



# IV.C TPPC

January 17, 2019

TO: Transportation Planning Policy Committee

FROM: Ahron Hakimi,  
Executive Director

By: Ed Flickinger,  
Regional Planner



SUBJECT: TPPC CONSENT AGENDA ITEM: IV C  
FEDERAL SAFETY PERFORMANCE MEASUREMENT (PM1) "TOWARD ZERO"  
2019 TARGET

## DESCRIPTION:

Required federal process to annually monitor transportation safety performance measure progress, including encouragement of member agencies to improve safety on our streets with their transportation expenditures. The Transportation Technical Advisory Committee has reviewed this report.

## DISCUSSION:

**Background** - On February 15, 2018, the Kern COG Transportation Planning Policy Committee approved their first federal "Toward Zero" deaths and accidents safety targets using the federal recommended methodology that employs a 5-year running average, consistent with the methodology recommend by Caltrans Division of Traffic Operations staff at that time.

On August 24, 2018 Caltrans management changed the state methodology using a more aspirational method that uses a fixed target dubbed "Vision Zero" where the target assumes a steady decline to zero accidents using set percentages per year. The state method is soon to be made available on line at: <http://dot.ca.gov/trafficops/shsp/target.html> .

Kern COG staff is recommending continued use of the 2018 "Toward Zero" target method adopted by Kern COG in 2018 which is consistent with the federal rule methodology but different than the current state method. Maintaining the same method allows for better comparability with prior targets with minimal consequences.

**Consequences of not meeting the targets** – Consequences of roadway accidents can be catastrophic to those who are involved. Everyone agrees that all appropriate countermeasures to reduce accidents should be taken. In addition, minor regulatory and funding consequences exist if the federal targets are not achieved. However, consequences of not adopting, monitoring, and encouraging progress toward the target, in accordance with federal rules, can ultimately result in loss of all federal transportation funding to the region though de-certification of the agency.

Under the requirements of the recent federal transportation spending bills, states and metropolitan planning organizations (MPOs) like Kern COG are required to annually monitor safety performance measure progress through the statewide and metropolitan planning process. Failure to meet safety targets set by the state and/or MPO could result in the minor consequence of redistribution of Caltrans Active Transportation Program (ATP) funding at the state level into the federal Highway Safety Improvement Program (HSIP). Many of the projects in the ATP program improve safety for bike and pedestrians, and would likely still be eligible under HSIP.

The Federal Highways Administration (FHWA) will review how MPOs are working to achieve their targets, in accordance with the federal rules, as they conduct MPO Certification Reviews every 4 years. Failure to adequately address target performance measure requirements could eventually result in loss of the MPO's federal certification along with access to federal transportation funds. Kern's next four year federal certification review is in Spring 2019. The 2018 Kern COG federal target compliance documentation is available here (<http://www.kerncoq.org/federal-performance-measures/>) and is ready for consideration at the federal certification review.

Rules and guidance for federal performance measure targets are still being established by FHWA (see [https://safety.fhwa.dot.gov/hsip/spm/policy\\_and\\_guidance.cfm](https://safety.fhwa.dot.gov/hsip/spm/policy_and_guidance.cfm)). A couple of workshops have been given by Caltrans over the past 2 years and a draft statewide target has been submitted to FHWA (see <http://dot.ca.gov/trafficops/shsp/target.html>). MPOs that do not submit a safety target update by February 27, 2019, will be required to adhere to the 2019 state target which is NOT consistent with the methodology proposed by Kern COG staff.

**The “Toward Zero” methodology** - The attached presentation demonstrates the Kern COG “Toward Zero” methodology which is consistent with the original 2018 state safety target methodology originally recommended by Caltrans Division of Traffic Operations engineers. In addition, the Kern methodology was prepared under the supervision of a certified engineer. The methodology uses California Highway Patrol (CHP) historical accident data for Kern County. The data is extrapolated using a 5 year running average to forecast future accidents and fatalities. In addition, we use travel model data to tie the forecast to local assumed growth. Targets are essentially being set to show improvement over the previous 5 year accident data. As accidents improve, the targets will improve automatically with each annual update on a trajectory “Toward Zero.”

### Countywide monitoring results summary

2011-2017 6-Year Change in 5-Year Running Average Accident Rates

**1% increase** in **vehicle related fatality rates** from 1.62 to 1.64 per 100M miles traveled.

**1% decrease** in **vehicle related serious injury rates** from 3.61 to 3.58 per 100M miles traveled.

**27% increase** in combined **bike and pedestrian related injury/fatality rates** from .000082 to .000104 per 1000 population.

2016-2017 1-Year Change in Annual Accident Rates

**29% increase** in **vehicle related fatality rates** from 1.61 to 2.08 per 100M miles traveled.

**8% increase** **vehicle related serious injury rates** from 3.64 to 3.92 per 100M miles traveled.

**1.5% decrease** in combined **bike and pedestrian related injury/fatality rates** from .000013 to .000011 per 1000 population.

Source: 2008-2017 CHP SWITRS data which only contains accidents reported to the CHP.

Longer term historic trends show that vehicle accidents track with economic fluctuations. In Kern, recent temporary rebound in oil prices are resulted in an increase in both the economy and roadway accidents. The recent drop in bike and pedestrian accidents in the last year of the data may be in part due to extensive investment in safer bike and pedestrian facilities identified in recent

bike/complete street plans adopted for the region back 2012, as well as the 2017 Active Transportation Plan.

**What your agency can do to accelerate attainment of the federal safety targets** - Kern COG's member agencies are encouraged to promote projects and policies that will help the region to perform better than the targets proposed for our region. The Caltrans Strategic Highway Safety Plan proposes four countermeasures to improve safety: engineering, education, enforcement and emergency services. Projects such as countdown pedestrian signals, buffered bike lanes, roundabouts, and establishing extra safety corridor patrols where spikes in accident activity occur, should be considered wherever appropriate. Since 2007 the Kern Region has seen over \$20M invested in the HSIP program alone (see Attachment 2). In addition, state and federal programs as well as Kern COG's project delivery policies give extra points for projects that improve safety, including:

- Highway Safety and Improvement Program (HSIP) – local & state road safety projects
- State Highway Operation and Protection Program (SHOPP) – state highway safety projects
- Regional Surface Transportation Program (RSTP) – local road maintenance & safety projects
- Active Transportation Program (ATP) – (58%-78% pts. for safety & need depending on size)
- Regional Transportation Improvement Program (RTIP) – (50% of points safety/congestion)
- Congestion Mitigation and Air Quality (CMAQ) – (40% of points for safety/congestion)
- Kern Motorist Aid Authority (KMAA) – Travel info., safety roadside cleanup, safety corridors

Zero fatalities on our streets is everyone's goal and it is anticipated that emerging safety technology standards such as autonomous vehicles will eventually help drive down these safety targets "Toward Zero." This report will be updated annually.

#### **Attachment**

- 1) Presentation – Towards Zero: Draft Safety Performance Target Update - Kern Region
- 2) Kern HSIP Projects 2007-2018

#### **ACTION:**

Approve the 2019 Kern "Toward Zero" safety targets consistent with federal methodology and direct staff to work with member agencies and stakeholders to develop projects that will accelerate attainment of the targets.

## TOWARDS ZERO: DRAFT SAFETY PERFORMANCE TARGET UPDATE Kern Region



### FEDERAL Requirements: MPOs Evaluated During 4-Year Review

- Metropolitan Planning Organizations (MPOs) will be held accountable for safety progress through the statewide and metropolitan planning process. FHWA will review how MPOs are addressing and achieving their targets (or assisting the State in achieving targets) as they conduct Transportation Management Area (TMA) 4-year Certification Reviews (only for large MPOs with more than 200,000 population). The TMA Certification Review requires the Secretary to certify whether the metropolitan planning process of an MPO serving as a TMA meets requirements, including the requirements of 23 USC 134 and other applicable Federal law.

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### FEDERAL Requirements: State Failure = More HSIP Safety Funding

- If a State DOT does not meet or make significant progress toward meeting its HSIP targets, the State shall use obligation authority equal to the HSIP apportionment for the fiscal year prior to the target year only for HSIP projects and submit an HSIP Implementation Plan to FHWA. For example, if a State DOT does not meet or make significant progress towards meeting its 2019 safety targets, in Fiscal Year (FY) 2022, the State DOT must use obligation authority equal to the FY 2018 HSIP apportionment only for HSIP projects and submit an HSIP Implementation Plan by June 30, 2021.



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### Five Performance Targets Under New Federal Regulations +1

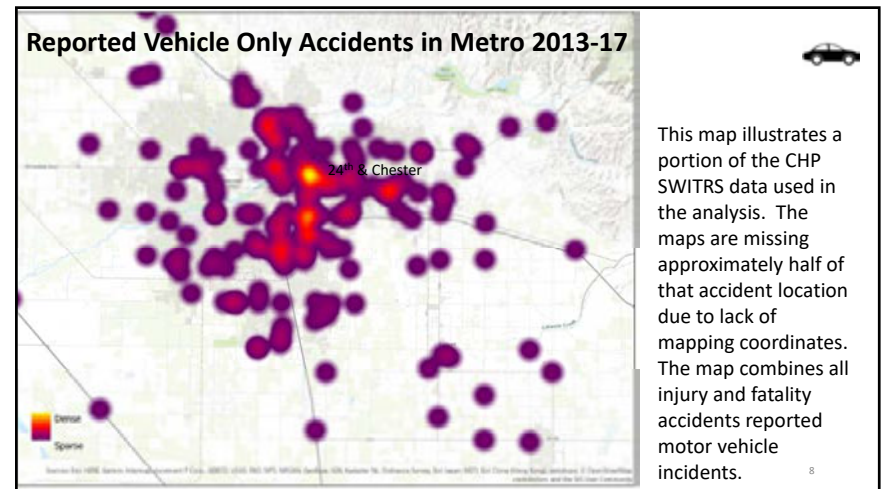
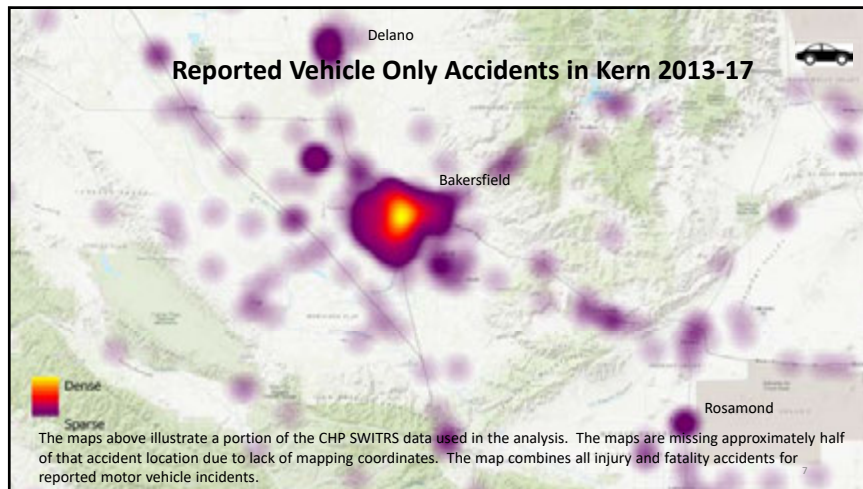
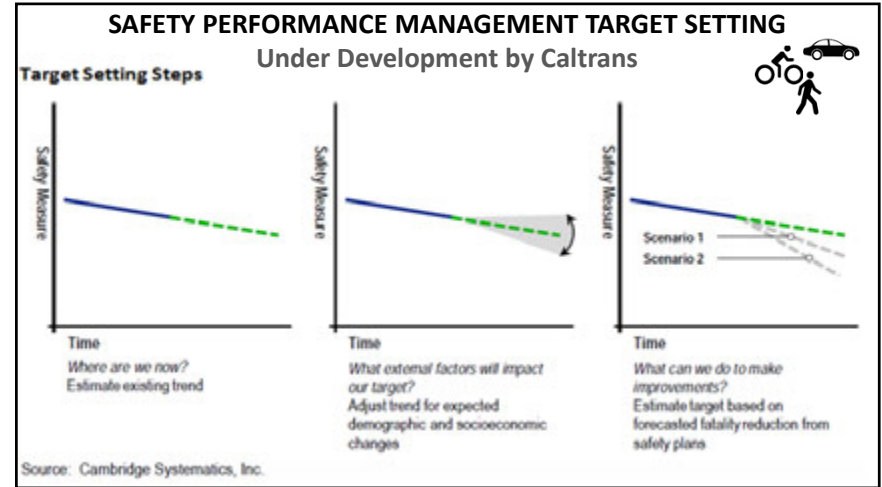
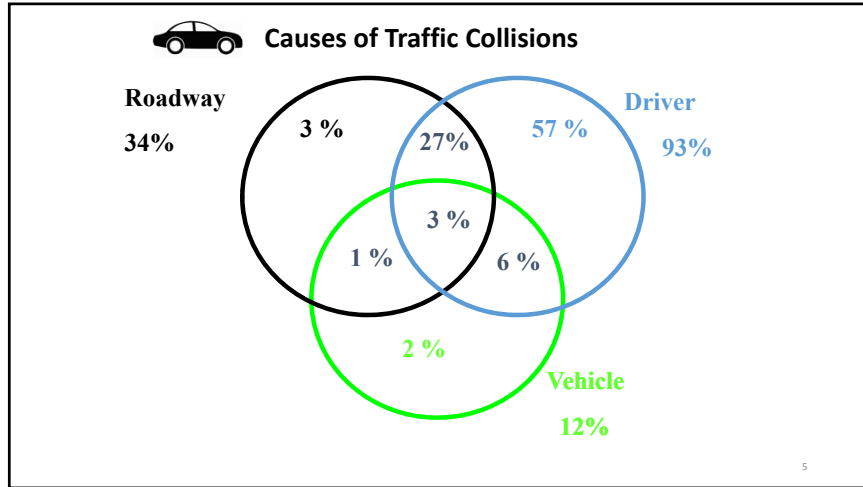
#### Motorized Vehicles

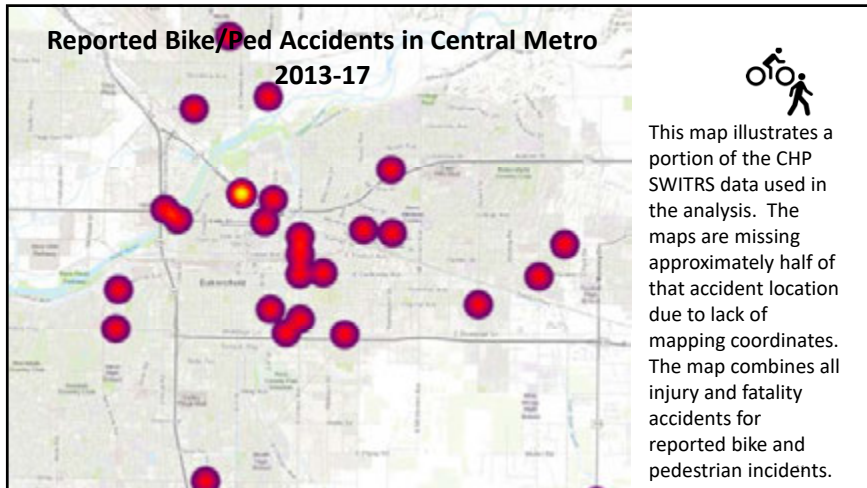
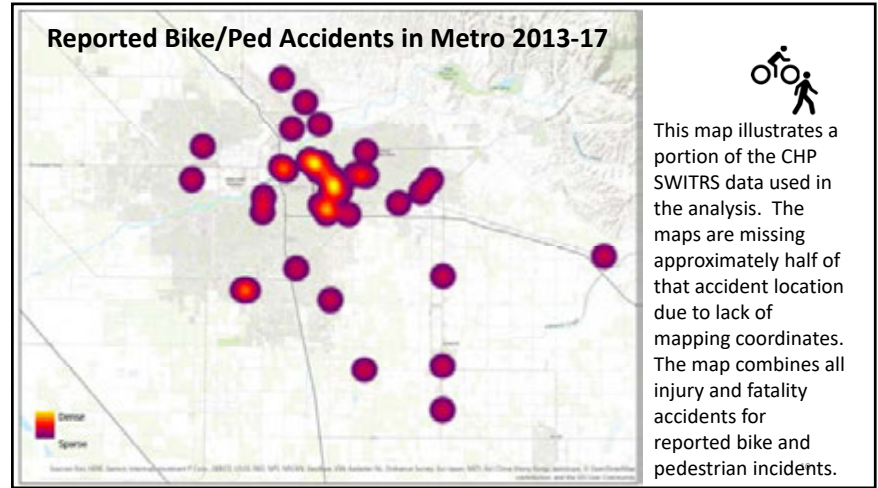
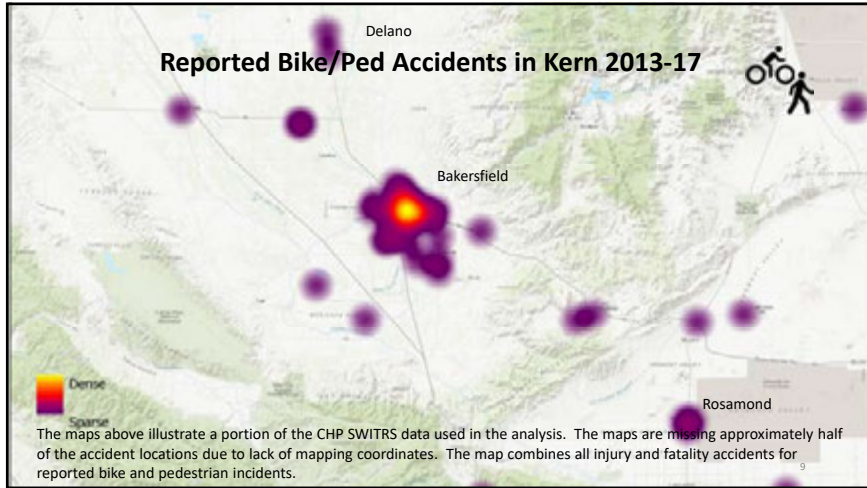
-  Number of Fatalities (SWITRS)
-  Rate of Fatalities per 100 Million VMT (SWITRS & HPMS)
-  Number of Serious Injuries (SWITRS)
-  Rate of Serious Injuries per 100 Million VMT (SWITRS & HPMS)

#### Non-Motorized

-  Number of Non-Motorized Fatalities and Serious Injuries (Bicycles and Pedestrians) (SWITRS)
-  Rate of Non-Motorized Fatalities and Serious Injuries (SWITRS & Travel Model) (This is not required but provided for information)




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### Countywide Accident Rate Monitoring Results

#### 2011-2017 6-Year Change in 5-Year Running Average Accident Rates

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### SAFETY PERFORMANCE MANAGEMENT TARGET SETTING

#### Statewide

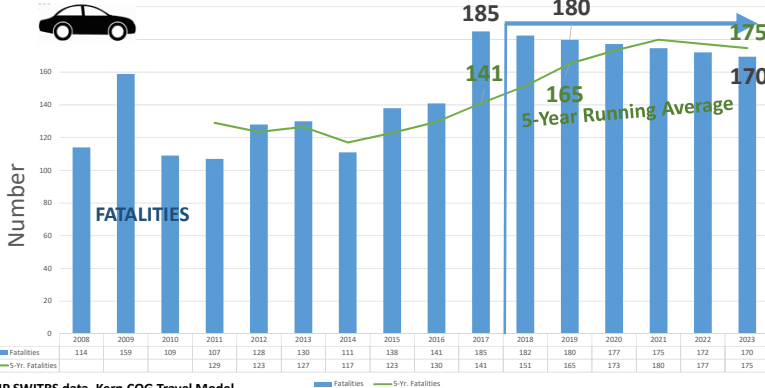
#### Economic Determinism (1998-2016)



### PRELIMINARY

Vehicle - Total Motorized Fatalities

Kern

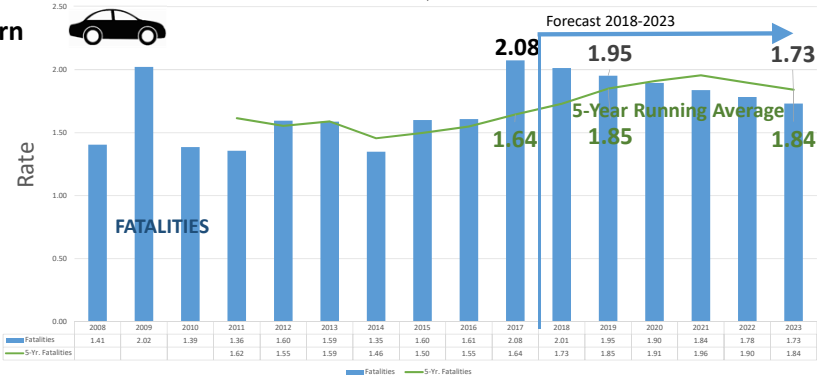


Source: CHP SWITRS data, Kern COG Travel Model  
 Forecast years assume base year fatality rates per mile of travel (VMT) stay same.  
 Target assumes we will do better than the base year model rate.

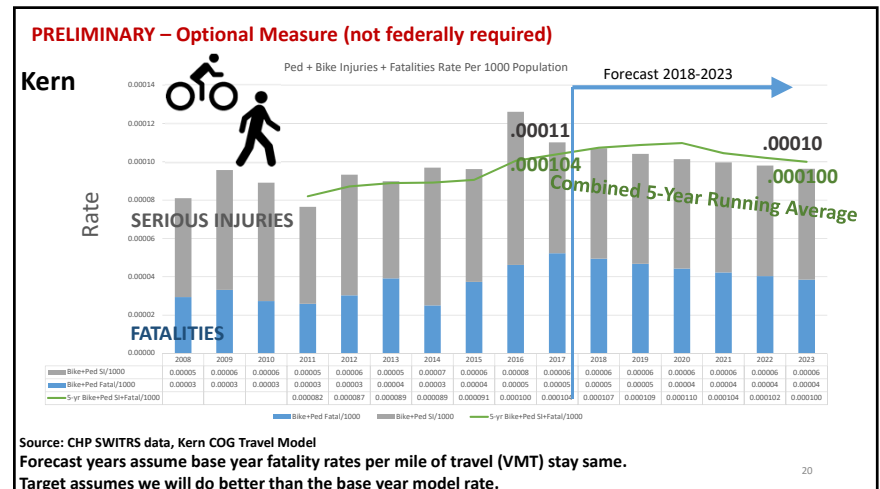
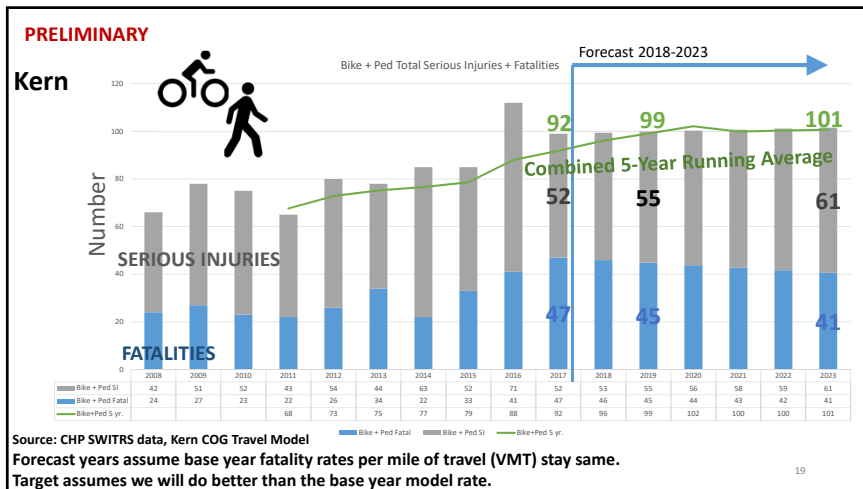
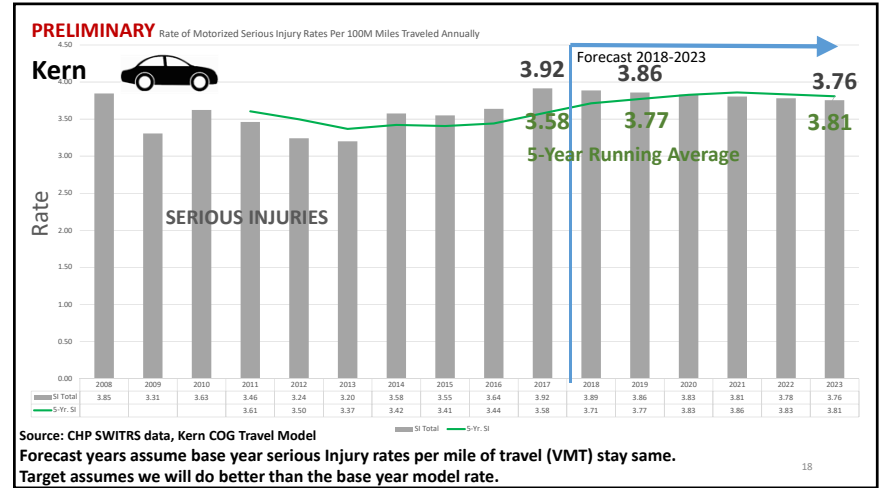
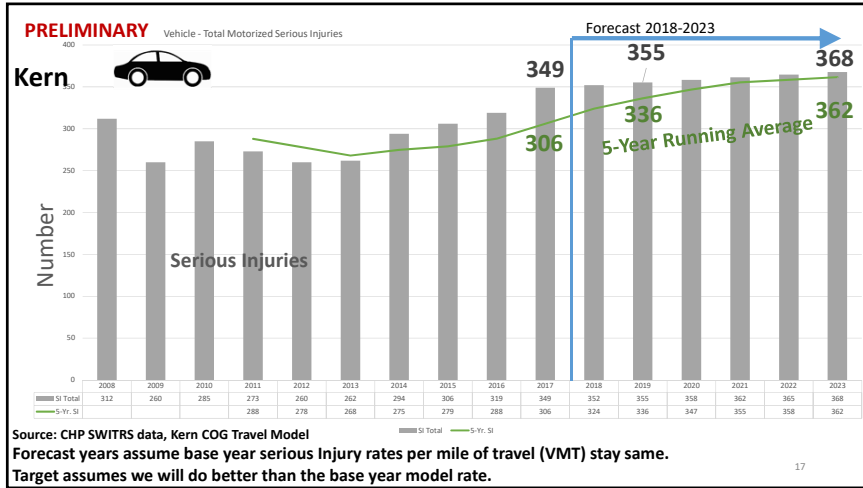
### PRELIMINARY

Rate of Motorized Fatalities Rates Per 100M Miles Traveled Annually

Kern













Source: CHP SWITRS data, Kern COG Travel Model  
 Forecast years assume base year fatality rates per mile of travel (VMT) stay same.  
 Target assumes we will do better than the base year model rate.





**PRELIMINARY 2019 FEDERAL TARGETS UPDATE – Statewide & Kern**

Statewide		New	Old
	<u>Five Performance Targets</u>	<u>for 2019 (5-yr)</u>	<u>for 2018 (5-yr)</u>
	Number of Fatalities =	<u>3445.4</u>	<u>3590.8</u>
	Rate of Fatalities per 100 Million VMT =	<u>0.995</u>	<u>1.029</u>
	Number of Serious Injuries =	<u>12,688.1</u>	<u>12,823.4</u>
	Rate of Serious Injuries per 100 Million VMT =	<u>3.661</u>	<u>3.831</u>
	Number of Non-Motorized Fatalities and Non-Motorized Serious Injuries (Bicycles and Pedestrians) =	<u>3949.8</u>	<u>4271.1</u>
<b>Kern</b>			
	<u>Five Performance Targets</u>	<u>for 2019 (5-yr)</u>	<u>for 2018 (5-yr)</u>
	Number of Fatalities =	<u>165</u> (4.8% of the State*)	<u>148</u>
	Rate of Fatalities per 100 Million VMT =	<u>1.85</u>	<u>1.63</u>
	Number of Serious Injuries =	<u>336</u> (2.6% of the State*)	<u>329</u>
	Rate of Serious Injuries per 100 Million VMT =	<u>3.77</u>	<u>3.63</u>
	Number of Non-Motorized Fatalities and Non-Motorized Serious Injuries (Bicycles and Pedestrians) =	<u>99</u> (2.5% of the State**) <sup>21</sup>	<u>98</u>

\*Kern accounts for 2.7% of the state VMT in 2016. \*\*Kern accounts for 2.3% of the state population in July 2017.

**Toward Zero – What your agency can do:**

The Caltrans Strategic Highway Safety Plan proposes four countermeasures to improve safety: engineering, education, enforcement and emergency services. Projects such as: **countdown pedestrian signals, buffered bike lanes, roundabouts, and establishing extra safety corridor enforcement**, where spikes in accident activity occur, should be considered where appropriate. In addition, state and federal **funding programs** as well as Kern COG's project delivery policies give extra points for projects that improve safety, including:

- Highway Safety and Improvement Program (**HSIP**) – local & state road safety projects
- State Highway Operation and Protection Program (**SHOPP**) – state highway safety projects
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- Congestion Mitigation and Air Quality (**CMAQ**) – (40% of points for safety/congestion)
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2007-2018 Highway Safety and Improvement Program (HSIP) – Kern Region

Agency Name	Year	Unique Project ID	Location of Work	Description of Work	Project Cost	Federal Funds
Arvin	2018	H9-06-001	Various existing intersection locations throughout the City of Arvin with an emphasis on locations adjacent to parks and schools.	Install new striped pedestrian crosswalks, stop bars, striping and a few curb ramps.	\$ 249,900	\$ 249,900
Arvin	2013	HSIP6-06-001	Bear Mountain Blvd (SR 223)/Derby St	Install traffic signals, railroad crossings, upgrade and install new pavement, striping and pavement markers	\$724,400	\$651,700
Bakersfield	2018	H9-06-002	Calloway Drive in front of Norris Middle School at existing crosswalk near Manhattan Drive; Monitor Street in front of Palla Elementary School at existing crosswalk near Kyrer Avenue.	Install flashing yellow beacons near crosswalks.	\$ 246,100	\$ 246,100
Bakersfield	2016	H8-06-001	Fifty-seven (57) signalized intersections within the north west portion of the City of Bakersfield.	Remove existing pedestrian walk/don't walk signal heads and install new pedestrian countdown timer modules for all pedestrian crossings.	\$ 124,400	\$ 111,960
Bakersfield	2016	H8-06-002	Eighty-eight (88) signalized intersections within the south west portion of the City of Bakersfield.	Remove existing pedestrian walk/don't walk signal heads and install new pedestrian countdown timer modules for all pedestrian crossings.	\$ 211,200	\$ 190,080
Bakersfield	2015	HSIP7-06-004	Various Locations - 62 signalized intersections within the north east portion of the City of Bakersfield	Install pedestrian countdown head at each signalized intersection	\$ 194,000	\$ 174,600
Bakersfield	2015	HSIP7-06-005	Various Locations - 50 signalized intersections within the south east portion of the City of Bakersfield	Install pedestrian countdown head at each signalized intersection	\$ 168,000	\$ 151,200
Bakersfield	2013	HSIP6-06-002	60 intersections throughout the City of Bakersfield	Install pedestrian countdown signal heads	\$190,000	\$171,000
Bakersfield	2012	HSIP5-06-001	Twenty (20) intersections within the city	Install pedestrian countdown heads	\$129,000	\$116,000
Bakersfield	2011	HSIP4-06-007	Various locations throughout the city	Install pedestrian countdown heads	\$126,000	\$113,400
Bakersfield	2008	6340	INSTALL FLASHING BEACONS AND CURB RAMPS.	BENTON STREET BETWEEN MING AVE. AND WILSON RD.	\$40,100	\$36,090
Delano	2018	H9-06-004	Twenty-two (22) uncontrolled pedestrian crossing locations throughout the City of Delano.	Install pedestrian crossings at uncontrolled locations; Install/upgrade larger intersections warning/regulatory signs.	\$ 249,300	\$ 249,300
Delano	2015	HSIP7-06-006	32 non-signalized crosswalk locations throughout the City of Delano.	Install pedestrian actuated warning systems; Install Advanced Yield Markings, and Install Pedestrian Crossing Signs	\$ 437,900	\$ 437,900
Delano	2013	HSIP6-06-004	Cecil Ave/Albany St	Upgrade traffic signals; Install protected left-turn phasing	\$320,600	\$288,500
Delano	2008	6375	INSTALL TRAFFIC SIGNAL	CECIL AVE. AND HIETT AVE. INTERSECTION	\$350,000	\$315,000
Kern County	2018	H9-06-010	Eighty-two (82) crosswalk locations at 79 intersections throughout Kern County.	Install continental crosswalks, intersection warning signs, reflective signs, pedestrian crossing signs, ADA curb ramps, street lighting, cross drains, and AC tie-ins.	\$ 5,196,300	\$ 5,120,300
Kern County	2018	H9-06-011	The intersections of Roberts Lane at Sequoia Drive, Norris at Manor, and Manor at China Grade Loop.	Upgrade signals from pedestal to overhead mast arms.	\$ 787,600	\$ 787,600
Kern County	2018	H9-06-012	Various signalized intersections throughout the unincorporated Bakersfield, Oildale, Wheeler Ridge, Lake Isabella, and Rosamond communities of Kern County.	Construct intersection improvements, including replacing signal hardware at 30 intersections, installing raised pavement markers/striping at 22 intersections, and upgrading existing ADA-accessible curb ramps.	\$ 1,567,200	\$ 1,567,200
Kern County	2018	H9-06-013	San Diego Street between Hall Road and Burgundy Avenue, in the unincorporated community of Lamont, Kern County.	Install continental crosswalks and lighting at four existing uncontrolled pedestrian crossing areas.	\$ 250,000	\$ 227,700
Kern County	2016	H8-06-007	Intersection of Mount Vernon Ave at Quincy St	Convert signal to mast arm for east/west bound traffic on Quincy St and install pedestrian countdown signal heads	\$ 219,100	\$ 219,100
Kern County	2016	H8-06-008	Intersection of Airport Dr at Norris Rd	install additional signal heads at north, west and east bound directions on the near side of the intersection.	\$ 219,100	\$ 219,100
Kern County	2016	H8-06-009	Various locations in unincorporated Bakersfield and Rosamond areas.	Installation of pedestrian countdown signal heads.	\$ 272,000	\$ 250,000
Kern County	2016	H8-06-010	Various locations throughout the County of Kern.	Upgrade existing guardrails.	\$ 1,200,000	\$ 1,200,000
Kern County	2015	HSIP7-06-007	South Union Ave between Taft Highway and Ming Avenue.	Construct left turn channelization	\$ 1,134,300	\$ 1,020,870
Kern County	2012	HSIP5-06-014	Patton Way between Hageman Rd. and Snow Rd.	Modify traffic signals; install two-way left-turn lane	\$180,000	\$144,000
Kern County	2012	HSIP5-06-015	Roberts Ln./Oildale Dr.	Construct left-turn lanes; modify traffic signals; install pedestrian countdown heads	\$139,000	\$109,000

2007-2018 Highway Safety and Improvement Program (HSIP) – Kern Region

Agency Name	Year	Unique Project ID	Location of Work	Description of Work	Project Cost	Federal Funds
Kern County	2011	HSIP4-06-013	Mount Vernon Ave. between Kentucky St. and Niles Pt.	Modify raised medians; relocate crosswalk; construct curb ramps	\$213,000	\$191,000
Kern County	2008	6370	UPGRADE TRAFFIC SIGNALS	SOUTH UNION AVENUE AND PACHECO RD	\$231,000	\$207,900
Kern County	2008	6369	UPGRADE TRAFFIC SIGNALS; CONSTRUCT CURB RAMPS	BERNARD ST. AND ALTA VISTA DR. INTERSECTION	\$165,000	\$148,500
Kern County	2008	6371	UPGRADE TRAFFIC SIGNALS; CONSTRUCT CURB RAMPS	SOUTH UNION AVE. AND FAIRVIEW RD. INTERSECTION	\$231,000	\$207,900
Kern County	2007	5435	UPGRADE TRAFFIC SIGNALS, REMOVE FIXED OBJECTS, CONSTRUCT CURB RAMPS.	INTERSECTION OF FLOWER ST. AND HALEY ST.	\$303,600	\$273,240
Mcfarland	2016	H8-06-012	Various stop controlled intersections along Garzoli Avenue, and Perkins Ave and 5th Street.	Upgrade signing with new Solar flashing LED Stop signs, traffic striping and markings, solar Speed Limit warning flashing beacon signs with radar speed feedback, crosswalk with In Roadway warning lights and upgrade ADA curb ramps.	\$ 212,400	\$ 212,400
Shafter	2015	HSIP7-06-008	Lerdo Highway between Cherry Ave. and Zerker Rd.	Install guardrail	\$ 1,081,800	\$ 1,081,800
Shafter	2011	HSIP4-06-006	Lerdo Hwy. between Cherry Ave. and Driver Rd.	Install median guardrail, signs, striping, and pavement markings	\$1,260,800	\$900,000
Taft	2016	H8-06-013	Kern Street between 1st Street and Hillard Street.	Remove existing roadway luminaries and install high performance cobra heads LED Roadway Luminaries, install Radar Speed Feed Back Signs, re-design pedestrians crosswalks, repaint and add markings.	\$ 432,000	\$ 432,000
Wasco	2018	H9-06-021	Various locations on local roadways throughout Wasco.	Upgrade roadway signs and various intersections as recommended in 2017 City of Wasco Roadway Safety Signs Audit Project Report.	\$ 114,023	\$ 114,023
Wasco	2016	H8-06-015	Various locations around Barker Park	Install Rectangular Rapid Flashing Beacons (RRFBs), high visibility crosswalks, infill sidewalk, and ADA curb ramps.	\$ 178,800	\$ 160,920
Wasco	2015	HSIP7-06-009	Various locations within the Wasco city limits	Roadway Safety Sign Audit and sign upgrade/installation project	\$ 143,900	\$ 143,900
Wasco	2010	HSIP3-06-041	Palm Ave. between SR 46 and 9th Place	Construct ADA compliant curb, gutter, sidewalk, and curb ramps	\$232,900	\$184,000
Wasco	2008	6366	BICYCLE/PEDESTRIAN IMPROVEMENTS	7TH STREET BETWEEN BROADWAY AND PALM AVENUES	\$235,100	\$211,590
Wasco	2007	5441	INSTALL IN-PAVEMENT CROSSWALK LIGHTS.	MID-BLOCK CROSSWALK ON POSO DRIVE BETWEEN GRIFFITH AVE. AND POPLAR AVE.	\$55,000	\$49,500
Wasco	2007	5442	INSTALL IN-PAVEMENT CROSSWALK LIGHTS.	INTERSECTION OF PALM AVE. AND 9TH PLACE.	\$189,700	\$170,730
<b>HSIP - Kern Total 2007-2018</b>					<b>\$20,205,523</b>	<b>\$19,057,003</b>