2017-2022 San Francisco Traffic Crashes Report

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Summary

Key findings (Table 1) from analysis of San Francisco Police Department-reported injury and fatal collision data for the period 2017-2022:

- **Overall Trends:** For the three years prior to the COVID-19 pandemic (2017-2019) compared to the three pandemic years (2020-22) there has been a sharp divergence between injury crashes, down 22 percent, compared with fatal crashes, up by approximately 30 percent. The drop in overall injury crashes is most likely due to significant drops in transportation activity during the pandemic.
- **Fatal Collisions:** The number of people killed due to traffic collisions increased in 2022 to 39, the highest annual total since 2007.
- **Fatal to Injury Ratio:** The percentage of overall crashes that were fatal significantly increased from a ratio of 5 fatalities for every 1000 injuries in 2017, to 11 fatal crashes for every 1000 injuries in 2022. The fatality to injury ratio increased during the pandemic as well in other California cities and nationally.
- **Pedestrian-Involved Crashes:** Injury collisions involving people walking have declined since 2019 by about 30 percent. Despite lower fatality totals in 2020 and 2021, in 2022 20 people died walking. Seven of these deaths (30% of the pedestrian total) were individuals experiencing homelessness.
- **Other Crash Changes:** This reporting period also saw notable increases in motorcycle fatal crashes, stand up device crashes in general, and the percentage of crashes that were hit and run or speeding related. Bicycle-related injury crashes were down.

Table 1: Crash Totals Comparison of 2017-2019 with 2020-2022

Crash Category Totals	Pre-pandemic 2017-2019	Pandemic 2020-2022	Total Change	Percent Change
Fatal	72	96	↑ 24	↑ 33%
Injury	10,091	7,905	↓ 2,186	↓ 22%
Fatalities per 1000 Injuries	5.7	9.6	↑ 3.9	↑ 68%
911 Crash Related Calls	25,222	18,976	↓ 6,246	↓25%
Fatal - Pedestrian	46	45	↓ 1	↓ 2%
Injury - Pedestrian	2,588	1,712	↓ 876	↓ 34%
Fatal - Person on Bicycle	6	5	↓ 1	↓ 17%
Injury - Person on Bicycle	1,747	1,255	↓ 492	↓ 28%
Fatal - Motorcyclist	7	22	↑ 15	↑ 214%
Injury - Motorcyclist	1,245	960	↓ 285	↓ 23%
Fatal – Stand Up Device	0	7	↑ 7	n.a.
Injury – Stand Up Device	145	454	↑ 309	↑ 213%

About This Report

Vision Zero

In 2014 San Francisco adopted a Vision Zero policy that had as its fundamental goal the elimination of severe and fatal traffic collisions.[1] The federal government has also adopted a Safe Systems approach that considers any death or severe injury on our roadways unacceptable. This safety data report is not intended to provide a comprehensive listing of the many programmatic or site-specific actions San Francisco is taking to improve safety.

The COVID-19 Pandemic

This report compares the three years prior to the COVID-19 pandemic (2017-2019) with the three years after (2020-2022). The COVID-19 shelter in place emergency was declared in March of 2020, but the pre-pandemic months of January and February are included in 2020 data for simplicity. The pandemic greatly altered the levels of activity of all transportation modes, particularly in 2020 and 2021. Even in 2022 travel and commute activity in San

[1] For information about San Francisco' Vision Zero initiative, including additional crash data, maps, and reports, see www.visionzerosf.org. On the federal Safe Systems approach: https://highways.dot.gov/safety/zero-deaths

Francisco has not returned to their pre-pandemic normal (Figure 11, Appendix C), remaining depressed particularly in the downtown area.[2] It appears that the pandemic has affected crash totals in other ways government agencies and safety experts are still trying to understand. Unlike most other countries,[3] the United States has experienced increases in traffic fatalities since 2020 (Appendix D) that are unexpected given one would expect fewer crashes with the drops in transportation activity seen during the pandemic.

Collision Data

The crash data is used here is collected by the San Francisco Police Department (SFPD) and validated by the Department of Public Health (DPH) and the SFMTA. The underlying March 2023 data in this report will be subject to revisions. Traffic collision data is publicly available through the city's TransBASE dashboard (www.transbase.sfgov.org). Reported collisions at any site or area can vary widely from year to year, at times due to factors that are not related to street infrastructure, for example changes in economic activity or normal statistical fluctuations. Analysis of long-term trends help minimize the influence of these factors.

Data Not Included

Non-Injury Collisions: Due to limited SFPD resources, non-injury collisions (property damage only) mostly do not result in an official report and are therefore not included in this analysis. Though not always an independently confirmed data source, 911 traffic crash related service calls (Table 2) can be used an indirect estimate of other crashes that generate a public dispatch request but do not subsequently result in an official SFPD collision report.

Collisions Outside of SFMTA Jurisdiction:

- Freeways collisions are reported to the California Highway Patrol. However, crashes on city streets that are state-designated highways (such as 19th and Van Ness Avenues) are included in this report since the local responding agency is the SFPD.
- Crashes in the Presidio of San Francisco and the San Francisco Airport.
- Pedestrian crashes on Caltrain and Bart tracks.
- Crashes in private property such as private parking lots and garages.

Underreported Injury Collisions: While injury collisions tend to be reported more consistently than non-injury collisions, not all injury collisions are captured by police reports. The extent of this underreporting has been documented through the Department of Public Health's comprehensive Transportation-related Injury Surveillance System (TISS), which includes San Francisco hospital data and links it to police and other sources of crash information.[4]

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[2] *The San Francisco Standard*, "If Downtown San Francisco is Dead Why is Traffic So Bad?" March 2, 2023.
[3] International Transport Forum, *Road Safety Annual Report 2021*.
[4] www.sfdph.org/dph/eh/phes/phes/transportationandhealth.asp

Part 1: Citywide Injury and Fatal Collision Trends

Reported non-fatal injury causing collisions in San Francisco have remained under 3,000 a year during the last three reporting years (Figure 1). Injury crashes are all those from complaint of pain to severe crashes that require hospitalization. Looking at historical data, non-fatal injury collisions declined by a remarkable 50 percent from 1990 to 2006, then stabilized at around 3,000 per year. Annual injury totals unfortunately started increasing after 2014. This negative trend was reversed with the start of the COVID-19 pandemic, after which injury crash totals fell significantly.

The annual number of collisions resulting in fatalities has also remained relatively unchanged in the past two decades, in the range of 20 to 40 a year (Figure 2). In 2022, 20 people were killed walking, 7 riding a motorcycle, 7 in a motor vehicle, 4 riding an electric stand up scooter or board, and 1 riding a bicycle (39 is an updated 2022 total from the 37 fatalities reported at the start of 2023). Since 1990 San Francisco saw annual fatality totals cut by half, but the lack of improvement in the past decade goes contrary to the city's Vision Zero goal to eliminate all roadway deaths. SFMTA responds after each fatal crash and analyzes site conditions and crash factors, information which is then summarized in the City's rapid response dashboard (Appendix A). More analysis and data concerning fatal crashes are included in the City's annual "Vision Zero Fatalities: End of the Year Reports."[5]

Table 2 uses 911 calls about possible traffic collisions to confirm that the overall the number of reported incidents has declined since the start of 2020 rather than just the police reporting of them. Both 911 calls and injury crash totals have gone down in parallel and thus maintained a steady ratio of about two-and-a-half calls for every officially reported injury crash (Table 2). Last year there were double the number of fatalities than would be predicted using pre-pandemic ratios of fatalities to injuries (6 versus 11 deaths per 1,000 reported injuries).

Table 2: 2017-2022 Ratio of 911 Calls, Crashes, Injuries and Fatalities

Year	Estimated 911 Traffic Crash Calls	Reported Injury Crashes	911 Calls per Reported Injury Crash	Reported Victims Injured	Injuries per Injury Crash	Victims Killed	Fatalities per 1,000 Reported Injuries
2017	8773	3,396	2.6	4,238	1.2	20	5
2018	8111	3,262	2.5	4,090	1.3	23	6
2019	8338	3,433	2.4	4,323	1.3	29	7
2020	5803	2,405	2.4	2,938	1.2	30	10
2021	6514	2,713	2.4	3,457	1.3	27	8
2022	6659	2,787	2.4	3,610	1.3	39	11

[5] For past annual severe injury and fatal collision reports: www.visionzerosf.org

Figure 1: San Francisco Non-Fatal
Injury Causing Collision Totals (1990-2022)

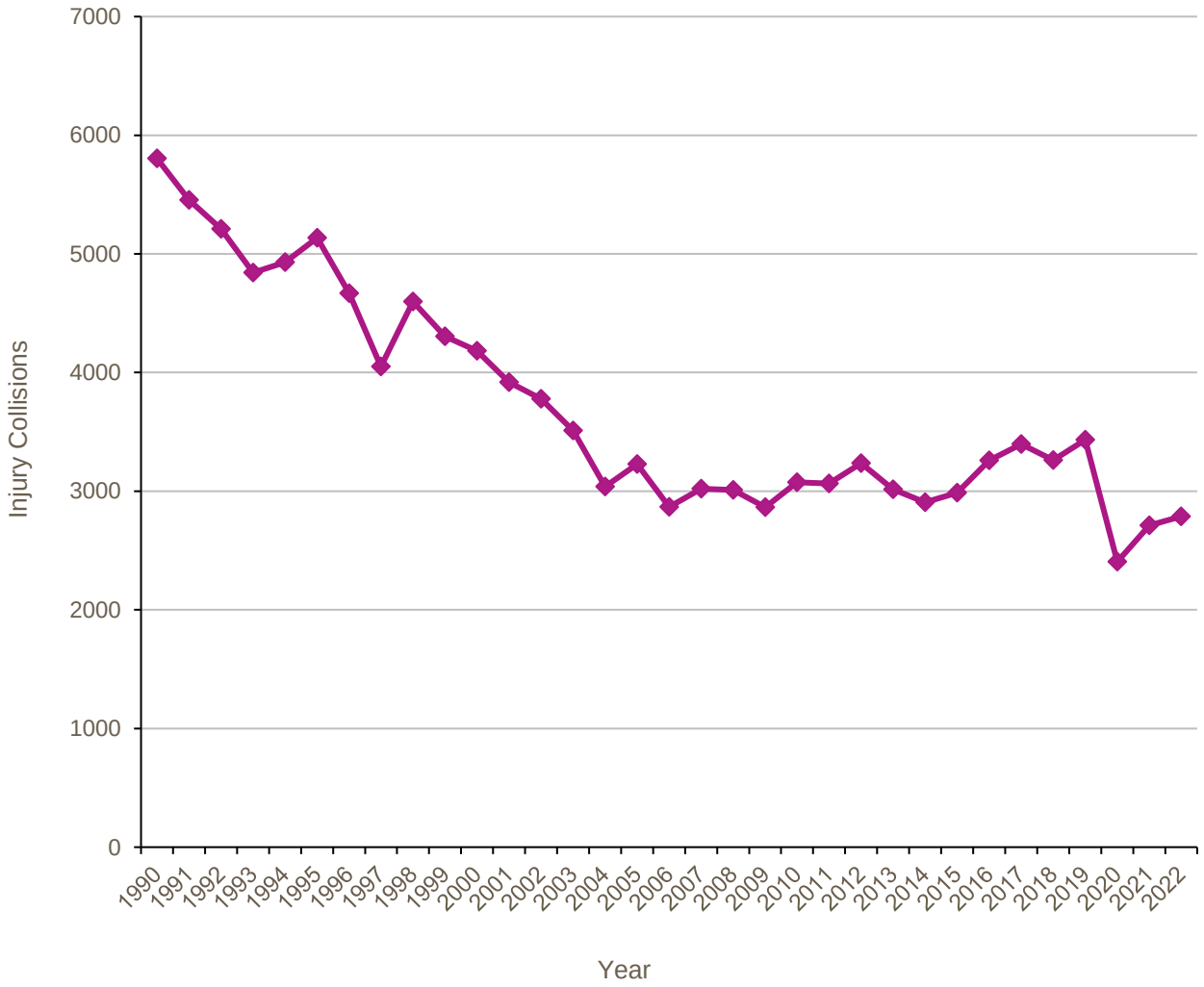


Figure 1: San Francisco Non-Fatal
Injury Causing Collision Totals (1990-2022)

Year	1990	2000	2010	2020	2021	2022
Total	5,804	4,182	3,056	2,405	2,713	2,787

Time Period	Total Change	Percent Change
From 1993 to 2002	-1,065	-22%
From 2003 to 2012	-274	-8%
From 2013 to 2022	-228	-8%

Part 9 of the report summarizes how fatalities and injury crash totals have diverged during the pandemic in other California cities and nationally.

Figure 2: San Francisco
Fatal Collision Totals (1990-2022)

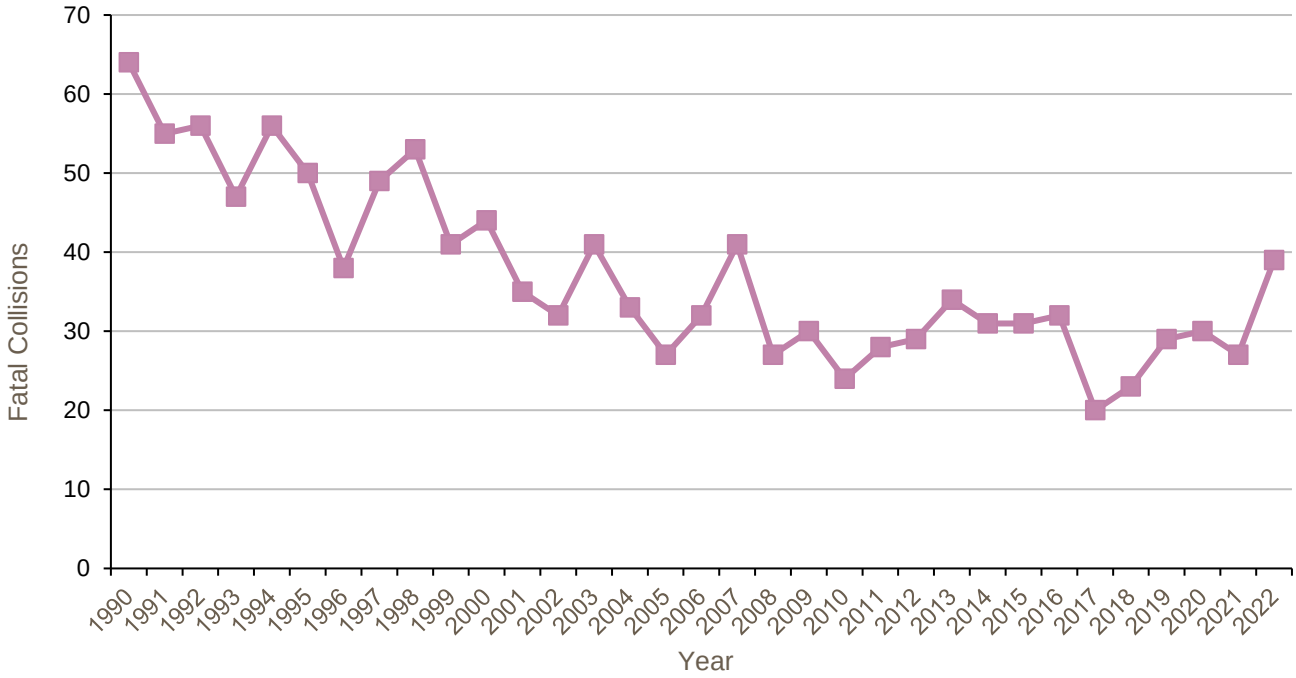


Figure 2: San Francisco
Fatal Collision Totals (1990-2022)

Year	1990	2000	2010	2020	2021	2022
Total	64	44	22	30	27	39

Time Period	Total Change	Percent Change
From 1993 to 2002	-15	-32%
From 2003 to 2012	-12	-29%
From 2013 to 2022	+5	+15%

It is not clear why San Francisco injury and fatal crashes started to trend in opposite directions during the pandemic. National studies and media stories have speculated on why more people are dying in traffic collisions, proposing everything from increased recklessness on empty roadways, mental and physical stress, crime, poor street design, alcohol and drug use, medications, fatigue, homelessness, driving licensing problems, vehicle sizes, in vehicle distractions, to decreases in seat belt use, motorcycle helmets, transit ridership, and police traffic enforcement.[6] This last factor is discussed in more detail in Part 5 of this report.

[6] For example: AAA, "Traffic Safety Impact of the COVID-19 Pandemic," December 2022. Bloomberg, "Covid increased traffic deaths but reduced car crashes. Here's Why," April 2, 2022. *The New York Times*, "The Exceptionally American Problem of Rising Roadway Deaths," November 27, 2022. See also Appendix D.

Part 2: Collision Types and Causes

Table 3 shows 2017-2022 injury collision totals by primary collision type. The two most common types of collisions, vehicular broadsides (crashes at right-angles) and vehicle-pedestrian crashes, together comprise half of injury collisions and two-thirds of fatal crashes.

Table 3: 2017-2022 Injury and Fatal Collisions by Collision Type

Collision Type	Injury Collisions	Percent	Fatal Collisions	Percent
Broadside	5500	30%	31	19%
Vehicle/Pedestrian	3457	19%	73	45%
Rear End	2752	15%	5	3%
Sideswipe	2637	15%	10	6%
Head-On	1206	7%	6	4%
Other	1003	6%	7	4%
Hit Object	680	4%	21	13%
Not Stated	604	3%	6	4%
Overturned	316	2%	3	2%

Though crashes can have multiple collision factors, SFPD determines the most likely California Vehicle Code (CVC) violation. Table 4 has the most common CVC primary violations as determined by the SFPD investigation. The top CVC violation cause is 22350, which is a person travelling at a speed “unsafe for conditions” but not necessarily over the posted speed limit. To that extent CVC 22350 is a violation code that can apply to many injury crashes: if the party at fault had been travelling at a slower speed the impact could have been avoided or been less severe. CVC 21950(A) is the failure of a vehicle driver or other parties on the roadway to yield to pedestrians crossing at a crosswalk. This includes failure to yield at both signalized and unsignalized, as well as marked or unmarked crosswalks. CVC 21453(A) is the violation of the traffic signal by a vehicle driver, bicycle, or scooter rider. The violation factors reported for fatal crashes are provided in Table 5. The top three CVC violations are driver-at-fault for both fatal crashes and for injury crashes. The top three pedestrian-at-fault CVC factors comprise about 15 percent of fatal crashes, but only 4 percent of injury crashes.

Table 6 summarizes what percentage of annual collisions the top CVC primary violation codes constituted for 2017 and 2022. One can see that the percentage of crashes associated with unsafe speed has gone up significantly, from being 16 percent of 2017 crashes to 20 percent of injury crashes (2022). The percentage of crashes attributed to unsafe lane changes, red light running and STOP sign violations went up, while those related to pedestrian right-of-way violations went down both in rank (2nd to 4th) and percentage of annual total.

Table 4: 2017-2022 Most Common
Injury Crash Primary Collision Violation

CVC Violation	Injury Collisions	Percent
22350: Driving at unsafe speed given conditions of roadway	3,231	18%
21950(A): Failure to yield to pedestrian at a crosswalk	1,772	10%
21453(A): Driver violation of a traffic signal	1,672	9%
22107: Unsafe lane change	1,590	9%
21801(A): Failure to yield for left or U-turn	1,070	6%
21703: Following vehicles too closely	828	5%
22450(A): Vehicle failure to stop at a STOP sign limit line	685	4%
All Others	7,307	40%

Table 5: 2017-2022 Most Common
Fatal Crash Primary Collision Violation

CVC Violation	Fatal Collisions	Percent
22350: Driving at unsafe speed given conditions of roadway	32	20%
21950(A): Failure to yield to pedestrian at a crosswalk	24	15%
21453(A): Driver violation of a traffic signal	17	10%
21954(A): Pedestrian failure to yield outside crosswalk	9	6%
23152(A): Driving under the influence of alcohol	8	5%
21456(C): Pedestrian violation of traffic signal	8	5%
21955: Pedestrian crossing unsafely between intersections	7	4%
All Others	57	36%

Table 6: Percent of Annual Total for CVC Factors (2017 Compared with 2022)

CVC Violation	2017 (Rank)	2022 (Rank)	Change in %
22350: Unsafe speed for conditions	16% (1)	20% (1)	25%
21950(A): Failure to yield to pedestrian	11% (2)	8% (4)	-26%
21453(A): Driver violation of a traffic signal	8% (3)	10% (2)	17%
22107: Unsafe lane change	7% (4)	10% (3)	36%
21801(A): Failure to yield for left or U-turn	7% (5)	6% (5)	-16%
CVC Unknown	6% (6)	6% (6)	-7%
21703: Following vehicle too closely	5% (7)	5% (7)	-1%
22106: Vehicular unsafe starting/backing	3% (8)	2% (10)	-29%
22450(A): Failure to stop at a STOP sign	3% (9)	4% (8)	26%
Other	33%	30%	-10%

Part 3: Highest Collision Intersections

About two-thirds of injury collisions in San Francisco occur at intersections. As documented in previous annual collision reports, the number of intersections with double-digit annual injury collision totals has decreased in past decades thanks in part to San Francisco's on-going targeted safety efforts.

Table 7 is a list of the highest injury collision intersections for the most recent six-year period, 2017-2022. SFMTA has made or will make changes at these locations and other high injury intersections or streets. Actions range from improved signal timing and signal hardware changes (for example at Gough and Market streets), pavement marking changes, speed limit reductions, changed regulations (such as car-free Market Street), major capital projects (including Van Ness Avenue and Upper Market Street), quick-build safety projects (like 13th Street and 8th Street bicycle improvements), and automated enforcement (Market and Octavia streets, Divisadero and Oak streets).

Table 7: 2017-2022 Injury Collision Intersections,
Intersections with 30 or More Injury Collisions

Intersection	Fatal Crashes	Injury Crashes	Total Injured
Gough Street and Market Street	0	48	70
13th Street, Duboce Avenue, Mission and Otis streets	0	43	56
Market Street and Octavia Street	0	43	58
Hayes Street and Van Ness Avenue	0	35	58
8th Street and Mission Street	0	35	37
5th Street and Market Street	0	34	37
13th Street and South Van Ness Avenue	0	33	45
Geneva Avenue and Mission Street	1	33	44
Divisadero Street and Oak Street	0	31	34

Appendix B has other higher collision intersections or midblock segments using various crash factors and collision types.

Part 4: Vulnerable Modes

"Vulnerable" modes refer to those involved in crashes outside cars and trucks, namely pedestrians, bicycle riders, motorcyclists, and electric stand up device users.

Tables 8 and 9 summarizes the percentage of fatal and injury crashes that involve individual travel modes. The percent of fatal crashes involving at least one of the listed vulnerable road users remained about the same between pre and post pandemic (about 82 percent), with an increase in the percent of crashes that involve motorcycles offsetting a decline in the percent of crashes that are pedestrian-involved. The percent of reported injury crashes involving vulnerable road users increased from 57 percent (2017-2019) to 62 percent (2020-2022) driven in part due to the new category of stand up powered devices, which rose to constitute about six percent of injuries and fatalities (2020-2022).

Table 8: Percent Fatal Crashes by Mode Comparison of 2017-2019 with 2020-2022

Crash category	Pre-pandemic 2017-2019 Percent of Total	Pandemic 2020-2022 Percent of Total
Fatal Pedestrian	64%	48%
Fatal Motorcyclist	10%	23%
Fatal Person on Bicycle	8%	5%
Stand up Powered Device Fatal	0%	6%
Vehicles Only / Other Fatal	18%	17%

Table 9: Percent Injury Crashes by Mode Comparison of 2017-2019 with 2020-2022

Crash category	Pre-pandemic 2017-2019 Percent of Total	Pandemic 2020-2022 Percent of Total
Injury Pedestrian	26%	24%
Injury Person on Bicycle	17%	18%
Injury Motorcyclist	12%	14%
Stand up Powered Device Injury	1%	6%
Vehicles Only / Other Injury	43%	38%

Table 10: 2017-2022 Injury Crashes by Victim Role

	Driver	Pedestrian	On Bicycle	Passenger	Other
Injured Victims	9,048	4,345	2,880	3,270	648

Pedestrian-Involved Collisions

Approximately a quarter of San Francisco's injury collisions involve pedestrians (Table 9). Until 2019, pedestrian collisions were in the range of 700 to 900 a year. The 2022 total of 583 pedestrian-involved injury collisions is significantly down from any of the annual totals reported before the pandemic (Figure 3). It is not clear how much of the drop in 2020-2022 was due to combination of a decrease in walking and fewer vehicles on city streets. It is encouraging that totals in 2021 and 2022 did not proportionally increase even as walking and driving increased, hopefully indicating that other factors such as engineering changes could also be decreasing pedestrian-involved crashes for the longer-term.

Figure 3: San Francisco Injury Collisions Involving Pedestrians (2000-2022)

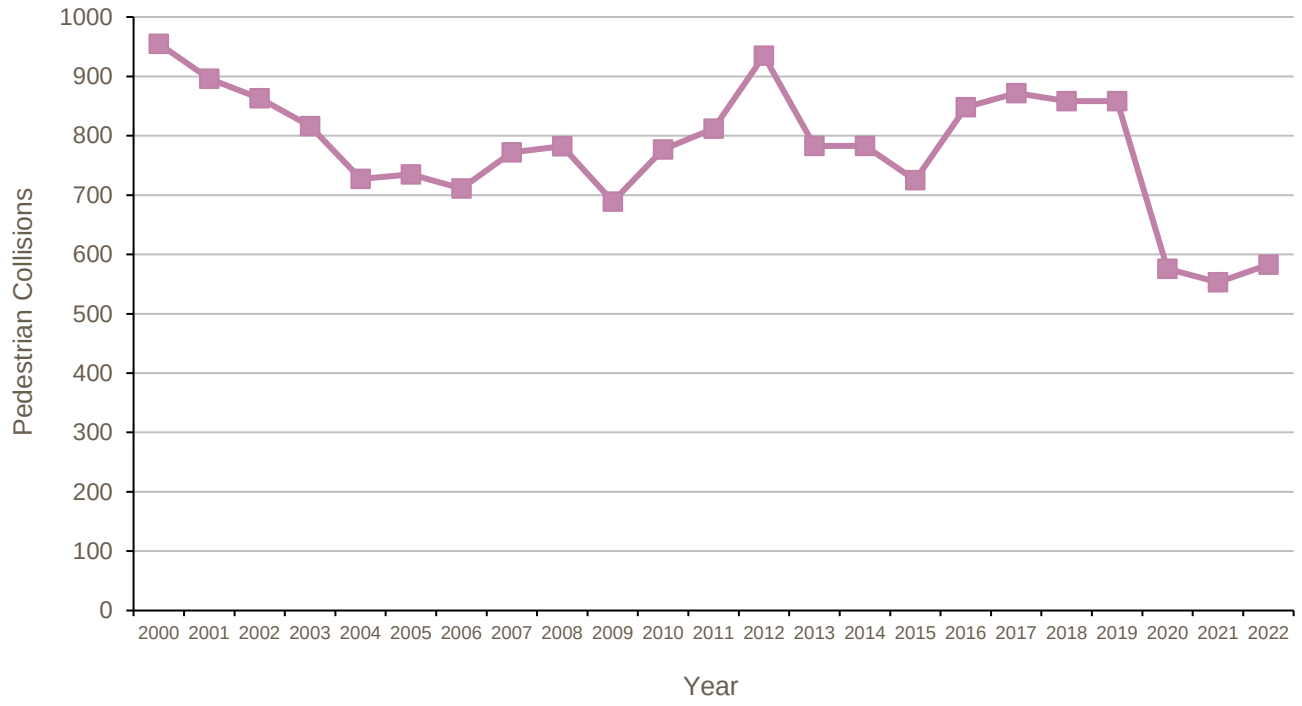


Figure 3: San Francisco Injury Collisions Involving Pedestrians (2000-2022)

Year	2000	2010	2020	2021	2022
Total	955	777	576	553	583

The number of pedestrian fatalities was 20 in 2022, tied for second highest annual total of the past ten years (Figure 4). About half of San Francisco's fatal collisions continue to involve pedestrians. As with fatal crashes in general, pedestrian fatal crashes have not decreased in

the past decade even though that there have been decreases in pedestrians being injured overall.

Figure 4: San Francisco Pedestrian
Fatal Collision Totals (2000-2022)

Figure 4: San Francisco Pedestrian
Fatal Collision Totals (2000-2022)

Year	2000	2010	2020	2021	2022
Total	32	13	12	13	20

Table 11 summarizes which CVC violations are associated with vehicle-pedestrian crashes. The two most common violations on the part of motorists (46%) are failure to yield at crosswalks (CVC 21950 A) and unsafe speed (CVC 22350). Common yielding violations are when motorists are making left or right turns at traffic signals, or when a vehicle fails to yield at an uncontrolled crosswalk when going straight. The two most common violations by pedestrians (16% of total crashes) are failure to yield right-of-way outside crosswalk (CVC 21954 A) and crossing between signalized intersections (CVC 21955).

Table 11: 2017-2022 Pedestrian Involved Injury and Fatal Collisions by CVC Violation (Total of 4,387)

CVC Violation	Collisions	Percent
21950(A): Driver failure to yield to pedestrian at a crosswalk	1,743	40%
21954(A): Pedestrian failure to yield outside crosswalk	460	11%
22350: Driver unsafe speed for conditions	280	6%
21955: Pedestrian crossing unsafely between intersections	271	5%
21453(D): Pedestrian violation of traffic signal	192	4%
22106: Driver unsafe maneuver or backing after being parked	187	4%
21950(B): Pedestrian crossing at crosswalk when unsafe	185	4%
21453(A): Driver violation of traffic signal	126	3%
Other	943	21%

Table 12 summarizes the highest intersection crash locations involving pedestrians. An area of focus during this reporting period has been the Tenderloin neighborhood, where SFMTA has implemented street changes including removing parking at intersections, signal timing changes, no turn on red regulations, road diets, pedestrian scrambles, bicycle infrastructure upgrades, and lowering the speed limits in the area to 20 miles per hour.

Table 12: Injury Vehicle-Pedestrian Collision Intersections
Intersections with 13 or More Injury Collisions, 2017-2022

Intersection	Fatal Crashes	Injury Crashes	Total Injured
Hyde and Turk Streets	0	20	21
5th and Market Streets	0	18	19
Leavenworth and Turk Streets	0	16	16
Eddy and Taylor Streets	0	15	17
Geneva Avenue and Mission Street	1	15	15
Golden Gate Avenue and Hyde Street	1	14	15
6th and Mission Streets	0	14	14
Pine and Polk Streets	0	14	15
San Bruno Avenue and Silver Avenue	0	14	15

Bicycle-Involved Collisions

There were 434 injury collisions in 2022 involving a bicycle rider as a party, about 15 percent of total injuries that year and a decline from pre-pandemic totals of about 550 to 600 crashes annually (Figure 5). Bicycle-related crashes increased in the 2000s, almost doubling before stabilizing in the 2010s. To some extent bicycle-involved crash trends have mirrored changes in bicycle ridership: collisions appear to have increased when bicycle ridership was going up in the 2000s and have now fallen with the decline in work commute and visitor trips during the pandemic (Appendix C). SFMTA bicycle counters estimate the drop in bicycle trips 2020 and 2021 was in the order of 40 percent during the drier summer months.[7]

Figure 5: San Francisco Injury Collisions Involving Bicycles (2000-2022)

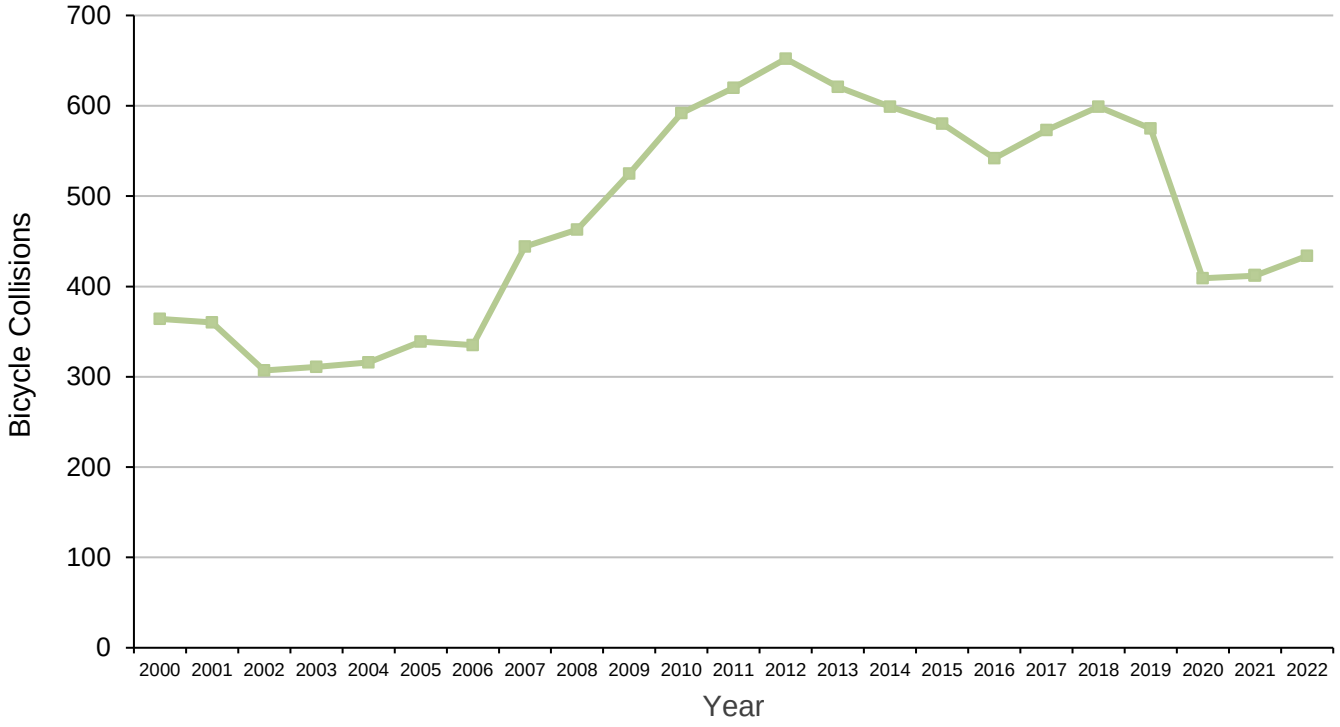


Figure 5: San Francisco Injury Collisions Involving Bicycles (2000-2022)

Year	2000	2010	2020	2021	2022
Total	364	592	409	412	434

Table 13 has the number of bicycle riders killed from 2017 to 2022.

[7] https://www.sfmta.com/bicycle-ridership-data

Table 13: Fatal Injury Collisions
Involving Bicycles (2017-2022)

Year	2017	2018	2019	2020	2021	2022
Fatal Collisions	2	3	1	2	2	1

Table 14 presents the primary collision type for injury collisions involving at least one party on a bicycle. The most common crash pattern are broadsides and sideswipes (58 percent of crashes). The “other” category includes vehicle door-opening crashes, as discussed below.

Table 14: 2017-2022 Bicycle Injury and Fatal
Collisions by Primary Collision Type

Type	Collisions	Percent
Broadside	1106	37%
Sideswipe	634	21%
Other	479	16%
Rear End	246	8%
Head-On	172	6%
Not Stated	134	4%
Vehicle/Pedestrian	104	4%
Hit Object	86	3%
Overturned	52	2%

Tables 15 and 16 present CVC violation factors for bicycle injury collisions, showing the top violation factors for when a bicyclist is and is not considered the party at fault by the SFPD investigation. Motorists and other parties are considered at fault in about 63 percent of bicycle involved crashes. For injury collisions where the bicyclist is likely not the party at fault, the top three factors are driver unsafe lane changes (CVC 22107), driver opening door into moving traffic (CVC 22517), and driver failure to yield when making a left or U-turn (CVC 21801 A). Reported injury crashes involving “dooring” CVC 22517 violations now constitute about 12 percent of bicycle-involved crashes, which is down from the 16 percent of injury bicycle crash totals during 2012-2015.

For injury collisions where the bicyclist was likely the party at fault, the top violation factors were bicycle rider at unsafe speed for conditions (CVC 22350), violation of a traffic signal (CVC 21453 A) and making unsafe lane change (CVC 22107).

Table 15: 2017-2022 Bicycle Injury and Fatal Collisions
by CVC Violation, Bicyclist Likely Not at Fault (Total of 1,872)

CVC Violation	Collisions	Percent
22107: Unsafe lane change	330	18%
22517: Opening door into moving traffic	229	12%
21801(A): Failure to yield for left or U-turn	203	11%
22350: Unsafe speed for conditions	131	7%
21453(A): Violation of traffic signal	83	4%
Other	896	48%

Table 16: 2017-2022 Bicycle Injury and Fatal Collisions
by CVC Violation, Bicyclist Likely at Fault (Total of 1,177)

CVC Violation	Collisions	Percent
22350: Unsafe speed for conditions	323	27%
21453(A): Violation of traffic signal	174	15%
22107: Unsafe lane change	97	8%
22450(A): Failure to stop at a STOP sign	87	7%
21650.1: Riding the wrong way on a one-way street	71	6%
Other	425	36%

Table 17 is a list of the highest bicycle injury intersections for 2017 through 2022. At the top location, Market and Octavia Streets, six-year intersection bicycle crash totals have been cut from 32 (2011-2016) to 20 (2017-2022). Currently physical changes are being completed at this intersection as part of SFMTA's Upper Market capital project. Further east the city implemented car-free section of Market in early 2020 and is beginning construction on the first phase of the Better Market Street project.

The highest mid-block bicycle-involved street segments in Table 18 all have had projects initiated, including the already mentioned changes on Market Street, completed and planned Valencia Street bicycle lane projects, and the addition of traffic calming devices on John F. Kennedy Drive in Golden Gate Park. While the portion of John F. Kennedy Drive listed in Table 14 was not closed to traffic during the pandemic, the street closure east of Transverse Drive by the Recreation and Parks Department probably helped reduce overall through traffic on the open portion. No injury crashes were reported on the Table 14 segment of JFK Drive in 2022.

Table 17: Highest Bicycle Involved Injury Collision Intersections
11 or more injury reported collisions (2017-2022)

Intersection	2017-2022 Injury Collisions
Market and Octavia Streets	20
7th and Market Streets	16
5th and Market Streets	14
Fulton and Webster Streets	13
14th and Valencia Streets	11
Market and Valencia Streets	11
Broadway and The Embarcadero	11
8th and Mission Streets	11

Table 18: Highest Bicycle Involved Injury Midblock Segments
10 or more injury reported collisions (2017-2022)

Midblock Segment	2017-2022 Injury Collisions
Market Street from 7th Street to 8th Street	15
Valencia Street from 18th to 19th Streets	10
John F. Kenney Drive from 30th Avenue to Transverse Drive	10

Motorcycle-Involved Collisions

Crashes in which a motorcycle or moped/scooter were involved comprised about 14 percent of injury crashes since 2020. Figure 6 shows recent trends in motorcycle-related crashes. As with some other patterns in this report, an increase in the 2010s has been followed by a statistically significant drop in crashes in the pandemic years (2020-2022), but this drop has not been reflected in the fatal crash totals, with 2022 having 6 people killed while on a motorcycle and one on a moped (Table 19). The more than doubling of motorcycle-involved fatalities during the pandemic years (2020-2022) compared to the prior three years (2017-2019) is one of the sharpest of all travel modes. San Francisco mirrors pandemic trends at the national level, where fatalities among people riding a motorcycle increased 11 percent from 2019 to 2020, while the number of non-fatal injuries decreased by 2 percent.[8]

[8] National Safety Council, https://injuryfacts.nsc.org/motor-vehicle/road-users/motorcycles/

Figure 6: San Francisco Injury Collisions
Involving Motorcycles and Mopeds (2005-2022)

Figure 6: San Francisco Injury Collisions
Involving Motorcycles and Mopeds (2005-2022)

Year	2005	2010	2020	2021	2022
Total	254	317	296	327	337

Table 19: Fatal Injury Collisions
Involving Motorcycles (2017-2022)

Year	2017	2018	2019	2020	2021	2022
Fatal Collisions	4	2	1	7	8	7

Electric Standing Scooters and Motorized Boards

A new modal factor for injury and fatal crashes are those involving motorized board devices where a person stands to ride. These include electric stand up scooters, electric skateboards, and one-wheel boards. Crashes involving these have gone up locally and nationally[9] with their increased adoption (Figure 7). Many stand up device solo fall injuries are underreported since the SFPD may not be called in those situations. Of particular concern are the high number of fatalities (seven) associated with these new devices in the past three years (Table 20).

Figure 7: San Francisco Injury Collisions
Involving Stand up Powered Devices (2005-2022)

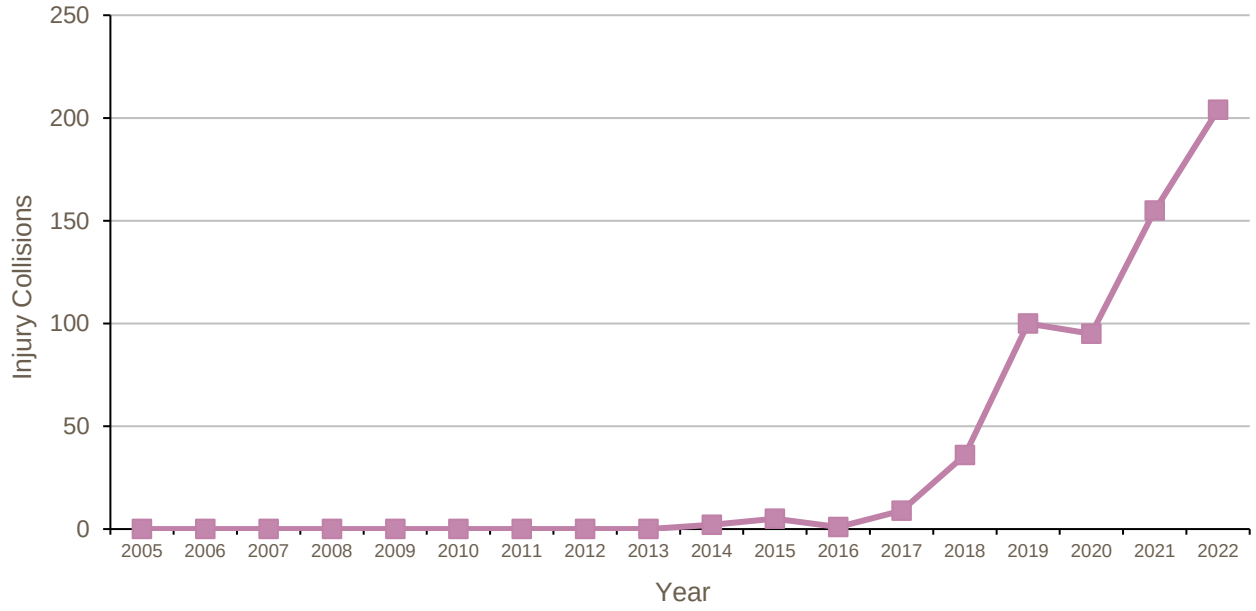


Figure 7: San Francisco Injury Collisions
Involving Stand up Powered Devices (2005-2022)

Year	2005	2010	2020	2021	2022
Total	0	0	95	155	204

Table 20: Fatal Collisions
Involving Stand up Powered Devices (2017-2022)

Year	2017	2018	2019	2020	2021	2022
Fatal Collisions	0	0	0	2	1	4

[9] United States Consumer Product Safety Commission, *Micromobility Products-Related Deaths, Injuries, and Hazard Patterns: 2017–2021*, September 2022: "Estimated emergency department visits associated with e-scooters increased from 7,700 in 2017 to 42,200 in 2021," page 4.

Part 5: Traffic Enforcement

Since 2013 the San Francisco Police Department (SFPD) has a traffic enforcement policy called “Focus on the Five” that prioritizes the citations in Table 21, which (along with unsafe lane changes and tailgating) are the most common primary collision causes in San Francisco. SFPD has a goal of at least half of traffic citations being Focus on the Five. Though traffic citations were falling prior to the pandemic, after March of 2020 there was a notable drop in the number of vehicles being cited for traffic violations, including the Focus ones (Figure 8).

Table 21: Focus on the Five Citation Categories

CVC Violation
22350: Driving at unsafe speed given conditions of roadway
21950(A): Failure to yield to pedestrian at a crosswalk
21453(A): Driver violation of a traffic signal
21801(A): Failure to yield for left or U-turn
22450(A): Failure to stop at a STOP sign limit line

Figure 8: San Francisco SFPD Citations
Focus on the Five (2016-2022)

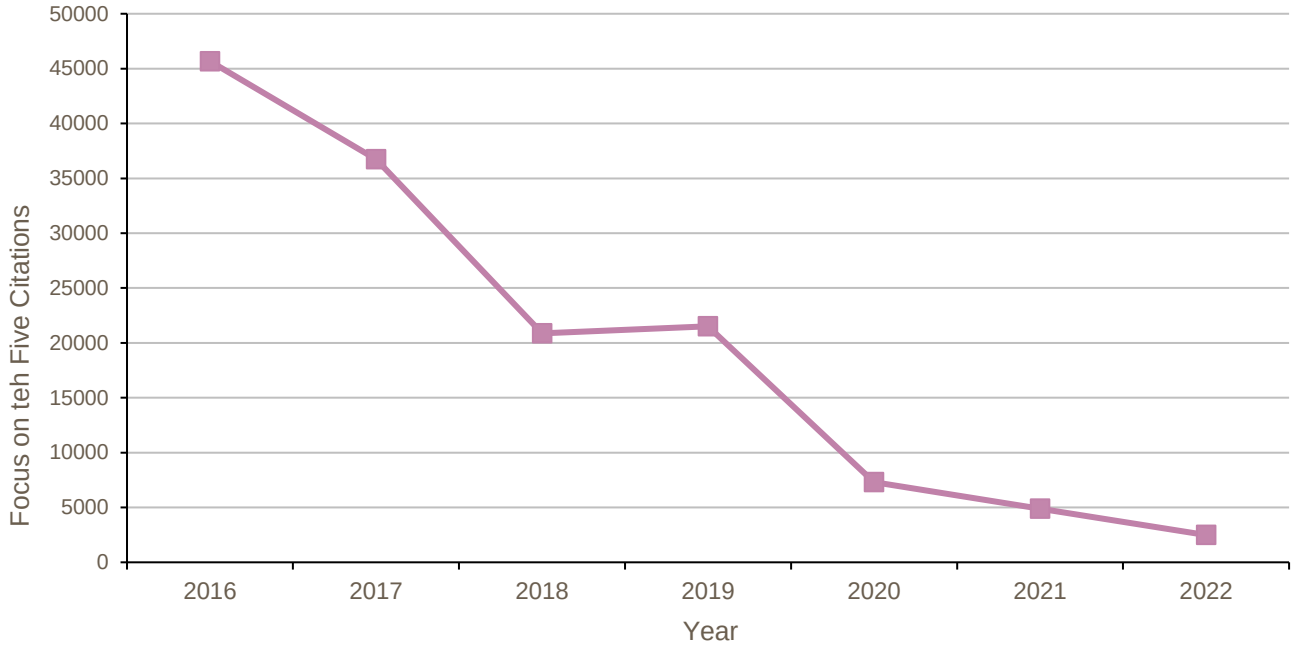


Figure 8: San Francisco SFPD Citations
Focus on the Five (2016-2022)

Year	2016	2017	2018	2019	2020	2021	2022
SFPD Citations	45671	36743	20859	21522	7320	4879	2487

Note: Data does not include about 800 to 1000 citations a month from red light cameras. In 2022 the SFMTA Automated Enforcement Program issued 9873 citations operating at 13 intersections.

SFPD has indicated decreased officer staffing levels have been the primary cause for the declining traffic enforcement in the past decade. Other factors that have been mentioned to explain national traffic enforcement changes have included shifts of attention other types of crime as well societal concerns with the racial equity and effectiveness of traffic stops.[10] Automated speed enforcement is one new tool that could address some of these resource and equity concerns but so far it has not been approved by the California legislature.

It has always been difficult to establish the exact correlation between policing levels and specific traffic safety outcomes.[11] As noted before, crash trends can be influenced by any number of other factors, including in this analysis period the pandemic. We know fatalities involving Focus on the Five primary collision factors have gone up, reported injury crashes decreased, and the percentage of crashes that are hit and runs has gone up (Table 22); what we don't know is why. San Francisco's data so far suggests that reductions in citation volumes by themselves may not lead to proportional increases in overall collision totals (Figure 9). Even if a majority of the public follows the law because it makes sense rather than because of the fear of a citation, some percentage of the public could increase their risky behavior with no enforcement, increasingly the likelihood of severe and fatal crashes.[12] Under this theory it may be more effective to direct limited city policing resources to address higher risk factors likely to result in immediate harm to self or others.

Table 22: Focus on the Five Crashes and Citations (2017-2019 compared with 2020-2022)

Category	Pre-pandemic 2017-2019	Pandemic 2020-2022	Total Change	Percent Change
Fatal Crashes with Primary Cause a Focus on the Five Code	30	46	16	53%
Injury Crashes with Primary Cause a Focus on the Five Code	4,575	3,806	-769	-17%
Focus on the Five Citations by SFPD	79,124	14,686	-64,438	-81%
Felony and Misdemeanor Hit and Run Crashes (All Collision Causes)	1,763	1,753	-10	- 1%
Ratio of Focus on the Five Citations for every Focus on the Five Injury Crash	17.2	3.8	-13.4	-78%

SFPD citations source: https://www.sanfranciscopolice.org/stay-safe/crime-data/traffic-violation-reports

[10] *The San Francisco Standard*, "With Traffic Enforcement Way Down, SF Residents Are Taking Safety into Their Own Hands," July 20, 2022. *New York Times*, "Cities Try to Turn the Tide on Police Traffic Stops," April 15, 2022.
[11] San Francisco Office of the Controller, *Focus on Enforcement Report*, March 2017. https://sfcontroller.org/sites/default/files/Documents/Auditing/FINAL%20Collision%20Analysis%203-10-17.pdf
[12] National Public Radio, "America's roads are more dangerous, as police pull over fewer drivers," April 6, 2023.

Crashes can also involve illegal behavior before or after the incident. For 2022 fatal crashes alone, two people were driving a stolen vehicle, one was involved in a robbery, one driver was unlicensed, one was evading a CHP pursuit and at least six were driving under the influence (Appendix A). Hit and run crashes refer to incidents where a party fails to remain at the site of the crash. The percentage of fatal crash hit and runs doubled from 13% (2017-19) to 25% (2020-22). For injury crashes the percentage of hit and runs increased from 17% (2017-19) to 22% (2020-22). For 2020-22, 40% of pedestrian fatal and 30% of injury crashes were hit and run. This deterioration in lawful driving behavior was a problem nationally as well.[13]

Figure 9: Percentage Changes with 2016 as Base Year
Focus on the Five Citations, All Fatal Crashes, and All Injury Crashes (2016-2022)

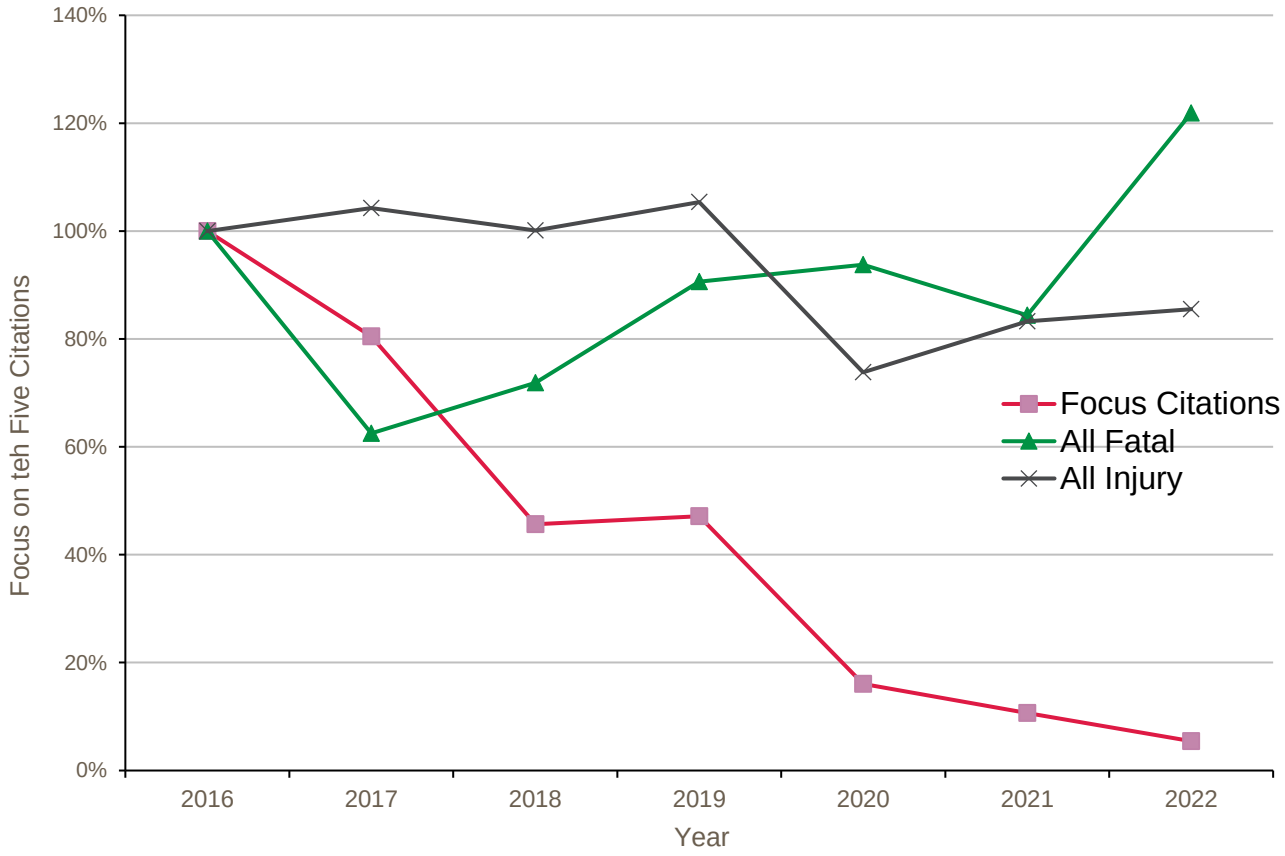


Figure 9: Percentage Changes with 2016 as Base Year
Focus on the Five Citations, All Fatal Crashes, and All Injury Crashes (2016-2022)

Year	2016	2017	2018	2019	2020	2021	2022
SFPD Focus Citations	100%	80%	46%	47%	16%	11%	5%
Fatal Crashes	100%	63%	72%	91%	94%	84%	122%
Injury Crashes	100%	104%	100%	105%	74%	83%	86%

[13] CNN, “Traffic safety crisis marked by spike in hit and run deaths,” March 31, 2022. See also Appendix D.

Part 6: Homelessness and Traffic Fatalities

An area of recent concern has been the high percent of people dying on city streets that were experiencing homelessness at the time of the traffic collision. Table 23 shows how the percent of pedestrian fatalities involving people without a fixed address is a third to half of pedestrian totals in the past three years. This does not include pedestrian fatalities on city freeways and Caltrain tracks, which also tend to involve those that lack permanent housing. The Department of Homelessness and Supportive Housing estimates that every year in San Francisco approximately 20,000 people experience homelessness at some point, making homeless individuals significantly overrepresented in traffic fatalities.[14]

Table 23: Traffic Fatalities Involving People Experiencing Homelessness (2017-2022)

Year	2017	2018	2019	2020	2021	2022
Victims Killed	2	5	0	6	4	7
Percent of All Fatals	10%	22%	0%	20%	15%	18%
Percent of Pedestrian Fatals	7%	33%	0%	50%	31%	30%

Source: Medical Examiner, Department of Public Health, *Vision Zero Fatalities: End of Year Reports (2017-2021)*
All deaths were people walking except for one person riding a bicycle in 2017 and one moped in 2022.

Part 7: Collisions by Area

As noted before the general decrease in injury crashes between 2017-19 and 2020-22 is about 20 percent citywide but these changes have not been the same from neighborhood to neighborhood. Tables 24-26 breaks down crash totals by Board of Supervisors district boundaries (Figure 10). The highest drops in overall and pedestrian involved crashes were in Districts 3, 6 and 7. The drops in Districts 3 and 6 would confirm the hypothesis that areas with the most drops in commuter (Figure 11) and visitor activity have seen proportionally the most drops in reported crash totals. District 3 includes the downtown area most impacted by shelter-in-place and increased telecommuting, as well the major tourist areas of North Beach, Chinatown, and Fisherman's Wharf. The San Francisco Travel Association estimates there were almost 27 million fewer visitors in 2020-22 compared to 2017-19 (Appendix C). District 6 (which includes South of Market) also saw crash reductions likely due to decreased driving, transit, and riding activity. District 6 went from having 18% of the city's crash totals to 16% thanks to a total drop of 575 crashes. District 6, along with portions of District 5 (the Tenderloin), is also at the heart of the city's High Injury Network map, the 12% of city streets were approximately 68% of severe and fatal crashes occur (Figure 12). Though all districts saw decreases in injury crashes, District 10 was the least changed with only a 3 percent drop. Districts 3 and 6 also saw significant (over 40 percent) drops in pedestrian and bicycle related crashes (Tables 25 and 26).

[14] *San Francisco Examiner*, "Homeless residents at high risk of death in traffic collisions," September 3, 2019.

Table 24: Fatal and Injury Crashes by Board of Supervisors District Boundaries
Comparison of 2017-2019 with 2020-2022

Supervisor District (General SF Area)	Pre-pandemic 2017-2019	Pandemic 2020-2022	Total Change	Percent Change
District 1 (Northwest, Richmond)	621 (6%)	461 (6%)	-160	-26%
District 2 (North Central, Pacific Heights)	656 (6%)	558 (7%)	-98	-15%
District 3 (Northeast, Downtown, Waterfront)	1118 (11%)	760 (9%)	-358	-32%
District 4 (West Central, Sunset)	416 (4%)	321 (4%)	-95	-23%
District 5 (Central, Western Addition)	1294 (13%)	1097 (14%)	-197	-15%
District 6 (East Central, South of Market)	1893 (18%)	1318 (16%)	-575	-30%
District 7 (Southwest, West of Twin Peaks)	638 (6%)	431 (5%)	-207	-32%
District 8 (Central, Castro, Noe Valley)	689 (7%)	543 (7%)	-146	-21%
District 9 (Central, Mission, Bernal Heights)	1222 (12%)	1036 (13%)	-186	-15%
District 10 (Southeast, Bay View, Vis Valley)	900 (9%)	877 (11%)	-23	-3%
District 11 (South Central, Excelsior)	808 (8%)	638 (8%)	-170	-21%

Figure 10
2023 San Francisco Board of Supervisors District Boundaries

Note: The data in this report used current district boundaries (2022 redistricting) for analysis of 2017-2022 collision trends.

Table 25: Pedestrian Involved Crashes by Board of Supervisors District Boundaries Comparison of 2017-2019 with 2020-2022

Supervisor District (General SF Area)	Pre-pandemic 2017-2019	Pandemic 2020-2022	Total Change	Percent Change
District 1 (Northwest, Richmond)	133 (5%)	88 (5%)	-45	-34%
District 2 (North Central, Pacific Heights)	170 (6%)	129 (7%)	-41	-24%
District 3 (Northeast, Downtown, Waterfront)	395 (15%)	195 (11%)	-200	-51%
District 4 (West Central, Sunset)	102 (4%)	70 (4%)	-32	-31%
District 5 (Central, Western Addition)	379 (14%)	291 (16%)	-88	-23%
District 6 (East Central, South of Market)	509 (19%)	302 (17%)	-207	-41%
District 7 (Southwest, West of Twin Peaks)	146 (6%)	76 (4%)	-70	-48%
District 8 (Central, Castro, Noe Valley)	164 (6%)	101 (6%)	-63	-38%
District 9 (Central, Mission, Bernal Heights)	282 (11%)	240 (14%)	-42	-15%
District 10 (Southeast, Bay View, Vis Valley)	161 (6%)	137 (8%)	-24	-15%
District 11 (South Central, Excelsior)	192 (7%)	142 (8%)	-50	-26%

Table 26: Bicycle Involved Crashes by Board of Supervisors District Boundaries Comparison of 2017-2019 with 2020-2022

Supervisor District (General SF Area)	Pre-pandemic 2017-2019	Pandemic 2020-2022	Total Change	Percent Change
District 1 (Northwest, Richmond)	86 (5%)	78 (6%)	-8	-9%
District 2 (North Central, Pacific Heights)	77 (4%)	79 (6%)	2	3%
District 3 (Northeast, Downtown, Waterfront)	206 (12%)	115 (9%)	-91	-44%
District 4 (West Central, Sunset)	43 (2%)	51 (4%)	8	19%
District 5 (Central, Western Addition)	253 (14%)	190 (15%)	-63	-25%
District 6 (East Central, South of Market)	497 (28%)	268 (21%)	-229	-46%
District 7 (Southwest, West of Twin Peaks)	56 (3%)	67 (5%)	11	20%
District 8 (Central, Castro, Noe Valley)	123 (7%)	97 (8%)	-26	-21%
District 9 (Central, Mission, Bernal Heights)	268 (15%)	190 (15%)	-78	-29%
District 10 (Southeast, Bay View, Vis Valley)	99 (6%)	61 (5%)	-38	-38%
District 11 (South Central, Excelsior)	45 (3%)	56 (4%)	11	24%

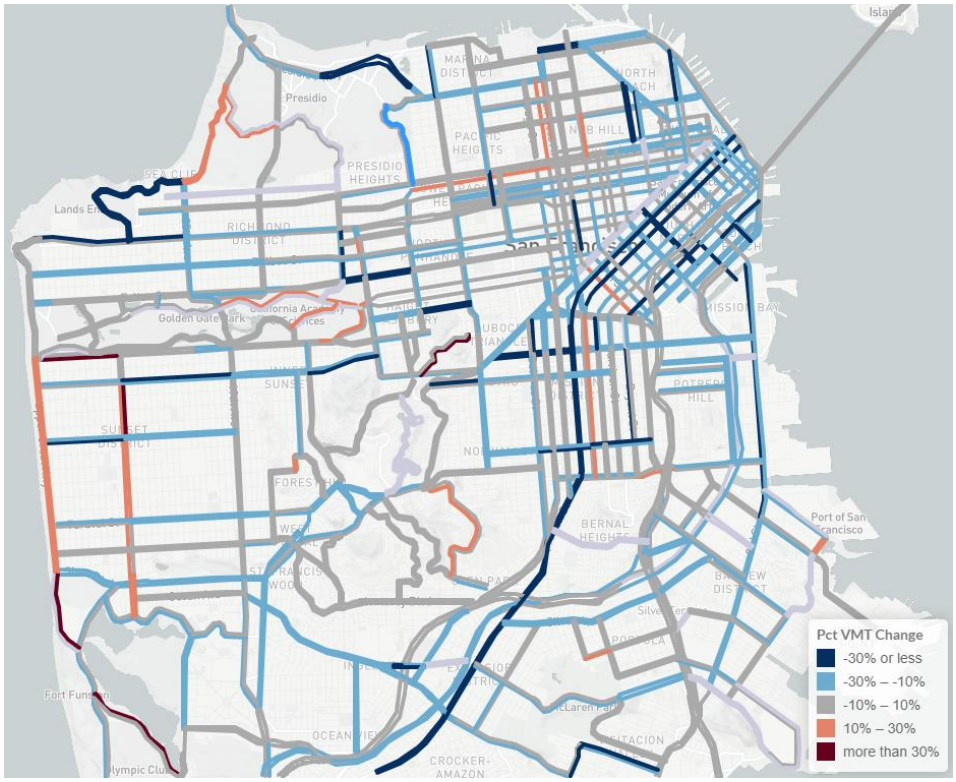


Figure 11 - Map of Estimated Percentage Change in Vehicle Miles Travelled Pre-pandemic San Francisco Streets Compared to End of 2022

Source: San Francisco County Transportation Authority COVID-ERA Congestion Tracker https://covid-congestion.sfcta.org/

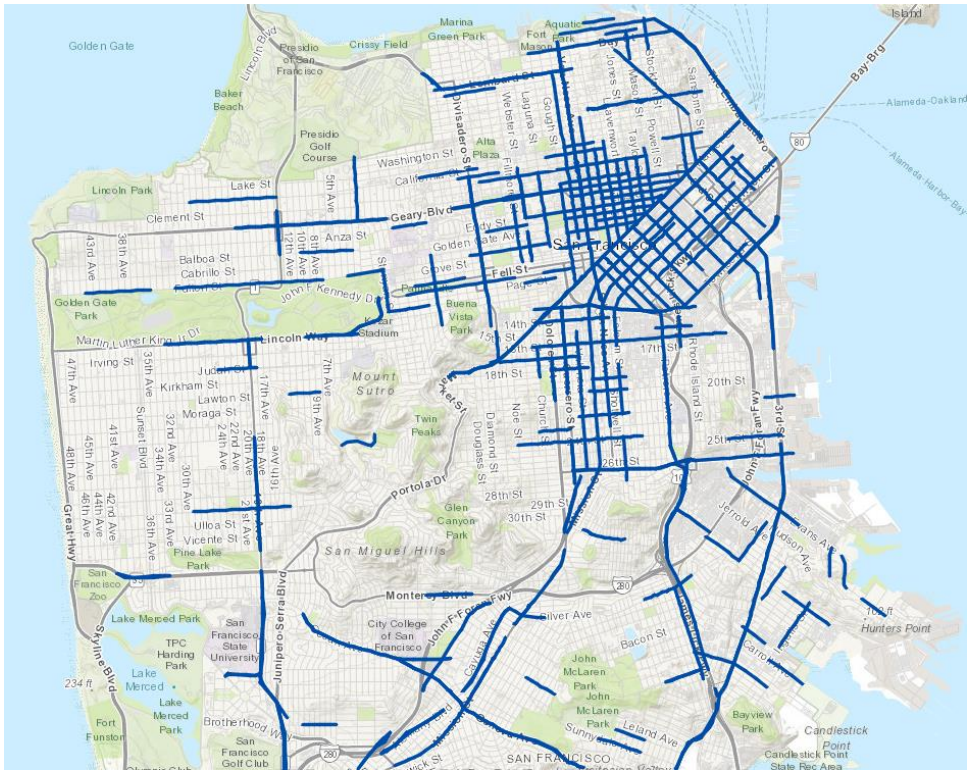


Figure 12 The 2022 High Injury Network Map

Source: San Francisco Department of Public Health https://www.visionzerosf.org/maps-data/

Part 8: Three Highlighted Street Segments

The sudden drop in injury crash totals in 2020 makes it more challenging to isolate the safety effects of street redesign projects. Recent completed projects, like the 2nd Street Streetscape or the retiming of all the signals in the downtown area for example, are difficult to analyze considering the overall drops in crashes citywide. Nevertheless, this report highlights three corridors where past actions appear to have positive results in recent years.

- Market Street east of 10th Street. After regulations were changed to prohibit most vehicular traffic early in 2020, the street has seen a 40% sustained drop in crashes (Figure 13). Market Street is one of the highest severe injury corridors in San Francisco, especially for crashes involving pedestrians and bicycle riders.

- Sunset Boulevard. Traffic collisions dropped in 2019 prior to the pandemic in part due to the addition of multiple new traffic signals, speed limit, and signal timing improvements. Totals remained lower during 2020-2022 even with the closure of the Great Highway and construction on 19th Avenue, both parallel north-south arterials which relied on Sunset Boulevard as a detour (Figure 14).

- Van Ness Avenue. The Van Ness Bus Rapid Transit project was inaugurated in April of 2022. Completion of new traffic signals and other physical improvements resulted in the lowest crash total reported for 2022 despite increasing transit ridership and regional vehicular traffic on this state highway (Figure 15).

Figure 13: Injury Collisions
Market Street between 10th Street and Steuart Street (2016-2022)

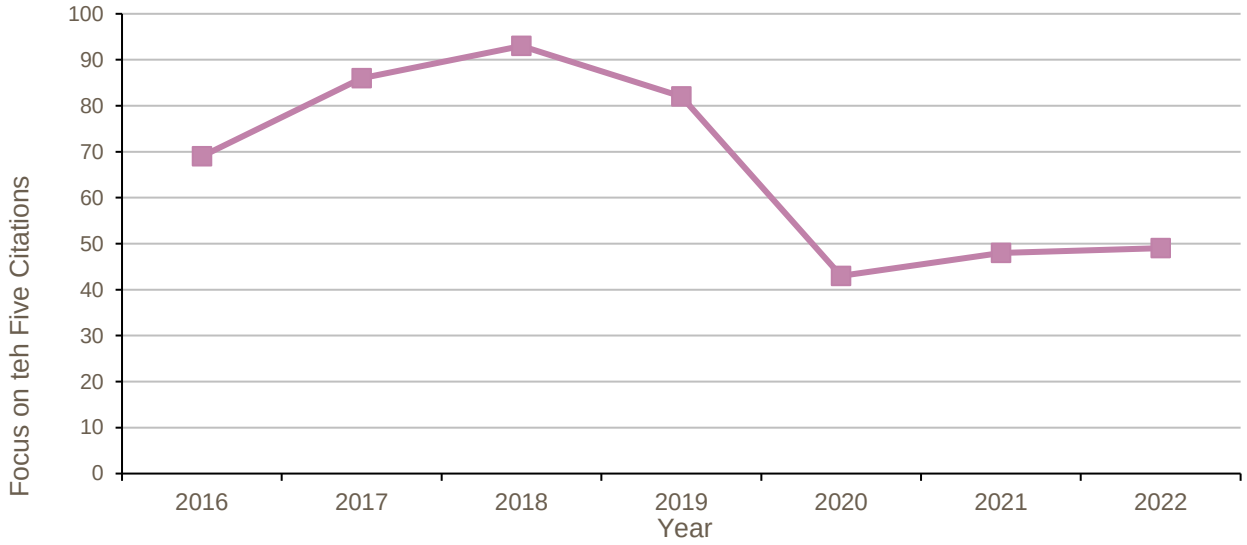


Figure 13: Injury Collisions
Market Street between 10th Street and Steuart Street (2016-2022)

Year	2016	2017	2018	2019	2020	2021	2022
Collisions	69	86	93	82	43	48	49

Figure 14: Injury Collisions
Sunset Boulevard between Irving Street and Lake Merced Boulevard (2016-2022)

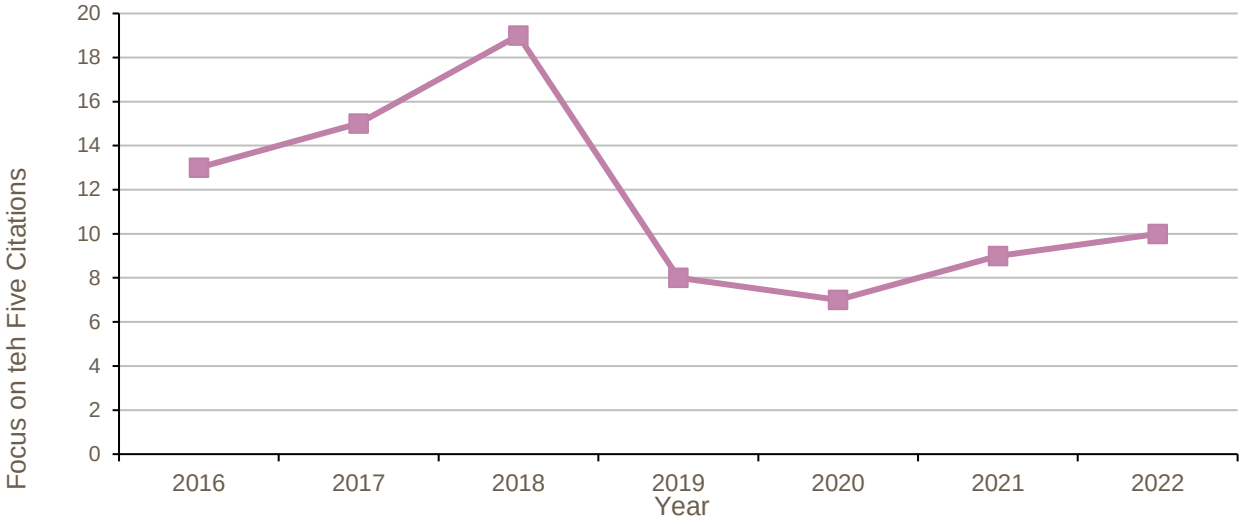


Figure 14: Injury Collisions
Sunset Boulevard between Irving Street and Lake Merced Boulevard (2016-2022)

Year	2016	2017	2018	2019	2020	2021	2022
Collisions	13	15	19	8	7	9	10

Figure 15: Injury Collisions
Van Ness Avenue between Bay Street and Market Street (2016-2022)

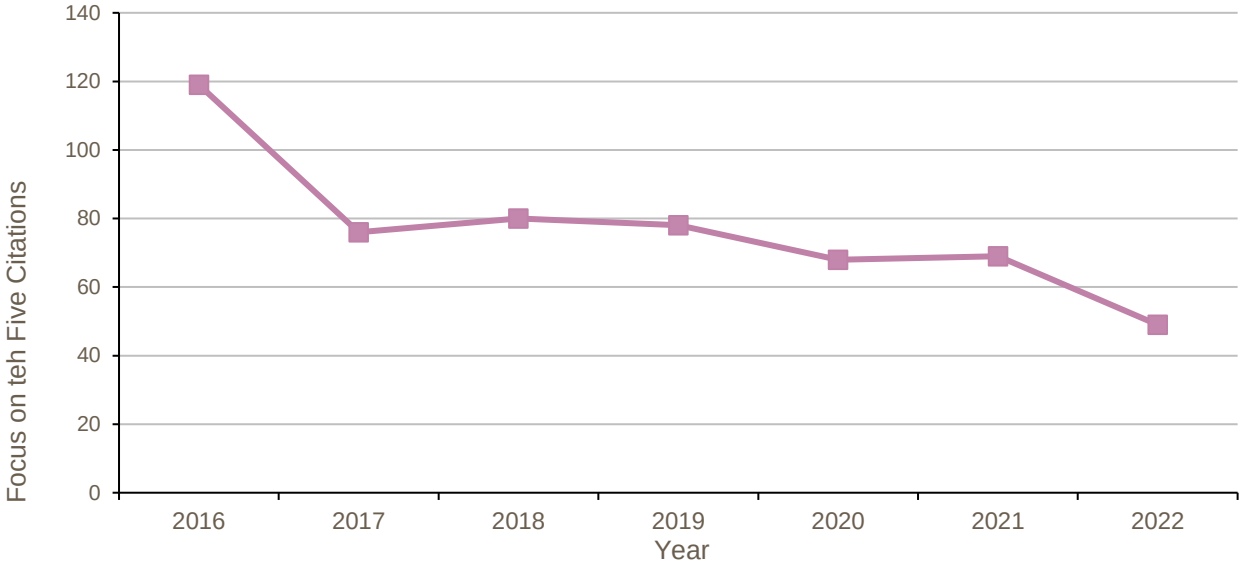


Figure 15: Injury Collisions
Van Ness Avenue between Bay Street and Market Street (2016-2022)

Year	2016	2017	2018	2019	2020	2021	2022
Collisions	119	76	80	78	68	69	49

Part 9: Comparison with Other California Counties

In ten other urbanized counties in California there were increases in fatalities starting in 2020 accompanied by a notable drop in traffic injuries, and thus a corresponding increase in the fatality to injuries ratio much like what happened in San Francisco (Table 27). Fatalities among the eleven counties listed increased by 14 percent while injuries decreased by 26 percent. According to the National Highway Traffic Safety Administration, during this same period U.S. traffic collision deaths increased by 18 percent while reported traffic injuries decreased by approximately 9 percent (Appendix D). Along with Santa Clara County, the City and County of San Francisco had one of the lowest fatality increases in 2020-2021. San Francisco also maintained a comparably lower ratio of fatalities per 1,000 traffic injuries after the pandemic.

Unlike the local data used in the rest of this report, Tables 27 and 28 are based on California Highway Patrol state-level data that also includes freeway and private property crashes.

Table 27: Victims Killed and Injured in California Urban Counties and United States
Includes Freeways, Comparison of 2018-2019 with 2020-2021

County	Pre-pandemic 2018-2019 Victims		Killed per 1000 Injured Ratio	Pandemic 2020-2021 Victims		Killed per 1000 Injured Ratio	Fatality/Injury Ratio Percent Change
	Killed	Injured		Killed	Injured		
Alameda	181	21,575	8	206	16,403	13	33%
Contra Costa	157	11,846	13	196	8,284	24	44%
Fresno	255	8,951	28	379	9,343	41	30%
Los Angeles	1465	178,917	8	1612	123,401	13	37%
Orange	383	37,494	10	415	29,782	14	27%
Sacramento	319	24,357	13	381	21,843	17	25%
San Diego	524	39,859	13	614	32,762	19	30%
San Francisco	67	10,097	7	68	7,687	9	25%
San Mateo	58	7,941	7	76	5,377	14	48%
Santa Clara	251	21,029	12	235	14,043	17	29%
Ventura	103	11,119	9	120	8,904	13	31%
Above total	3,763	373,180	10	4,302	277,829	15	35%
United States	72,931	5.4M	14	81,946	4.78M	17	21%

Source: California Highway Patrol, SWITRS (preliminary data as of April 2, 2023). U.S. Data: NHSTA

Solo vehicular crashes were the fastest growing category of fatal crashes during this reporting period, going up by 25 percent for the listed counties (Table 28). This crash type includes all motorized vehicles, including motorcycles, hitting objects, parked vehicles, and other events not involving a collision with another party. Over 60 percent of the increase in fatal crashes between the two reporting periods can be attributed to this crash type alone (313 crashes out of the total change of 513 in Table 27). A crash in which a vehicle occupant dies without colliding with another moving vehicle is typically associated with excessive speeding, a problem that increased during the pandemic (Appendix D).[15]

Table 28: Fatal Vehicle Solo Crashes, California Urban Counties
Includes Freeways, Comparison of 2018-2019 with 2020-2021

County	Pre-pandemic 2018-2019	Pandemic 2020-2021	Total Change	Percent Change
Alameda	44	75	31	41%
Contra Costa	53	77	24	31%
Fresno	71	86	15	17%
Los Angeles	314	418	104	25%
Orange	85	111	26	23%
Sacramento	85	106	21	20%
San Diego	160	205	45	22%
San Francisco	12	20	8	40%
San Mateo	18	31	13	42%
Santa Clara	70	83	13	16%
Ventura	34	47	13	28%
Above total	946	1259	313	25%

Source: California Highway Patrol, SWITRS (preliminary data as of April 2, 2023)

Press reports indicate that California cities continue to struggle with high annual traffic totals three years after the start of the COVID-19 pandemic. In addition to San Francisco, major cities like San Jose, Los Angeles, Oakland, Long Beach, and San Diego reported high fatal crash totals in 2022 compared to recent years.[16] The SFMTA remains committed to doing what it can to reverse this unfortunate trend in San Francisco.

[15] National Highway Traffic Safety Administration, "Continuation on Research on Traffic Safety Emergency during the COVID-19 Public Health Emergency: January – June 2021," October 2021.

[16] *San Jose Mercury News*, "San Jose set a modern record for roadway deaths in 2022. Here are key reasons why," January 1, 2023. *Los Angeles Times*, "L.A. traffic deaths rose in 2022, surpassing 300 fatalities for first time in two decades," January 14, 2023. *Oaklandside*, "The 35 people who lost their lives to traffic violence in Oakland last year," January 18, 2023. *Long Beach Post*, "Traffic deaths have spiked in recent years, with 45 in 2022," January 29, 2023. *CBS8*, "Is Vision Zero working? Pedestrian and bicycle deaths spike despite San Diego's efforts to zero them out," May 5, 2023.

APPENDIX A: 2022 Fatal Crash Details

(For the complete fatality dashboard go to https://www.visionzerosf.org/maps-data/)

Location	Crash Party Types	Deceased	Date	Crash Summary
Geary Blvd and Laguna St	Motor Vehicle & Pedestrian	Pedestrian	1/5/2022	Driver of a Hyundai sedan traveled eastbound and struck the victim who was crossing Geary from the northwest to the southwest corner against a solid red hand.
46th Ave and Lincoln Way	Motor Vehicle & Motor Vehicle	Passenger	1/29/2022	Driver of an Audi SUV traveled eastbound and broadsided a westbound left-turning Honda SUV. The victim was a rideshare passenger of the Honda SUV. The eastbound vehicle and license plates were previously reported as stolen and the driver fled the scene.
Harrison St and 22nd St	Stand up Powered Device & Motor Vehicle	Stand up Powered Device Rider	3/2/2022	Driver of a 2-axle, 6 tire truck struck traveled northbound and struck the rider of an electric kick scooter who traveled eastbound on 22nd Street. SFPD investigation determined that both parties had not fully stopped at the STOP sign at this all-way STOP intersection.
34 France St	Motor Vehicle & Pedestrian	Pedestrian	3/4/2022	Victim parking parallel exited vehicle to check parking job and turned off engine, which resulted in the vehicle rolling downhill as it was left in reverse with the emergency brake disengaged. Victim became pinned between the open car door and vehicle.
39th Ave and Quintara St	Motor Vehicle Collision (solo)	Driver	3/5/2022	Victim was driving at a high rate of speed in a Honda SUV eastbound on Quintara and struck the concrete wall at the intersection with 39th Avenue, where the street turns. The victim was driving under the influence.
Chestnut St and Fillmore St	Motor Vehicle & Pedestrian	Pedestrian	3/10/2022	Driver of a Chevy van made a westbound right-turn and struck the victim, who crossed from the northeast corner towards to northwest corner. A school crossing guard warned the victim not to proceed into the intersection due to little to no crossing time left.
IFO 370 Bayshore Blvd	Motorcycle & Motor Vehicle	Motorcyclist	3/20/2022	Northbound Bayshore motorist made U-Turn south of the intersection, which caused a southbound Harley Davidson motorcyclist to lose control, fall, and collide with a parked 2 axle, 6-tire truck on the west side of Bayshore.
Evans St and Mendell St	Moped & Motor Vehicle	Moped	4/9/2022	Driver of a Ford SUV traveled northbound under the influence, ran the red light, and struck the rider of a motorized scooter.
Taylor St and Turk St	Stand up Powered Device & Motor Vehicle	Stand up Powered Device Rider	5/1/2022	Driver of a GMC SUV ran red light going northbound and struck the rider of a westbound electric stand up rental scooter (Bird) who had also violated the red light. Motorist fled the scene of the crash.
Steiner St and Green St	Motor Vehicle & Pedestrian	Pedestrian	5/11/2022	Driver of a Toyota Tundra made a southbound left-turn and struck pedestrian in the east crosswalk of this all-way STOP.

Ellis St near Leavenworth St	Motor Vehicle & Pedestrian	Pedestrian	5/15/2022	Driver of a Toyota SUV traveled westbound and struck the victim, who was already lying on the street midblock. Driver fled the scene but was later found and arrested. The victim was experiencing homelessness.
Bayshore St and Blanken St	LRV & Pedestrian	Pedestrian	5/15/2022	Victim was waiting in the bus shelter on east side of Bayshore. When T-train arrived, victim ran diagonally across northbound Bayshore lanes, tripped at the raised curb separating trackway from northbound lane #1, and fell in front of the train just as the train was starting to move.
37th Ave and Fulton St	Motor Vehicle & Pedestrian	Pedestrian	5/21/2022	Driver of a Hyundai SUV made a southbound left-turn onto eastbound Fulton and struck pedestrian in crosswalk. Victim was traveling northbound from southeast corner. Driver may have been distracted with changing radio stations while making left-turn.
3rd St and Mission St	Motor Vehicle & Pedestrian	Pedestrian	5/22/2022	Driver of a Mercedes sedan made a northbound right-turn from the center lane and struck a taxi driver (Ford SUV) going northbound in transit/taxi lane, which sent the taxi towards the northeast corner. The taxi then struck multiple pedestrians, two of whom were victims who were standing on the northeast corner.
3rd St and Mission St	Motor Vehicle & Pedestrian	Pedestrian	5/22/2022	Driver of a Mercedes sedan made a northbound right-turn from the center lane and struck a taxi driver (Ford SUV) going northbound in transit/taxi lane, which sent the taxi towards the northeast corner. The taxi then struck multiple pedestrians, two of whom were victims who were standing on the northeast corner.
Octavia Blvd and Oak St	Stand up Powered Device & Motor Vehicle	Stand up Powered Device Rider	6/1/2022	Victim riding an electric unicycle proceeded against a red light eastbound on Oak Street and collided with a northbound Recology 3+ axle truck. Investigation into driving under the influence is ongoing.
Larkin St and Eddy St	Motorcycle & Motor Vehicle	Motorcyclist	6/9/2022	The victim proceeded against a red light at Eddy Street on a stolen Yamaha motorcycle and struck an eastbound tractor-trailer. Victim may have also been performing motorcycle stunts prior to crash.
21st St and Mission St	Motor Vehicle & Motor Vehicle	Driver	6/14/2022	Victim was driving northbound in a a Toyota sedan on Mission Street, past 21st Street, and began a U-turn from the parking lane. The driver of a northbound Honda sedan was speeding and struck the U-turning vehicle. The driver of the second northbound vehicle fled the scene.
16th St and South Van Ness	Motor Vehicle & Pedestrian	Pedestrian	6/21/2022	Driver of a Honda sedan was speeding northbound on South Van Ness Avenue, ran the red light, and struck a pedestrian in the north crosswalk at 16th Street. The driver was suspected to be involved with a robbery. The driver fled the scene after the collision. The victim was experiencing homelessness.
North Point east of Jones Street	Bicycle Collision (solo)	Bicyclist	6/23/2022	The victim was riding his bicycle eastbound on North Point past Jones within the bicycle lane, ran over a tree branch partially in the bicycle lane, lost control, sideswiped a dumpster, and fell off the bicycle.

Danvers St and Market St	Motorcycle & Motor Vehicle	Motorcyclist	8/11/2022	Driver of an Toyota sedan made an eastbound left turn and struck the rider of a motorcycle traveling westbound. The driver of the automobile did not hold a valid driver's license and was charged with vehicular manslaughter.
Junipero Serra Blvd underneath Alemany overpass	Motor Vehicle Collision (solo)	Driver	8/11/2022	Victim drove onto the sidewalk and struck an overpass column adjacent to the right-most lane northbound on Junipero Serra Boulevard beneath the Alemany overpass.
McAllister St and Van Ness Ave	Motor Vehicle & Pedestrian	Pedestrian	8/12/2022	Driver of a Ford sedan (taxi) traveled southbound and struck a pedestrian who started and continued crossing eastbound in the north crosswalk against the solid red hand. The victim was experiencing homelessness.
Polk St and Vallejo St	Motor Vehicle & Pedestrian	Pedestrian	9/1/2022	Driver of a Honda sedan traveled westbound and struck the victim who was walking west of the intersection.
5th St and Bryant St	Motor Vehicle & Pedestrian	Pedestrian	9/6/2022	Driver of an unknown silver sedan traveled northbound on 5th Street and struck a pedestrian who was crossing midblock between Bryant and Harrison Streets, diagonally northeast-bound. Driver fled the scene. The victim was experiencing homelessness.
6th St and Harrison St	Motor Vehicle & Motor Vehicle	Passenger	9/8/2022	Driver was speeding and fleeing from CHP, ran red light while traveling northbound on 6th Street, was struck by driver traveling westbound on Harrison Street, was ejected from the vehicle, and succumbed to his injuries. The investigation is ongoing.
Lombard St and Steiner St	Motor Vehicle & Pedestrian	Pedestrian	9/8/2022	Driver of an Infiniti sedan traveled eastbound on a green light and struck a pedestrian who started and continued crossing in the west crosswalk against a solid red hand. The victim was experiencing homelessness.
Fulton Street and 12th Avenue	Motor Vehicle Collision (solo)	Driver	9/28/2022	Driver of an Audi SUV traveled southbound on 12th Avenue, sideswiped a vehicle in the 700 block of 12th Avenue, continued through the intersection, and struck a tree. The victim was driving under the influence.
19th Ave and Buckingham Way	Motor Vehicle & Pedestrian	Pedestrian	10/22/2022	Driver of a Toyota sedan was traveling on Buckingham Way intending to turn right onto 19th Avenue and struck the victim, who was walking northbound on a marked crosswalk.
24th Ave and Santiago Street	Motor Vehicle & Pedestrian	Pedestrian	10/24/2022	Driver of a Ford sedan traveled at a high rate of speed eastbound on Santiago and struck the victim, who was walking northbound in the east side yellow school crosswalk, then proceeded to strike other vehicles east of the intersection. The driver was charged for vehicular manslaughter and driving under the influence.
Harrison St between 13th St and 14th St	Moped Collision (solo)	Moped	10/28/2022	Driver of a motorized scooter traveled from the southeast corner of 14th and Harrison Street and struck a utility pole on the west side of Harrison Street, midblock, between 13th and 14th Streets. The victim was experiencing homeless.

Market St and Sanchez St	Motorcycle Collision (solo)	Motorcyclist	10/31/2022	Driver of a motorcycle was speeding westbound and struck the center median west of the intersection and sustained fatal injuries.
Silver Ave at University St	Stand up Powered Device Collision (solo)	Stand up Powered Device Rider	11/27/2022	Rider of an electric scooter at the intersection of Silver Avenue and University Street backed up his scooter to avoid a vehicle and tripped on the sidewalk. The rider fell backwards, struck his head, and did not survive due to complications of the injury.
Geneva Ave and Naples St	Motor Vehicle & Pedestrian	Pedestrian	12/6/2022	Driver of a Ford truck was traveling eastbound on a green signal and struck the victim, who was walking near the east crosswalk, southbound, against a solid red hand.
Cesar Chavez St and South Van Ness Ave	Motorcycle & Motor Vehicle	Motorcyclist	12/7/2022	Driver of a Chevy SUV made an eastbound left turn on a fresh green ball and struck the driver of a Harley motorcyclist speeding westbound within the bicycle lane. Possible driving under the influence.
Geneva Ave east of Prague St	Motor Vehicle & Pedestrian	Pedestrian	12/7/2022	Driver of a black SUV traveling eastbound struck the victim, who was crossing northbound somewhere 500 feet east of Prague St. The driver then fled the scene. A second driver of a Tesla SUV that was traveling eastbound behind the black SUV also struck the victim.
Marina Blvd west of Webster St	Motor Vehicle Collision (solo)	Driver	12/24/2022	Driver of a vehicle was speeding eastbound on Marina Blvd west of Webster St, did not follow the roadway curve, continued straight into the parking lot, struck various objects such as gates and trees, and was ejected from the vehicle. The driver was under the influence.
Larkin St and Eddy St	Motor Vehicle & Pedestrian	Pedestrian	12/25/2022	Driver of a northbound vehicle ran a red light and struck the victim, who was crossing eastbound in the south side crosswalk, and fled the scene.
Bay St east of Stockton St	Motor Vehicle & Pedestrian	Pedestrian	12/28/2022	A driver possibly traveling westbound struck the victim midblock on Bay St east of Stockton St and fled the scene. A second driver also struck the victim and fled the scene. The victim was experiencing homelessness.

APPENDIX B: Other Collision Factors (2017-2022)

Top Citywide Injury Collision Mid-Block Locations

Market Street from 7th Street to 8th Street	23
Park Presidio Bypass from Fulton Street to Crossover Drive	19
The Embarcadero from Don Chee Way to Washington Street	17
Mission Street from 6th Street to 7th Street	16

Top Citywide Injury Collision Intersections for Unsignalized All-way or Two-way STOP Intersections

5th Street and Clara Street	15
7th Street and Natoma Street	13
8th Street and Minna Street	13

Top Citywide Injury Collision Pedestrian for Unsignalized Uncontrolled (no signal or STOP signs) Intersections

San Bruno Avenue and Woolsey Street	7
20th Avenue and Fulton Street	4
6th Street and Natoma Street	4
7th Street and Natoma Street	4

Top Citywide Injury Collision Mid-Block Segments for CVC 22350 Unsafe Speed for Conditions

Park Presidio Bypass from Crossover Drive to Fulton Street	12
Market Street from 7th Street to 8th Street	9
The Embarcadero from Chestnut Street to Bay Street	6

Top Citywide Injury Collision Intersections for CVC 22350 Unsafe Speed for Conditions

24th Street and Potrero Avenue	8
Fulton Street and Park Presidio Bypass	8
19th Avenue and Junipero Serra Drive	8

Top Citywide Injury Collision Intersections for CVC 21801(A) Motorist Failure to Yield for Left or U-Turn

Guerrero, Laguna and Market streets	9
16th Street and Guerrero Street	7
Lake Merced and Skyline boulevards	7
Burnett Avenue, Diamond Heights Boulevard and Portola Drive	7
19th Avenue and Sloat Boulevard	7

Top Citywide Injury Collision Intersections for CVC 21453(A)
Driver Violation of a Traffic Signal

Gough, Haight and Market streets	25
13th Street, Mission Street, Otis Street, Duboce Avenue	15
Larkin Street and Post Street	11
3rd Street and Evans Avenue	10

Top Citywide Injury Collision Intersections for CVC 22450(A)
Vehicle Failure to stop at a STOP Sign

Keith Street and Shafter Avenue	6
Loomis Street and Oakdale Avenue	6
Great Highway and Skyline Boulevard	6

Top Citywide Injury Collision Intersections for CVC 21950(A) Failure to Yield to Pedestrian at Crosswalk

Geneva Avenue and Mission Street	11
Pine Street and Polk Street	8
San Bruno Avenue and Silver Avenue	7
Bush Street and Franklin Street	7

Top Citywide Injury Collision Intersection for CVC 22107
Unsafe Lane Change

O'Farrell Street and Polk Streets	6

Top Citywide Injury Collision Mid-Block Segment CVC 22107
Unsafe Lane Change

Fell Street from Broderick Street to Baker Street	4
19th Avenue from Judah Street to Kirkham Street	4

Top Citywide Injury Collision Intersection for CVC 21703
Vehicles Following Too Closely

Market Street and Octavia Streets	6
Crossover Drive and Park Presidio Bypass	5

Top Citywide Injury Collision Intersections CVC 22101(D)
Illegal Turn

Market Street and Octavia Boulevard	13
9th Street and Harrison Street	4

Top Citywide Injury Collision Intersection for CVC 22517
Unsafe Opening of Vehicle Door

7th Street and Market Street	4

Top Citywide Injury Collision Intersections When Motorist Making a Left Turn is At Fault

Geneva Avenue and Mission Street	18
16th Street and Guerrero Street	14
Hayes Street and Van Ness Avenue	13

Top Citywide Injury Collision Mid-Block Segment CVC 22517 Unsafe Opening of Vehicle Door

The Embarcadero from Chestnut Street to Bay Street	4

Top Citywide Injury Collision Intersections "Had Been Drinking" by Any Party

2nd Street and Bryant Street	6
16th Street and Potrero Avenue	6
Fillmore and Lombard Streets	6

Top Citywide Injury Collision Intersections coded "Hit Object."

21st Street and Potrero Avenue	4
Bayshore Boulevard, Cesar Chavez Street and Vermont Street	3

Top Citywide Injury Collision Intersections coded "Rear End"

Crossover Drive and Park Presidio Bypass	12
Market Street and Octavia Street	12
Fulton Street and Park Presidio Boulevard	10
24th Street and Potrero Avenue	9

Top Citywide Injury Collision Intersections coded "Sideswipe"

10th Street and Bryant Street	9
8th Street and Mission Street	8
Fulton Street and Webster Street	7
10th Street and Mission Street	6

Top Citywide Injury Collision Mid-Block Segment Crashes between Bicycles and Pedestrians

Market Street from 5th Street to Powell Street	4

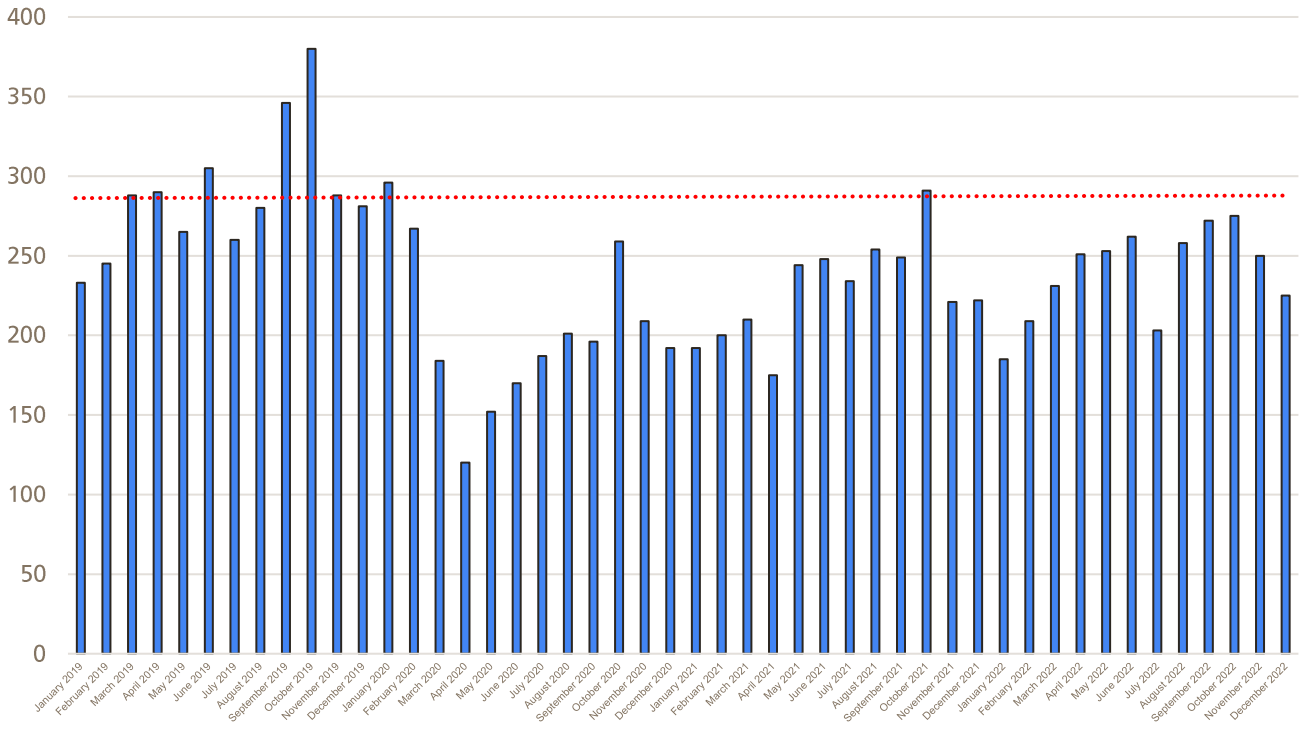
Top Citywide Injury Intersection Motorcycle Involved Crashes

JFK Drive, Oak, Fell and Stanyan streets	8
Hayes Street and Van Ness Avenue	7
16th Street, Noe Street and Market Street	7
16th Street and Guerrero Street	6
Guerrero Street, Laguna Street and Market Street	6

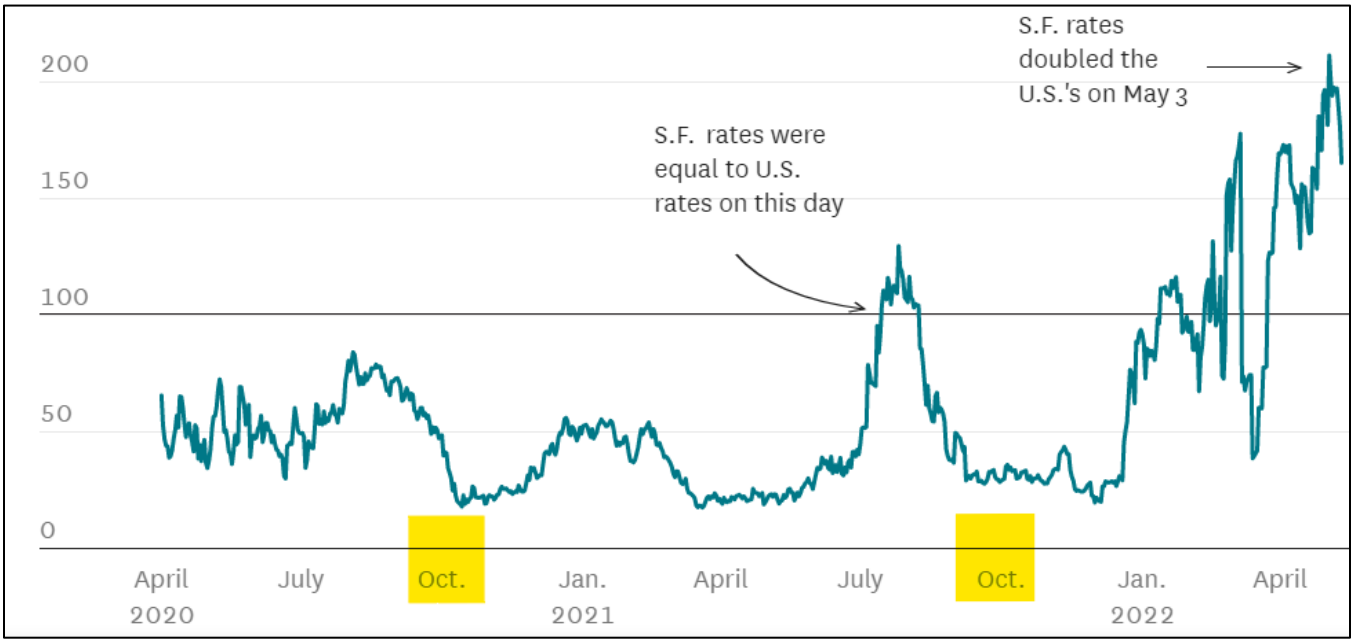
APPENDIX C: Estimated Changes in Transportation Activity

How much of the overall crash changes in Table 1 are primarily due to the changes in street activity levels during the pandemic? Traffic monitoring data (Figure 11) and parking inventories suggest that overall vehicle traffic fell 30 percent immediately following shelter-in-place and that during much of the pandemic was approximately 20 percent lower than pre-pandemic. Per charts below transit and bicycling trips citywide were down more than 30 percent from pre-pandemic levels. Less travel within and into the city meant there were also fewer people walking in San Francisco on any day. According to U.S. Census data, San Francisco County had a population of 808,437 in July 2022, down 7% from 870,393 in July 2020. Declines in international and regional tourist activity affected neighborhoods differently, as noted in Part 7. Complicating matters further, some new trips at different times of the day or days of the week may have been induced during the pandemic (for example, remote workers and students finding new ways to dine, exercise, recreate, or complete errands). The pandemic affected trip making differently each month depending on the reported case load, what health measures were in place, and the level of concern about the virus. City crash totals broken down by month indicate two spikes in crashes in October 2020 and 2021. This monthly rise coincided with declining cases of COVID-19 (yellow highlight next page), then followed by a surge of new cases that decreased overall public activity. This peaking pattern in October of 2020 and 2021 also appears in the Muni ridership chart below. The coming years will confirm whether collision statistics return to pre-pandemic levels as San Francisco's transportation activity recovers.

Reported Traffic Injury Collisions by Month (2019-2022)
Red Line is 2019 Monthly Average

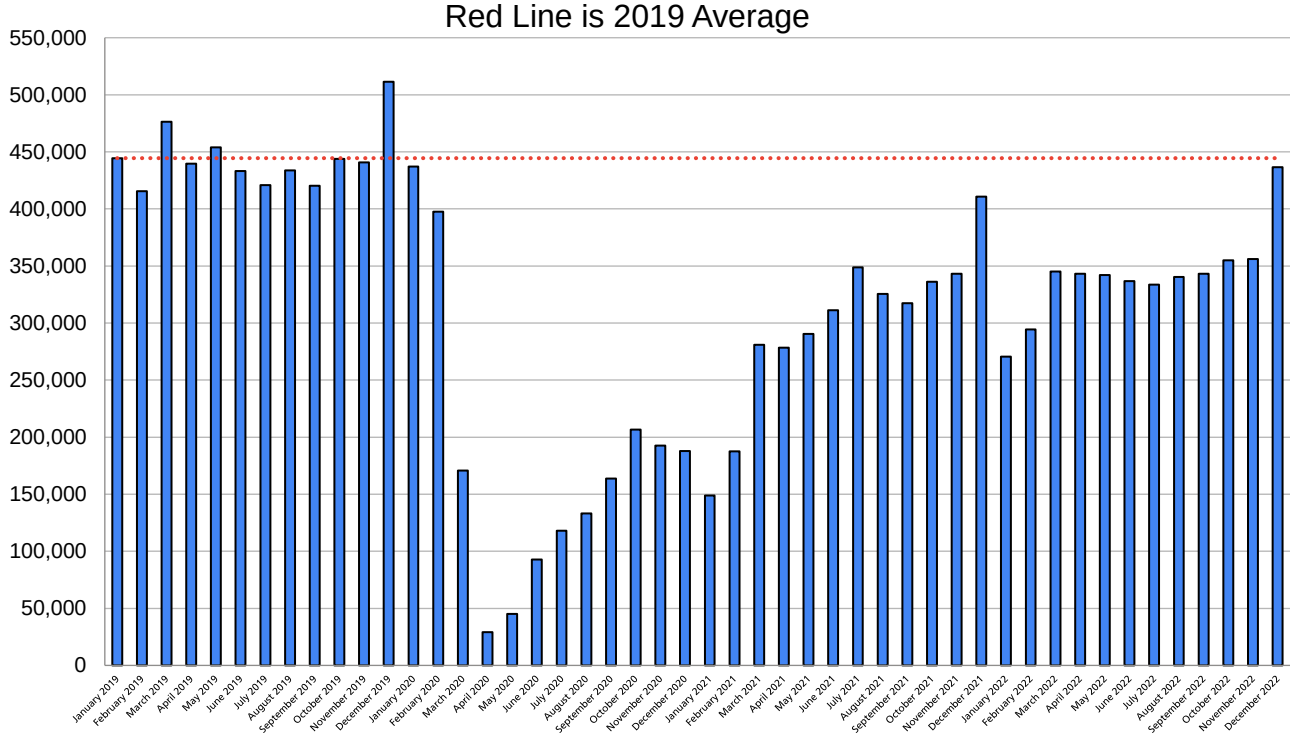


San Francisco COVID-19 Rates Per Person as a Percentage of US COVID-19 Rates
(Based on 7-day average of cases per person)



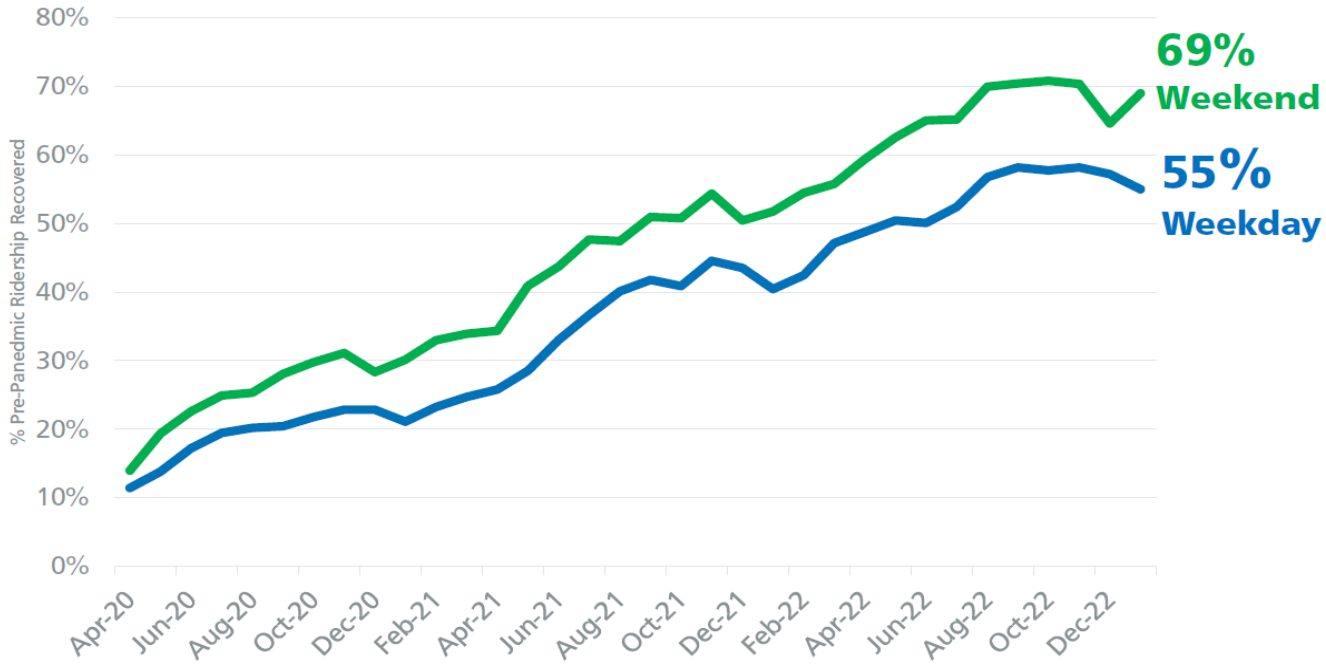
Source: *The San Francisco Chronicle*, May 16, 2022. U.S. data from *The New York Times*

SFMTA Monthly Garage Transient Ticket Activity (2019-2022)
Red Line is 2019 Average



Source: SFMTA

Percent Muni Pre-Pandemic Ridership Recovered for Muni Bus and Rail
Weekend and Weekday (2020-2022)

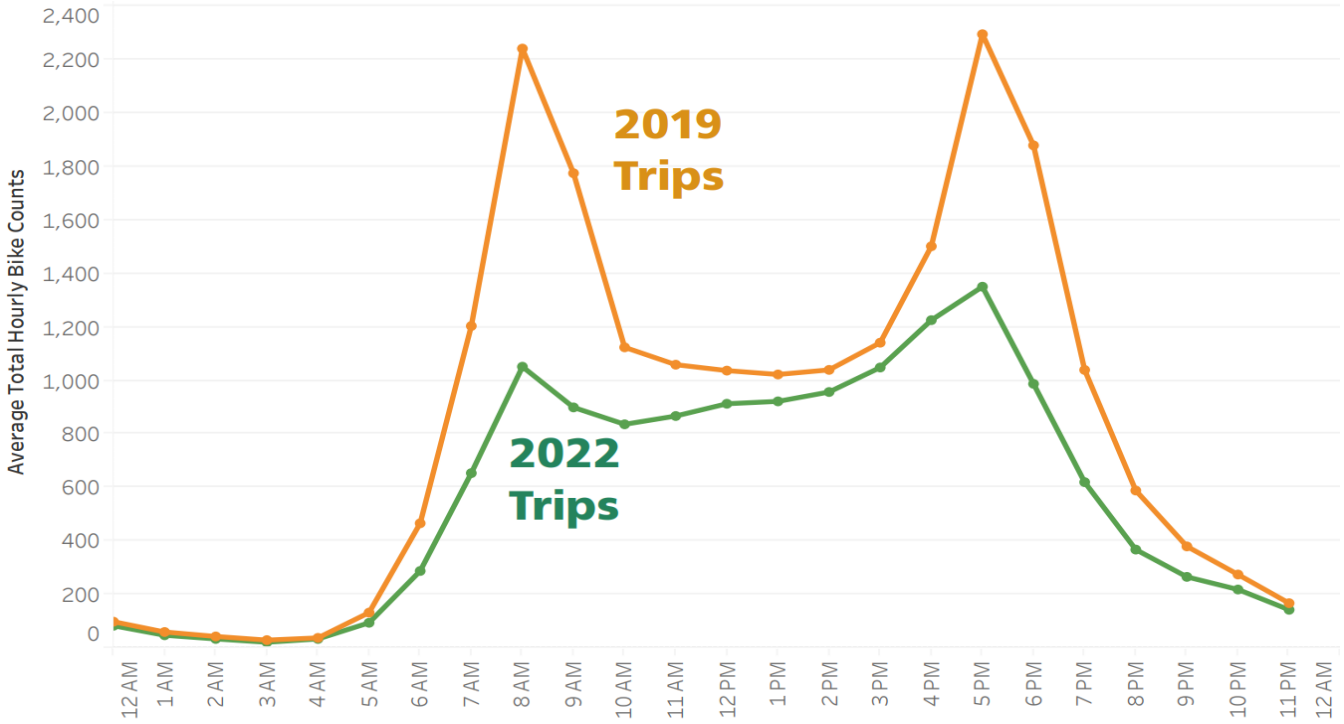


Source: SFMTA

Monthly Bart Ridership to Downtown San Francisco
(Bart exits at downtown San Francisco stations a percentage of same month in 2019)

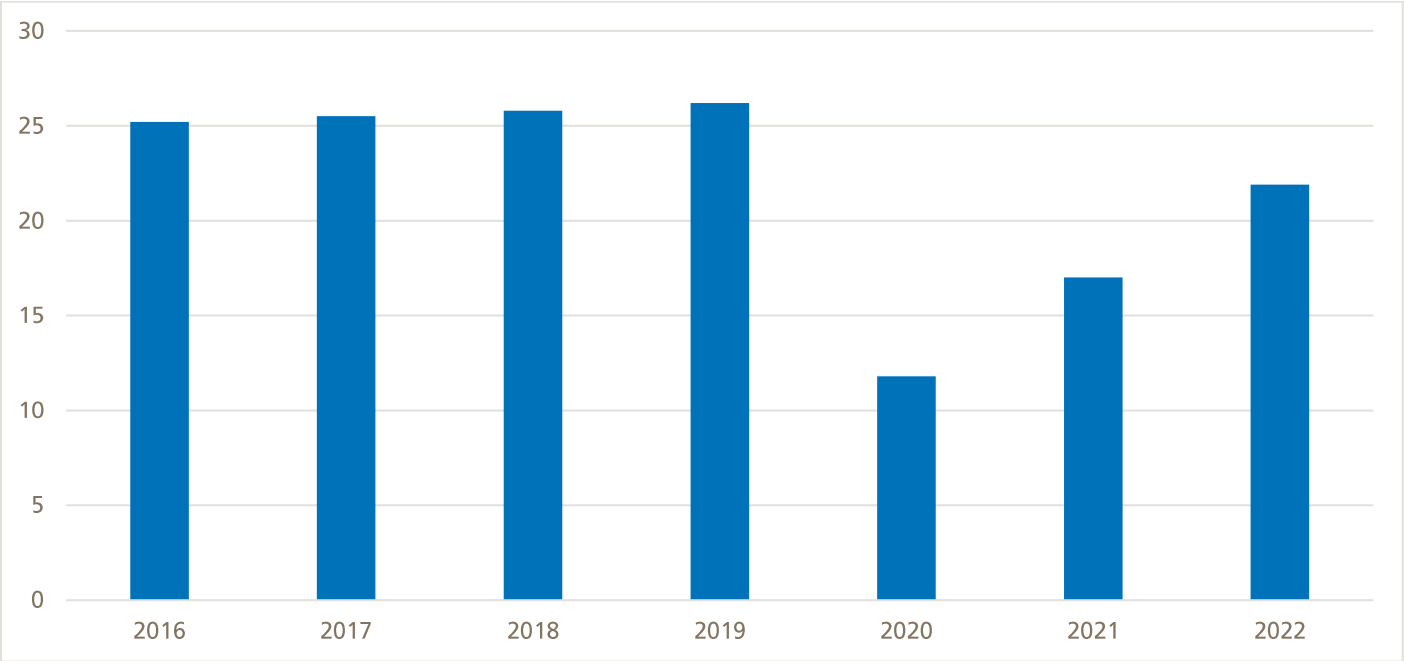
Source: The San Francisco Standard, “If Downtown SF Is Dead, Why is Traffic So Bad?” March 2, 2023

San Francisco Bicycle Average Hourly Volumes (2019 compared to 2022)
(Hourly averages from all 23 reporting automated bike counters combined)



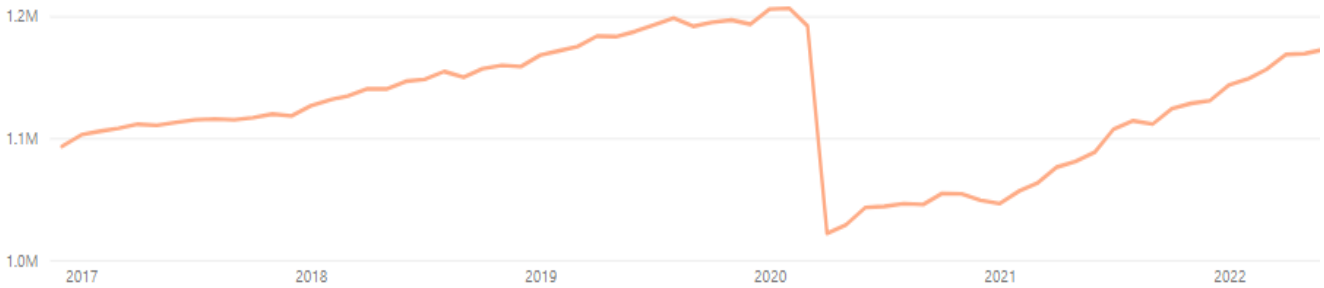
Source: SFMTA https://www.sfmta.com/sites/default/files/reports-and-documents/2022/05/bikereport2022_final.pdf

San Francisco Annual Visitor Volumes (2016-2022, in Millions)



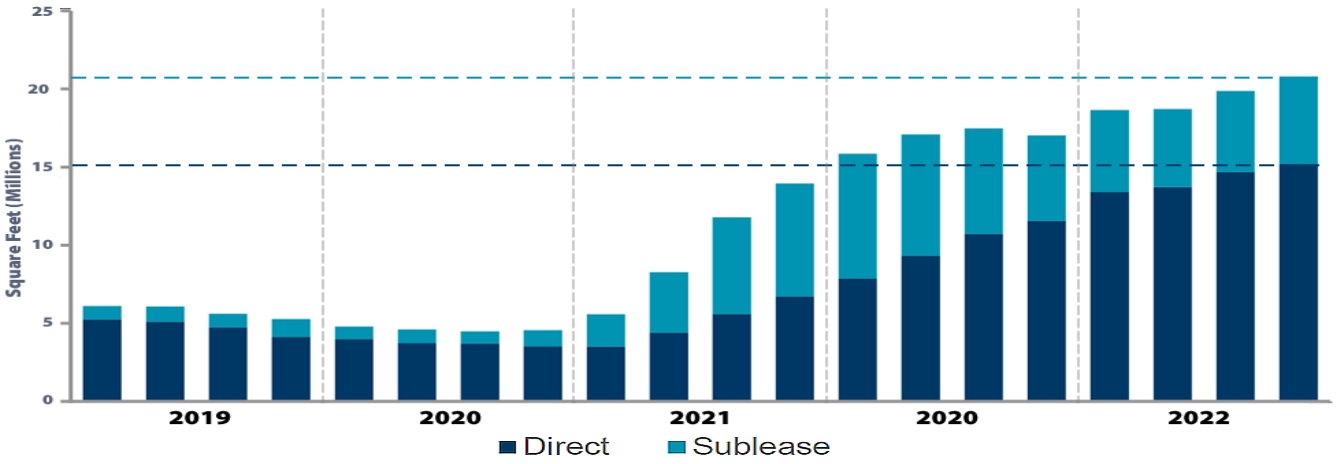
Source: San Francisco Travel Association, https://www.sftravel.com/media/info/san-francisco-statistics

Total San Francisco Employment, Seasonally Adjusted (2017-2022)



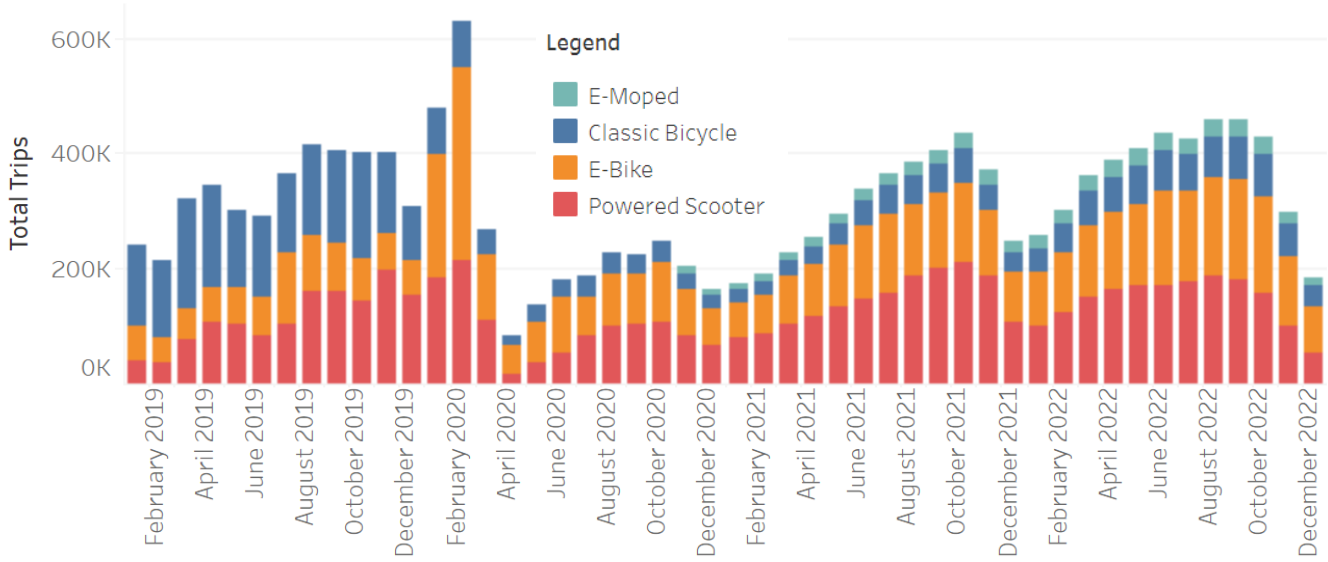
Source: Employment | City Performance Scorecards (sfgov.org)

Vacant Office Space in San Francisco, Millions of Square Feet (2019-2022)



Source: Socketsite.com, January 17, 2023, Data: Cushman & Wakefield

Total San Francisco Public Rental Micromobility Trips (2019-2022)



APPENDIX D: National Changes in Transportation Crashes

Source for United States Data in this page: National Highway Traffic Safety Administration, *Overview of Motor Vehicle Crashes in 2021*, April 2023, Page 2.

Changes from 2019 to 2020, NHSTA data compared to San Francisco

Category	United States	San Francisco
Estimated Vehicle Miles Traveled	↓ 11%	↓ 30%
Overall Fatalities	↑ 7.3%	↑ 3.3%
People Injured Estimates	↓ 17%	↓ 30%
Property Damage-Only Crash Estimates	↓ 25%	↓ 31%*
Killed in Speeding Related Crashes	↑ 19%	↑ 250%
Pedestrian Fatalities	↑ 4.7%	↓ 29%

Changes from 2020 to 2021 NHSTA data compared to San Francisco

Category	United States	San Francisco
Estimated Vehicle Miles Traveled	↑ 8.1%	↑ 10%
Overall Fatalities	↑ 10%	↓ 10%
People Injured Estimates	↑ 9.4%	↑ 18%
Property Damage-Only Crash Estimates	↑ 20%	↑ 12%*
Killed in Speeding Related Crashes	↑ 7.9%	0 %
Pedestrian Fatalities	↑ 13%	↑ 8.3%
Motorcycle Rider Fatalities	↑ 7.7%	↑ 14%
Bicycle Rider Injuries	↑ 7%	0 %

*San Francisco estimate based on 911 reported calls minus reported injuries but most minor property damage only crashes do not generate a 911 calls

In December of 2022 the American Automobile Association released a research brief entitled "Traffic Safety Impact of the COVID-19 Pandemic: Fatal Crashes Relative to Pre-Pandemic Trends, United States, May-December 2020." The study used statistical models of the crash patterns prior to the pandemic (2011-2019) to predict what should have been the expected number of fatalities had the pandemic never occurred. It then compared the expected number of people killed with the actual numbers recorded in May through December of 2020, and highlighted those that exceeded the forecast by a significant amount. AAA concluded that "different segments of the population responded differently to the pandemic."

Select Fatal Crash Factors Exceeding Forecast During Pandemic per AAA Research Using Pre-Pandemic Crash Totals 2011-2019 compared to May-December 2020

Category	U.S. Fatalities Percent Over Statistical Forecast
License Expired	84.3
Driver Under 16 Years Old	76.9
Never Licensed	44.8
Driver Licensed Suspended/Revoked	37.5
Hit and Run Crashes	31.2
Prior DUI during past 5 years	27.2
Victim Age 25-39	22.8
Crash Time 10 PM to 2 AM	21.9
Police Reported Speeding	21.8
Vehicle Age Over 20 Years Old	21.3
Blood Alcohol Over 0.08 g/dL	20.1
No Motorcycle Helmet Used	18.6
No Seat Belt Used	18.2
Driver 16 to 19 Years Old	16.6
Riding a Motorcycle	15.9
Driving Someone Else's Private Vehicle	15.5
Single Vehicle (Solo) Crash	15.0
Male Victim	13.4