



Integrating the Safe System Approach and Equity into California’s Strategic Highway Safety Plan

Background

Preliminary data from the California Highway Patrol and California Department of Transportation (Caltrans) show that 3,866 people died in traffic crashes on California’s roadways in 2020, the highest number since 2008. This represents a 7.2 percent increase in fatalities from 2019, despite a 14.9 percent decrease in vehicle miles traveled due to the pandemic.¹ This mirrors the 7.2 percent increase in traffic fatalities across the US at the time.² Recognizing the need for change to combat increasing fatalities—particularly among vulnerable road users³ and underserved communities⁴—transportation leaders in California integrated equity and the Safe System Approach as Guiding Principles into their Strategic Highway Safety Plan⁵ (SHSP) update, called “The Pivot.” The SHSP includes a commitment to reach zero traffic fatalities and serious injuries in California by 2050.

“The Pivot”

Focused on reversing this increasing roadway fatalities and serious injuries trend, Caltrans authored a bold and transformative update to its Strategic Highway Safety Plan (SHSP) in 2020 called “The Pivot.” Recognizing that responsibility for traffic safety is shared by everyone—including engineers, planners, automobile manufacturers, emergency medical services, policymakers, law enforcement, and all road users, CalTrans collaborated⁶ closely with executive leadership and staff from key statewide, regional, local, academic, private, federal, tribal, and non-governmental organizations focused on traffic safety and equity. These partners represented many stakeholders that had not been involved in developing the SHSP in the past.

The SHSP update expands and diversifies membership of the SHSP committee, designates high-priority challenge areas (Lane Departure; Impaired Driving; Aggressive Driving/Speed Management; Pedestrian and Bicyclists and Intersections), seeks to increase the effectiveness of the program with innovative tools and data,

¹ California Safe Roads: 2020-2024 Strategic Highway Safety Plan, Caltrans, March 2021, <https://dot.ca.gov/-/media/dot-media/programs/safety-programs/documents/shsp/2020-2024-shsp-report-march-2021-a11y.pdf>

² <https://www.nhtsa.gov/press-releases/2020-fatality-data-show-increased-traffic-fatalities-during-pandemic>

³ Per the Caltrans 2020-2024 Strategic Highway Safety Implementation Plan, vulnerable road users include pedestrians, bicyclists, and motorcyclists. <https://dot.ca.gov/-/media/dot-media/programs/safety-programs/documents/shsp/2020-2024-shsp-implementation-plan-march-2021-a11y.pdf>

⁴ Per the Executive Order on Advancing Racial Equity and Support for Underserved Communities Through the Federal Government, underserved community refers to populations that have been systematically denied a full opportunity to participate in aspects of economic, social, and civic life. <https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/20/executive-order-advancing-racial-equity-and-support-for-underserved-communities-through-the-federal-government/>

⁵ California Safe Roads: 2020-2024 Strategic Highway Safety Plan, Caltrans, March 2021, <https://dot.ca.gov/-/media/dot-media/programs/safety-programs/documents/shsp/2020-2024-shsp-report-march-2021-a11y.pdf>

⁶ Strategic Highway Safety Plan (SHSP) Partners, Caltrans, <https://dot.ca.gov/programs/safety-programs/shsp/partners>

and evaluates progress on a continual basis. “The Pivot” also adopts four guiding principles that support the SHSP:

- **Integrate equity**
- **Implement a Safe System Approach**
- **Double down on what works**
- **Accelerate advanced technology**

This document focuses on the first two principles: integrate equity and implement a Safe System Approach.

Guiding Principles

Integrate Equity

Through data analysis for the SHSP update, Caltrans recognized that integrating equity is essential to address disparate fatal and serious injury crash outcomes impacting underserved communities and vulnerable road users. Caltrans believes that everyone has the right to travel safely on California’s public roads regardless of race, socioeconomic status, gender, age, and ability. In “The Pivot,” equity means taking into account any historical, present-day, and systemic biases so that safety is improved for all groups, particularly individuals from underserved communities.

To ensure equity is addressed, all of the actions within the SHSP must consider a series of equity questions in their development and implementation.

1. Which groups will benefit from the implementation of the proposed action (target audiences, vulnerable populations, specific end-users, etc.)?
2. Who may be negatively impacted or affected by the implementation of the proposed action (low-income, persons of color, user ability, modality, etc.)?
3. What demographic and/or socioeconomic data was considered in the development of the action (race, age, income, gender, etc.)?
4. What data gaps (particularly in relation to equity-related data sets) could be addressed by a proposed action?
5. Who was involved in the process of developing the action, and who was missing?
6. What partnerships were built with community-based organizations (who have access to and trust from underserved or vulnerable populations)?
7. What culturally sensitive and/or multilingual approaches are needed to conduct outreach, engagement, or education efforts?
8. Are ADA compliance and accessibility needs considered proactively?

The intent of these questions is to leverage demographic and socioeconomic data to make sure that the processes, strategies, and actions of the SHSP serve all people.

Implement a Safe System Approach

The Safe System Approach⁷ aims to eliminate fatal and serious injuries for all road users through a holistic view of the roadway system. The SHSP embraces the six principles of the Safe System Approach, which place additional responsibility on agencies to account for human error within the design and operation of roadways.

Caltrans’ implementation of the Safe System Approach includes elevating and institutionalizing a safety culture. This includes



Figure 1 Safe System Approach
Source: FHWA

⁷ Zero Deaths – Saving Lives through a Safety Culture and a Safe System, FHWA, https://safety.fhwa.dot.gov/zerodeaths/zero_deaths_vision.cfm

changing the way they talk about traffic safety, like (1) not blaming “human error” as the cause of crashes and (2) shifting language from “accident” to “crash” to emphasize that there are identifiable reasons for crashes and that most are preventable. Language matters in how safety problems are viewed and solutions are designed at Caltrans. Caltrans understands that they can accommodate users’ mistakes by changing the design and operations of the road system. For example, roads can be designed to be self-enforcing so that drivers instinctively drive at vehicle speeds⁸ that make the roads safer for all users.

Other Guiding Principles

The third principle, Double Down on What Works, aims to maximize the use of countermeasures that have demonstrated effectiveness. The fourth principle, Accelerate Advanced Technology, begins to lay the groundwork for new technologies to come by designing roadways and intersections that are prepared to handle automated vehicles.

Data

A key element of SHSP implementation is to use data to drive decisions and actions. To be most effective, Caltrans continually improves the availability of data for analysis in order to achieve the safety and equity goals identified in the plan. Caltrans developed the California SHSP Crash Data Dashboard⁹ to provide SHSP implementers with direct access to crash data to support data-driven implementation of the SHSP. The dashboard uses crash data from the Fatality Analysis Reporting System (FARS) and California’s Statewide Integrated Traffic Records System (SWITRS). The dashboard allows for querying crash data by the number and characteristics of fatal and serious injury crashes over a 10-year period. Some querying options include:

Traditional Safety Data	Equity Data
<ul style="list-style-type: none"> • SHSP Challenge Area • Crash Severity • Location • Crash Cause • Crash Conditions 	<ul style="list-style-type: none"> • Race • Gender • Tribal Area • Age

Distribution of California Traffic Fatalities by Race/Ethnicity

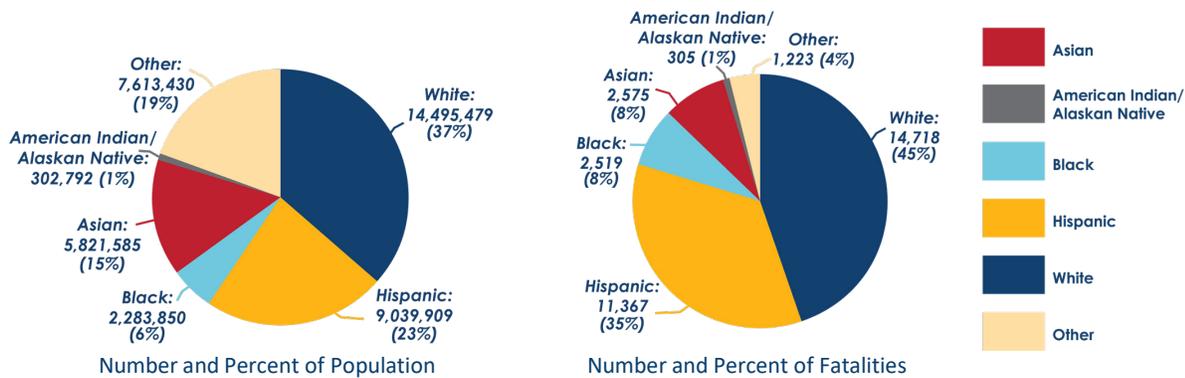


Figure 2 Distribution of California Traffic Fatalities by Race and Ethnicity
Sources: Strategic Highway Safety Plan Traffic Safety Facts September 2021

⁸ Zero Traffic Fatalities Task Force and Speed Limit Setting Report — California, FHWA, August 2020, https://safety.fhwa.dot.gov/zerodeaths/docs/California_TaskForceSpeedLimit_508.pdf

⁹ California SHSP Crash Data Dashboard, Caltrans, <https://shsp.dot.ca.gov/>

Fatality Rate by Race/Ethnicity Compared to White (Comparison of Fatality Rate by Population)

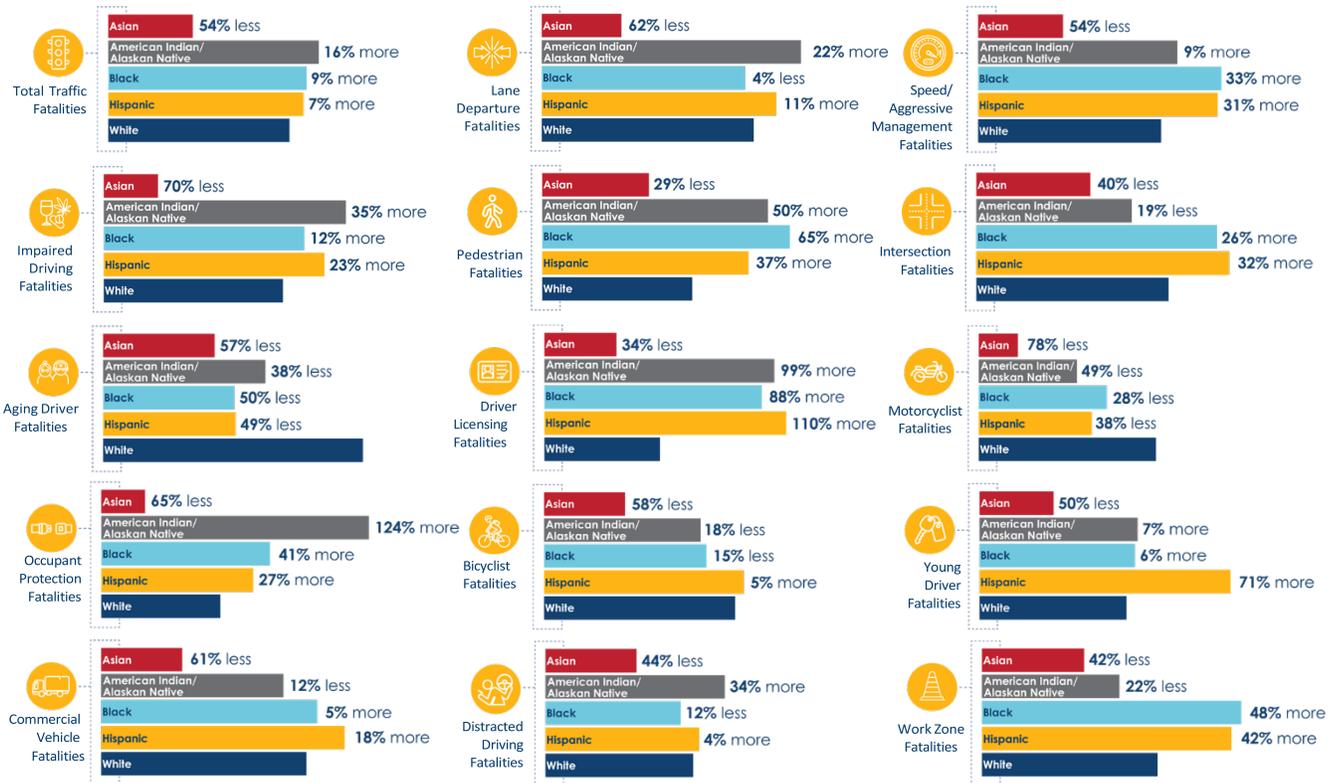


Figure 3 Fatality Rate by Race/Ethnicity Compared to White
Sources: Strategic Highway Safety Plan Traffic Safety Facts September 2021

Through the integration of equity into the SHSP Crash Data Dashboard, Caltrans is able to better understand the effects of socioeconomic and demographic factors on fatal and serious injury crashes. By integrating equity into the dashboard, Caltrans has been able to identify trends in traffic fatalities by race and ethnicity; some of these trends are illustrated in Figure 2.

Caltrans is leveraging the SHSP Crash Data Dashboard in a demonstration project that aims to better understand the communities where crashes occur and identify what equity considerations may be contributing factors. For example, Caltrans has identified that census tract locations with household incomes less than \$50k have 50% greater likelihood of fatalities than those with incomes greater than \$50k.¹⁰ Caltrans believes these types of findings will allow SHSP implementers to take a data driven approach in addressing disparities in safety projects, however it is too early in the demonstration project to measure results.

Outcomes

Caltrans' SHSP update has created processes that will allow swift identification of problems and rapid deployment of resources to save lives. Using the Safe System Approach and equity as guiding principles, Caltrans is demonstrating its belief that everyone has the right to travel safely on California's public roads regardless of race, socioeconomic status, gender, age, and ability.

¹⁰ Strategic Highway Safety Plan Traffic Safety Facts, California Department of Transportation, September 2021, <https://dot.ca.gov/-/media/dot-media/programs/safety-programs/documents/shsp/combined-shsp-fact-sheets-sept-2021-a11y.pdf>

While California is just starting to employ the Safe System Approach and much work needs to be done, strong leadership is making this pivot promising. Toks Omishakin¹¹, Director of the California Department of Transportation, is a long-time champion for the Safe System Approach and equity. Under his direction, Caltrans established a new Chief Safety Officer role to oversee all safety within Caltrans. This new role has been key in championing the guiding principles for the SHSP update.

As a testament to Caltrans' intensive 15-month collaborative effort to update its SHSP with a focus on the Safe System Approach and equity, Caltrans was honored with a 2021 National Roadway Safety Award¹².

Point of Contact

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¹¹ Talking with Toks Omishakin, Director of the California Department of Transportation, about integrating equity and Safe Systems, Vision Zero Network, May 2021, <https://visionzeronetwork.org/talking-with-toks-omishakin-director-of-the-california-department-of-transportation-about-integrating-equity-and-safe-systems/>

¹² 2021 National Roadway Safety Award, FHWA, 2021, <https://safety.fhwa.dot.gov/roadwaysafetyawards/>

Integrating the Safe System Approach and Equity into California's Strategic Highway Safety Plan (SHSP) Caltrans Comments January 19, 2022

Since 2020, Caltrans has implemented multiple actions regarding integrating the Safe System Approach and Equity into the SHSP to include the following:

1. The SHSP has developed and adopted a Working Definition of Equity:
"Everyone has the right to travel safely on California's public roads – regardless of race, socioeconomic status, gender, age, and ability. When developing and implementing the SHSP, equity means taking into account any historical, present-day, and systemic biases so that safety is improved for all groups, particularly our most vulnerable and traditionally underserved populations. Equity will be integrated into all aspects of the SHSP, including the five key strategies of Engineering, Enforcement, Education, Emergency Response and Emerging Technologies, so that a comprehensive, inclusive and equitable approach can be taken to implement solutions to save lives on all of California's public roads."
(As published in the Summer 2021 Newsletter: <https://dot.ca.gov/programs/safety-programs/shsp/newsletters>)
2. SHSP's Equity Related Efforts
 - a. SHSP membership has been expanded to include tribal governments and non-governmental stakeholders added in advisory roles.
 - b. Established an Equity Workgroup in July 2021. Equity will be integrated into all aspects of the SHSP, including the five key strategies of Engineering, Enforcement, Education, Emergency Response, and Emerging Technologies.
 - c. Select Current Actions:
 - Developed and released online SHSP Fact Sheets featuring equity-based (demographic & socioeconomic) traffic safety data from the Fatality Analysis Reporting System (FARS) and Statewide Integrated Traffic Records System (SWITRS) for Serious Injuries.
 - Provided equity-related data sets to and reviewed alignment with Equity for the 16 Challenge Area Teams to support action development as well as evaluation of the actions.
 - Updating the current SHSP to include equity-related and Tribal data.
 - Integrating Tribal data into the SHSP Crash Data Dashboard. More information: California SHSP Crash Data Dashboard – Please register to explore the data. Contact Nagi Pagadala for access issues or data questions at nagi.pagadala@dot.ca.gov. More information: <https://shsp.dot.ca.gov/>
 - d. Potential Future Actions:
 - Integrate more equity-related data attributes into the SHSP Crash Data Dashboard.
 - Look to obtain qualitative (such as community-led) data in addition to quantitative data. For example, work with local and regional agencies to identify already-existing venues and meetings that the SHSP Team could tap into to provide information and solicit feedback on the SHSP.
 - Evaluate completed actions in the 2020-2024 SHSP Implementation Plan to determine impacts to vulnerable and traditionally underserved populations.
 - Develop specific measurable objectives for disadvantaged or communities of concern in both urban and rural areas.
 - Add/develop SHSP equity training modules for internal/external use.
 - Consider developing an equity-focused outreach and engagement strategy, which could be tied to outreach efforts being conducted by SHSP partner agencies (i.e., Caltrans CORE, RTPAs, MPOs, specific cities and counties).