates of San Francisco's total crashes and injuries, as explained further below.

[2] https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/813403. The NHTSA study was originally published in December 2022 and then revised in February 2023 with minor changes that did not affect the study's findings.

[3] Lost market productivity is defined in the study as the present discounted value of lost wages and benefits over a victim's remaining lifespan. Lost household productivity is defined as the present value of lost productive household activity at the market price of hiring someone to perform the same tasks.

[4] Congestion costs include travel delay, excess fuel consumption, greenhouse gases, and pollutants.

[5] The NHTSA study also included incidents categorized as MAIS0, which is used to denote uninjured people in injury crashes. The average cost for MAIS0 people was $3,252, and the total cost for all MAIS0 people in 2019 in the United States was approximately $14.7 billion, or approximately 4.3 percent of the total economic costs of crashes. MAIS0 costs are generally excluded from this analysis because of the relatively small amount and the lack of available data of MAIS0 cases in San Francisco.

Exhibit 4: National Study Estimates: Reported and Unreported Crashes and Injuries, 2019

Measure	Reported Crashes	Unreported Crashes	Total	Ratios: Total to Reported Crashes
Crashes	6,647,514	7,546,213	14,193,727	2.14
% total	46.8%	53.2%	100.0%	---
Injuries & fatalities	3,067,996	1,438,526	4,506,523	1.47
% total	68.1%	31.9%	100.0%	---

Source: NHTSA

The NHTSA study assumes that all severe and critical injuries (MAIS4 and MAIS5, respectively) and all fatalities are reported. Using the average cost per crash and the incidence of each type of injury, both reported and estimated unreported, the study found that the total national cost for crashes in 2019 was approximately $339.8 billion, as shown in Exhibit 5 below.

Exhibit 5: Total U.S. Traffic Collision Costs for Reported and Unreported Crashes, NHTSA Study, 2019

Injury Severity Level	Total Incidents	Average Cost	Total Cost (in Billions)
Total crashes	*14,193,727*		
Property Damage Only Vehicles (multiple vehicles for some crashes)	19,288,139	$5,251	$101.282
Injury Crashes (people injured):			
Minor (MAIS1)	3,875,265	$19,344	$74.963
Moderate (MAIS2)	427,119	$71,419	$30.504
Serious (MAIS3)	141,167	$280,726	$39.629
Severe (MAIS4)	19,285	$675,727	$13.031
Critical (MAIS5)	7,187	$979,328	$7.038
Fatality	36,500	$1,606,644	$58.642
Injuries & fatalities subtotal	*4,506,523*		
Total (injuries and damaged vehicles)	**23,794,662**		**$339.809**

Source: NHTSA.

Notes: Property Damage Only (PDO) costs are shown on a per-vehicle basis, while injury and fatality costs are shown on a per-person basis. The total amount of $339.809 billion includes approximately $14.718 billion from MAIS0 incidents (uninjured people in injury crashes), which are excluded from this analysis because there is no corollary reporting in the San Francisco data. Amounts in the Total Cost column therefore add up to $325.09 billion.

MAIS = Maximum Abbreviated Injury Scale, a standardized scale used by NHTSA.

Of the costs incurred due to traffic crashes, the largest shares were for property damage (33.9 percent), market productivity (22.2 percent), congestion (10.6 percent), medical costs (9.1 percent), and household productivity (9.1 percent). A breakdown of total economic costs in the NHTSA study is shown in Exhibit 6 below.

Exhibit 6: Breakdown of U.S. Traffic Collision Costs, NHTSA Study, 2019

Category	Costs (in Billions)	% of Total
Medical	$30.900	9.1%
Emergency Medical Services	$1.348	0.4%
Market Productivity	$75.459	22.2%
Household Productivity	$30.816	9.1%
Insurance Administration	$29.540	8.7%
Workplace Costs	$3.795	1.1%
Legal Costs	$16.698	4.9%
Congestion	$35.954	10.6%
Property Damage	$115.297	33.9%
Total	**$339.809**	**100.0%**

Source: NHTSA

The NHTSA study estimated that of the approximately $339.8 billion in total costs, approximately 54 percent is paid by private insurers, 23 percent is paid by individual crash victims, 14 percent is paid by third parties (such as uninvolved parties in traffic delays, charities, and healthcare providers), and nine percent is paid by public revenues. Of the costs paid by public revenues, approximately 4.8 percent of total costs is paid by federal revenues, 3.2 percent is paid by state and local revenues, and 0.7 percent is paid by subsidized programs for which the specific source could not be determined. State and local government costs are typically incurred for market productivity, medical costs, and emergency services.

Estimated Costs of Traffic Collisions in San Francisco

Estimating Unreported Collisions and Injuries in San Francisco

To estimate the costs of traffic collisions in San Francisco, we applied the 2019 cost estimates from the NHTSA study detailed above to the crash data reported by SFMTA and Caltrans.[6] Given that NHTSA estimates that approximately 53.2 percent of crashes and 31.9 percent of injuries are unreported, we assume that reported San Francisco crash data are likewise undercounted and adjusted our estimated totals accordingly. Using the multipliers we derived from NHTSA's estimates of unreported crashes and injuries, we estimate that the total number of crashes in San Francisco is approximately 2.14 times greater than the number of reported crashes and the

[6] We were unable to find crash data from the Presidio, which is owned by the National Park Service.

total number of injuries is approximately 1.47 times greater than the number of reported injuries. The results are shown in Exhibit 8 below, with 92,799 total crashes estimated for the five-year period 2018-2022. Of those, 113,428 vehicles were damaged with no related injuries ("Property Damage Only"), and there were 33,302 injuries and 193 fatalities. These estimates assume that crashes and injuries in San Francisco were reported at the same rate as in the NHTSA national study.

For Property Damage Only crashes (PDOs), we estimate that the total number of crashes is approximately 2.48 times greater than the number of reported PDO crashes based on the ratio of estimated total PDO crashes to reported PDO crashes in the NHTSA study. To estimate the number of PDO vehicles involved in PDO crashes, we applied the ratio of PDO vehicles to PDO crashes based on the NHTSA study, which is approximately 1.77:1.

As mentioned above, the SFMTA data is complete through 2022, but the Caltrans data is only complete through 2021. To provide data over a five-year period, we decided that the period from 2018 through 2022 would be more relevant than the period from 2017 through 2021. To estimate the number of Caltrans crashes, injuries, and fatalities in 2022, we compared the SFMTA and Caltrans data from 2017 through 2021 and applied the ratios between the two datasets to the 2022 SFMTA numbers to establish 2022 Caltrans estimates. The total estimated SFMTA, Caltrans, and total crashes, PDO vehicles, injuries, and fatalities from 2018 through 2022, including those we estimate are unreported, are shown in Exhibit 7 below.

Exhibit 7: Estimated Reported and Unreported Traffic Crashes, PDO Vehicles, Injuries, and Fatalities, 2018-2022

Estimates based on SFMTA data

Year	Total Crashes	Total PDO Vehicles	Total Injuries	Total Fatalities
2018	17,358	21,297	6,012	23
2019	17,843	21,543	6,355	29
2020	12,418	14,925	4,319	30
2021	13,940	16,695	5,082	27
2022	14,250	17,006	5,307	39
Total	**75,809**	**91,465**	**27,075**	**148**

Estimates based on Caltrans data

Year	Total Crashes	Total PDO Vehicles	Total Injuries	Total Fatalities
2018	3,944	5,073	1,446	5
2019	3,769	4,945	1,345	10
2020	2,752	3,483	1,058	7
2021	3,304	4,374	1,129	11
2022	3,221	4,087	1,248	12
Total	**16,990**	**21,962**	**6,226**	**45**

Total Incidents based on City and State data

Year	Total Crashes	Total PDO Vehicles	Total Injuries	Total Fatalities
2018	21,302	26,370	7,459	28
2019	21,612	26,488	7,700	39
2020	15,170	18,408	5,377	37
2021	17,244	21,069	6,211	38
2022	17,471	21,093	6,555	51
Total	**92,799**	**113,428**	**33,302**	**193**

Source: BLA estimates using NHTSA study and SFMTA and Caltrans data.

Notes: Total crashes = 2.14 multiple of reported crashes. Total PDO vehicles = 1.77 multiple of PDO crashes (not shown on table). Total injuries = 1.47 multiple of reported injuries (not shown on table).

It is notable that San Francisco had significantly lower per capita crashes, injuries, and fatalities over the period of 2017 through 2022 than national averages. Over that period, San Francisco on average had 1,064 reported crashes, 544 reported injuries, and 3.9 fatalities per 100,000 population per year. In 2019, the United States had 3,106 reported crashes, 934 reported injuries, and 11.1 fatalities per 100,000 population. This difference does not affect our estimates since we used the national ratios to estimate unreported incidents based on San Francisco's reported incidents, but our baseline number of incidents were those reported for San Francisco, not the national number of crashes reported by NHTSA.

Total Costs of Traffic Collisions in San Francisco

We used the 2019 per-incident costs in the NHTSA study to estimate the costs from traffic collisions in San Francisco. Because the injury severity levels in the SFMTA data do not align with the MAIS injury severity levels, and because Caltrans does not publish injury severity data, we used an average cost for all injuries in the NHTSA study for San Francisco collision injuries, which was $36,950. This assumes that traffic collision injuries in San Francisco are distributed similarly along the MAIS scale as in the NHTSA study. Additionally, we used the average costs of $5,251 per PDO vehicle and $1,606,644 per fatality.[7] Using these estimates, we estimate that the total cost for traffic crashes in San Francisco from 2018 through 2022 is approximately $2.1 billion in 2019 dollars. Adjusted for inflation to 2024 dollars, the total cost is approximately $2.5 billion, as shown in Exhibit 8 below.

Exhibit 8: Total Estimated San Francisco Traffic Crash Economic Costs, 2018-2022

Year	PDO Vehicle Costs/Incidents	Injury Costs/Incidents	Fatality Costs/Incidents	Total Costs (in 2019 $)	Total Costs (Adjusted to 2024 $)
2018	$138,468,870	$275,601,921	$44,986,032	$459,056,823	$542,696,976
2019	139,088,488	284,509,827	62,659,116	486,257,431	574,853,535
2020	96,660,408	198,689,757	59,445,828	354,795,993	419,439,823
2021	110,633,319	229,487,213	61,052,472	401,173,004	474,266,725
2022	110,759,343	242,194,809	81,602,570	434,556,722	513,732,957
Total	**$595,610,428**	**$1,230,483,527**	**$309,746,018**	**$2,135,839,973**	**$2,524,990,016**
# incidents	113,428	33,302	193	n.a.	n.a.
Average cost/incident	$5,251	$36,949	$1,604,902	n.a.	n.a.

Source: BLA estimates using NHTSA study and SFMTA and Caltrans data.
Note: Average cost per fatality slightly less than NHSTA amount due to rounding.

The NHTSA study estimated that approximately 8.7 percent of costs were paid by public revenues, including 3.2 percent paid by state and local revenues. If this estimate were applied to San Francisco crashes, then the total cost paid by state and local revenues was approximately $80.8 million over this five-year period. Unfortunately, the NHTSA study did not differentiate between state and local government costs, so we are unable to determine total costs incurred by the City and County of San Francisco.

[7] We excluded MAIS0 incidents because they were not reported in the SFMTA or Caltrans data.

City Litigation Costs

One component of City costs related to traffic crashes that can be identified is claims and litigation costs. According to the City Attorney's Office, the City paid out approximately $61.4 million in settlements and judgements from claims and litigation related to traffic collisions involving City vehicles over the five-year period from 2020 through 2024. Over this period, the City settled 1,628 claims and settled or paid judgements in 129 lawsuits, for a total of 1,757 incidents. The total and average payment costs per year for the five year period are shown in Exhibit 9 below.

Exhibit 9: Annual Costs of Settlements and Judgements Related to Collisions Involving City Vehicles, 2020-2024

Year	Settlements/Judgments Paid	Total Payment Amount
2020	420	$6,317,409
2021	398	4,497,596
2022	279	13,521,489
2023	317	18,890,344
2024	343	18,220,733
Total	**1,757**	**$61,447,570**
Average	**351**	**$12,289,514**

Source: City Attorney's Office

Additional City costs for settlements and judgements stemming from collisions caused by the City's street design and infrastructure were $243,500 between 2020 and 2023 according to the City Attorney's office.

City Spending on Traffic Safety Initiatives

Though many of its projects have this goal, SFMTA does not separately track and report its street safety projects and initiatives aimed at reducing traffic collisions. The Agency reports that their FY 2024-25 operating budget for street-related activities is approximately $85.8 million. Excluding $52.4 million of that amount allocated to parking enforcement leaves approximately $33.4 million, which covers any efforts aimed at reducing collisions. Of the $33.4 million, approximately $14.8 million is for transportation engineering, $10.3 million is for livable streets (improving conditions for pedestrian and bicycle travel), and $8.2 million is for field operations. The FY 2024-25 capital budget for streets, which likely includes some projects aimed at reducing collisions, is approximately $60 million, which includes some carryforward funding for projects started in prior years.

Other Studies

National Safety Council

The National Safety Council (NSC), an industry organization focused on eliminating preventable injuries and deaths, publishes estimates on the costs of various types of injuries and deaths, particularly focused on workplace injuries. NSC estimated that in 2022, the average cost per motor vehicle death was approximately $1,869,000, and the average cost per injury ranged from $26,000 to $162,000, depending on injury severity. The average cost per PDO vehicle was approximately $6,100.[8] Overall, NSC estimated that the total cost of motor vehicle crashes in the United States in 2022 was approximately $481.2 billion.[9] Of these costs, approximately 49.0 percent were for wage and productivity losses, 19.3 percent were for vehicle damage, 18.7 percent were for administrative expenses, 12.0 percent were for medical expenses, and 1.0 percent were for employer uninsured costs.

The total cost of traffic collisions in the NSC estimates was approximately $141.4 million or 42 percent more than the total costs in the NHTSA study. We decided to use the NHTSA study for our analysis for this report because it is from an official government source, and it contains greater supporting details of its methodology in estimating costs.

New York Vision Zero Study

In May 2024, the American Journal of Public Health (AJPH) published a study to evaluate the impact of Vision Zero policies in New York City.[10] The study compared traffic collision data between New York City, which had adopted Vision Zero policies, and surrounding counties, which had not, from the period of 2009-2021. The study found that after implementing Vision Zero in 2014, Medicaid enrollees within New York City had 77.5 fewer injuries per 100,000 person-years[11] than those in surrounding counties. This resulted in savings of approximately $90.8 million in Medicaid costs over the five-year period from 2014-2018.

Representatives from the San Francisco Department of Public Health (SFDPH) report that they are planning to replicate the APJH study to evaluate the impact of Vision Zero in San Francisco, but they remain in the early stages of planning this study.

[8] https://injuryfacts.nsc.org/all-injuries/costs/guide-to-calculating-costs/data-details/

[9] https://injuryfacts.nsc.org/motor-vehicle/overview/introduction/

[10] "Major Traffic Safety Reform and Road Traffic Injuries Among Low-Income New York Residents, 2009-2021," https://ajph.aphapublications.org/doi/full/10.2105/AJPH.2024.307617

[11] A "person-year" represents one year of participation time for one person in the study. For example, if 1,000 people each participated in a study for five years, the study would have a total of 5,000 person-years.

Impact of Traffic Congestion on Crashes

Various studies have attempted to estimate how congestion contributes to traffic collisions. A 2019 meta-analysis from the University of Adelaide reviewed 11 studies with data between 1954 and 2013 and found that five studies showed a positive linear relationship between congestion and collisions (where collisions increase as congestion increases), four found a concave relationship (a U-shaped relationship where collisions begin to decrease but then increase as congestion increases), and two found a convex relationship (an inverse U-shaped relationship where collisions begin to increase but then decrease as congestion increases).[12] The study noted that studies with the largest datasets tend to show a concave relationship. A 2021 study from the University of Barcelona analyzed data from 129 European cities from 2008 through 2017 and found a concave relationship between congestion and traffic deaths.[13] Traffic deaths decrease until travel times increase to approximately 30 percent greater than a free flow situation (for example, a trip that would take 10 minutes with no traffic increasing to a travel time of 13 minutes due to congestion). After congestion increases travel times beyond 30 percent, traffic deaths increase as well.

Policy Options

The Board of Supervisors should:

1. Request that the San Francisco Municipal Transportation Agency (SFMTA) and the San Francisco Department of Public Health enhance their current reporting on traffic crashes by producing annual reports detailing the number of reported crashes, injuries, and deaths in San Francisco so the Board of Supervisors, other City officials, and the public can stay informed on the totals and trends.

2. Request that SFMTA and/or other City staff prepare estimates for the Board of Supervisors of the costs of street safety measures that could offset City and County of San Francisco costs associated with traffic collisions, injuries, and deaths.

[12] https://www.researchgate.net/publication/335809765_Current_Understanding_of_the_Effects_of_Congestion_on_Traffic_Accidents

[13] https://www.sciencedirect.com/science/article/pii/S0967070X21000731