

Southern California Association of Governments
900 Wilshire Blvd., Suite 1700, Los Angeles, CA 90017

Agenda Item No. 6
February 1, 2018

To: Regional Council (RC)

EXECUTIVE DIRECTOR'S
APPROVAL

From: Kome Ajise, Planning Director, (213) 236-1835;
ajise@scag.ca.gov



Subject: Calendar Year 2018 Transportation Safety Targets

RECOMMENDED ACTION:

Recommend that the Regional Council approve and adopt SCAG's calendar year 2018 Transportation Safety Targets, which are supportive of the adopted statewide safety targets.

EXECUTIVE SUMMARY:

On December 7, 2017, the Transportation Committee voted in favor of recommending that the Regional Council approve and adopt the calendar year 2018 transportation safety targets, which are supportive of the adopted statewide targets. By way of background, the Federal Highway Administration (FHWA) issued a Final Rule, effective April 14, 2016, to establish performance measures for state departments of transportation (DOTs) to carry out the Highway Safety Improvement Program (HSIP) as required by the Moving Ahead for Progress in the 21st Century Act (MAP-21). The Final Rule calls for State DOTs, working with Metropolitan Planning Organizations (MPOs), to establish targets for reducing the numbers and rates of transportation fatalities and serious injuries. The California Department of Transportation (Caltrans) established vision-based statewide safety targets in August 2017. SCAG has until February 27, 2018 to establish regional safety targets. SCAG has the option to agree to support the statewide targets, establish numerical targets specific to the region, or use a combination of both. SCAG staff recommend supporting the statewide targets and adopting SCAG-specific targets based on Caltrans' target setting methodology. This recommendation would allow SCAG to more accurately monitor its performance in relation to the State's targets going forward. Because targets will be updated annually, SCAG will have the opportunity to revisit and update its targets each calendar year.

STRATEGIC PLAN:

This item supports SCAG's Strategic Plan, Goal 1: Improve Regional Decision Making by Providing Leadership and Consensus Building on Key Plans and Policies; Objective: a) Create and facilitate a collaborative and cooperative environment to produce forward thinking regional plans.

BACKGROUND:

Safety Performance Management Measures Final Rule

The Federal Highway Administration (FHWA) issued the National Performance Management Measures: Safety Performance Management Measures Final Rule, effective April 14, 2016, to establish performance measures for State departments of transportation (DOTs) to carry out the

Highway Safety Improvement Program (HSIP). State DOTs and Metropolitan Planning Organizations (MPOs) will be expected to use the information and data generated as a result of the new regulations to inform their transportation planning and programming decision-making and link investments to performance outcomes. In particular, FHWA expects that the new performance measures will help State DOTs and MPOs make investment decisions that will result in the greatest possible reduction in fatalities and serious injuries. The Final Rule is aligned with California Department of Transportation (Caltrans) support of Toward Zero Deaths (TZD) (similar to Vision Zero), which has also been adopted by many State DOTs and municipalities (e.g., Los Angeles).

The Final Rule calls for State DOTs, working with MPOs, to assess fatalities and serious injuries on all public roads, regardless of ownership or functional classification. Specifically, the Final Rule establishes the following five performance measures for five-year rolling 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.

The Final Rule also establishes the process for DOTs and MPOs to establish and report their safety targets, and the process that FHWA will use to assess whether State DOTs have met or made significant progress toward meeting their safety targets.

Caltrans is required to establish statewide targets on an annual basis, beginning August 2017 for calendar year 2018 targets. SCAG is required to establish targets for the same five safety performance measures up to 180 days after Caltrans establishes the statewide targets (i.e., February 27 each year). SCAG has the option to agree to support the statewide targets, establish numerical targets specific to the SCAG region, or use a combination of both. SCAG must provide regular updates on its progress towards achieving these targets, including within the Regional Transportation Plan/Sustainable Communities Strategy and the Federal Transportation Improvement Program.

FHWA will consider whether Caltrans has 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 performance measure is better than the baseline performance the year prior to the target year. The met or made significant progress determination only applies to State DOT targets, not MPOs. However, as part of oversight of the planning process, FHWA will review how MPOs such as SCAG are addressing their targets or assisting the state in addressing its targets during Transportation Management Area (TMA) Certification Reviews, when FHWA reviews the Transportation Improvement Programs (TIPs) and State Transportation Improvement Programs (STIPs). FHWA will also review how MPO targets are achieved during the Federal Planning Finding associated with the approval of the STIP. If California does not meet its targets, a State Implementation Plan will have to be developed to meet its targets,

and whatever flexibility there is in using HSIP funds will be gone. Also, if California is not meeting the requirements, greater coordination of Caltrans and MPO safety activities will likely have to occur.

Target Setting Approaches

There are two main types of target setting, vision-based target setting and evidence-based target setting. When developing aspirational, vision-based targets, agencies use the term “target” to refer to a long-term vision for future performance, their ultimate goal. Many transportation agencies are setting vision-based targets for zero fatalities (e.g., Vision Zero or TZD) and for progress towards this vision (e.g., reduce fatalities by one-half within 20 years). Evidence-based targets take a more narrow approach to target setting – focused specifically on what can be achieved within the context of a set of investments, policies, and strategies defined within an implementation plan and subject to a shorter timeframe (e.g., five to ten years). While these two approaches are distinct, they are not necessarily in conflict. A vision-based target is useful for galvanizing support around a planning effort and for ensuring successful strategies are considered and/or implemented while keeping the focus on a clear goal. Evidence-based targets promote accountability. Being able to demonstrate the benefits of different levels of investment in safety can help strengthen understanding of the implications of investment decisions. Many agencies choose to adopt interim hard targets based on a broader vision (e.g., TZD).

Caltrans’ Statewide Safety Targets

Caltrans used a vision-based approach to establish the calendar year 2018 statewide safety targets. For the fatality and serious injury targets, the methodology the State used was to identify existing trends through 2016, forecast performance for 2017, and then estimate annual targets for 2018 using annual vision-based goals. The number and rate of fatalities targets reflect the State’s TZD goal for zero traffic fatalities by 2030. The number and rate of serious injuries targets correspond to the targets identified within the current Strategic Highway Safety Plan (SHSP), a 1.5 percent annual reduction. The non-motorized safety target corresponds to the State’s Strategic Management Plan vision-based goal of 10 percent annual reductions in non-motorized fatalities and serious injuries. The statewide targets for calendar year 2018, all of which reflect five-year rolling averages, are as follows:

- Number of Fatalities: 3,590.8
- Rate of Fatalities per 100 million VMT: 1.029
- Number of Serious Injuries: 12,823.4
- Rate of Serious Injuries per 100 million VMT: 3.831
- Number of Non-motorized Fatalities and Non-motorized Serious Injuries: 4,271.1

For additional details regarding the State’s target setting methodology, please review **Attachment 1: Safety Performance Management Targets for 2018**.

Regional Safety Targets

SCAG staff solicited feedback from SCAG's Technical Working Group, Active Transportation Working Group, and CEO Sustainability Working Group regarding target setting approaches. Many expressed support for adopting an overarching vision-based goal or target (e.g., TZD) supported by near-term evidence-based targets. This feedback is consistent with safety target setting literature, which reports that the most commonly documented safety target setting approach is to establish a top-down visionary target and track success using interim, hard targets. Still, other stakeholders recommended that SCAG support the statewide targets, recognizing the limits of SCAG's ability to forecast future trends and considering the agency's ability to motivate reductions when compared to a county transportation commission or local jurisdiction.

Target Setting Evaluation

In order to evaluate potential targets, SCAG staff took the following steps: (1) estimate the existing trends to determine where we are now, (2) determine what external factors will impact the target in order to forecast future trends, and (3) estimate targets based on forecasted fatality reductions from safety plans. SCAG's efforts related to each of these steps is detailed below.

(1) Regional Existing Conditions

SCAG staff developed an existing conditions report that analyzed the region's roadway collision data, patterns, and trends. In summary, on average, 1,500 people are killed, 5,200 are seriously injured, and 136,000 are injured in traffic collisions in Southern California each year. These collisions are happening in every community in the region, from El Centro in Imperial County to Malibu in Los Angeles County. They are happening to people from all walks of life, to those who drive and disproportionately, to those who walk and bike. SCAG experienced a period of annual declines in traffic-related fatalities and serious injuries until 2012 when they began to steadily rise, though they have not risen to their previous peaks. The existing conditions report and corresponding county fact sheets can be reviewed online here:

<http://www.scag.ca.gov/programs/Pages/Safety.aspx>.

(2) Influence of External Factors

Collisions and collision severity are impacted by many factors, some of which are not under the direct control of transportation agencies, such as vehicle safety features, weather, and the state of the economy. Some research suggests that in California, 70 percent of the collision variation can be taken into account from only considering the unemployment rate and per capital Gross Domestic Product (GDP) growth for California for the years 1998 to 2015.¹ Other external factors to consider include: continued population growth; demographic changes (e.g., increasing share of older adults, Millennial transport preferences); the changing mode mix on the roadways; mobility innovations; changing drug laws; and the availability of funding for safety-related projects and programs, among others.

¹ National Cooperative Highway Research Project 17-67, "Identification of Factors Contributing to the Decline of Fatalities in the United States"

(3) Estimating Targets based on Forecasted Fatality Reductions from Safety Plans

Though there are clearly many external factors, SCAG recognizes that there are many actions agencies can take to influence the numbers and rates of fatalities and serious injuries, including engineering our roadways better, conducting targeted education and enforcement, and ongoing evaluation. Also, we are undoubtedly in a better position to take actions that can have impact when we have a firm handle on our existing conditions. SCAG’s 2016 Regional Transportation Plan/Sustainable Communities Strategy (2016 RTP/SCS) prioritizes ensuring the safety and mobility of the region’s residents, including drivers and passengers, transit riders, pedestrians, and bicyclists. The Plan’s Safety and Security Appendix provides a framework, largely grounded in the State’s Strategic Highway Safety Plan, that can help member agencies interested in pursuing safety initiatives and strategies at the local level. Though a solid resource, for the 2020 RTP/SCS, SCAG proposes working more closely with local jurisdictions to develop a more detailed regional safety plan.

At this time, SCAG does not have modeling software that can forecast collisions and safety numbers. However, SCAG staff are interested in exploring whether such a model is available or can be developed that takes into account a variety of inputs including proposed transportation projects, land uses, population growth, VMT growth, roadway types, and the density of intersections, for example. In the absence of modeling, SCAG staff used a linear regression methodology (also known as a “line of best fit”) to project future fatality and serious injury numbers and rates if the trends were to continue. More specifically, SCAG staff developed simple trend lines based on 2001-2016 data and five-year rolling averages from 2005 to 2016. SCAG staff also reviewed the average percentage declines from 2001 to 2016 for annual and five-year rolling averages. Finally, SCAG staff applied the State’s methodology to the region. As reflected in the table below, the trend line projections were considerably more ambitious than the targets resulting from applying the State’s methodology.

Forecasted Reductions						
	Baseline 5-Year Rolling Average	2001-2016 Linear Trend Projection Annual Numbers (Not 5-Year Rolling)		2005-2016 5-Year Rolling Average Linear Trend Projection		State Methodology Applied (5-Year Rolling Average)
Measure	2016	Average Annual % Change (Past 16 Years of Data)	2018 Prediction	Average Annual % Change (Past 16 Years of Data)	2018 Prediction	2018 Prediction
Number of Fatalities	1403	-0.04%	1213	-1.97%	1121	1601
Rate of Fatalities per 100M VMT	0.88	-0.99%	0.73	-2.50%	0.70	0.97
Number of Serious Injuries	5044	0.12%	4612	-1.35%	4358	5752
Rate of Serious Injuries per 100M VMT	3.162	-0.83%	2.79	-1.87%	2.72	3.5
Total Number of Nonmotorized	2046.4	8%	1995.8	-0.30%	1849.9	2068.2
* In all cases, referring to victims, not collisions						

Target Setting Recommendation

As previously mentioned, SCAG has the option to agree to support the statewide targets, establish numerical targets specific to our region, or use a combination of both. Based on the issues outlined earlier—that is, the considerable influence of external factors such as the economy, SCAG’s need to work more with stakeholders to develop a more detailed regional safety plan, and SCAG’s current inability to accurately forecast safety numbers using a model—SCAG staff recommend supporting the overall statewide targets and adopting SCAG-specific targets based on Caltrans’ target setting methodology (noted in the table above). This recommendation allows SCAG to establish numerical targets specific to the region that are consistent with and supportive of the statewide targets, and it allows SCAG to more accurately monitor its performance in relation to the State’s targets going forward. Because targets will be updated annually, SCAG will have the opportunity to revisit and update its targets each calendar year.

Timeline and Next Steps

SCAG has until February 27, 2018 to finalize its regional targets. Once the regional targets are established, SCAG anticipates working with stakeholders to develop a regional safety plan that could be incorporated into the 2020 RTP/SCS.

FISCAL IMPACT:

Funding for staff work on this issue is included in the FY17/18 OWP (010.00170.08: Transportation Security Planning).

ATTACHMENT/S:

Safety Performance Management Targets for 2018

California’s Safety Performance Management Targets for 2018

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 by August 31, 2017 for the 2018 calendar 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 and OTS have adopted aspirational goals consistent with the Strategic Highway Safety Plan (SHSP) and Caltrans’ Strategic Management Plan (SMP), as follows:

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

Performance Target	Data Source	5- Yr. Rolling Average (2018)	Percent Reduction (2018)
Number of Fatalities	FARS	3590.8	-7.69%
Rate of Fatalities (per 100M VMT)	FARS & HPMS	1.029	-7.69%
Number of Serious Injuries	SWITRS	12,823.4	-1.5%
Rate of Serious Injuries (per 100M VMT)	SWITRS & HPMS	3.831	-1.5%
Number of Non-Motorized Fatalities and Non-Motorized Severe Injuries	FARS & SWITRS	4271.1	-10%

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 that 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 September 2015, California updated its SHSP, which is “a statewide coordinated safety plan that provides a comprehensive framework for reducing highway fatalities and severe injuries on all public roads” (SHSP, 5). It further states that the “SHSP is a multi-disciplinary effort involving Federal, State, and local representatives from the 4Es of safety [i.e. engineering, education, enforcement, and emergency services]” (SHSP, 2015-2019, 34). In support of a data-driven and strategic approach, the HSIP Final Rule contains three major policy changes related to: (1) the HSIP report content and schedule, (2) the Strategic Highway Safety Plan (SHSP) update cycle, and (3) the subset of the model inventory of roadway elements (MIRE), also known as the MIRE fundamental data elements.

The Safety 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 rolling averages for: (1) Number of Fatalities, (2) Rate of Fatalities per 100 million VMT, (3) Number of Serious Injuries, (4) Rate of Serious Injuries per 100 million VMT, and (5) 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 performance measures. 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 will be established annually, beginning in August 2017 for calendar year 2018. For common performance measures (number of fatalities, rate of fatalities and number of serious injuries), targets must be identical to the targets established for the National Highway Transit Safety Administration (NHTSA) Highway Safety Grants program that is administered by OTS. The State Department of Transportation (DOT) must also coordinate with the Metropolitan Planning Organizations (MPO) in the State 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.

MPOs will establish targets for the same five safety performance measures for all public roads in the MPO 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.

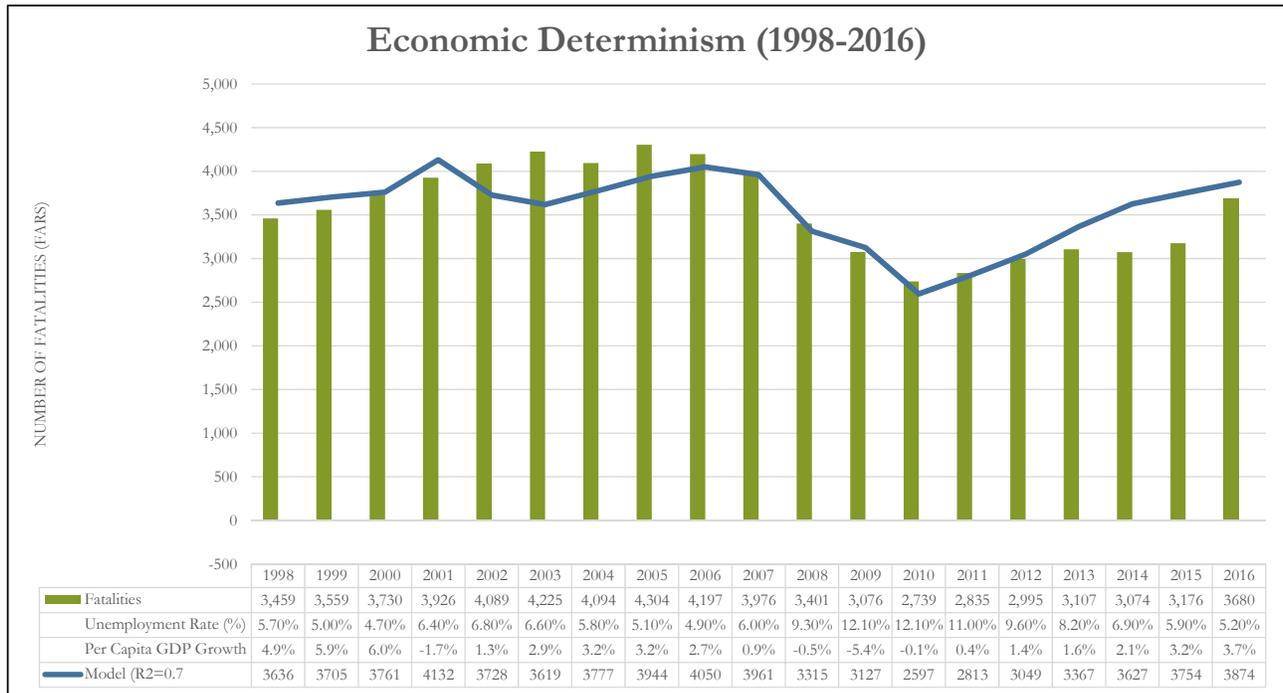
A State is considered to have met or made significant progress toward meeting its safety targets when at least four of the five targets are met or the outcome for the performance measure is better than the baseline performance the year prior to the target year. Optional urbanized area or non-urbanized area targets will not be evaluated. Each year that 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 only 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: (1) estimating the existing trends to determine where we are now, (2) determining what external factors will impact the target in order to forecast future trends, and (3) to estimate targets based on forecasted fatality reductions from safety plans. The need to forecast future collision trends is prescribed by the fact that safety performance targets are set a year in advance where at least two years of collision data is unknown. For example, in the case of setting the first target in 2018, the total numbers of collisions are not known for the years 2017 and 2018 (and possibly the current year).

In order to answer the question of what external factors will impact the targets, there is an active National Cooperative Highway Research Project (NCHRP) 17-67 titled, “Identification of Factors Contributing to the Decline of Fatalities in the United States.” This study has preliminarily determined that economic factors contribute up to 85 percent of the variation of collisions on yearly basis. This study has found that the main factors are: the percent of unemployment for 16-24 year olds, Gross Domestic Product (GDP) per capita, median income, and beer consumption. In the case of California, seventy percent of the variation can be taken into account from only considering the unemployment rate and per capital GDP growth for California for the years 1998 to 2015.

FIGURE 1: THE INFLUENCE OF ECONOMIC FACTORS ON THE NUMBER OF FATALITIES IN CALIFORNIA



Therefore, to accurately forecast future collision trends for fatalities, serious injuries, and property damage only collision types, the difficult task of forecasting the economy with political and economic uncertainties would need to be completed.

In forecasting the number of fatalities, a more straightforward approach is to use the National Safety Council's (NSC) Motor Vehicle Estimates for the current year and then to extrapolate these values for an additional two years. For example in 2016, California ended up 13 percent higher as compared to 2015 and 19 percent higher as compared to 2014 for the number of fatalities. If this methodology is followed, then collisions are in corresponding fashion extrapolated to also increase 13 percent until 2018 (which is the first safety performance target reporting period). The advantage of using this methodology is that it is simple and it considers actual collision trends that are close in time to the target year. **Therefore, the recommendation is to use NSC estimates to forecast future trends due to the difficulty of forecasting economic trends for the number of fatalities.** If the five-year rolling average is taken from the years 2014 to 2018, this establishes the baseline values from which progress is measured.

The rationale for using current trends to extrapolate to the near future is that in the face of uncertainties the best indicator is what is happening in the present. Therefore, in a likewise fashion, the current trends for serious injuries are extrapolated from current trends. For instance, if the number of serious injuries are increasing nine percent in the current year, then this number is used to forecast numbers for an additional two years (for the purposes of setting targets). Unlike the number of fatalities, there are no official estimates (such as the NSC) to forecast serious injuries.

With regards to forecasting fatality and serious injury reductions from safety plans, the ideal is to set "empirically derived targets based on quantitative modeling of potential strategies. With this approach, targets are based on empirical evidence of the selected interventions' previous effectiveness combined with best estimates of future effectiveness, using a model linking inputs and outcomes" (Performance Management Practices and Methodologies for Setting Safety Performance Targets, Federal Highway Administration, 2011). Since safety performance targets pertain to all public roads, in a practical sense for this to work, local jurisdictions need to develop individual performance measures based on the particular needs of the locality and to also target the appropriate strategies. If regional implementation is adopted, this denotes a bottoms-up approach where targets are rolled up from the State and local jurisdictions based on safety effectiveness, supported by research, and are more realistic and achievable which in turn helps secure political support (Joint Transportation Research Centre of the Organization for Economic Cooperation and Development and International Transport Forum, *Towards Zero: Ambitious Road Safety Targets and the Safe System Approach*, 2008).

At the other end of the spectrum, a target is set by edict from agency leadership, elected officials, or other policy making bodies. The advantage of this approach is it is less time and money intensive and it is unequivocal and well understood. The drawback is that having an aspirational or vision based target is only symbolic if they have no realistic safety program to ensure success and do not define actions and goals of all of the responsible agencies (FHWA, 25, 2011).

As a part of this document, targets have been set through a consensus-based planning process within the context of a performance-based allocation of resources. Moreover, it is "felt strongly that Toward Zero Death (TZD) should be the ultimate aspirational goal for the plan, and that realistic and achievable steps should be set for California to move closer to zero deaths" (SHSP, 14). In a corresponding fashion, the rate of fatalities and serious injuries based on vehicle miles traveled will reflect the TZD goals.

Furthermore, the SHSP recommends that “the regional approach could be an excellent way to address the Executives Leadership’s overarching regional, local, and tribal government policy priorities and could be managed concurrently with the overall statewide effort where Challenge Area Teams continue to meet and work on issues of statewide concern” (SHSP, 38). This approach would be consistent with empirically derived targets as described in the ideal scenario.

Nevertheless, the SHSP also states that, “a regional approach to implementation has not been formally adopted by the SHSP Executive Leadership and is currently under advisement and review” (SHSP, 38). As a result, the SHSP as currently structured is somewhere in the middle between and bottoms-up regional approach and a top-down aspirational or vision based approach. As currently devised, the SHSP provides a comprehensive umbrella document with fifteen challenge areas that reflect the main topic areas in roadway safety.

The 2018 SPMT engagement process started approximately one year after the 2015-2019 SHSP was published. The 2018 SPMT engagement process revealed a general consensus among California stakeholders, many of which participated in the development of the SHSP, to maintain the aspirational direction outlined in the SHSP a year earlier.

The Number of Fatalities

In 2018, the target for fatalities based on the five-year rolling average is **3590.8** with 3838 fatalities that are projected for the same year. The five-year rolling average includes four years of increasing fatalities and one year of decreasing fatalities. This is best explained while referring to Figure 2. The dark green bars denote the current data available in FARS (as of June 22, 2017), while the light green bar depicts the “NSC Motor Vehicle Fatality Estimates” for 2016. The gray bar in 2017 shows a thirteen percent increase in fatalities from 2016 to 2017, which is based on the most recent trends from 2015 to 2016, which is based on the NSC data. From 2017 to the 2030, the fatalities decrease at a rate of 7.69 percent based on the Toward Zero Death concept by 2030. For example, if the number of fatalities in 2018 of 4158 is multiplied by 0.9231 (or $1.000 - 0.0769 = 0.9231$), this equals 3838 fatalities in 2018. The line in red depicts the five-year rolling average, which takes the average on a year-to-year basis the previous five years of data.

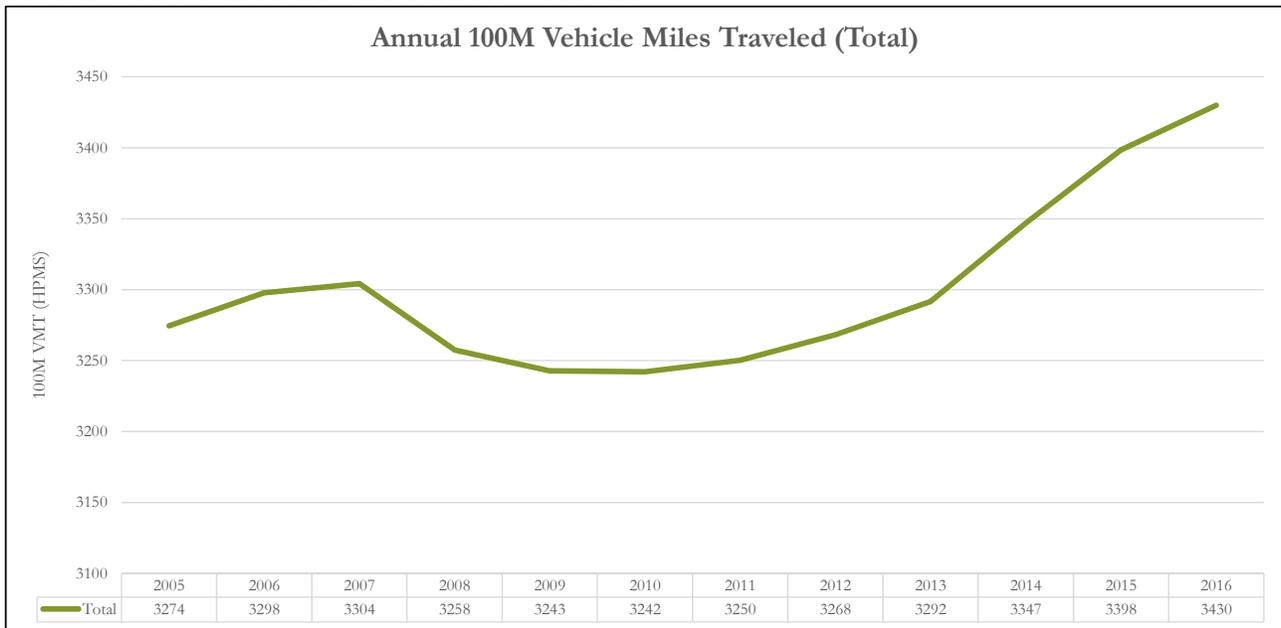
FIGURE 2: THE NUMBER OF FATALITIES



Annual Fatality Rate (per 100M VMT)

Before discussing fatality rates, a few words must be mentioned about statewide traffic volumes, which are reported in one hundred million vehicle miles traveled (100M VMT). While referring to Figure 3, traffic volumes have been steadily increasing since 2011. For the purposes of safety performance target setting, a 2 percent increase in VMT is forecasted from year-to-year for the years from 2015 to 2020.

FIGURE 3. ANNUAL STATEWIDE TRAFFIC VOLUMES



The fatality rate is calculated by dividing the number of fatalities by 100M VMT. The same assumptions are relevant for the calculation of the number of fatalities and they are (refer to Figure 4):

- The bars in dark green denote the current data that is available in FARS (as of June 22, 2017 when the OTS presents their targets to NHTSA);
- The light green bar depicts the “NSC Motor Vehicle Fatality Estimates” for 2016; and
- The gray bars show a year-to-year increase of +13% from 2016 to 2017 (which is based on the change of fatalities from 2015 to 2016)

FIGURE 4. THE FATALITY RATE



The red line represents the five-year rolling average from annual fatality numbers that reflect the TZD aspirational goal. This is a “vision” based target, based on a year-to-year decrease of 7.69% from 2017 and onwards (which is divided by the traffic volumes). The 5-year rolling average set at 2018 is 1.029 per 100M VMT. As stated, The Average Annual Daily Traffic (AADT) volumes are increased 2 percent per year from 2014 levels for the years from 2015 to 2020. In summary, the target, which is based on the five-year rolling average (set at 2018), is **1.029** per 100M VMT.

The Number of Serious Injuries

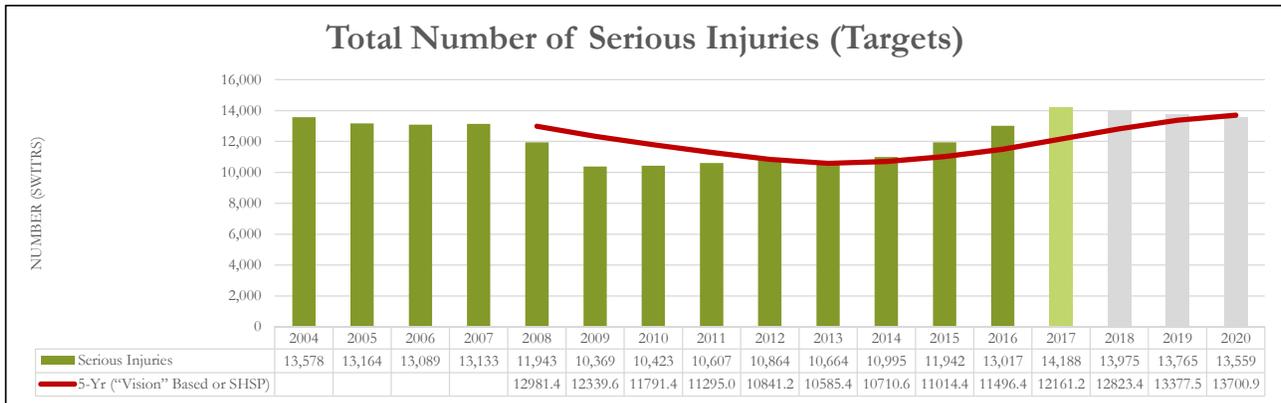
The serious injury data for the State of California resides in the Statewide Integrated Traffic Records System (SWITRS). The definition of serious injury corresponds to “A” in the KABCO Scale and the corresponding value in the SWITRS database is coded as “2”. This is explained in Table 2 (below).

TABLE 2. A COMPARISON BETWEEN KABCO AND SWITRS SERIOUS INJURY DEFINITIONS

KABCO Definition (FHWA)	SWITRS Definition (CHP)
K: Fatal Serious Injury	1: Fatal
A: Serious Injury	2: Injury (Severe)
B: Minor Injury	3: Injury (Other Visible)
C: Possible Injury	4: Injury (Complaint of Pain)
O: Property Damage Only	5: Property Damage Only

Referring to Figure 5 below, the bars in dark green denotes the current data that is available in SWITRS (as of June 22, 2017). The light green bar depicts the forecasted values for 2017, which is based on an increase of +9% (the change from 2015 to 2016 for serious injuries). The gray bars show the number of serious injuries when decreased at a rate of -1.5% per year starting in the year 2018. The target year for serious injury numbers is 13,975. The red line represents a five-year rolling average from a decrease in serious injuries of -1.5% per year starting in 2017. This target is incorporated in the SHSP. This is a “vision” based or “aspirational” target. The five-year rolling average target for 2018 is **12,823.4**.

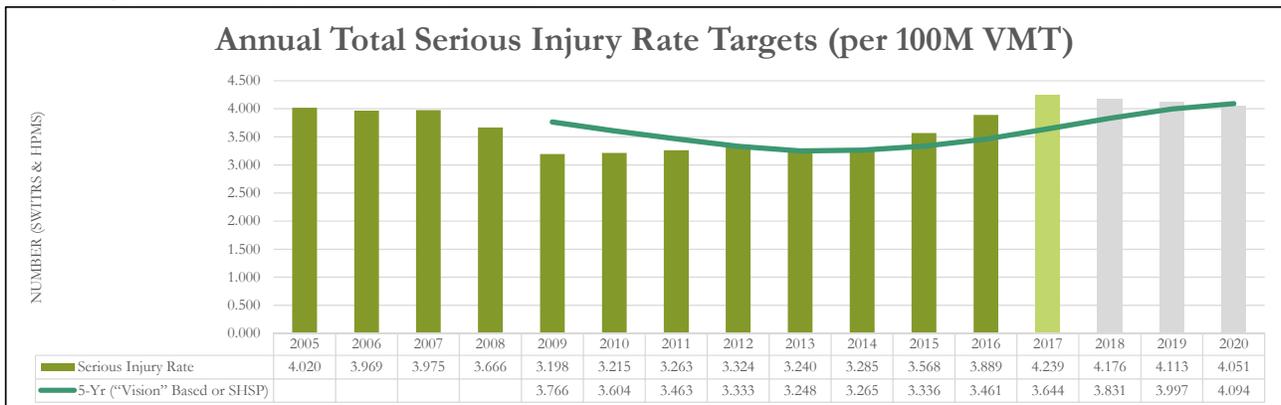
FIGURE 5. THE NUMBER OF SERIOUS INJURIES



The Rate of Serious Injury

The serious injury rate is the number of serious injuries divided by 100M VMT. While referring to Figure 6 (below), the bars in dark green denote the current data that is available in SWITRS and HPMS. The light green bar shows the 2017 value, which incorporates an increase of +9% for serious injuries. The gray bar charts denote an annualized decrease of 1.5% for serious injuries from 2017. The serious injury rate in 2018 is 4.176. The red line represents a five-year rolling average or serious injuries that decreases 1.5 percent per year from 2017. This concept is incorporated in the SHSP. This is a “vision” based or “aspirational” target. The 2018 target for the serious injury rate is **3.831**. The Average Annual Daily Traffic (AADT) volumes are increased 2 percent per year from 2014 levels for the years from 2015 to 2020 (as is the case in calculating the fatality rate).

FIGURE 6. THE RATE OF SERIOUS INJURIES

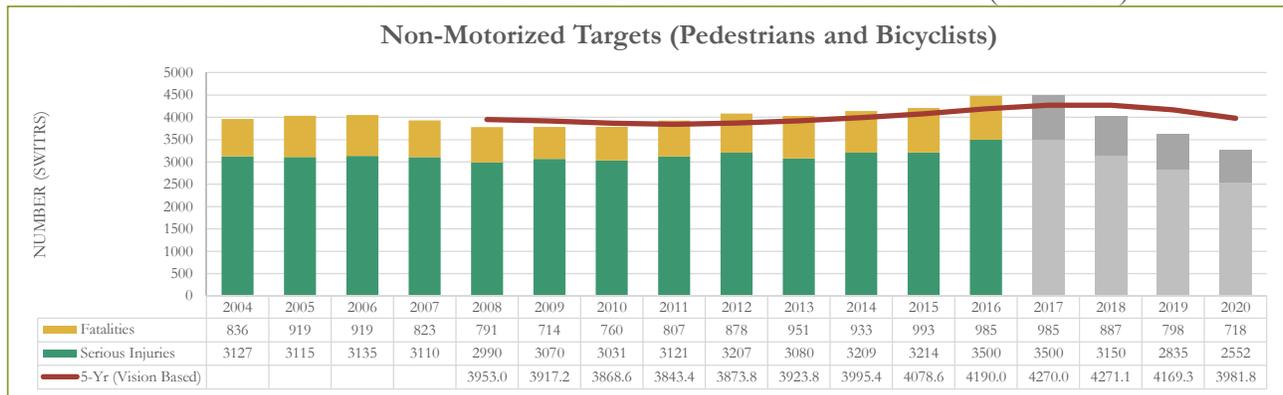


The Number of Non-Motorized Fatalities and Non-Motorized Serious Injuries (Bicycles and Pedestrians)

Concerning the number of fatalities and serious injuries for non-motorists, the strategy is to be more aggressive than the SHSP by mandating performance measures that are consistent with Caltrans’ 2015-2020 SMP. As part of Goal 1 in the SMP, which deals with Safety and Health, the strategic objective is to reduce fatalities and serious injuries by adopting a “Toward Zero Deaths” practice. **Therefore, the target for bicyclists and pedestrians fatalities and serious injuries is a 10 percent reduction per calendar year.** In the SHSP there are challenge areas for both pedestrians and bicycling along with strategies in the implementation plan to reduce fatalities and severe injuries.

While referring to Figure 7 (below), the orange bars show the number of fatalities for pedestrians and bicyclists combined. The number of fatalities is held constant from 2016 to 2017 at 985. The bar chart in green denotes the current data that is available in SWITRS for the number of serious injuries for pedestrians and bicyclists combined. The gray bars depict the forecasts for future years that are based on a year-to-year increase from 2016 to 2017 of 0.00%. That is, the number of serious injuries is held constant at 3500 from 2016 to 2017. The red line represents a five-year rolling average for serious injuries that decrease 10% per year from 2017 to 2020 for both fatalities and serious injuries. This is a “vision” based or “aspirational” target. The final target for 2018 is **4271.1**.

FIGURE 7. NON-MOTORIZED TARGETS FOR FATALITIES AND SERIOUS INJURIES (COMBINE)



Summary

For a breakdown of the five Safety Performance Targets, please refer to Table 1 on page 1. Appendix A also details the outreach efforts done by Caltrans, OTS, and the FHWA to the MPO’s, Counties, and local agencies in order to coordinate and communicate the safety performance targets. Further information with regards to the four webinars listed in Appendix A is accessible at: <http://www.dot.ca.gov/trafficops/shsp/>. Here data is provided from Caltrans, OTS, and the FHWA. For example, traffic volumes from HPMS are broken down by county for 10 years. In addition, all the four webinars have been recorded and can be accessed from this website. In addition, Appendix B provides a reporting template for the MPOs to document the 2018 Safety Performance Targets to the State six months after the August 31, 2017 deadline to the FHWA for the State targets.

APPENDIX A: Safety Performance Target Setting Outreach Efforts

Background:

Safety Performance Management (Safety PM) is part of the overall Transportation Performance Management (TPM) program, which the Federal Highway Administration (FHWA) defines as a strategic approach that uses system *information* to make investment and policy decision to achieve national performance goals. The Safety PM Final Rule supports the Highway Safety Improvement Program (HSIP), as it establishes safety performance measure requirements for the purpose of carrying out the HSIP and to assess fatalities and serious injuries on all public roads.

The Safety PM Final Rule establishes five performance measures as the five-year rolling averages to include:

1. Number of Fatalities
2. Rate of Fatalities per 100 million Vehicle Miles Traveled (VMT)
3. Number of Serious Injuries
4. Rate of Serious Injuries per 100 million VMT
5. Number of Non-motorized Fatalities and Non-motorized Serious Injuries

The Safety PM Final Rule also establishes the process for State Departments of Transportation (DOTs) and Metropolitan Planning Organizations (MPOs) to establish and report their safety targets, and the process that the FHWA will use to assess whether State DOTs have met or made significant progress toward meeting their safety targets.

Important Dates/Deadlines:

The overall State targets required by FHWA are due on August 31st, annually, while the MPOs set their targets six months after the State sets its targets. Three of the five safety targets must be coordinated with the Highway Safety Plan administered by the Office of Traffic Safety (OTS), which must submit their targets to NHTSA by June 30th of each year.

Performance Targets must also be included in updates to Long-Range Statewide Transportation Plans (LRSTP), metropolitan transportation plans (MTP), state transportation improvement programs (STIP) and transportation improvement programs (TIP) after May 27, 2018.

Engagement Timeline:

- **November 28, 2016** – An all day workshop was held in Caltrans’ Boardroom to discuss, in a theoretical sense, what is behind safety performance targets. The MPOs, local and regional agencies, and the Tribal Governments were invited. The FHWA co-presented the workshop and answered frequently asked questions about the target setting process and what the possible consequences are for the State and MPOs if safety performance targets are not met. Caltrans presented the latest fatality and serious injury data for the State. The data was also broken down by the challenge areas in the Strategic Highway Safety Plan. A prerequisite webinar was also developed by the FHWA to provide background information to the participants before the workshop. The OTS also presented at the workshop.
- **December 12, 2016** – This workshop was held at the Holiday Inn in Downtown Sacramento, California. Like the workshop in November, the participants included the MPOs, local and regional agencies and the Tribal Governments. The FHWA co-presented the workshop to provide further guidance on the final rules adopted for Safety Performance Management. The OTS also presented since three of the five state performance targets must be coordinated with OTS. Caltrans presented

the latest trend data for fatalities and serious injuries and possible strategies for target setting. After the Caltrans presentation, the participants broke into groups to discuss the targets and preferences for where to set the targets from a regional perspective.

- **February 8, 2017** – This workshop was held in Fontana, California at the District 8 Traffic Management Center. The objective of this workshop was to demonstrate how to access and analyze safety data to set safety performance targets for an MPO. Santa Barbara County Association of Governments (SBCAG) was the example used for the demonstration. The FHWA presented information on how to access HPMS, while the California Highway Patrol (CHP) made a presentation on how to access SWITRS data. Caltrans demonstrated how the data could be analyzed and OTS presented on what countermeasures could be funded through their grant program.
- **June 22, 2017** – The final workshop presented the State safety targets with an explanation of the underlying assumptions in establishing the targets. In addition, an overview of the Office of Traffic Safety’s Behavioral and Education funding opportunities were presented.

Contacts:

John Ensich

Phone: (916) 653-3099

Email: john.ensich@dot.ca.gov

Gretchen Chavez

Phone: (916) 654-6101

Email: gretchen.chavez@dot.ca.gov

Thomas Schriber

Phone: (916) 654-7138

Email: thomas.schriber@dot.ca.gov