

FEDERAL HIGHWAY ADMINISTRATION

- Lee Potter, P.E., Division Administrator
- FHWA, North Dakota Division
- 4503 Coleman Street, Suit 205
- Bismarck, North Dakota 58503

- 701-405-5745 (cell phone)

NATIONAL ROADWAY SAFETY STRATEGY (RELEASED 2022)

NRSS released to address the roadway fatality crisis

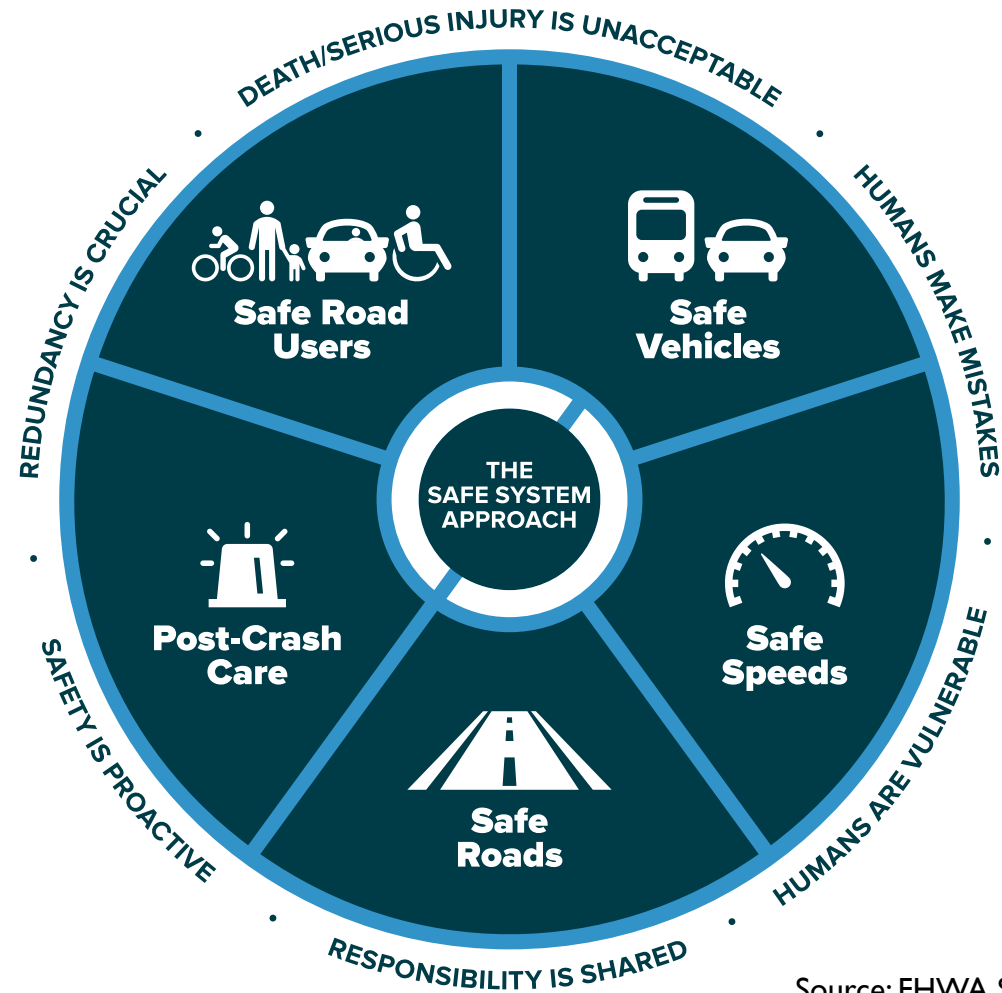
North Dakota 2023 Crash Data (preliminary):

- 106 roadway fatalities
- 10 pedestrians
- 16 motorcycle
- 30 alcohol related
- 3 were train crashes
- Question: Predominant Crash Type in ND????

SAFE SYSTEM APPROACH

The Safe System Approach is based on five elements—Safer People, Safer Roads, Safer Vehicles, Safer Speeds, and Post-Crash Care—and differs significantly from a conventional safety approach in that it acknowledges both human mistakes and human vulnerability and designs a redundant system to protect everyone.

SAFE SYSTEM APPROACH



Source: FHWA SSA

SAFE SYSTEM APPROACH

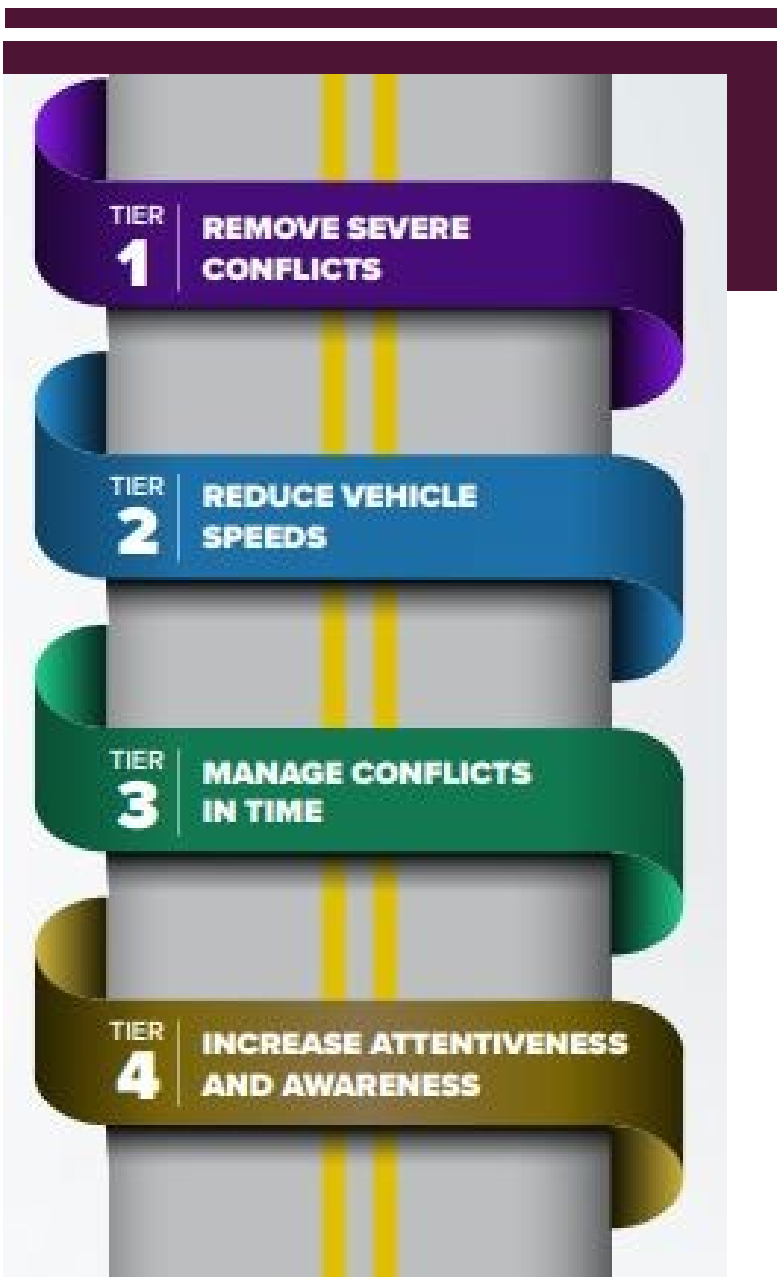
- **Safer People**: Encourage safe, responsible driving and behavior by people who use our roads and create conditions that prioritize their ability to reach their destination unharmed.
- **Safer Roads**: Design roadway environments to mitigate human mistakes and account for injury tolerances, to encourage safer behaviors, and to facilitate safe travel by the most vulnerable users.
- **Safer Vehicles**: Expand the availability of vehicle systems and features that help to prevent crashes and minimize the impact of crashes on both occupants and non-occupants.
- **Safer Speeds**: Promote safer speeds in all roadway environments through a combination of thoughtful, equitable, context-appropriate roadway design, targeted education, outreach campaigns, and enforcement.
- **Post-Crash Care**: Enhance the survivability of crashes through expedient access to emergency medical care, while creating a safe working environment for vital first responders and preventing secondary crashes through robust traffic incident management practices.

SAFE SYSTEM APPROACH

- **Predominant Crash Type in ND?**
- **Lane departure - 53%**
- **Intersections – 31%**

SAFE SYSTEM APPROACH

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The preferred order of corrective treatment for fixed objects and non-traversable hazards located within the clear zone:

1. Remove the obstacle.
2. Redesign the obstacle so that it can be safely traversed.
3. Relocate the obstacle to a point where it is less likely to be struck.
4. Reduce the impact severity by using an appropriate breakaway device.
5. Shield the obstacle with a longitudinal traffic barrier designed for redirection or use a crash cushion.
6. Delineate the obstacle if the above alternatives are not appropriate.

TIER I – REMOVE SEVERE CONFLICTS

- 1st level in the Safe System Solutions Hierarchy – these countermeasures should be prioritized first
- Supports both the **Safe Roads** and **Safe User** elements of the SSA
- Removing severe conflicts reduces risk by **eliminating potential roadway safety hazards**, providing **physical separation by space** to protect all roadway users, and **manages kinetic energy**.

Proven Safety Countermeasures

- Bicycle Lanes
- Medians and Pedestrian Refuge Islands
- Road Diets
- Walkways
- Median Barriers
- Roadside Design Improvements at

Curves

- SafetyEdge
- Corridor Access Management
- Dedicated Left and Right Turns at Intersections
- Reduced Left Turn Conflict Intersections
- Roundabouts

TIER 2 – REDUCE VEHICLE SPEEDS

- 2nd level in the Safe System Hierarchy
- Supports the **Safe Roads, Safe Speeds** and **Safe User** elements of the SSA
- Physical features to slow traffic supports the **management of kinetic crash energy** to reduce impact forces on the human body.

Proven Safety Countermeasures

- Medians and Pedestrian Refuge Islands
- Road Diets
- Roundabouts
- Pavement Friction Management
- Speed Safety Cameras

TIER 3 – MANAGE CONFLICTS IN TIME

- 3rd level in the Safe System Hierarchy
- Reduces traffic collisions by **separating users in time**
- Conflict separation in time is less effective than removing severe conflicts or separating users by space but **remains essential to avoid and reduce crashes.**

Proven Safety Countermeasures

- **Leading Pedestrian Interval**
- **Pedestrian Hybrid Beacons**
- **Yellow Change Intervals**

TIER 4 – INCREASE ATTENTIVENESS AND AWARENESS

- 4th level in the Safe System Hierarchy
- Reinforces the Safe System principle that **responsibility is shared among all road users**
- Countermeasures that increase attentiveness and awareness **help drivers avoid potential crashes.**

Proven Safety Countermeasures

- Variable Speed Limits
- Crosswalk Visibility Enhancements
- Rectangular Rapid Flashing Beacons (RRFB)
- Enhanced Delineation for Horizontal Curves
- Longitudinal Rumble Strips and Stripes
- Wide Edge Lines
- Backplates with Reflective Borders
- Systemic Application of Low-Cost Countermeasures at Stop-Controlled Intersections
- Lighting