The Safe System Approach to Vision Zero

Sacramento Vision Zero Action Plan Update Working Meeting #1

April 7, 2025

City of SACRAMENTO | FEHR & PEERS

Working Meeting #1

Agenda

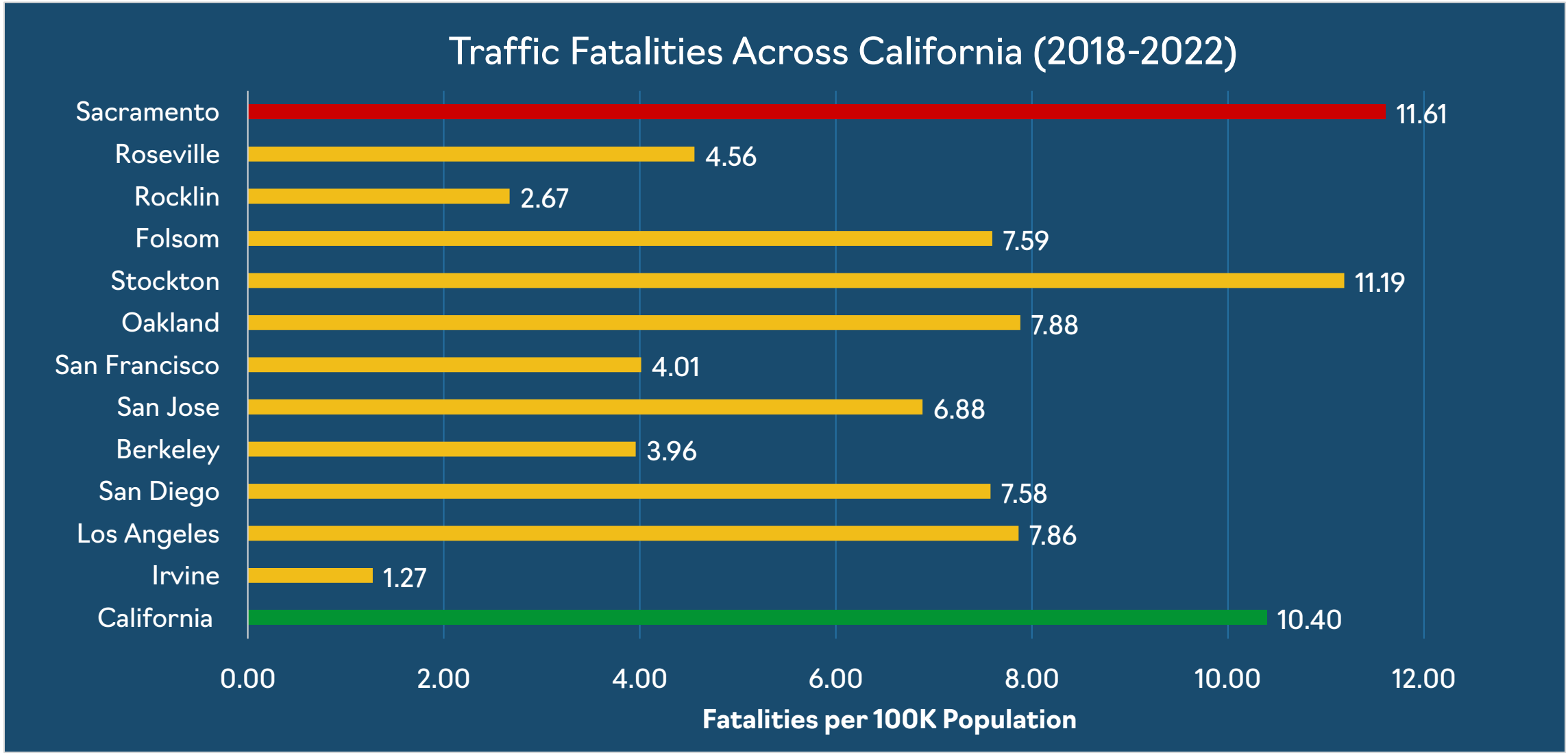
- Welcome & Introductions
- Safe System Core Concepts
- Applying Core Concepts to Sacramento
  - Large Group Activity
  - Small Group Activity
  - Debrief from the Activity
- Looking Ahead

Introductions:

Name & organization

What's your favorite restaurant in Sacramento?

Project Purpose & Scope



Project Purpose & Scope

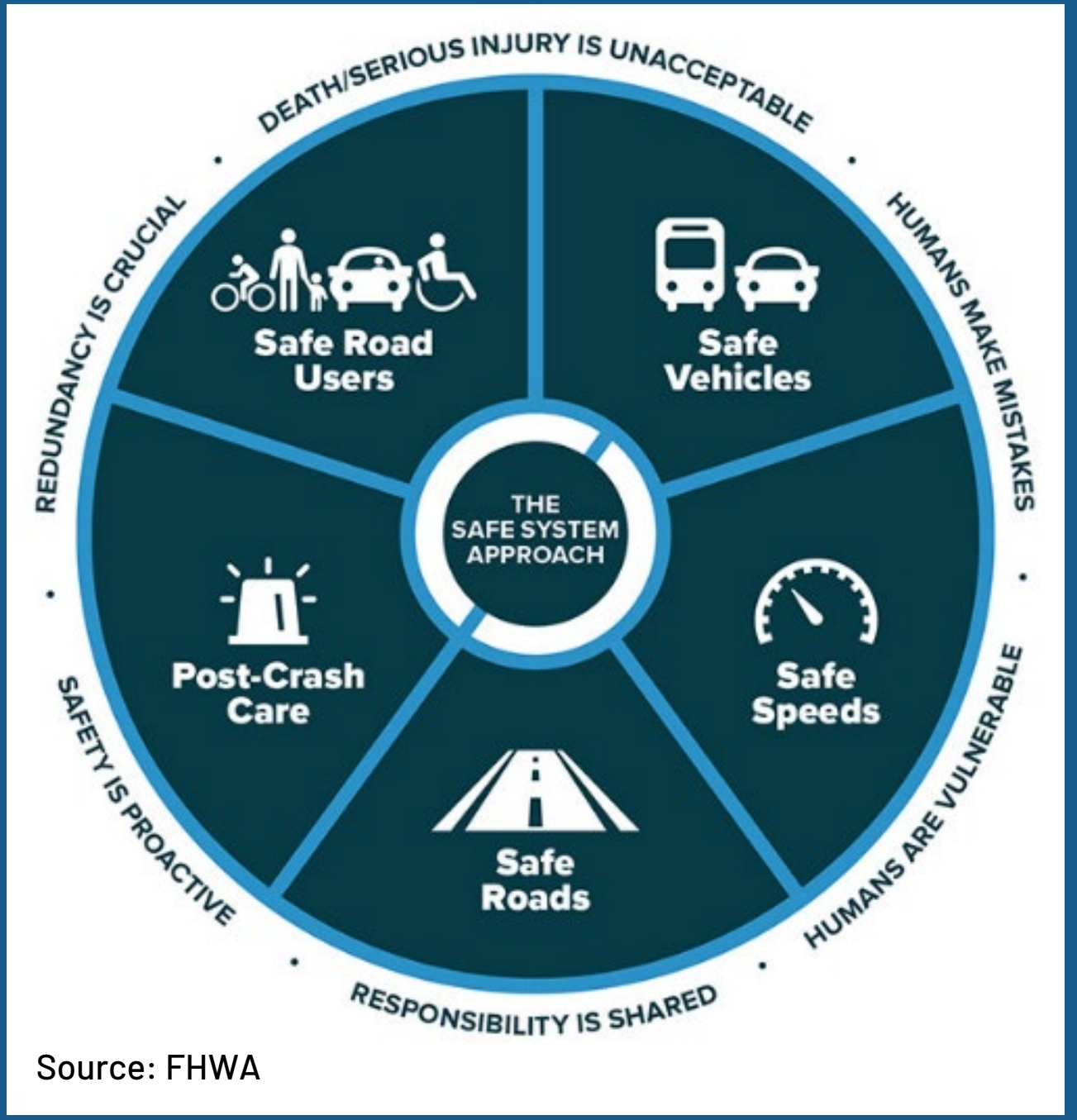
- Updated Collision Data Analysis and Profiles
- Robust Community Engagement
- Meet State and Federal Standards
- Implementable Recommendations

Meeting Purpose

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

Safe System Core Concepts

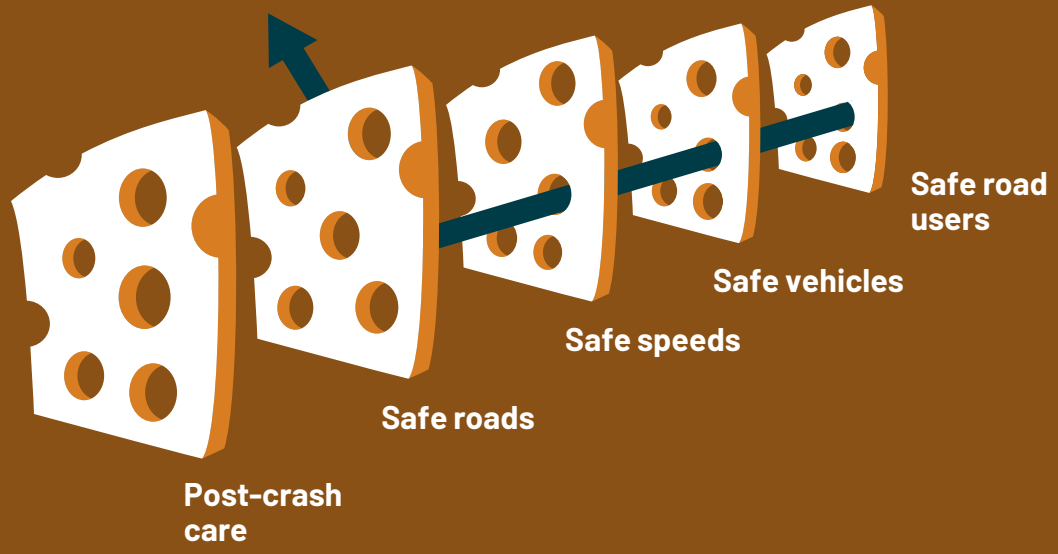
The Safe System Approach in the US



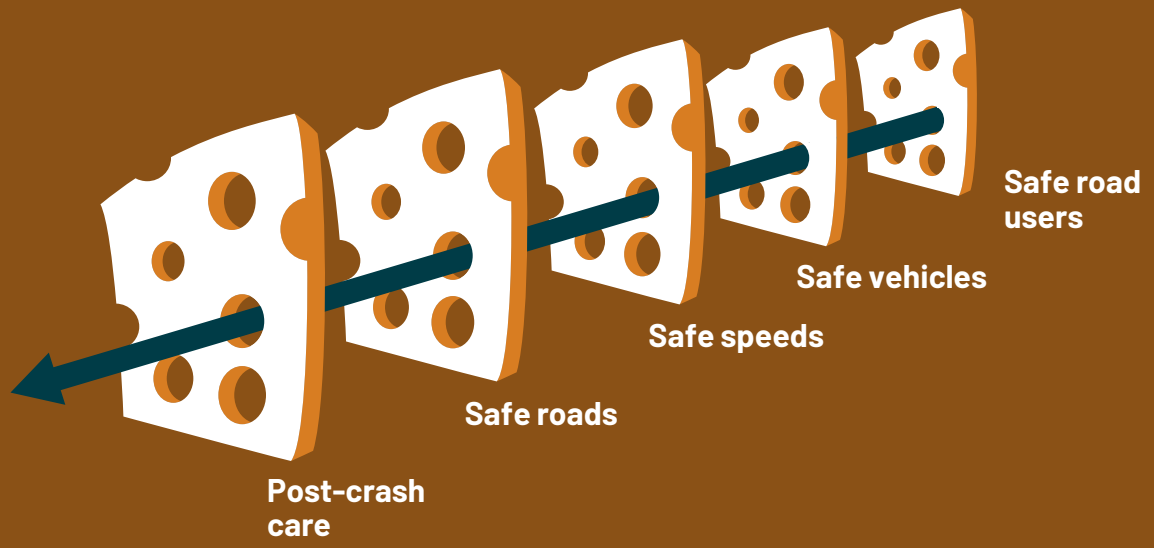
Source: FHWA

Redundancy is crucial

The “Swiss Cheese Model” of redundancy creates layers of protection



Death and serious injuries only happen when all layers fail



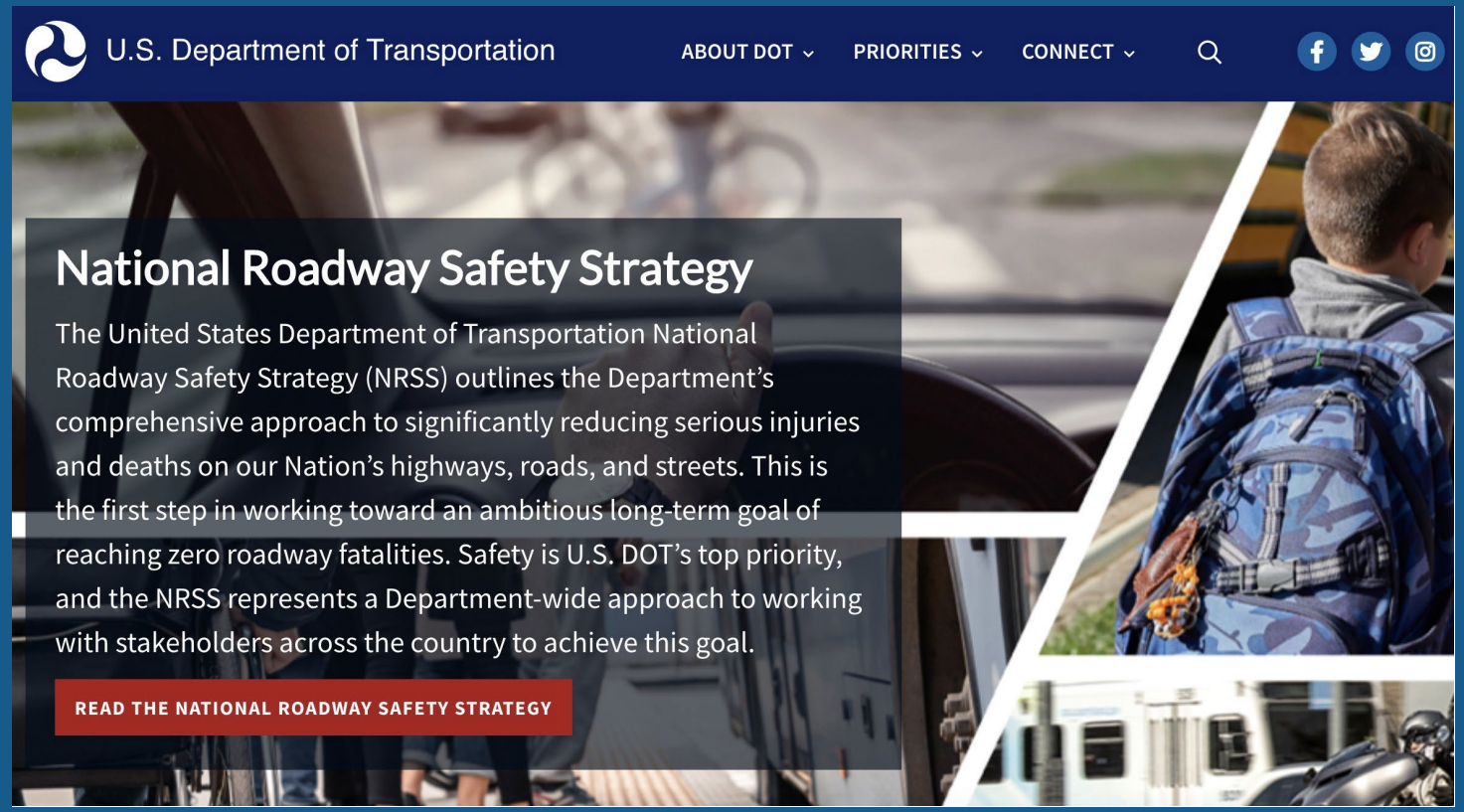
Source: FHWA

The Safe System Pivot

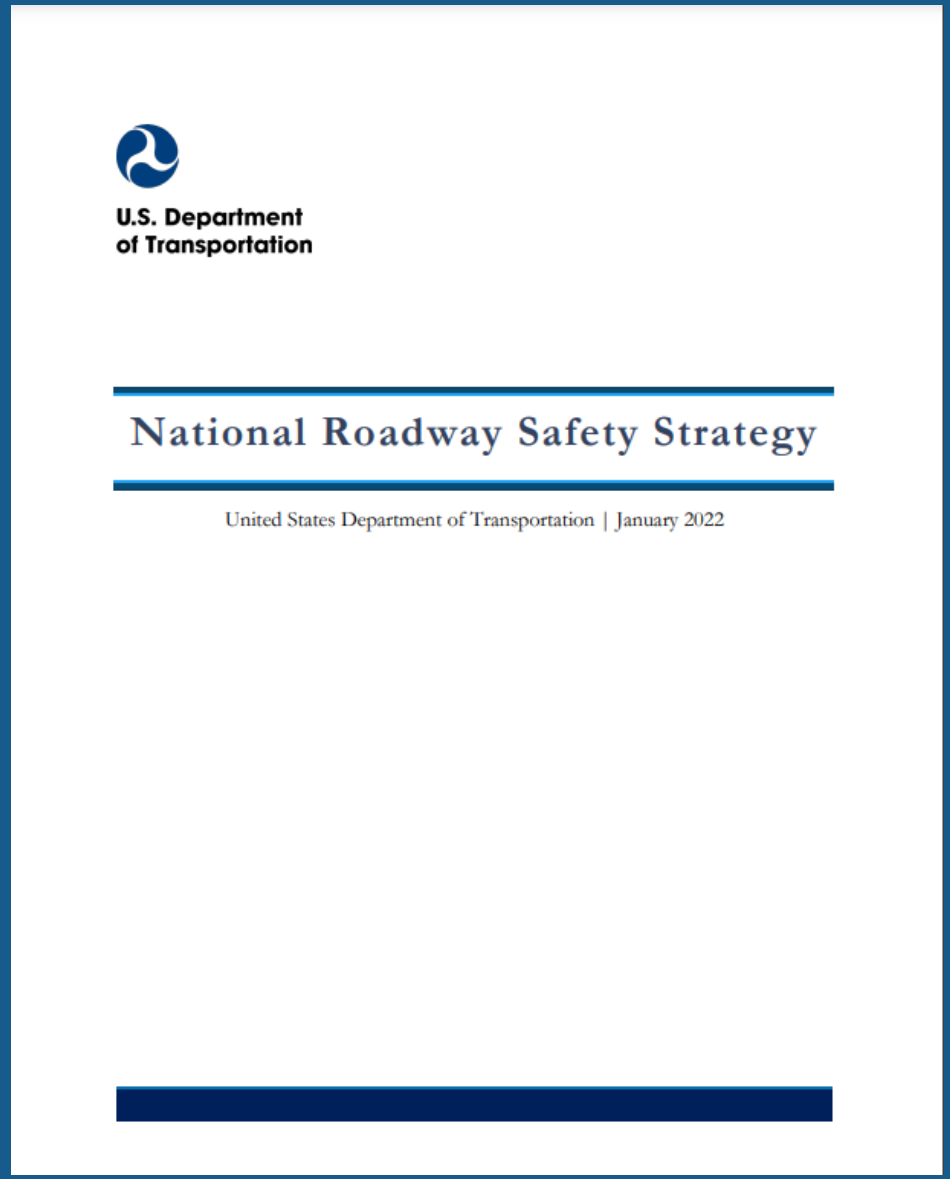
Traditional approach		Safe System approach
Prevent crashes	→	Prevent death and serious injuries
Improve human behavior	→	Design for human mistakes/limitations
Control speeding	→	Reduce system kinetic energy
Individuals are responsible	→	Share responsibility
React based on crash history	→	Proactively identify and address risks

Source: FHWA

US DOT Strategy



Source: USDOT



Caltrans' Approach

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)*

Modified Safe System Approach Graphic for the California SHSP

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.

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:

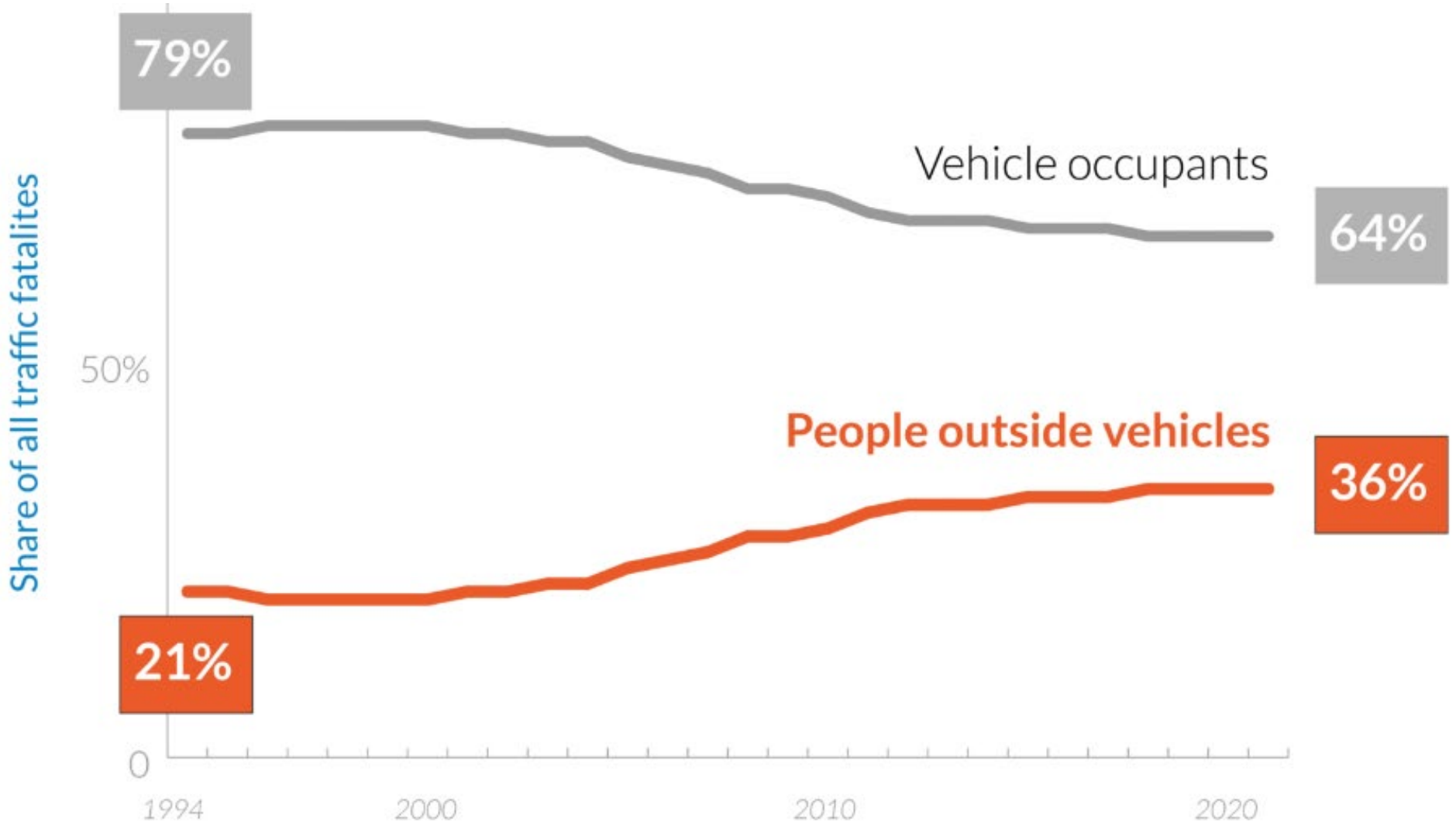
- A safety first mindset prioritizing road safety.
- Prioritize the elimination of fatal and serious injury crashes through our existing safety improvement programs along with development and implementation of new programs to enhance the safe use of our roadways.
- Eliminating race-, age-, ability- and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

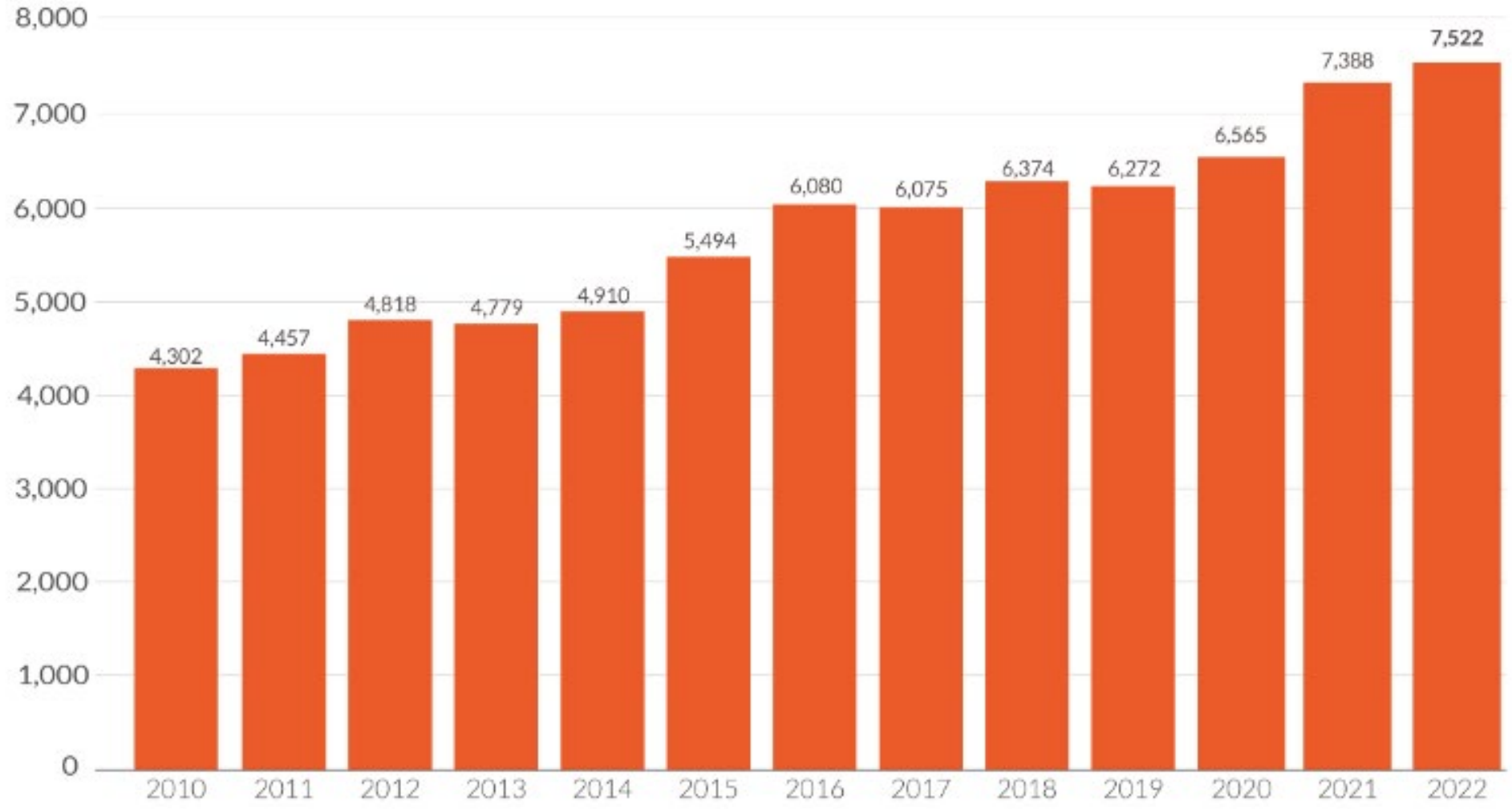
Source: Caltrans

Traffic Fatalities: People inside vs outside vehicles



Source: Dangerous by Design 2024

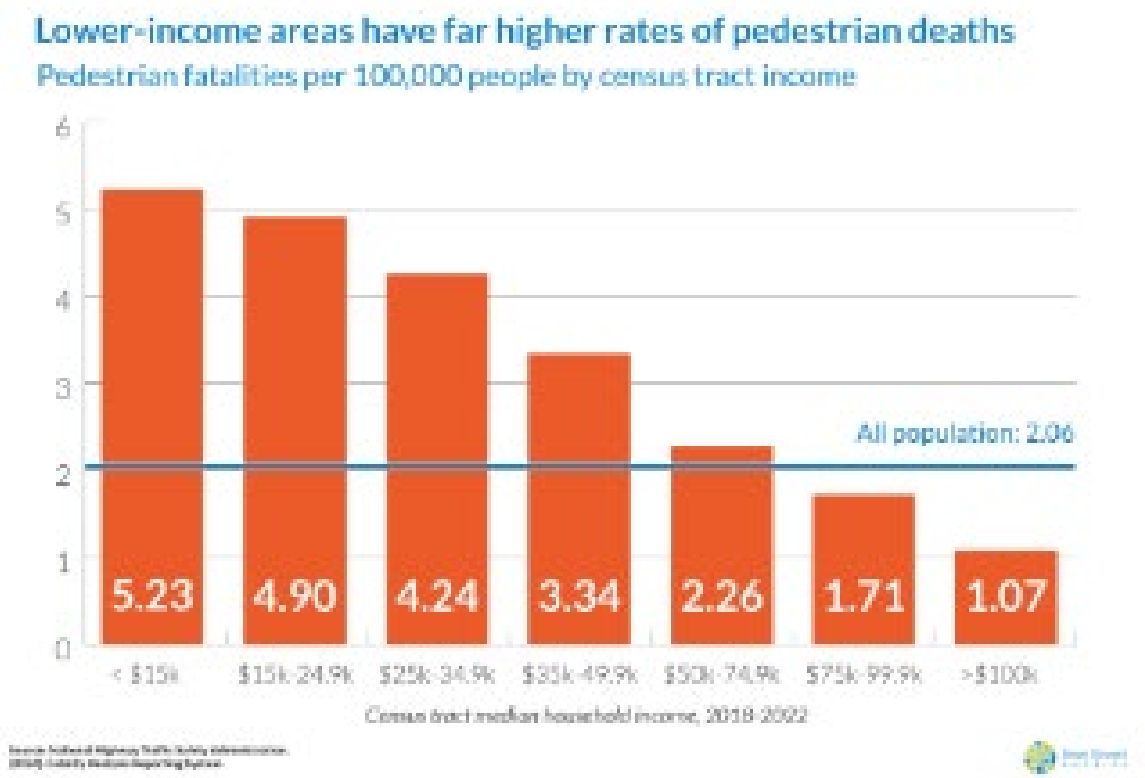
U.S. Pedestrian deaths are increasing

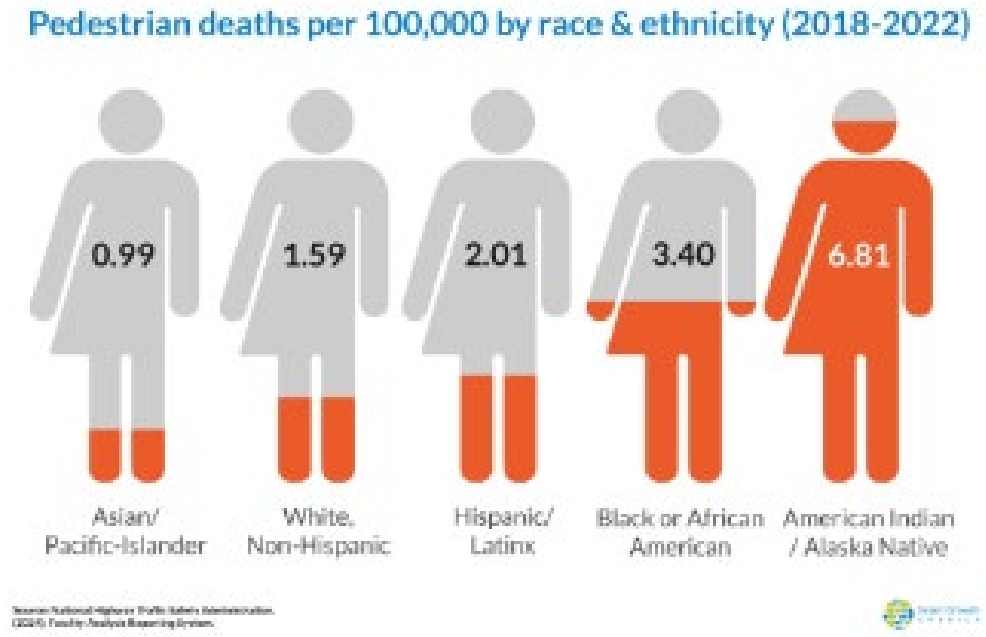


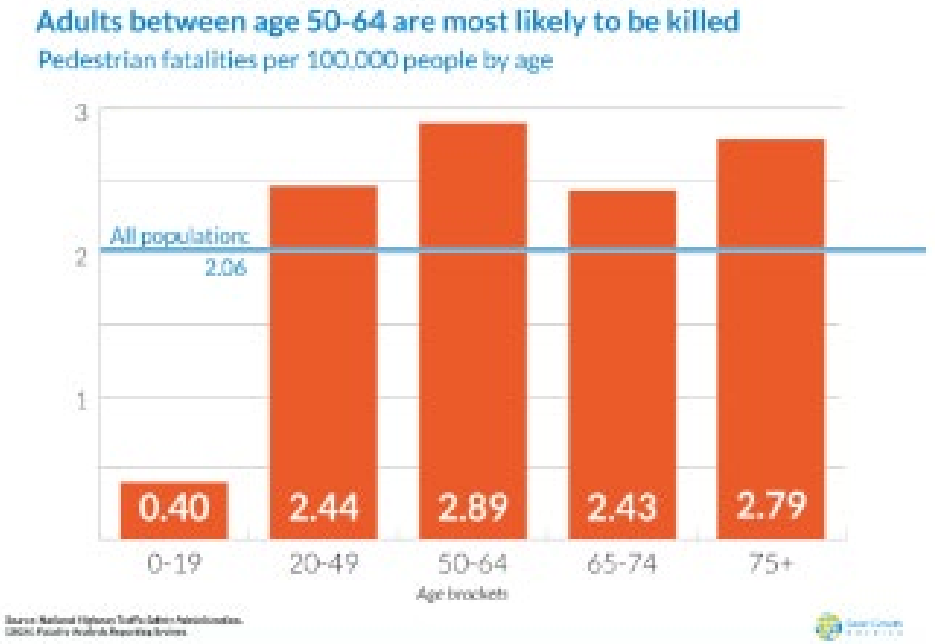
U.S. pedestrian deaths (2010-2022)

Source: Dangerous by Design 2024

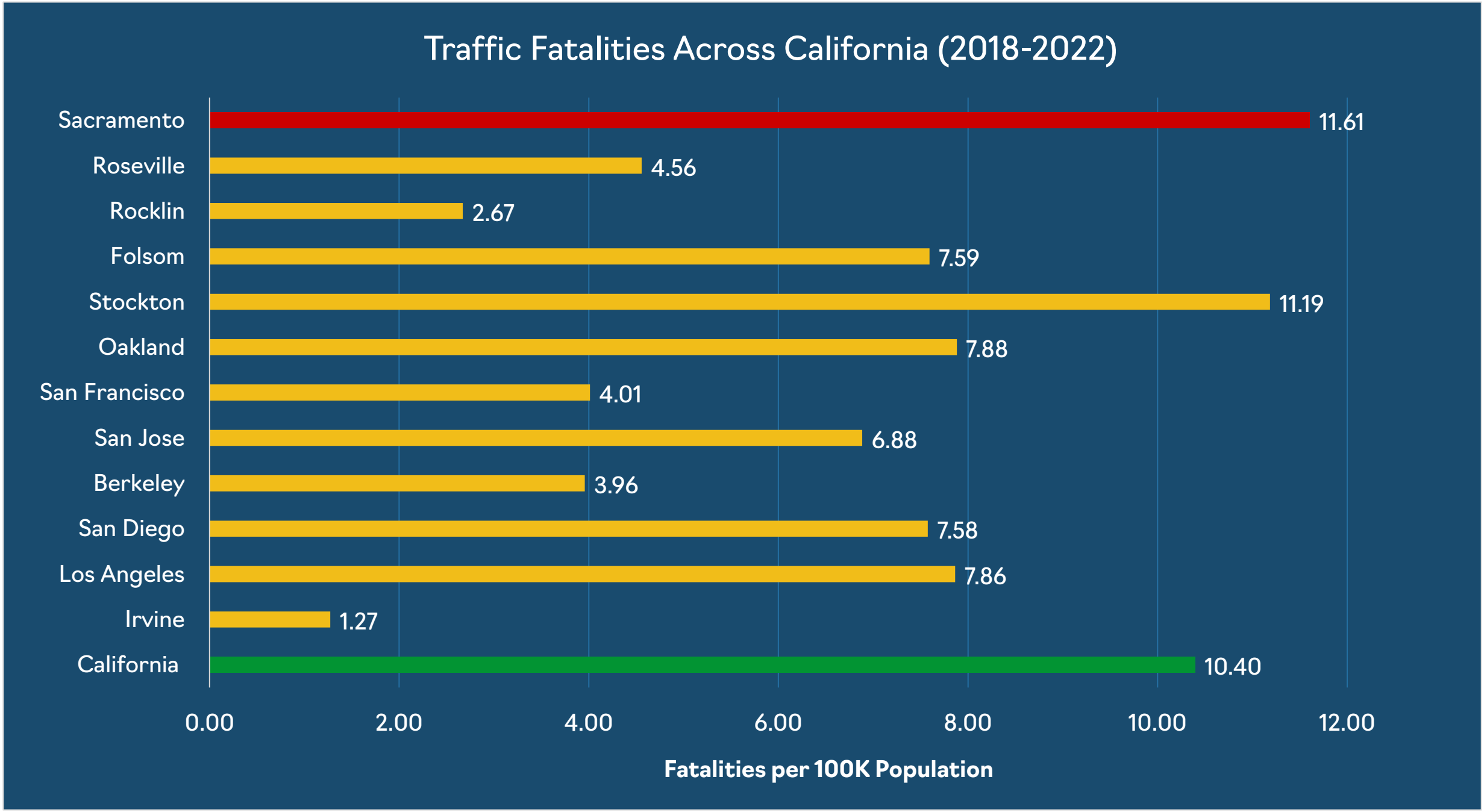
Collision rates are not equitable







Source: Dangerous by Design 2024


Traffic Fatalities Across California (2018-2022)
Sacramento
Roseville
Rocklin
Folsom
Stockton
Oakland
San Francisco
San Jose
Berkeley
San Diego
Los Angeles
Irvine
California
11.61
4.56
2.67
7.59
11.19
7.88
4.01
6.88
3.96
7.58
7.86
1.27
10.40
0.00
2.00
4.00
6.00
8.00
10.00
12.00
Fatalities per 100K Population

‘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

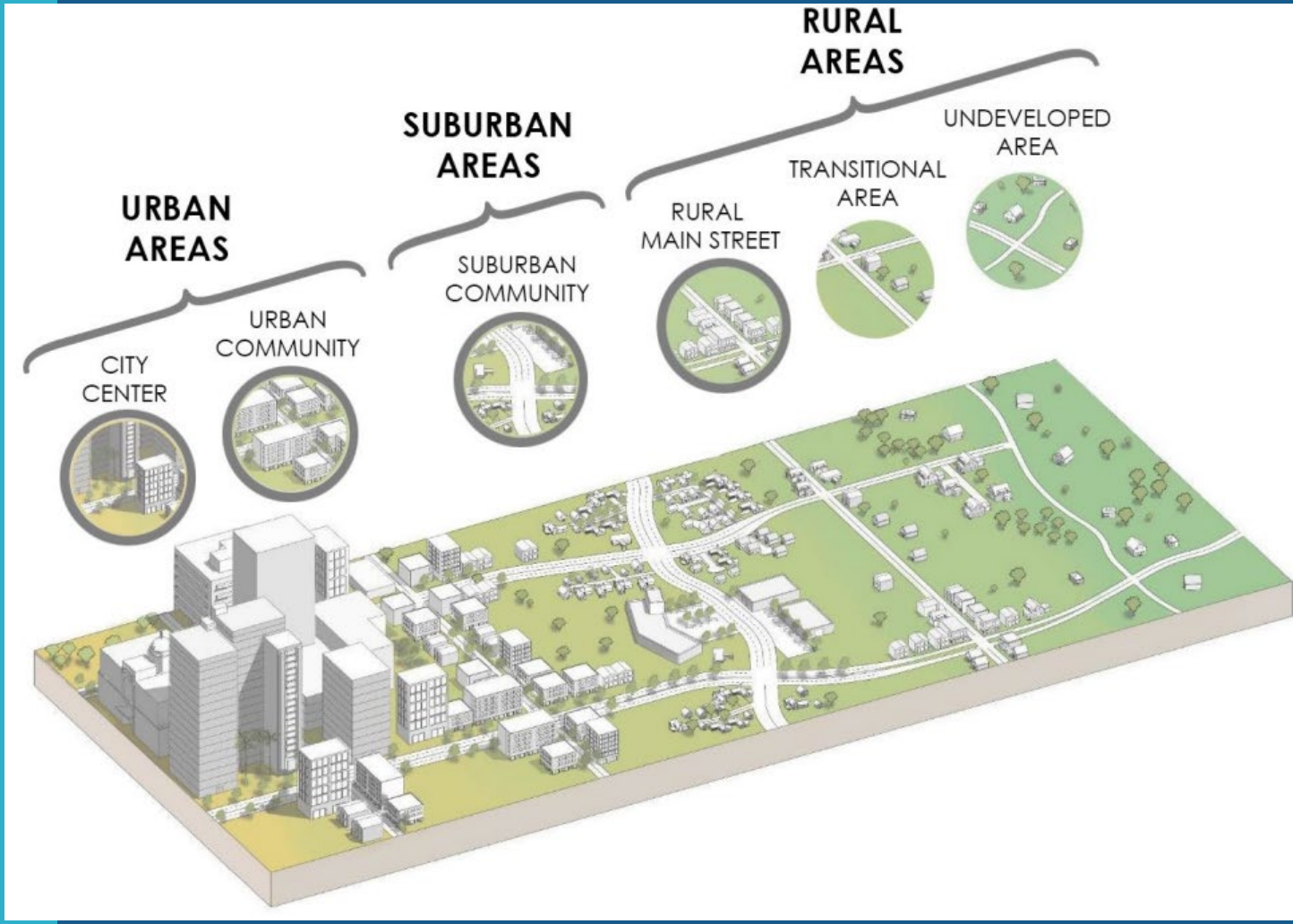
Evening traffic in Roanoke, Va. Should we put more thought into how our streets and roads are designed? PHOTO: ISTOCKPHOTO

Marysville Boulevard

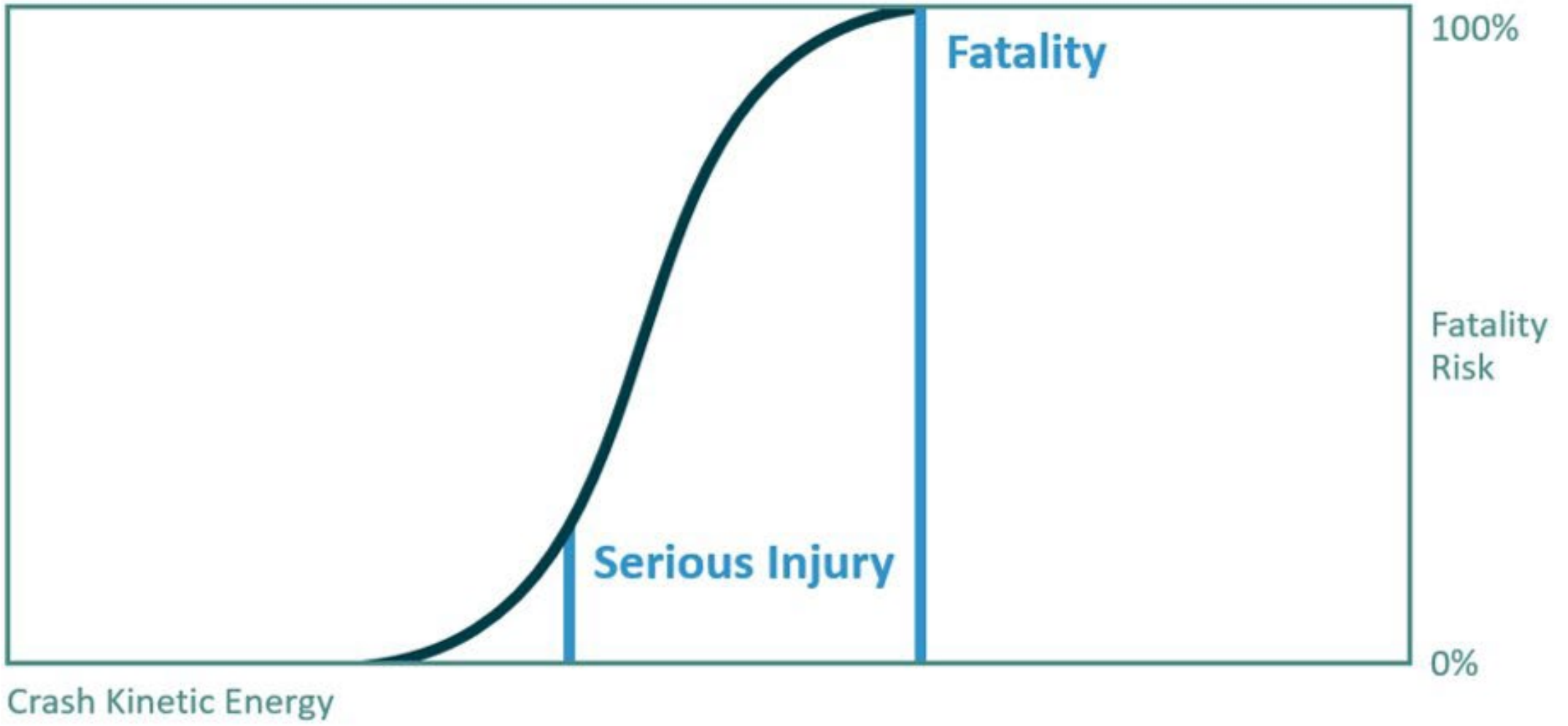
Source: Wall Street Journal, https://www.wsj.com/business/logistics/stroads-street-road-problems-fixes-9a04863c

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



Source: USDOT

Components of Kinetic Energy Risk

Exposure: where and how far people travel

Likelihood: where conflicts occur

Severity: speed, mass, and vulnerability in a conflict

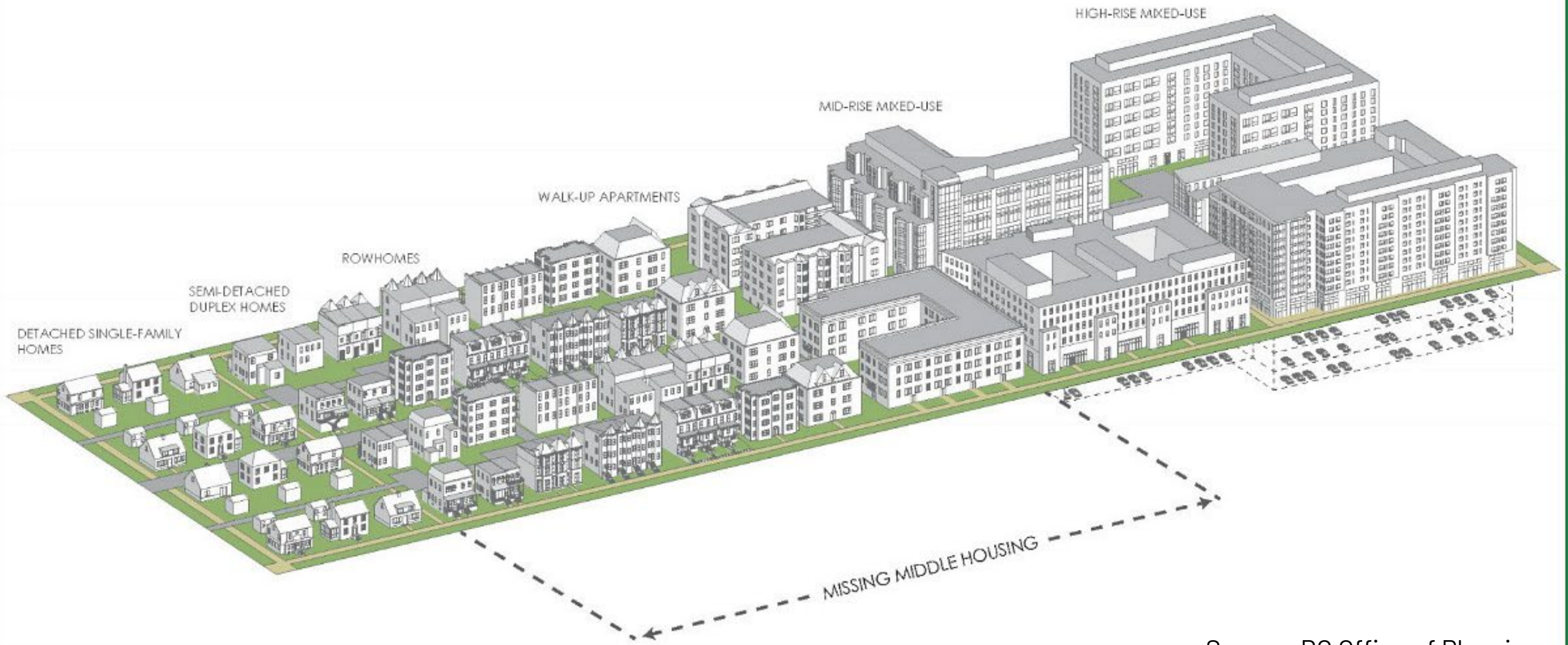
How Can We Mitigate Kinetic Energy Risk?

- 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

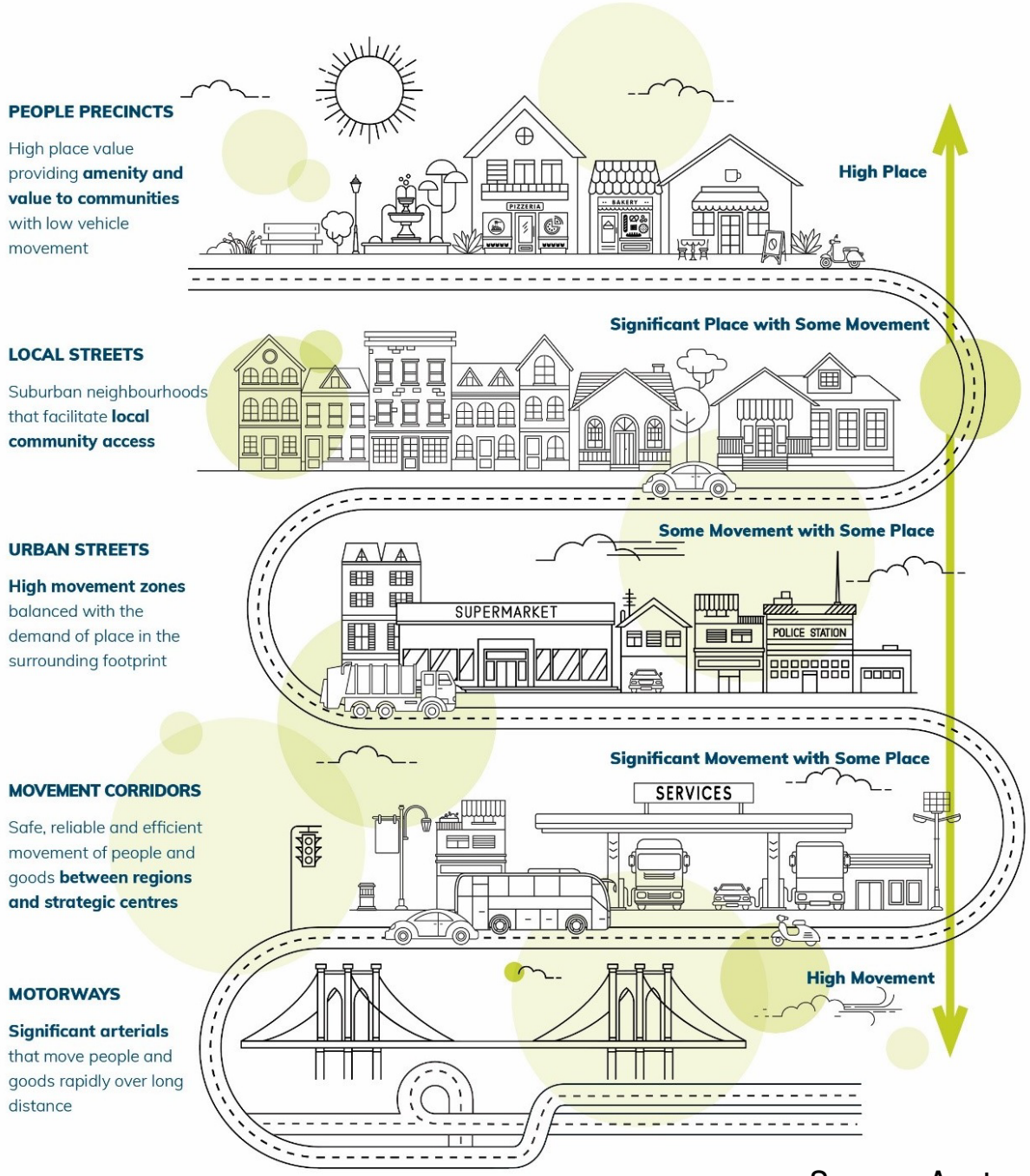
Affordable Housing is a Safety Tool

Mode Shift is a Safety Tool

US 101 San Francisco

SR 123 Albany

Movement and Place Framework



Source: Austroads

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

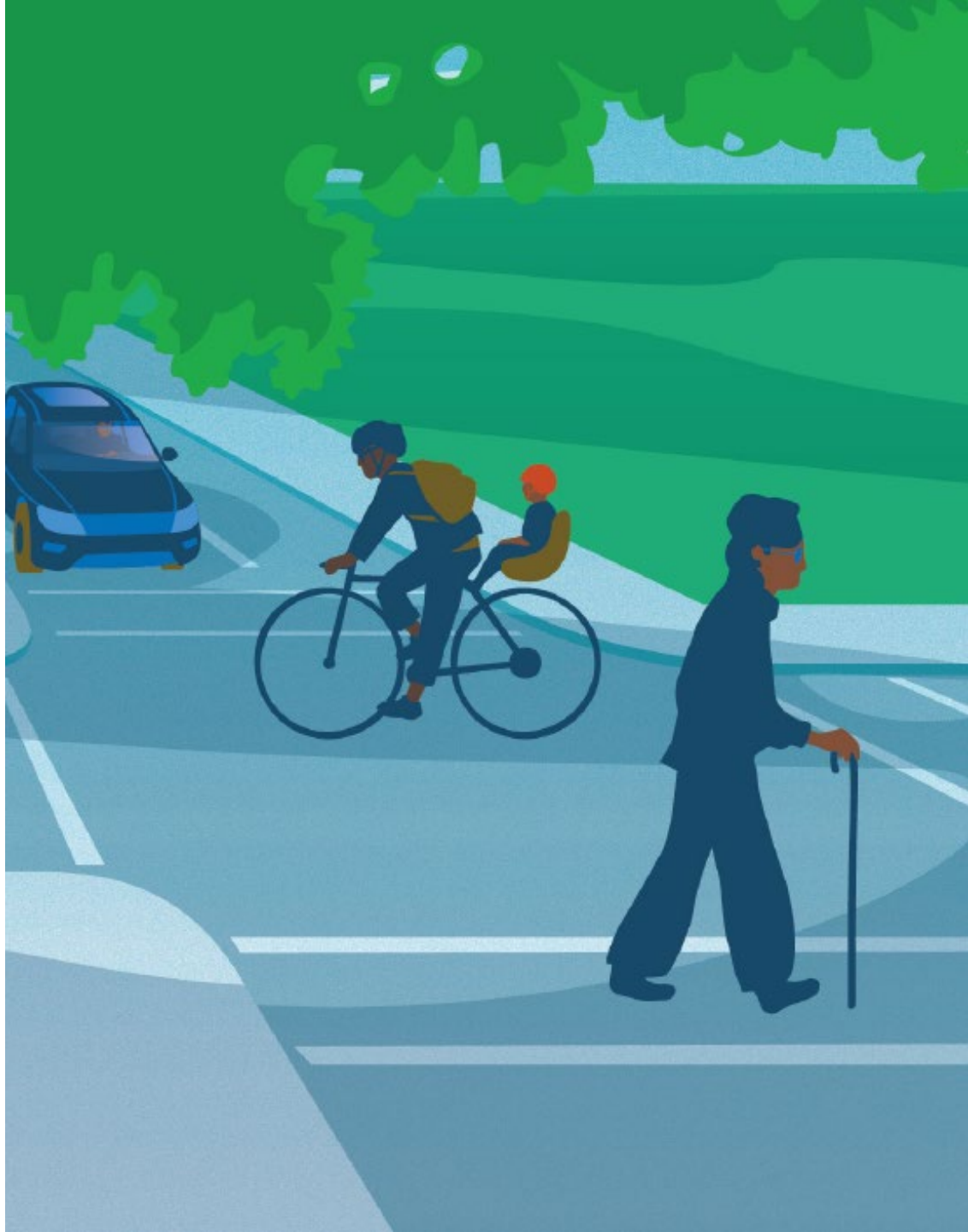
Activity

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