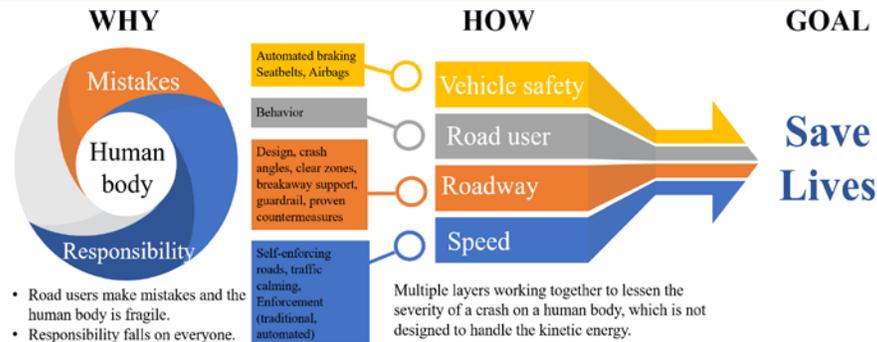


Safe Systems Explanation

Image of a Safe Systems approach to a roundabout in the Netherlands that separates users, slows speeds, and reduces points of conflict. Source: Fran van Caspel, YouTube.

The Safe Systems approach to eliminating fatal and serious injury crashes.



The Safe Systems approach differs from conventional safety practice by being human-centered, i.e., seeking safety through a more aggressive use of vehicle or roadway design and operational changes rather than relying primarily on behavioral changes – and by fully integrating the needs of all users (pedestrians, bicyclists, older, younger, disabled, etc.) of the transportation system. Safe Systems provide a *safety net* for the user by adhering to the following:

- 1. Anticipating Human Error** - Safe Systems are designed to anticipate and accommodate errors by drivers and other road users.

Example: Even a momentary distraction can prevent a driver from seeing vulnerable road users or vice-versa. Separating vulnerable road users—such as pedestrians and bicyclists—from traffic wherever possible, reduces the likelihood that such predictable errors will lead to a deadly collision.

Example: On rural highways, the application of rumble strips can recapture the driver's attention when they drift out of the lane due to distraction or fatigue. In newer vehicles, lane-keeping technologies can provide similar benefit.

- 2. Accommodating Human Injury Tolerance** - Safe Systems are designed to reduce or eliminate opportunities for crashes resulting in forces beyond human endurance.

Example: Where pedestrians and vehicles need to occupy the same space—such as urban crosswalks—reducing vehicle speeds through the use of lower speed limits combined with road design changes can reduce the likelihood of fatal collisions with pedestrians or bicyclists.

Example: Breakaway designs on traffic control devices installed in the right-of-way can reduce the force of impact when struck by an errant vehicle.

When we take a Safe Systems approach we may employ some of our current safety practices, but by taking a human-centered approach, we will often make different decisions than we would have otherwise.



Intersection converted to a multimodal roundabout in The Hague, Netherlands in 2012 using Safe Systems using shorter travel distances and separation by mode. Source: Bicycle Dutch, Cycling from Scheveningen to The Hague.

