Safety Performance Management Targets for 2021

The California Department of Transportation (Caltrans), in cooperation with the Office of Traffic Safety (OTS), is required to set five annual Safety Performance Management Targets (SPMTs) for all public roads in the State of California by August 31 of each year. This is pursuant to the Moving Ahead for Progress in the 21st Century Act (MAP-21, P.L. 112-141). The Safety Performance Management Final Rule adds Part 490 to Title 23 of the Code of Federal Regulations to implement the performance management requirements in 23 U.S.C. 150.

Caltrans set SPMTs for the 2021 calendar year by August 31, 2020. Caltrans and OTS have adopted targets consistent with the California Strategic Highway Safety Plan (SHSP) as follows:

TABLE 1. PERFORMANCE MEASURE AND TARGET BASED ON 5-YEAR AVERAGE

Performance Measure	Data Source	5-Yr. Average Target for 2021	Annual Reduction 2018 to 2021
Number of Fatalities	FARS	3,624.8	2.9%
Rate of Fatalities (per 100M VMT)	FARS & HPMS	1.044	2.9%
Number of Serious Injuries	SWITRS	15,419.4	1.3%
Rate of Serious Injuries (per 100M VMT)	SWITRS & HPMS	4.423	1.3%
Number of Non-Motorized Fatalities and Serious Injuries	FARS & SWITRS	4,340.8	2.9% for Fatalities and 1.3% for Serious Injuries

Note: The targets highlighted in gray are set in coordination with OTS.

The Highway Safety Improvement Program (HSIP) is a core Federal-aid program with the purpose to achieve a significant reduction in fatalities and serious injuries on all public roads. The HSIP requires a data-driven, strategic approach to improving highway safety on all public roads and focuses on performance. The HSIP regulation under 23 CFR 924 establishes the Federal Highway Administration's (FHWA) HSIP policy, as well as program structure, planning, implementation, evaluation and reporting requirements for states to successfully administer the HSIP. The overarching highway safety plan for the State of California is the Strategic Highway Safety Plan (SHSP). In January 2020, California updated its SHSP, which is "a statewide, coordinated traffic safety plan that provides a comprehensive framework for reducing roadway fatalities and serious injuries on California's public roads" (SHSP, 2020-2024, page 5). It further states that the "SHSP is a multi-disciplinary effort involving Federal, Tribal, State, and local representatives from the 5 Es of safety who dedicate countless hours to improve safety and partnerships across disciplines" (SHSP, 2020-2024, page 38).In support of a data-driven and strategic approach, the HSIP Final Rule contains major policy changes related to:

- the HSIP report content and schedule,
- the SHSP update cycle, and

- the subset of the Model Inventory of Roadway Elements (MIRE), also known as the MIRE Fundamental Data Elements (FDE).

The Safety Performance Measures (PM) Final Rule supports the data-driven performance focus of the HSIP. The Safety PM Final Rule establishes five performance measures to carry out the HSIP: the five-year averages for:

- Number of Fatalities,
- Rate of Fatalities per 100 million Vehicle Miles Traveled (VMT),
- Number of Serious Injuries,
- Rate of Serious Injuries per 100 million VMT, and
- Number of Non-motorized Fatalities and Non-motorized Serious Injuries.

These safety performance measures are applicable to all public roads regardless of ownership or functional classification. The Safety PM Final Rule also establishes a common national definition for serious injuries.

States must establish statewide targets for each of the safety PMs. States also have the option to establish any number of urbanized area targets and one non-urbanized area target for any, or all, of the measures. Targets are established annually. For three PMs (number of fatalities, rate of fatalities and number of serious injuries), targets must be identical to the targets established for the National Highway Traffic Safety Administration (NHTSA) Highway Safety Grants program that is administered by OTS. The State Departments of Transportation (DOTs) must also coordinate with their Metropolitan Planning Organizations (MPOs) in their states on establishment of targets, to the maximum extent practicable. States will report targets to the FHWA in the HSIP report due in August of each year.

Each MPO will establish targets for the same five safety performance measures for all public roads in the MPO's planning area within 180 days after the state establishes each target. The targets will be established in coordination with the state, to the maximum extent practicable. The MPO can either agree to support the State DOT target or establish a numerical target specific to the MPO planning area. MPOs' targets are reported to the State DOT, which must be able to provide the targets to FHWA, upon request.

A state is considered to have met or made significant progress toward meeting its safety targets when at least four of the five targets are met or the outcome for the PM is better than the baseline performance the year prior to the target being set. Optional urbanized area or non-urbanized area targets will not be evaluated. Each year that the FHWA determines a state has not met or made significant progress toward meeting its performance targets, the state will be required to use obligation authority equal to the baseline year HSIP apportionment for safety projects. States must also develop a HSIP Implementation Plan.

Target Selection Methodology

There are three steps to setting safety performance targets, which are:

- estimating the existing trends to determine where the state is,
- determining what external factors will impact the target in order to forecast future trends, and
- estimating targets based on forecasted fatality reductions from safety plans.

Since safety targets are applicable to all public roads in the California, regional and local jurisdictions should be collaboratively involved in the safety target setting process. In line with this, on July 20, 2020, a virtual workshop was held to discuss the 2021 SPMTs with the MPOs and other vested stakeholders. During this workshop, three possible scenarios for setting the 2021 targets were discussed. They included: (1) an aspirational trend such as reaching zero fatalities by 2050; (2) a target based on estimated impacts from completed activities and projects; and (3) a trend line, which extrapolates the existing changes in fatalities and serious injuries into the future.

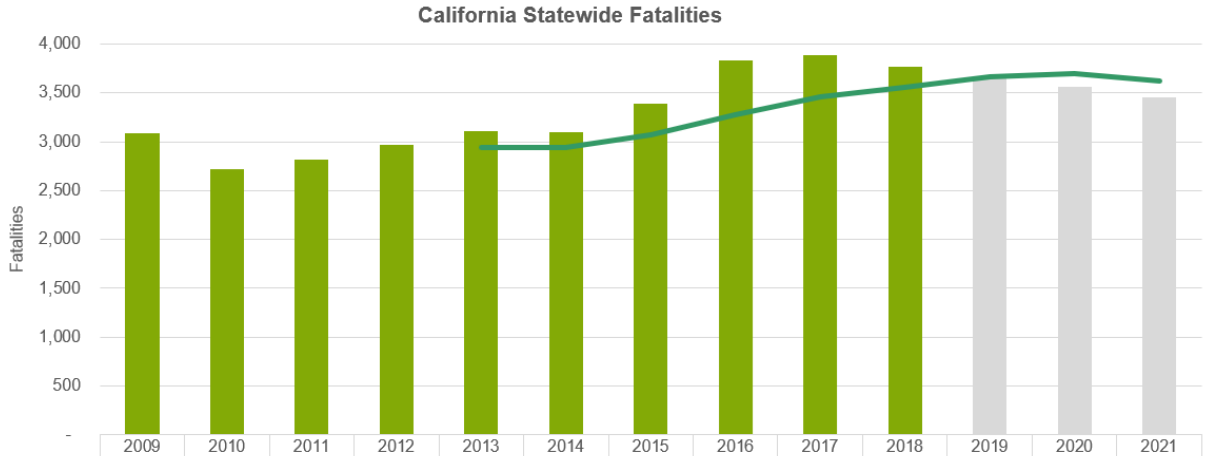
The current approach is the third scenario that uses a trend line. The trend line approach extrapolates the existing changes in fatalities and serious injuries into the future and is a data-driven process that estimates the impacts of external factors and safety improvements based on collision history.

The Number of Fatalities

For 2021, the target for fatalities is the five-year average of **3,624.8** with 3,456 fatalities projected for the same year. NHTSA Fatality Analysis Reporting System (FARS) data was used through 2017 and the adjusted provisional number of 3,772 obtained from California Highway Patrol (CHP) FARS was used for 2018 as it was believed to be a more accurate number for 2018. Even though traffic fatalities have generally increased from 2010 to 2017 in California as shown in Figure 1, there was a 2.9% reduction in fatalities from 3,884 in 2017 to 3,772 in 2018. The target for 2021 fatalities is based on continuing this trend line for fatalities of an annual reduction of 2.9% from 2018 through 2021. This includes a decrease in actual annual fatalities from 3,772 in 2018 to 3,456 in 2021. In **Figure 1**, the dark green bars for 2009 through 2018 denote the existing fatality data and the gray bars for 2019 through 2021 represent the trend line reduction.

Through assistance with the HSIP, many California agencies have or are developing Local Roadway Safety Plans that put a focus on reducing fatal and serious injury collisions throughout their respective jurisdictions. This coupled with an increase (over 25 percent) in the number of OTS grants from the prior year, will assist California in continuing the downward this downward trend in fatalities.

FIGURE 1 – CALIFORNIA STATEWIDE FATALITIES



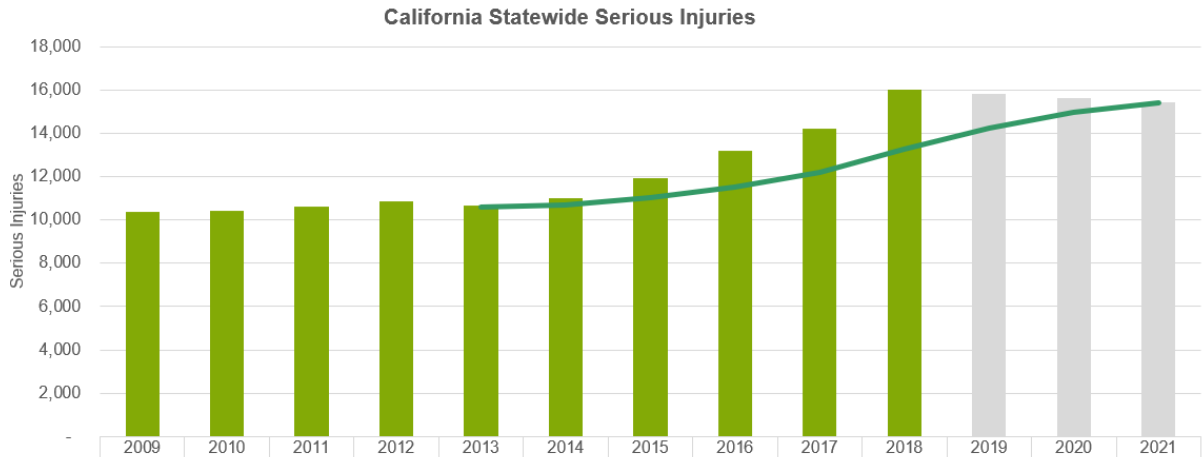
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Fatalities	3,090	2,720	2,816	2,966	3,107	3,102	3,387	3,837	3,884	3,772	3,663	3,558	3,456
5-Year Average					2,939.8	2,942.2	3,075.6	3,279.8	3,463.4	3,554.6	3,666.8	3,701.0	3,624.8

The Number of Serious Injuries

The 2021 target for serious injuries is the five-year average of **15,419.4** with 15,411 serious injuries projected for the same year. Statewide Integrated Traffic Records System (SWITRS) data was available for serious injuries through 2018. The definition of serious injuries was changed to include suspected serious injuries and was implemented in mid-2017. The first full year of suspected serious injuries resulted in an increase of 21% from the last full year using the old definition. The trend line for serious injuries was based on the 1.3% reduction from 7,725 serious injuries for the first half of 2018 to 7,623 for the first half of 2019. The target for 2021 serious injuries is based on continuing this trend line for serious injuries of an annual reduction of 1.3% of serious injuries from 2019 through 2021. This is represented by a decrease in serious injuries from 16,039 in 2018 to 15,411 in 2021. In **Figure 2**, the dark green bars for 2009 through 2018 denote the existing serious injury data and the gray bars for 2019 through 2021 represent the trend line reduction.

Through assistance with the HSIP, many California agencies have or are developing Local Roadway Safety Plans that put a focus on reducing fatalities and serious injuries throughout their agency. This coupled with the increase (over 25%) in the number of OTS grants from the prior year, will assist California in continuing the downward trend in serious injuries.

FIGURE 2 – CALIFORNIA STATEWIDE SERIOUS INJURIES



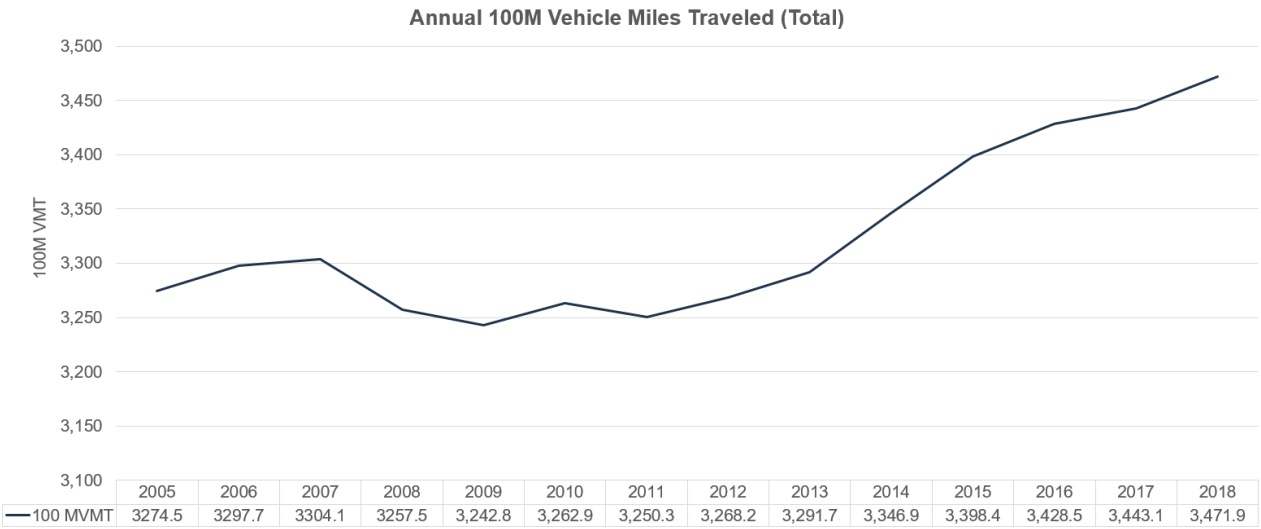
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Serious Injuries	10,369	10,423	10,607	10,864	10,664	10,995	11,942	13,171	14,201	16,039	15,827	15,618	15,411
5-Year Average					10,585.4	10,710.6	11,014.4	11,527.2	12,194.6	13,269.6	14,236.0	14,971.2	15,419.4

Annual Fatality Rate (per 100M VMT)

Statewide traffic volumes are reported in one hundred million vehicle miles traveled (100M VMT).

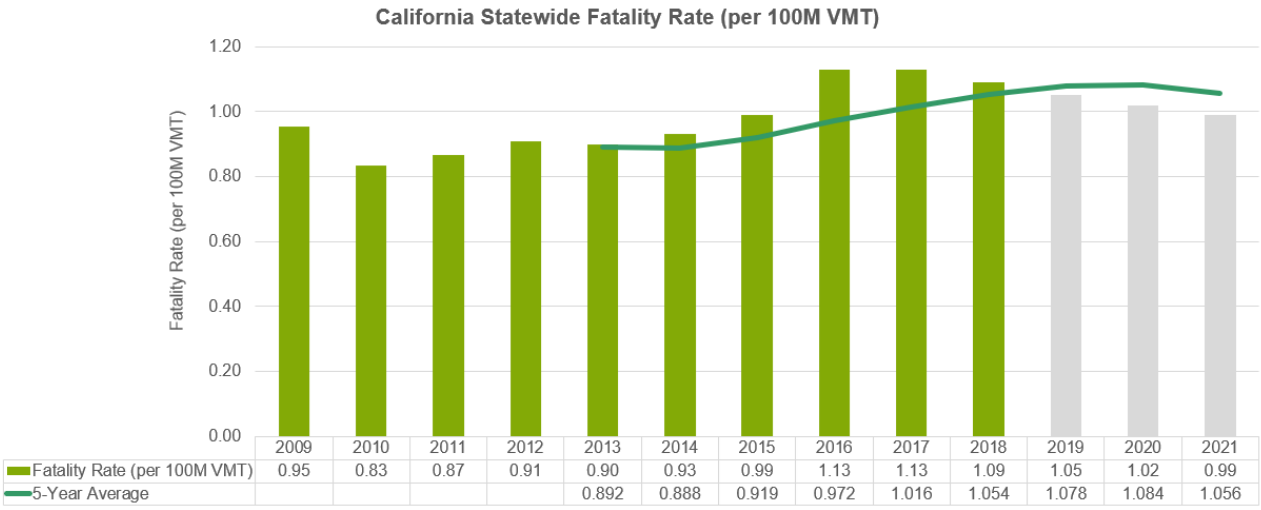
For the purposes of safety performance target setting, VMT data used was from the Highway Performance Monitoring System through 2018. As shown in Figure 3, traffic volumes have been steadily increasing since 2011. 2019 VMT was projected to have a 0.9 percent increase over 2018 and then remain flat through 2021 due to the uncertainties of the impacts of COVID-19.

FIGURE 3 – ANNUAL STATEWIDE TRAFFIC VOLUMES



For 2021, the target for fatality rate is the five-year average of **1.043** with an annual rate of 0.99 for the same year. This represents an annual reduction from a rate of 1.09 for 2018 to 0.99 in 2021. For the fatality rate calculation, the fatality data and reduction of fatalities of 2.9% from 2018 through 2021 from the number of fatalities performance measure was used. In **Figure 4**, the dark green bars for 2009 through 2018 denote the existing fatality rate data and the gray bars for 2019 through 2021 represent the trend line reduction.

FIGURE 4 – CALIFORNIA STATEWIDE FATALITY RATE

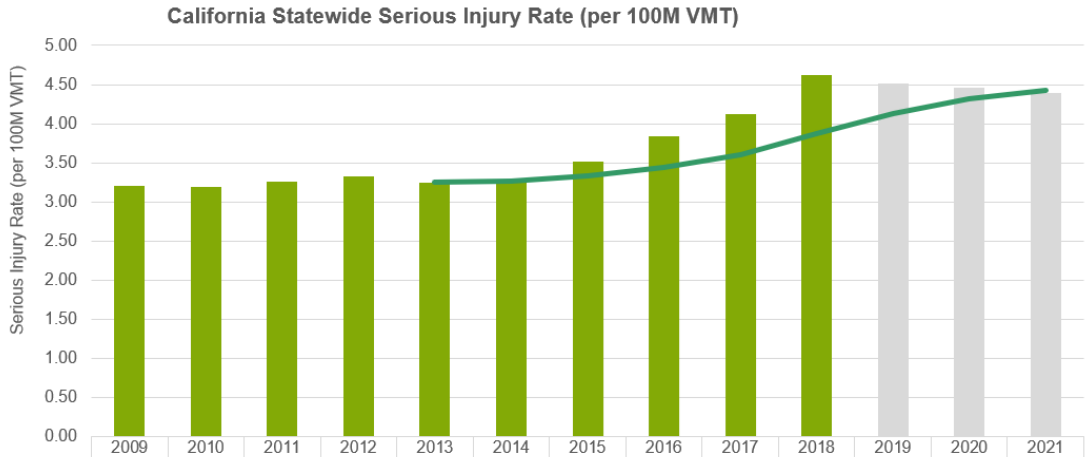


The Rate of Serious Injury

The serious injury rate is the number of serious injuries divided by 100M VMT. For 2021, the target for serious injury rate is the five-year average of **4.423** with an annual rate of 4.40 for the same year. This includes a reduction of the annual serious injury rate from 4.62 in 2018 to 4.40 in 2021. For the serious injury rate calculation, the serious injury data and reduction of serious injuries of 1.3% from 2019 through 2021 from the number of serious injuries performance measure was used. The VMT data used was from the Highway Performance Monitoring System through 2018 and 2019 VMT was projected to have a 0.9 percent increase over 2018 and then remain flat through 2021 (as is the case in calculating the fatality rate). In **Figure 5**, the dark green bars for 2009 through 2018 denote

the existing serious injury rate data and the gray bars for 2019 through 2021 represent the trend line reduction.

FIGURE 5 - CALIFORNIA STATEWIDE SERIOUS INJURY RATE

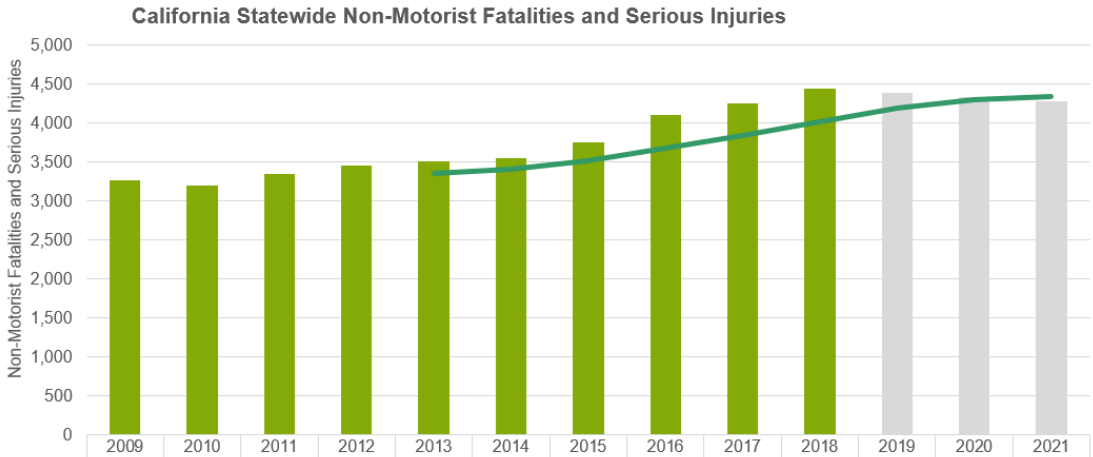


	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Serious Injuries per 100M VMT	3.20	3.19	3.26	3.32	3.24	3.29	3.51	3.84	4.12	4.62	4.52	4.46	4.40
5-Year Average					3.244	3.261	3.325	3.441	3.601	3.877	4.123	4.312	4.423

The Number of Non-Motorized Fatalities and Non-Motorized Serious Injuries (Bicycles and Pedestrians)

In **Figure 6**, the darker green bars for 2009 through 2018 show the number of fatalities from FARS and serious injuries from SWITRS for pedestrians and bicyclists combined. The gray bars for 2019 through 2021 depict the decreasing number of fatalities and serious injuries. For 2021, the target for non-motorized fatalities and serious injuries is the five-year average of **4,340.8** with an annual frequency of 4,276 for the same year. This includes a reduction in the annual frequency from 4,447 in 2018 to 4,276 in 2021. This reduction is based on applying the 2.9% reduction for fatalities and 1.3% reduction for serious injuries discussed previously.

FIGURE 6 - CALIFORNIA STATEWIDE NON-MOTORIST FATALITIES AND SERIOUS INJURIES



	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Fatalities and Serious Injuries	3,262	3,204	3,344	3,459	3,505	3,555	3,758	4,105	4,260	4,447	4,389	4,332	4,276
5-Year Average					3,354.8	3,413.4	3,524.2	3,676.4	3,836.6	4,025.0	4,191.8	4,306.7	4,340.8

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Further information with regards to the safety targets is accessible at:
https://dot.ca.gov/programs/federal-liaison.