

Creating a Safe System

When designing roadways that align with the Safe System Approach, some essential questions to ask include:

What is the level of exposure to potential conflicts?

Consider:

- **Traffic volumes** - The Safe System Alignment Framework identifies 15,000+ vehicles/day as having the highest risk.¹
- **Road width** - Fatal and serious injury crashes disproportionately occur on roads with 5 or more lanes.²
- **Conflict points** - More potential locations where different users may cross paths (e.g., left-turn in front of through traffic) increases exposure.

Based on known risk factors present, what is the likelihood of a crash?

Certain characteristics can increase the likelihood of a crash. Document any risk factors that are present (e.g., permissive left-turn phasing, roadside objects, missing sidewalks).

How severe would potential crashes be?

Consider:

- **Speeds** - Fatal and serious injury crashes disproportionately occur on roads with speeds of 35+ MPH.²
- **User types** - Crashes involving people walking, biking, or on a motorcycle are more likely to be severe.²
- **Crash types** - Angle, turning, and roadway departure crashes tend to have the most severe consequences.²

Based on answers to these questions, what safety features should be considered? How can they address the road's crash exposure, likelihood, and severity challenges?

See the COMPASS RSAP toolkit for potential strategies and their tiers.

Safe System Roadway Design Hierarchy

Tiers 1 through 3 are proven most effective.



Remove Severe Conflicts

Removes exposure to conflicts and reduces crash likelihood.

Examples: Roundabouts, sidewalks, medians



Reduce Vehicle Speeds

Reduces the severity of potential crashes.

Examples: Raised crosswalks, speed humps



Manage Conflicts in Time

Reduces crash likelihood and exposure.

Examples: Protected left-turn phasing, leading pedestrian intervals



Increase Attentiveness and Awareness

Reduces crash likelihood.

Examples: Enhanced crossings, warning signs

¹ Federal Highway Administration (FHWA), Safe System Project-Based Alignment Framework (FHWA-SA-2023-009).

² COMPASS Regional Safety Action Plan (2025)

Real-World Example: Whitewater Park Boulevard (Boise)

Whitewater Park Boulevard in Boise is a multi-lane arterial with a posted speed limit of 35 MPH. This type of road is overrepresented on our High-Injury Network. However, thanks to the safety strategies in its design, Whitewater Park Boulevard is not on our High-Injury Network and did not experience any fatal or serious injury crashes between 2018 and 2022.

TIER 1

Remove Severe Conflicts:

A raised median restricts most accesses to right-in/right-out only, eliminating opportunities for users to conflict with one another. Roundabouts reduce conflict points at intersections. Sidewalks with landscape buffers separate people walking from motor vehicles. Bike lanes provide a separate space for people biking.



TIER 2

Reduce Vehicle Speeds:

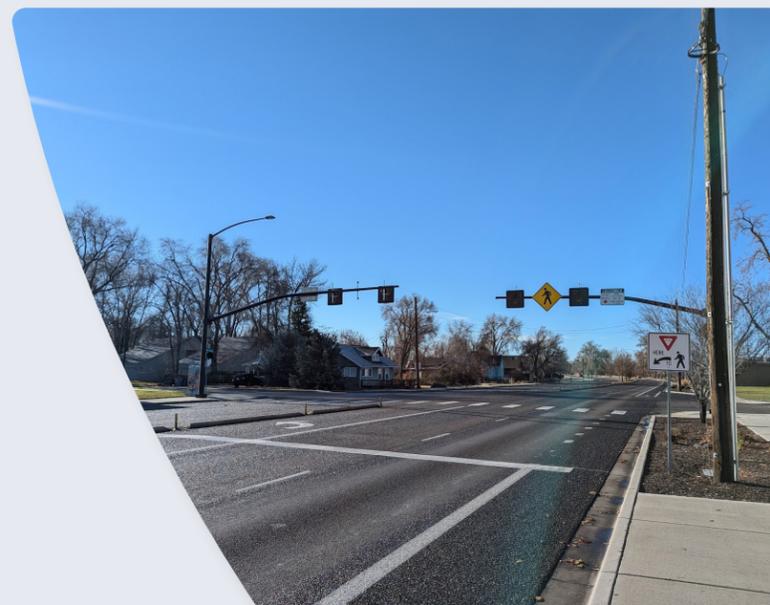
Roundabouts reduce speeds along the corridor. Flashing lights are used to indicate school zones.



TIER 3

Manage Conflicts in Time:

People walking can activate a red light indication for traffic (a pedestrian hybrid beacon) at key crossings, including near a regional park and an elementary school.



TIER 4

Increase Attentiveness and Awareness:

Warning signs and high-visibility markings enhance the visibility of crossings.

