CALIFORNIA SAFE ROADS

The Safe System Approach

APPROACH

California and the rest of the nation are seeing an increase in fatalities and serious injuries on their roadways. In California, more than 3,600 people die each year in traffic crashes and more than 13,000 people are severely injured. More than 3,200 people died on the state's roadways in the first nine months of 2021 - a 17 percent increase from the previous year.

The California SHSP is aligning activities and actions with the Safe System approach, which identifies several interconnected elements to achieving a vision of zero fatalities and serious injuries -- safe road users, safe roads, safe speeds, safe vehicles, and post-crash care.

The SHSP has committed to zero fatalities and serious injuries. They are also committed to eliminating the most serious crashes first rather than all crashes. And finally eliminating disparities in road safety outcomes by addressing historic and current barriers to transportation access and safety.

Remainder of document is from the U.S. Department of Transportation Federal Highway Administration (FHWA-SA-20-015)

Zero is our goal.
A Safe System is how we will get there.

Imagine a world where nobody has to die from vehicle crashes. The Safe System approach aims to eliminate fatal and serious injuries for all road users. It does so through a holistic view of the road system that first anticipates human mistakes and second keeps impact energy on the human body at tolerable levels. Safety is an ethical imperative of the designers and owners of the transportation system. Here's what you need to know to bring the Safe System approach to your community.

Modified Safe System Approach Graphic for the California SHSP

SAFE SYSTEM PRINCIPLES

Death/Serious Injury is Unacceptable

While no crashes are desirable, the Safe System approach prioritizes crashes that result in death and serious injuries, since no one should experience either when using the transportation system.

Humans Make Mistakes

People will inevitably make mistakes that can lead to crashes, but the transportation system can be designed and operated to accommodate human mistakes and injury tolerances and avoid death and serious injuries.

Humans Are Vulnerable

People have limits for tolerating crash forces before death and serious injury occurs; therefore, it is critical to design and operate a transportation system that is human-centric and accommodates human vulnerabilities.

Responsibility is Shared

All stakeholders (transportation system users and managers, vehicle manufacturers, etc.) must ensure that crashes don't lead to fatal or serious injuries.

Safety is Proactive

Proactive tools should be used to identify and mitigate latent risks in the transportation system, rather than waiting for crashes to occur and reacting afterwards.

Redundancy is Crucial

Reducing risks requires that all parts of the transportation system are strengthened, so that if one part fails, the other parts still protect people.

Website: dot.ca.gov/programs/safety-programs/shsp
Crash Data Dashboard: shsp.dot.ca.gov/ **Email:** SHSP@dot.ca.gov

SAFE SYSTEM ELEMENTS

Making a commitment to zero deaths means addressing every aspect of crash risks through the five elements of a Safe System, shown below. These layers of protection and shared responsibility promote a holistic approach to safety across the entire transportation system. The key focus of the Safe System approach is to reduce death and serious injuries through design that accommodates human mistakes and injury tolerances.

Safe Road Users

The Safe System approach ddresses the safety of all road users, including those who walk, bike, drive, ride transit, and travel by other modes.

Safe Vehicles

Vehicles are designed and regulated to minimize the occurrence and severity of collisions using safety measures that incorporate the latest technology.

Safe Speeds

Humans are unlikely to survive high-speed crashes. Reducing speeds can accommodate human injury tolerances in three ways: reducing impact forces, providing additional time for drivers to stop, and improving visibility.

Safe Roads

Designing to accommodate human mistakes and injury tolerances can greatly reduce the severity of crashes that do occur. Examples include physically separating people traveling at different speeds, providing dedicated times for different users to move through a space, and alerting users to hazards and other road users.

Post-Crash Care

When a person is injured in a collision, they rely on emergency first responders to quickly locate them, stabilize their injury, and transport them to medical facilities. Post-crash care also includes forensic analysis at the crash site, traffic incident management, and other activities

THE SAFE SYSTEM APPROACH VS. TRADITIONAL ROAD SAFETY PRACTICES

Traditional

Prevent crashes

Improve human behavior

Control speeding

Individuals are responsible

React based on crash history

Safe System

Prevent deaths and serious injuries

Design for human mistakes/limitations

Reduce system kinetic energy

Share responsibility

Proactively identify and address risks

Whereas traditional road safety strives to modify human behavior and prevent all crashes, the Safe System approach also refocuses transportation system design and operation on anticipating human mistakes and lessening impact forces to reduce crash severity and save lives.

WHERE ARE YOU ON THE SAFE SYSTEM JOURNEY?

Implementing the Safe System approach is our shared responsibility, and we all have a role. It requires shifting how we think about transportation safety and how we prioritize our transportation investments. Consider applying a Safe System lens to upcoming projects and plans in your community: put safety at the forefront and design to accommodate human mistakes and injury tolerances. Visit safety.fhwa.dot.gov/zerodeaths to learn more.