

Vision Zero

August 2021



What is Vision Zero?

Vision Zero is a transportation safety philosophy based on the principle that loss of life is not an acceptable price to pay for mobility. Among those concerned with traffic safety, Vision Zero has become a useful framework to eliminate traffic deaths and severe injuries in the transportation system with a proactive and preventative approach. Vision Zero recognizes that human behavior is imperfect. Therefore, the transportation system should be designed to minimize the consequences of human error.

Why the WAMPO Region needs Vision Zero

The Wichita Area Metropolitan Planning Organization (WAMPO) region comprises 22 cities and 3 counties. The cities and counties of the region work together to ensure the WAMPO region remains a great place to live, work, and play. WAMPO is required to set targets for MAP-21 Act mandated safety-related measures, with an overarching goal of increasing safety in the area, and reports these targets annually to the Kansas Department of Transportation (KDOT). The five-year rolling averages of fatalities and serious injuries from 2014 through 2018, as reported in WAMPO's 2020 Metropolitan Transportation Plan, are as follows:

Performance Measure	2014-2018 Average
Number of Fatalities	58.6
Rate of Fatalities per 100 million VMT	1.22
Number of Serious Injuries	146.8
Rate of Serious Injuries per 100 million VMT	3.07
Number of Non-motorized Fatalities and Non-motorized Serious Injuries	28.2

The United States Department of Transportation (USDOT) defines a suspected serious injury as any injury other than fatal that results in one or more of the following:

- Severe laceration resulting in exposure of underlying tissues/muscle/organs or resulting in significant loss of blood
- Broken or distorted extremity (arm or leg)
- Crush injuries
- Suspected skull, chest, or abdominal injury other than bruises or minor lacerations
- Significant burns (second or third-degree burns over 10% or more of the body)
- Unconsciousness when taken from the crash scene
- Paralysis

How to Adopt a Vision Zero Toolkit

Local governments may use this plan as a toolkit of resources that can be endorsed as-is or customized on a case-by-case basis to encourage the adoption of the Vision Zero philosophy and develop a local safety action plan.

Step 1: Develop a Regional High-Injury Network

Local governments can develop their own High-Injury Network (HIN) through the use of detailed localized crash data, modify the regional HIN, or adopt the regional HIN within their own communities. A High-Injury Network maps local corridors where high numbers of people have been killed or seriously injured. The network serves as a tool to assess patterns across the city and identify particularly dangerous intersections. Some municipalities may choose to develop separate High-Injury Networks for cyclist and vehicle crashes. The HIN can then be used to help prioritize street safety improvements.

Step 2: Develop Crash Profiles, Behavior Profiles and Countermeasures

Crash profiles defined by area type provide information to local governments on the types of crashes that most frequently contribute to serious injury and/or fatal crashes in their jurisdictions. The crash profiles and corresponding countermeasure glossary suggest potential actions that local governments and their partners can use to reduce these types of crashes. To apply these crash profiles, a local government can identify the area types relevant in its jurisdiction and target reduction of key crash profiles by implementing recommended countermeasures in high-priority locations (such as on the regional High-Injury Network).

Countermeasure	Description
Traffic Calming	Traffic calming refers to a full range of horizontal and vertical design elements intended to slow the movement of cars through a corridor. Examples include horizontal curvature, chicanes, narrow travel lanes, traffic circles, fewer lanes, bulb-outs, medians, signals coordinated for slower speeds, and speed humps.
Road Diet	Road diets reassign space in the roadway from vehicle travel lanes to room for bicycle facilities, wider sidewalks, or center turn lanes. Road diets optimize street space to benefit all users by improving the safety and comfort of people walking and biking by reducing travel speeds and the potential for rear-end crashes.
Protected/Separated Bikeway	Designated bicycle lanes separated from vehicle traffic by a physical barrier (such as bollards, landscaping or parked cars) can increase safety for everyone by decreasing opportunities for encroachment on the bike lane by people driving. Protected and separated bikeways also reduce the risk of dooring.
Prohibited Left Turn	Consider banning left turns at locations where a turning vehicle may conflict with people walking in the crosswalk, where opposing traffic volume is high, or from a side street onto a busy two-way arterial street. Prohibiting drivers from turning left reduces pedestrian interaction with vehicles when crossing.
Pedestrian Refuge Median	Pedestrian refuge medians provide a protected area for people walking at the center of the roadway. They reduce the exposure time for people walking and simplify crossings by allowing people walking to focus on one traffic direction at a time.
Targeted Enforcement	Targeted enforcement is used to reduce the most dangerous behaviors (such as speeding, distracted driving, aggressive driving, impaired driving, red-light and stop sign running), particularly at locations with a history of such behaviors. People driving are less likely to take part in dangerous behaviors when they know there is a higher likelihood they will be caught.

Step 3: Equity

The Vision Zero Network published Equity Strategies for Practitioners to assist communities in implementing Vision Zero with a focus on equity. Key strategies from the guide are:

- Commit to the work
 - Ensure that Vision Zero or traffic safety leadership reflects the diversity of the community.
 - Agree that equity issues are a focus of Vision Zero and make a firm commitment from the start.
- Use data to focus efforts
 - Include demographic data such as race, ethnicity, level of poverty, and household median income.
- Enforce with empathy
 - Enforcement must not have an outsized effect on low-income communities and communities of color, nor should they damage police/community relationships.
 - Strategies to integrate equity into enforcement include:
 - Community policing
 - Officer training
 - Careful application of automated enforcement
 - Transparency in traffic stop data
 - Diversion programs that focus on education rather than punishment
 - Graduated fines.
- Community engagement
 - Programs and associated staff should build sustaining relationships with the community and partners.
 - Hosting engagement meetings in locations people can attend conveniently.
 - Reduce barriers to participation.

MPO Example

The Hillsborough, FL MPO partnered with state and local stakeholders to create their own Vision Zero Action Plan. Partners in the Vision Zero Coalition include the Tampa City Council, Hillsborough County Commission, Temple Terrace City Council, Plant City Commission, School Board of Hillsborough County, emergency responders, businesses, and nonprofits. All of them share the vision to eliminate traffic fatalities and severe injuries on area roadways.

Members of the Hillsborough Vision Zero Coalition created goals and specific activities supporting each track:

- Low-Cost Retrofits and Pop-Up Treatments
 - Painted temporary bike lanes
- Public Awareness and Education Strategies
 - Identified key audiences for the initiative and chose the most effective mediums to reach them.
 - Tailored Vision Zero's messages in interesting ways for each audience.
- Shared Responsibility for Safe Road Behavior
 - Reduce dangerous behaviors by all road users.

- Considered methods beyond policing to inhibit dangerous behaviors, including engineering and education.
- Facilitating Culture Change through Policies and Programs.
 - Including changing the way professionals in private and public sectors approach driving, biking, and walking.
 - This track also focuses on ways to avoid perpetuating the problems in the built environment.

Hillsborough Vision Zero Coalition Members:

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| • Hillsborough MPO | • American Association of Retired Persons (AARP) |
| • Hillsborough County | • BayCare |
| • Florida Department of Transportation (FDOT) | • Westshore Alliance |
| • City of Tampa | • Innovation Place |
| • City of Plant City | • Tampa Bay Partnership |
| • Tampa Police | • Tampa Downtown Partnership |
| • Sheriff's Office Hillsborough County | • Cox Media Group |
| • Hillsborough County City-County Planning Commission | • 83 Degrees Media |
| • Hillsborough County Public Schools | • Center for Urban Transportation Research (CUTR) |
| • St. Joseph's Hospital | • National Association for the Advancement of Colored People (NAACP) |
| • Florida Health Hillsborough County | • Walk Bike Tampa |
| • Florida Hospital | • Bike/Walk (A regional coalition of Tampa Bay) |
| • Tampa General Hospital | |
| • Temple Terrace | |

Step 4: Speed Reduction

Speed is a contributing factor to fatal and serious injury crashes across all area types. Safe travel speed is a core Vision Zero principle, given the documented relationship between speed and crash severity. A variety of proven techniques can reduce travel speed:

- Realigning skewed intersections
 - Broad, wide-radius turns can be made at high speeds.
 - Tighter turns, closer to 90 degrees, with a small radius are made at lower speeds.
- Reducing travel lane widths
 - Narrower travel lanes encourage lower vehicle speeds.
- Roundabouts
 - By introducing horizontal deflection onto otherwise straight roadways, roundabouts can reduce operating speeds, and proven safety benefits compared to standard intersections.
- Traffic Calming
 - Horizontal and vertical design elements intended to slow the movement of cars through a corridor.
 - Install speed and red-light cameras on high injury streets.

References

- American Association of State Highway and Transportation Officials Highway Safety Manual
- Caltrans Local Roadway Safety Manual
- Denver Regional Council of Governments. (2020, June). *Taking Action on Regional Vision Zero*.
- Federal Highway Administration Office of Safety
- Federal Highway Administration Crash Modification Factors Clearinghouse
- Federal Highway Administration Bicycle Safety Guide and Countermeasure Selection System
- Federal Highway Administration Pedestrian Safety Guide and Countermeasure Selection System
- National Association of City Transportation Officials Urban Bikeway Design Guide
- Fehr & Peers