

The Safe System Approach to Vision Zero

Sacramento Vision Zero
Action Plan Update
Working Meeting #1

April 7, 2025

City of
SACRAMENTO | FEHR & PEERS



Agenda

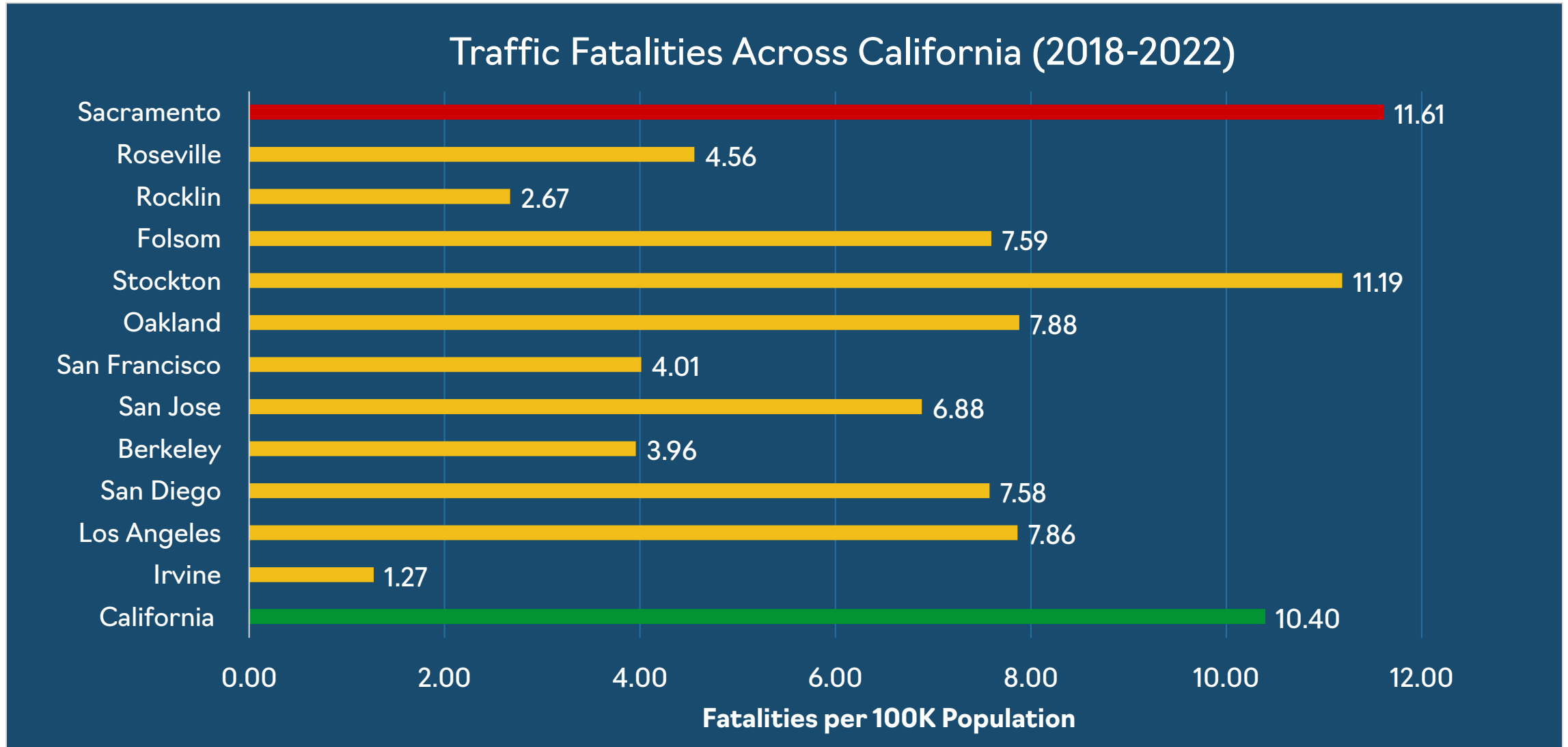
- Welcome & Introductions
- Safe System Core Concepts
- Applying Core Concepts to Sacramento
 - Large Group Activity
 - Small Group Activity
 - Debrief from the Activity
- Looking Ahead

Introductions:

Name & organization

What's your favorite restaurant
in Sacramento?

Project Purpose & Scope



Project Purpose & Scope

- Updated Collision Data Analysis and Profiles
- Robust Community Engagement
- Meet State and Federal Standards
- Implementable Recommendations



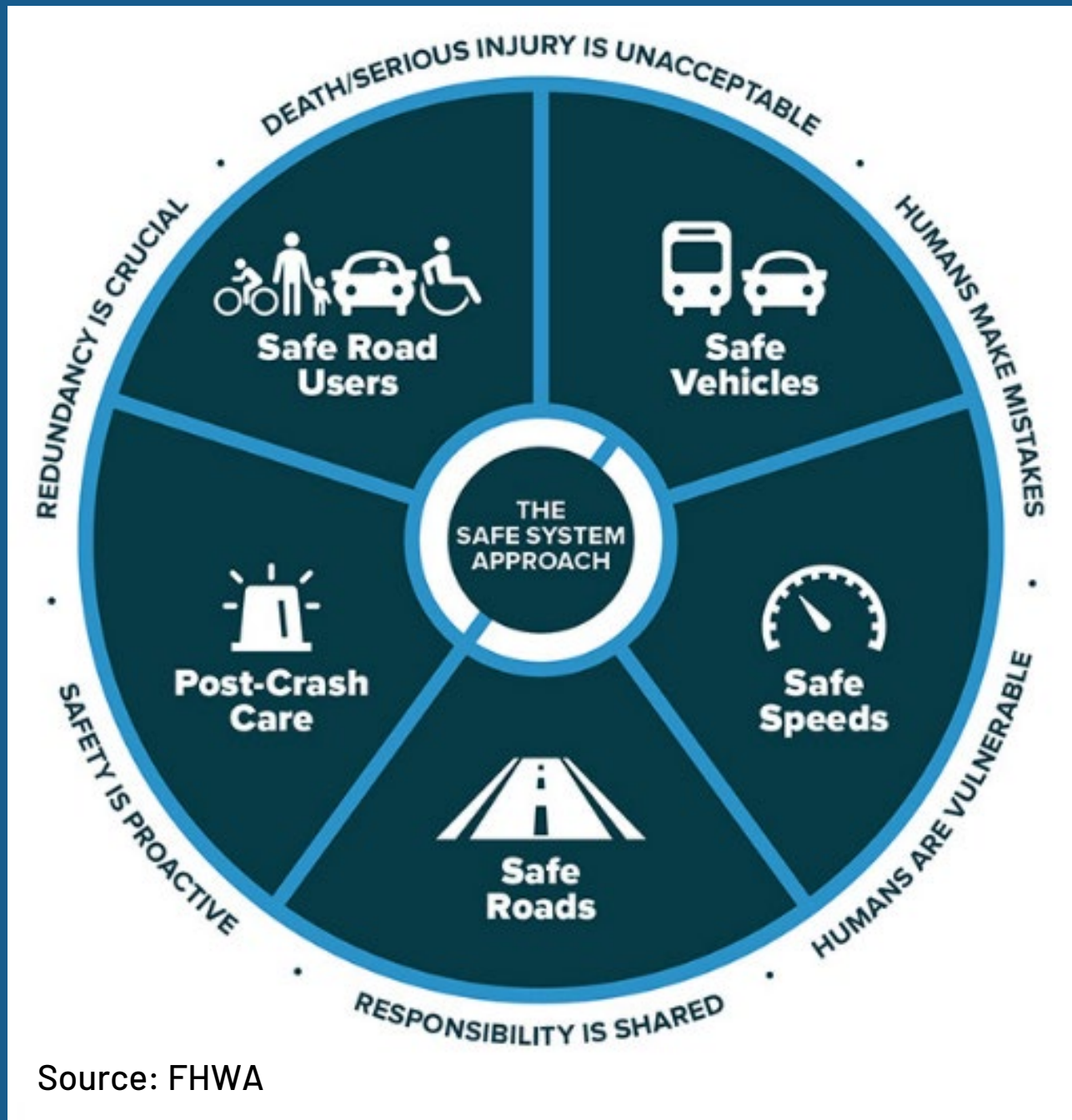
Meeting Purpose

- Connecting!
- Overview of Safe System Approach
- Applying Safe System concepts to our Vision Zero work



Safe System Core Concepts

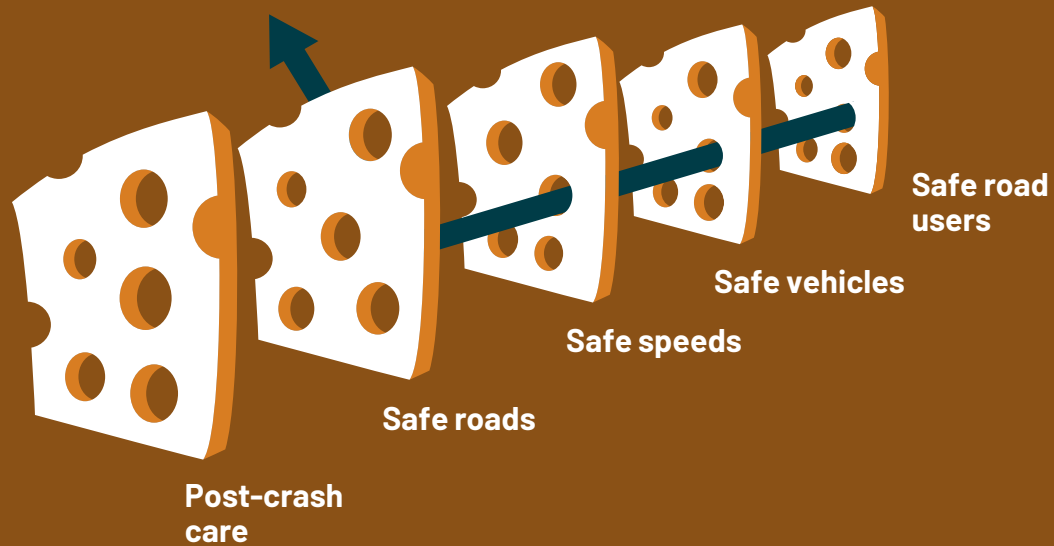
The Safe System Approach in the US



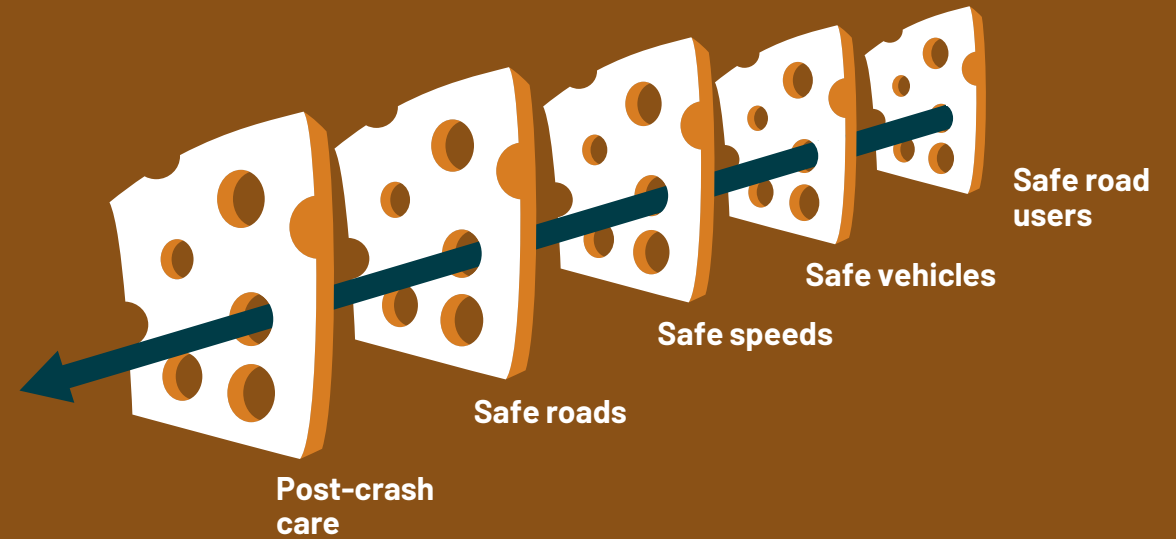
Source: FHWA

Redundancy is crucial

The "Swiss Cheese Model" of redundancy creates layers of protection



Death and serious injuries only happen when all layers fail



The Safe System Pivot

Traditional approach

Prevent crashes →

Improve human behavior →

Control speeding →

Individuals are responsible →

React based on crash history →

Safe System approach

Prevent death and serious injuries

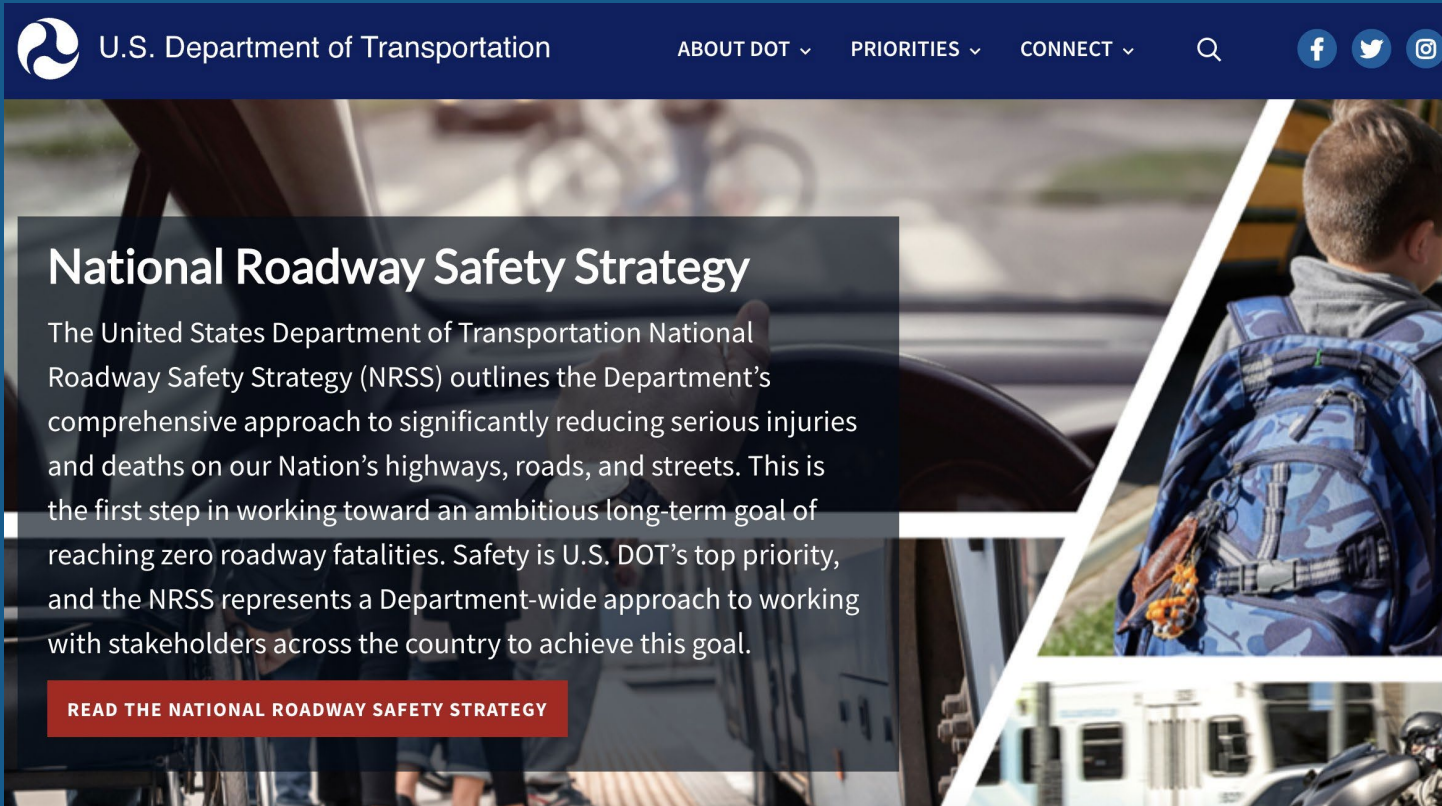
Design for human mistakes/limitations

Reduce system kinetic energy

Share responsibility

Proactively identify and address risks

US DOT Strategy

The screenshot shows the top navigation bar of the U.S. Department of Transportation website. It includes the DOT logo, the text "U.S. Department of Transportation", and links for "ABOUT DOT", "PRIORITIES", and "CONNECT", each with a dropdown arrow. There is also a search icon and social media icons for Facebook, Twitter, and Instagram. Below the navigation bar is a large hero image featuring a collage of transportation-related photos: a person in a blue safety vest, a train, and a person on a motorcycle. Overlaid on the left side of the hero image is a dark grey text box containing the title "National Roadway Safety Strategy" and a paragraph of text. At the bottom left of the hero image is a red button with white text.

U.S. Department of Transportation

ABOUT DOT ▾ PRIORITIES ▾ CONNECT ▾

Search

Facebook Twitter Instagram

National Roadway Safety Strategy

The United States Department of Transportation National Roadway Safety Strategy (NRSS) outlines the Department's comprehensive approach to significantly reducing serious injuries and deaths on our Nation's highways, roads, and streets. This is the first step in working toward an ambitious long-term goal of reaching zero roadway fatalities. Safety is U.S. DOT's top priority, and the NRSS represents a Department-wide approach to working with stakeholders across the country to achieve this goal.

[READ THE NATIONAL ROADWAY SAFETY STRATEGY](#)

Source: USDOT



U.S. Department
of Transportation

National Roadway Safety Strategy

United States Department of Transportation | January 2022

Caltrans' Approach



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

California Department of Transportation

Director's Policy

Number: DP-36

Effective Date: February 15, 2022

Supersedes: New

Responsible
Program: Division of Safety Programs

Title Road Safety

Policy

California Department of Transportation (Caltrans) has a vision to eliminate fatalities and serious injuries on California's roadways by 2050 and provide safer outcomes for all communities. To realize this vision Caltrans commits to:

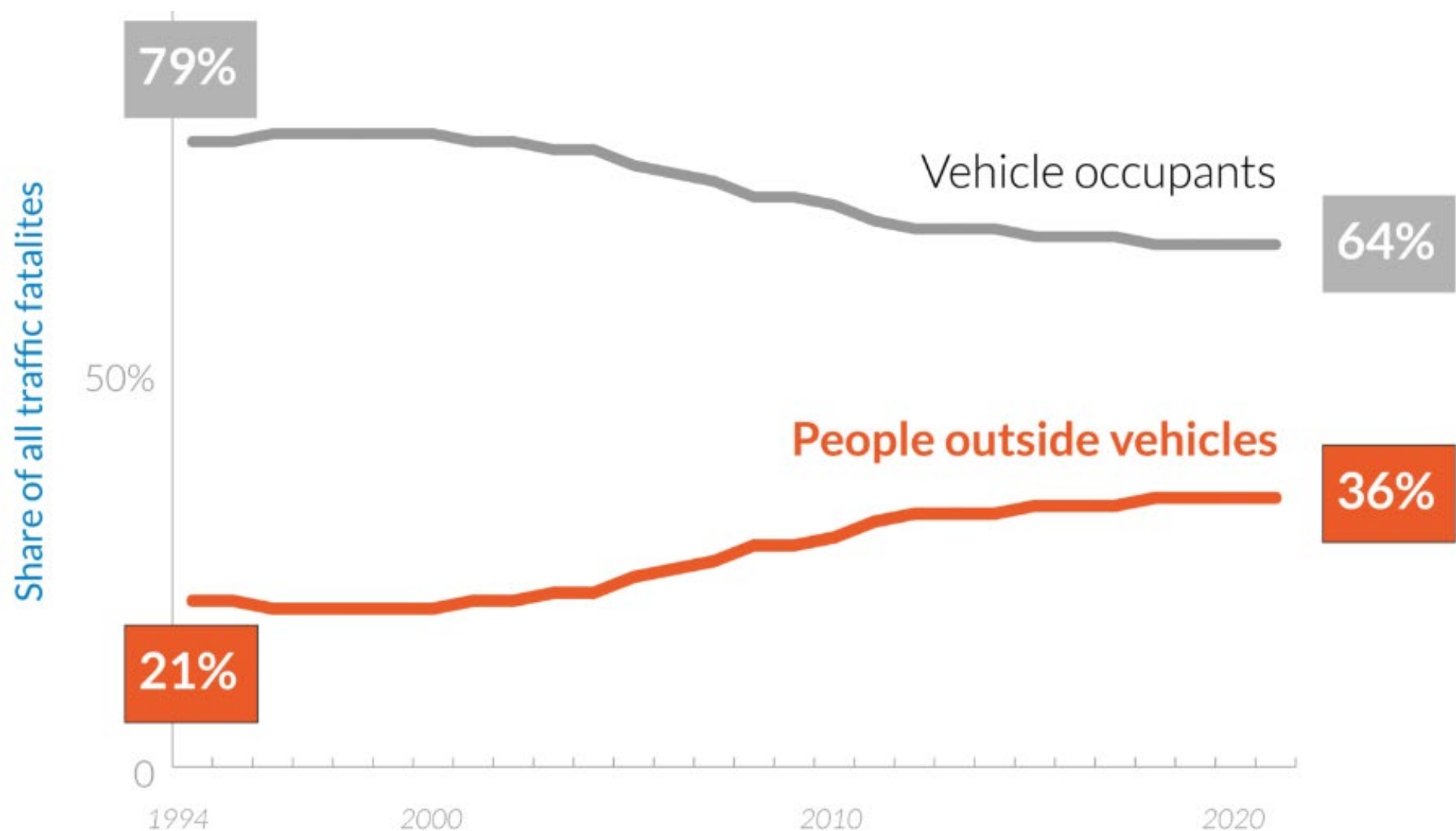
- A safety first mindset prioritizing road safety.
- Prioritize the elimination of fatal and serious injury crashes through our existing safety improvement programs along with development and implementation of new programs to enhance the safe use of our roadways.
- Eliminating race-, age-, ability- and mode-based disparities in road safety outcomes.

Background

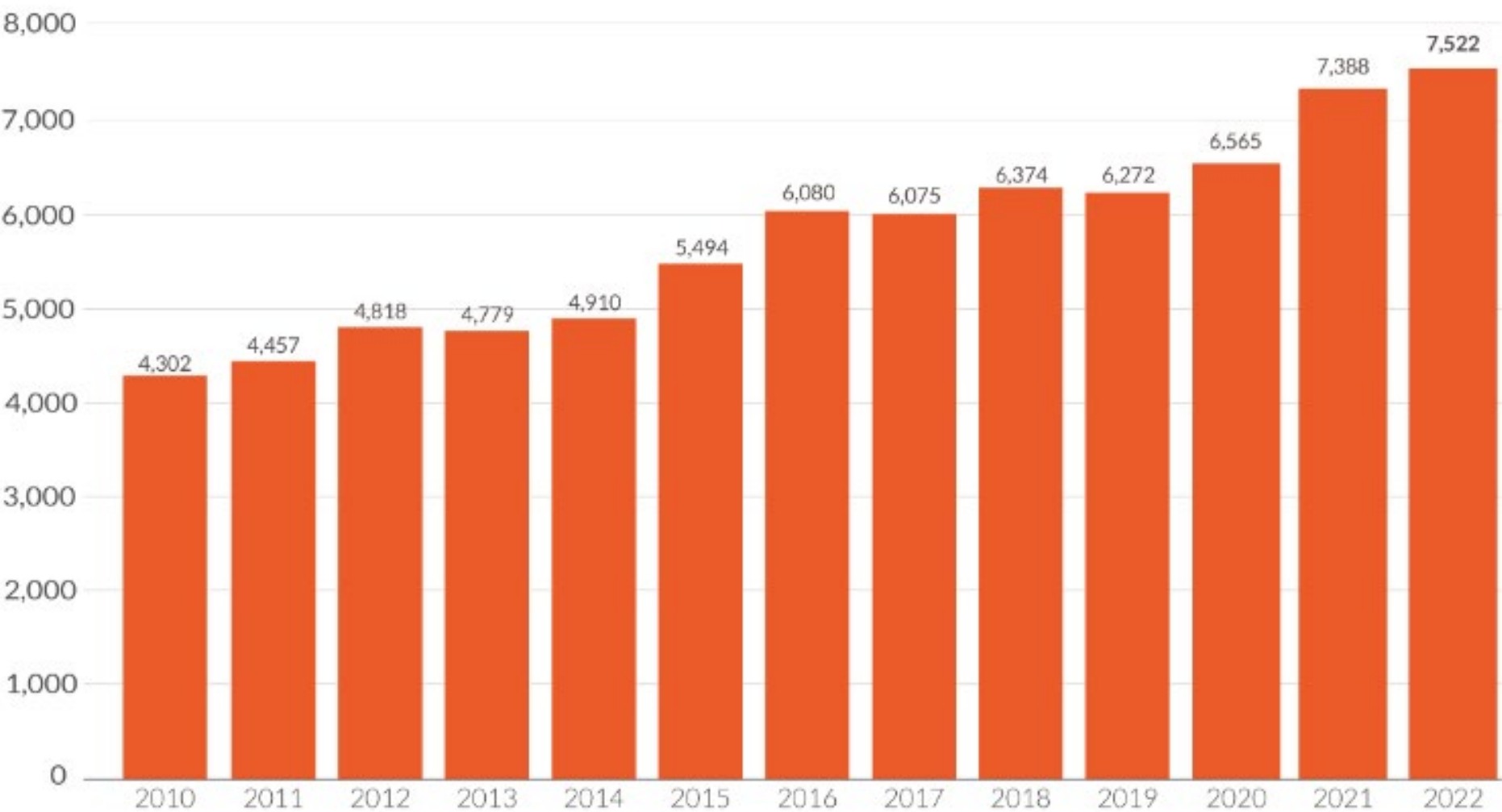
Caltrans has a vision of zero road fatalities and serious injuries by 2050, as committed to in the:

Source: Caltrans

Traffic Fatalities: People inside vs outside vehicles



U.S. Pedestrian deaths are increasing

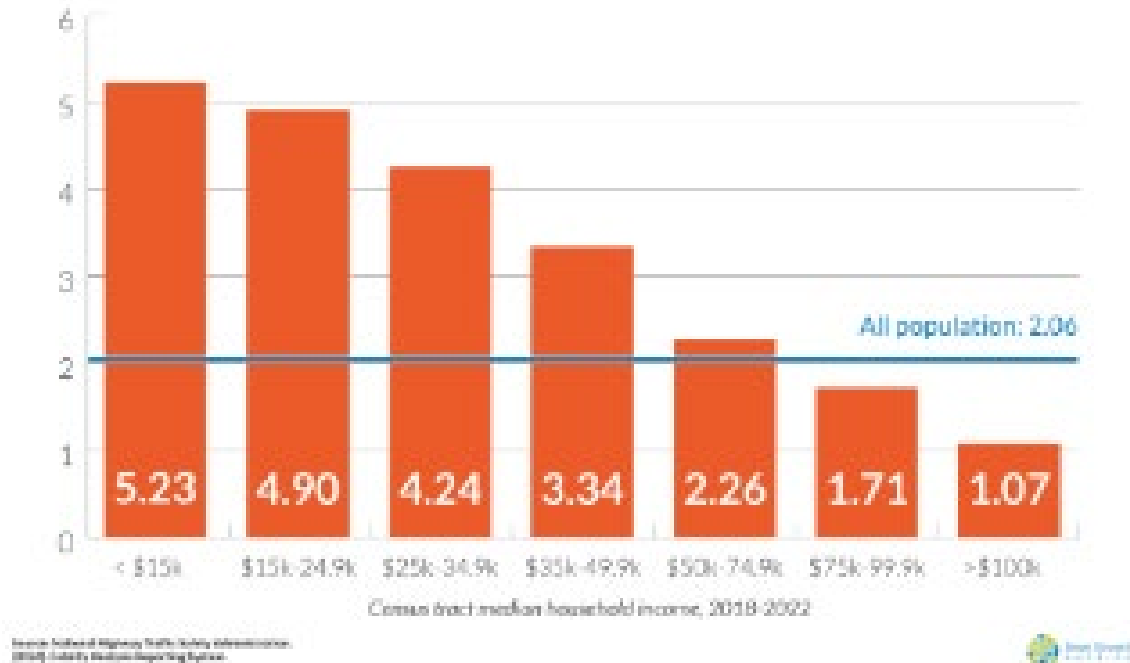


U.S. pedestrian deaths (2010-2022)

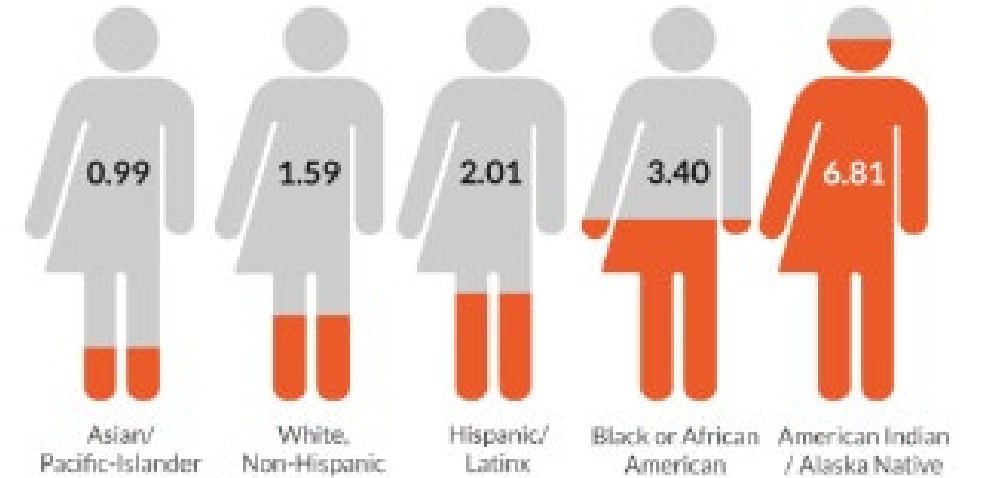
Source: Dangerous by Design 2024

Collision rates are not equitable

Lower-income areas have far higher rates of pedestrian deaths
Pedestrian fatalities per 100,000 people by census tract income



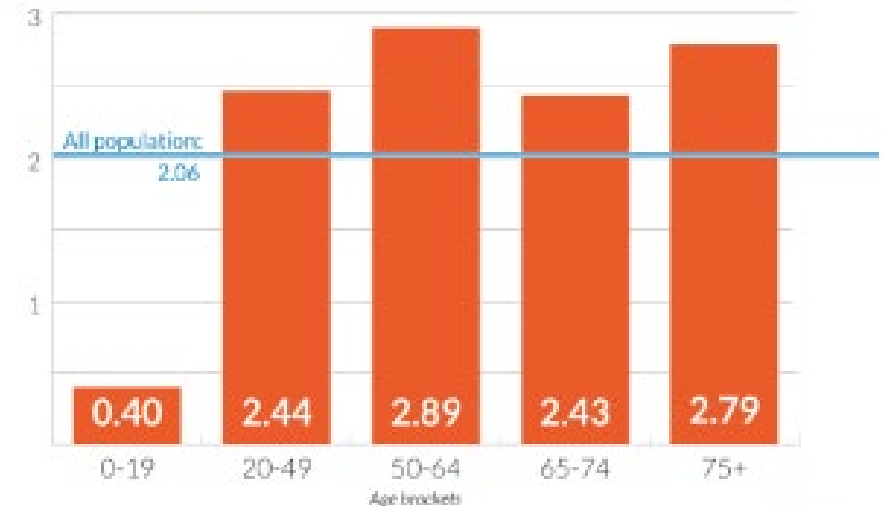
Pedestrian deaths per 100,000 by race & ethnicity (2018-2022)



Source: National Highway Traffic Safety Administration (NHTSA) Fatality Analysis Reporting System



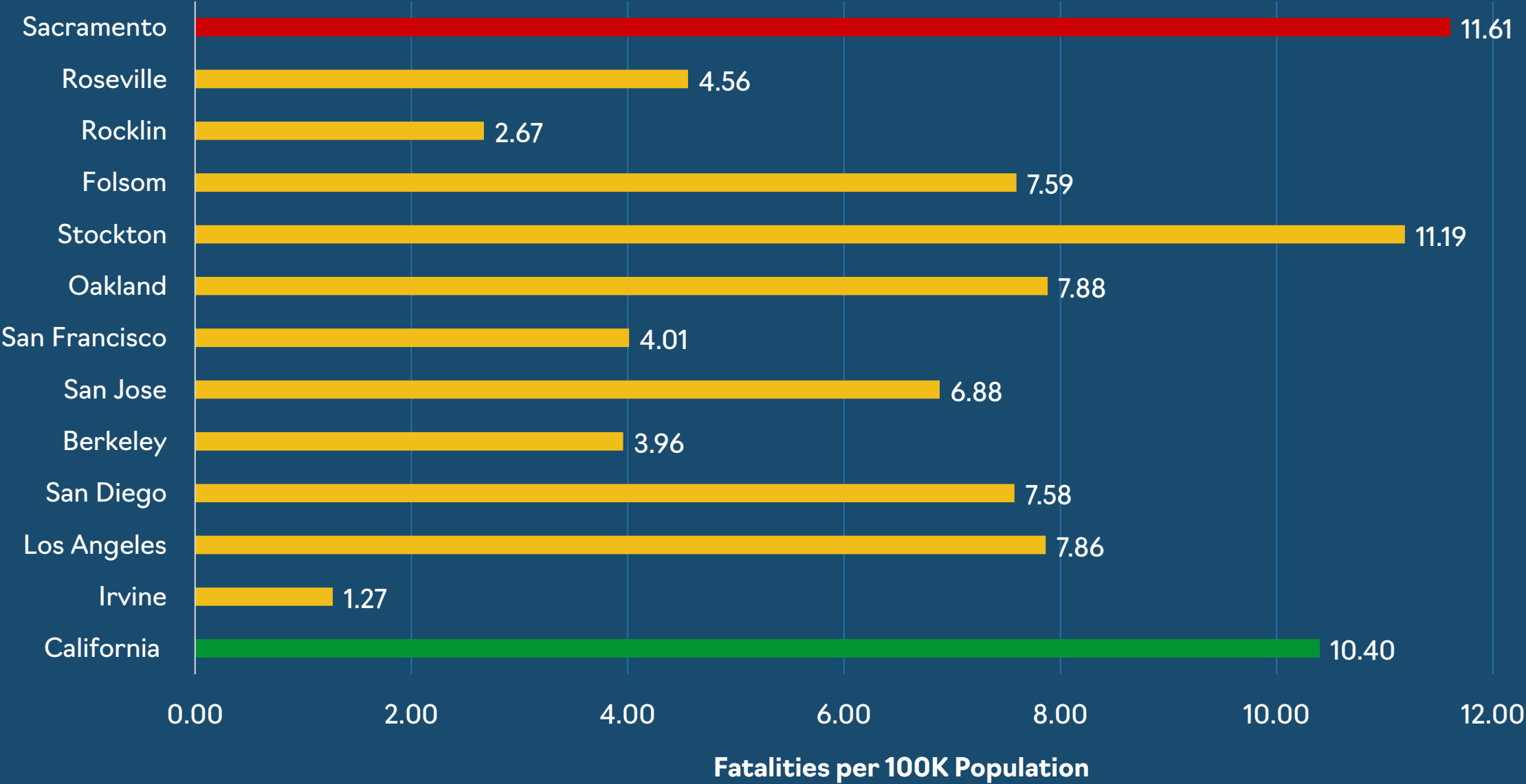
Adults between age 50-64 are most likely to be killed
Pedestrian fatalities per 100,000 people by age



Source: National Highway Traffic Safety Administration (NHTSA) Fatality Analysis Reporting System



Traffic Fatalities Across California (2018-2022)



'Stroads' Aren't Streets. They Aren't Roads. And They Don't Work.

Urban planning critic says the U.S. should build streets for people to live, and roads to move traffic quickly

By James R. Hagerty [Follow](#)

Updated May 15, 2024 12:04 am ET



Evening traffic in Roanoke, Va. Should we put more thought into how our streets and roads are designed? PHOTO: ISTOCKPHOTO

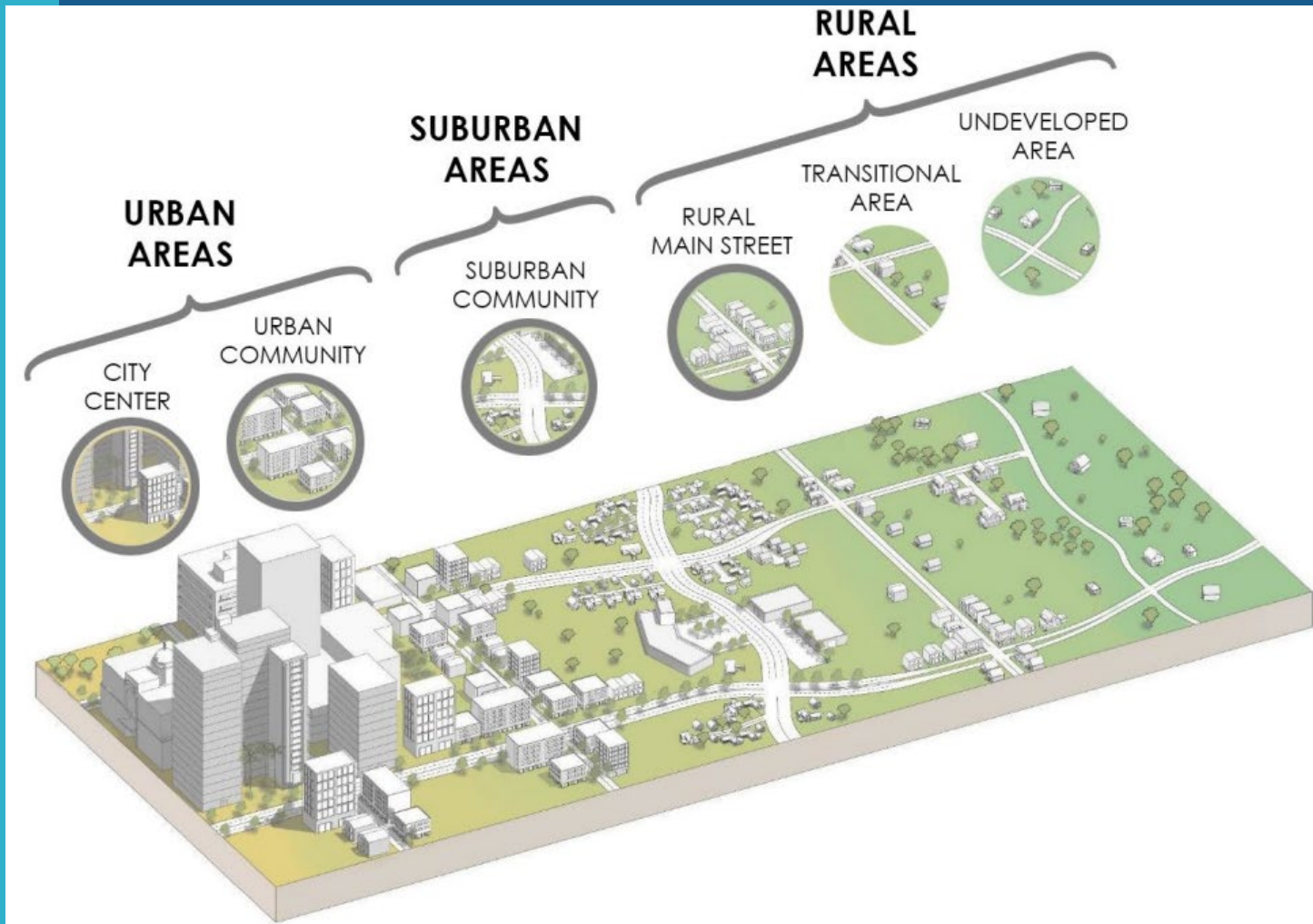


Marysville Boulevard

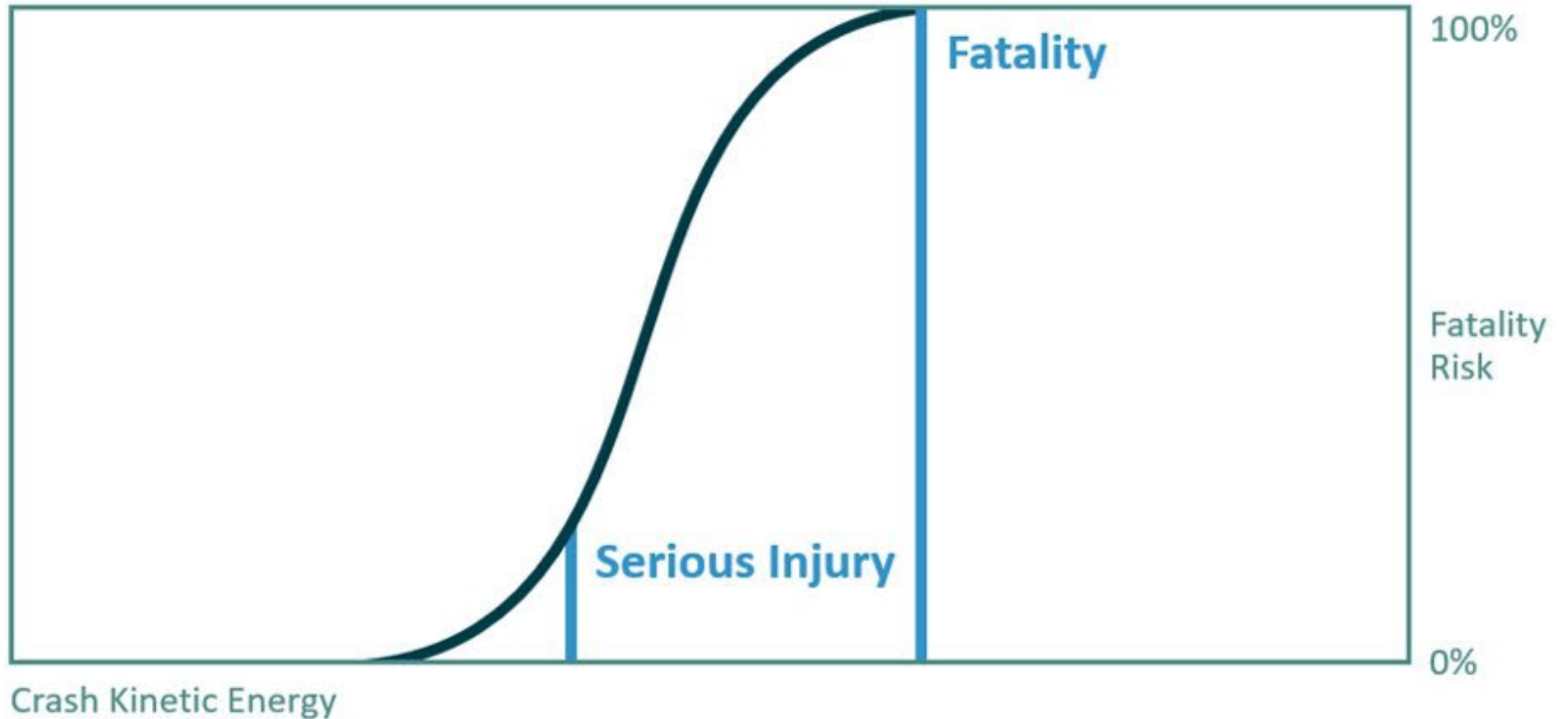


Supporting Context

- One size does not fit all for safety needs and safety solutions
- We first need to understand: is this road acting as a place or providing movement



Kinetic Energy



Components of Kinetic Energy Risk

Exposure: where and how far people travel

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graph TD; A[Exposure: where and how far people travel] --> B[Likelihood: where conflicts occur]; B --> C[Severity: speed, mass, and vulnerability in a conflict];
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Likelihood: where conflicts occur

Severity: speed, mass, and vulnerability in a conflict

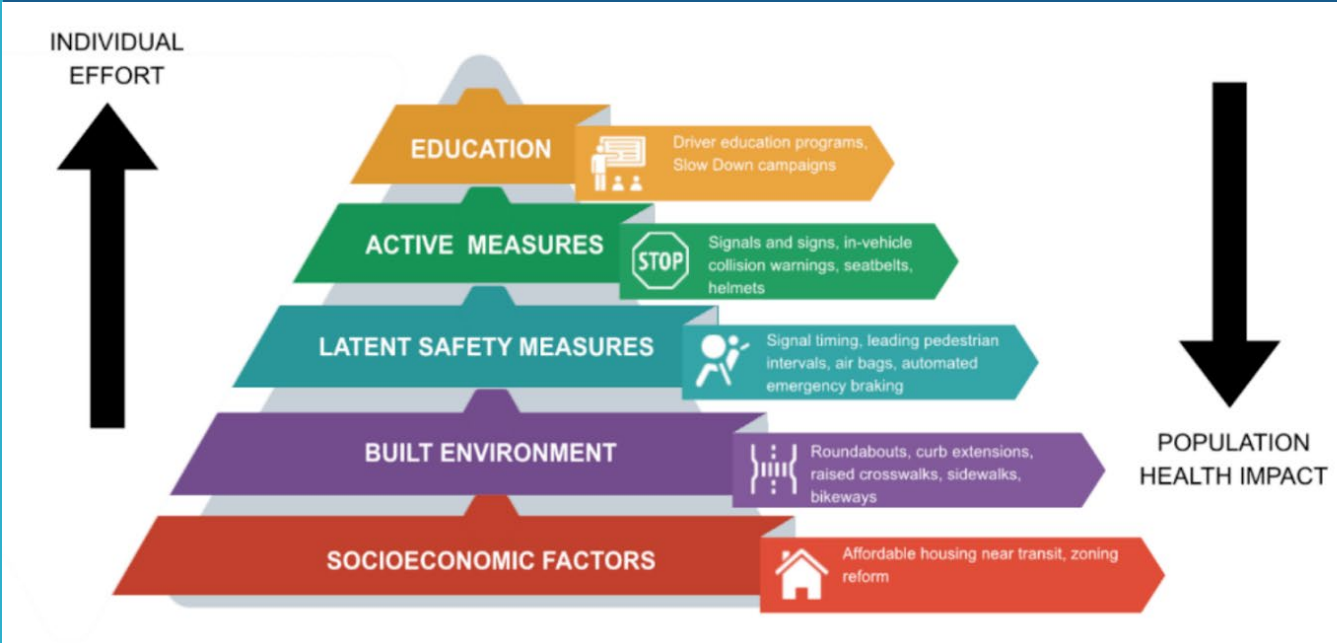
How Can We Mitigate Kinetic Energy Risk?

- Reduce Crash Exposure (vehicle miles traveled (VMT))
- Reduce Crash Severity (speed, mass, angle)
- Reduce Crash Likelihood (conflicts)

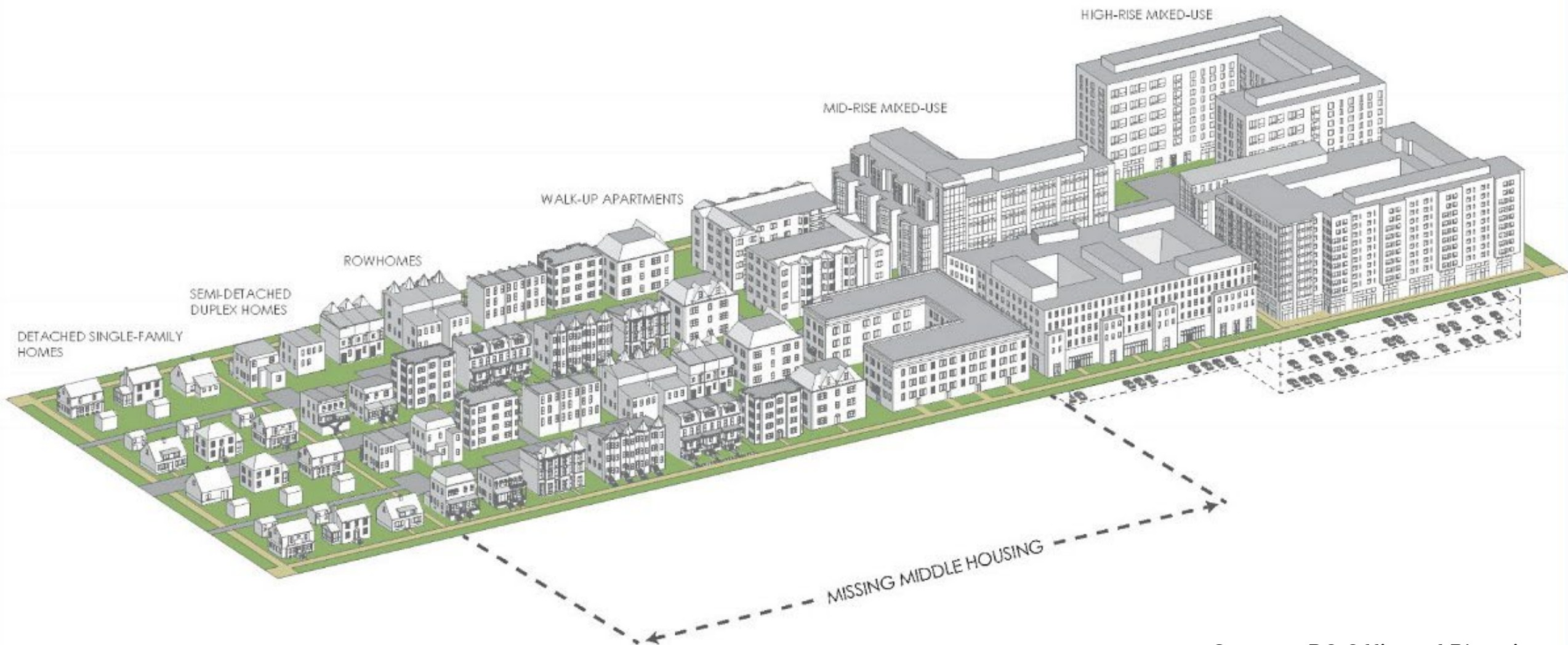


What Matters Most?

- Adopt public health best practice to prevent and mitigate KE risk in our system
- Follows a hierarchy: some strategies are much more effective than others
- Seek low individual effort, high population impact options to make safety “easy and obvious”



Source: Ederer, et al



Source: DC Office of Planning

Affordable Housing is a Safety Tool

Mode Shift is a Safety Tool



US 101 San Francisco



SR 123 Albany

Movement and Place Framework

PEOPLE PRECINCTS

High place value providing **amenity and value to communities** with low vehicle movement



LOCAL STREETS

Suburban neighbourhoods that facilitate **local community access**



URBAN STREETS

High movement zones balanced with the demand of place in the surrounding footprint



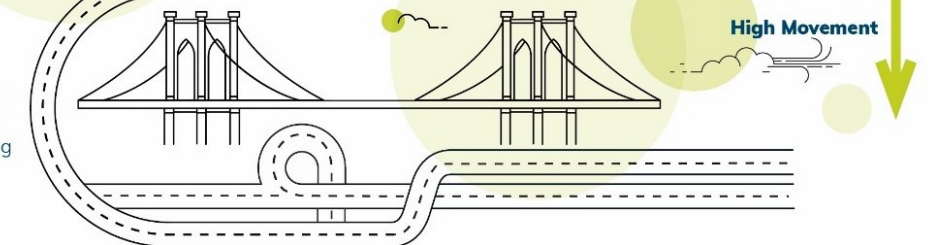
MOVEMENT CORRIDORS

Safe, reliable and efficient movement of people and goods **between regions and strategic centres**



MOTORWAYS

Significant arterials that move people and goods rapidly over long distance



Implementing Safe System

Safe System Foundation	Street Context		
	Local Access	Transition	Mobility
1. Safe Road Users: Reduce Exposure	Demand Management	Demand Management	Demand Management
2. Safe Speeds: Reduce Severity	Speed Management	Speed Management	Access Control and Conflict Management
3. Safe Roads: Reduce Conflicts	Conflict Management	Conflict Management	
4. Safe Vehicles and 5. Post Crash Care: Ensure Redundancy	Technology, Policy, and Post Crash Care	Technology, Policy, and Post Crash Care	Technology, Policy, and Post Crash Care

Questions?

Applying Core Concepts to Sacramento

Large Group Activity

Small Group Activity

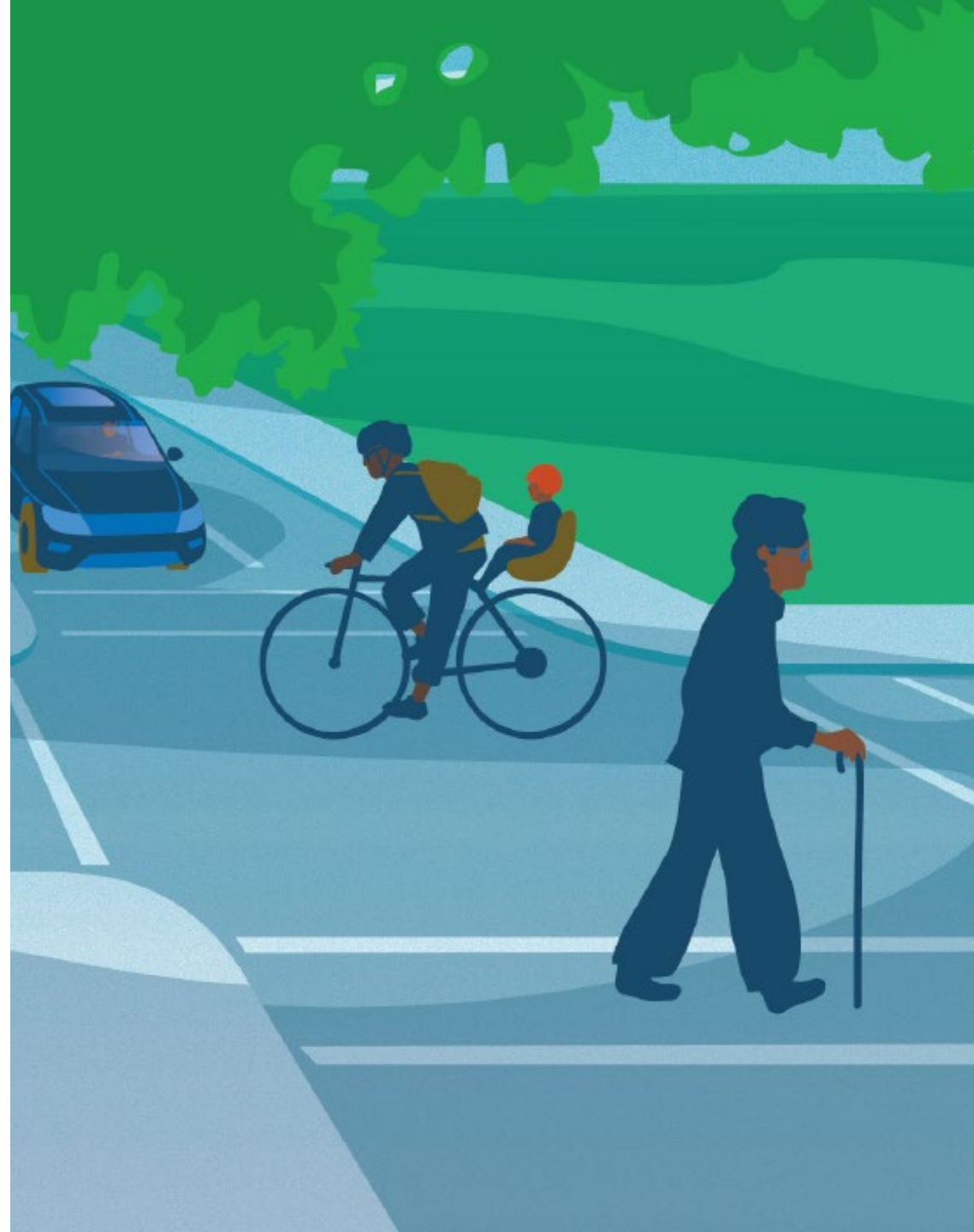
Activity

- 1 Review and discuss the two draft maps
- 2 Create a third map reflecting your group's thoughts on "movement" and "place"
- 3 Share back group's thoughts and discussion

Next Steps

Next up...

- Phase I Engagement:
Introducing the Vision Zero 2.0 update
- Project team reviewing roadway context and crash data



Project Schedule

