

Emphasis Area: Roadway Departure

Overview

Roadway departure collisions involve vehicles leaving the travel lane and encroaching into the opposite lanes or onto the shoulder and roadside environment. The result of this maneuver is that the vehicle hits an oncoming vehicle or fixed object(s) such as trees, poles, bridge walls, piers, or columns, embankments, or guardrails. Some of the top contributing factors for roadway departure fatal- or severe- injury collisions include driver distraction or inattention, excessive speed, driving under the influence, and driving on the wrong side or the wrong way on a road.

Maintaining a proper clear zone is the first priority for engineering improvements. Clear zones allow enough area for drivers to recover when departing from the travel lane. Additional improvements, such as installing edge line and centerline rumble strips, improving shoulders, and removing or shielding hazards may prevent roadway departure collisions or lessen their severity.

Our Challenge

Roadway departure collisions accounted for approximately 43% of all fatal and severe injury collisions in South Carolina from 2008-2012, resulting in more than 2,100 fatalities and 6,400 severely injured persons (Figure 13). Nearly one in two roadway deaths and one in three severe injuries occurred in a roadway departure collision. While the number of severe injuries sustained in these types of collisions decreased 9.9% from 2008 to 2012, the number of fatalities declined at a slower rate, a 7.5% reduction.

Roadway Departure Fatalities and Severe Injuries
2008-2012

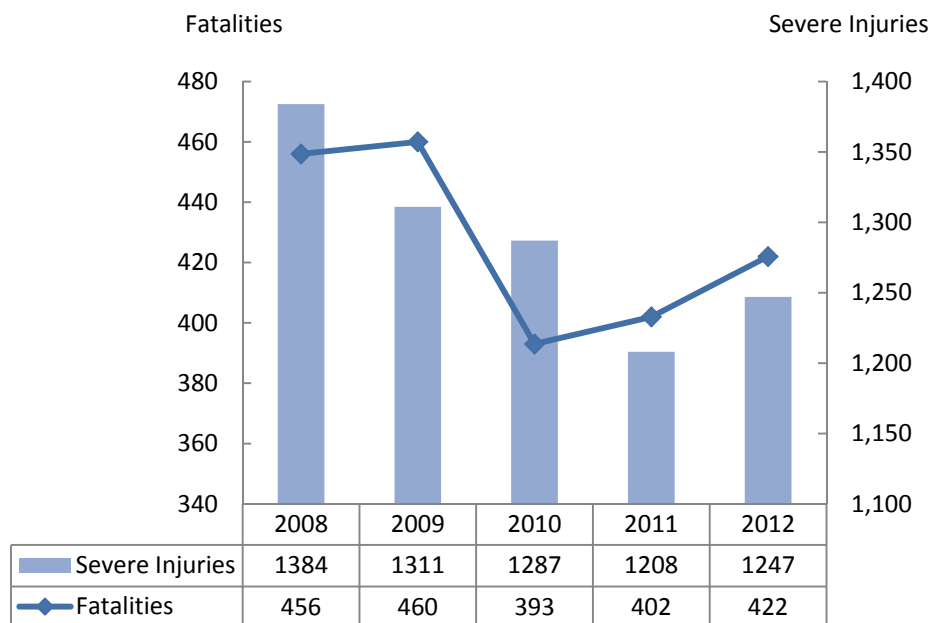


Figure 13.

As seen in Figure 14 below, more than half of the roadway departure collisions occurred on rural roads (59%), compared to 26% that occurred on urban roads.

Roadway Departure Fatalities and Severe Injuries
By Federal Route Classification, 2008-2012

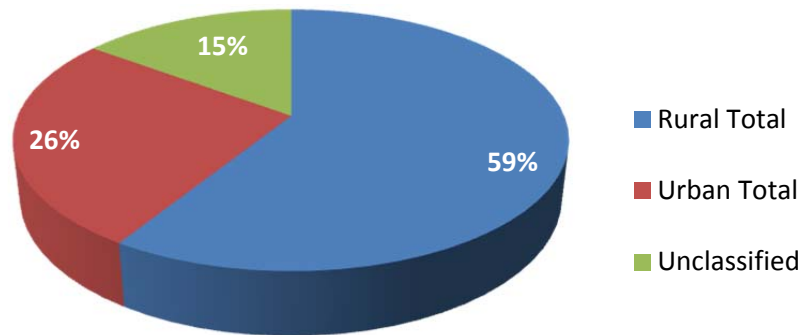


Figure 14.

When a vehicle is involved in a roadway departure, a sequence of events occurred prior to that vehicle leaving the roadway. Figure 15 below represents the top events, or actions, made by a vehicle after it departed the roadway. A collision with a fixed object far exceeds any other event, at 63% of the total fatal and severe injury collisions.

Roadway Departure Fatal and Severe Injury Collisions
By Top Events, 2008-2012

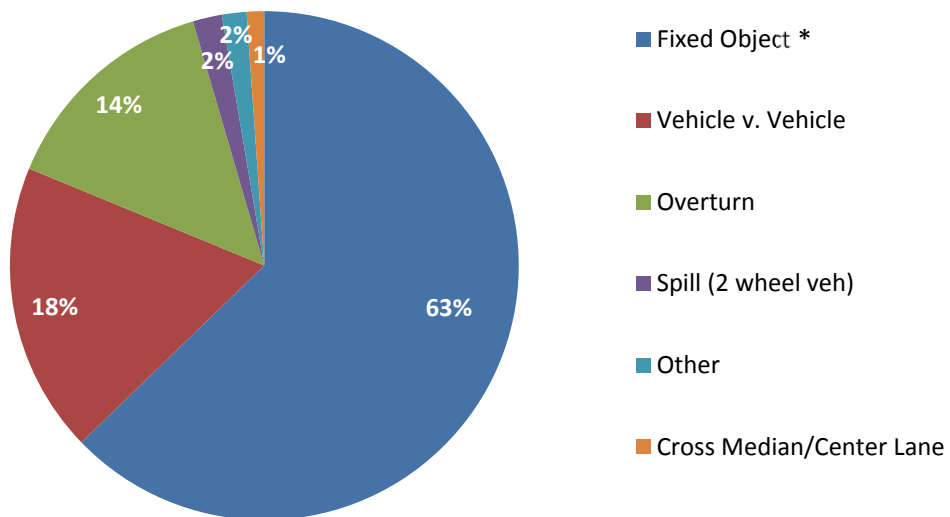


Figure 15.

*see Figure 16 for breakout.

Fixed objects include items such as trees, ditches, fences, bridge rails, guardrails, and curbs. From 2008 to 2012, hitting trees accounted for *nearly 40%* of all fatal and severe injury collisions that involved hitting fixed objects (Figure 16).

Roadway Departure Fatal and Severe Injury Collisions
 Hitting a Fixed Object, 2008-2012

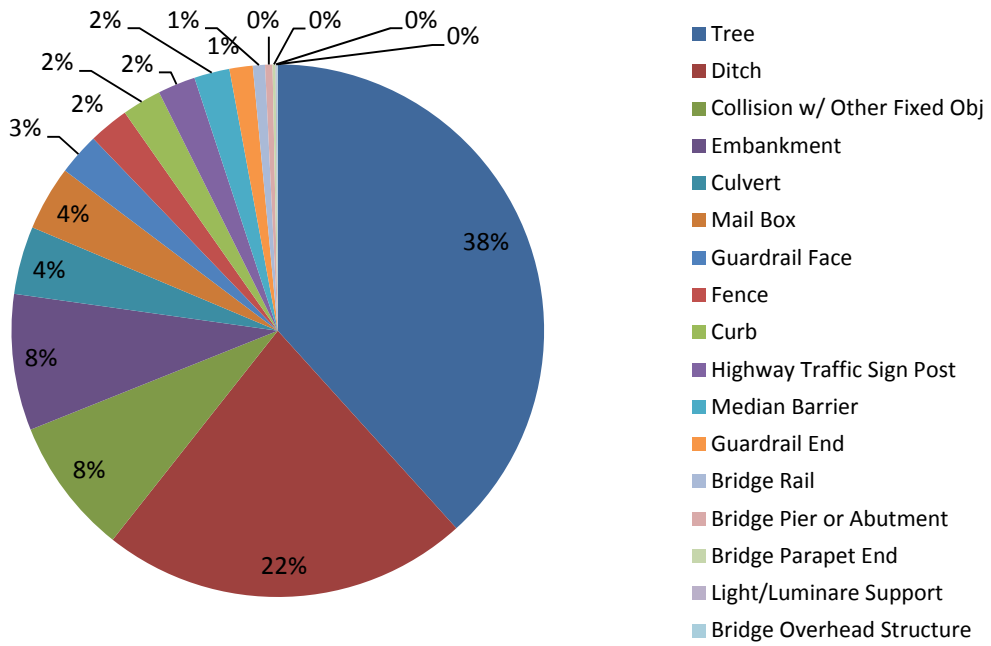


Figure 16.

Our Goal

Roadway Departure Fatalities, 2001-2018

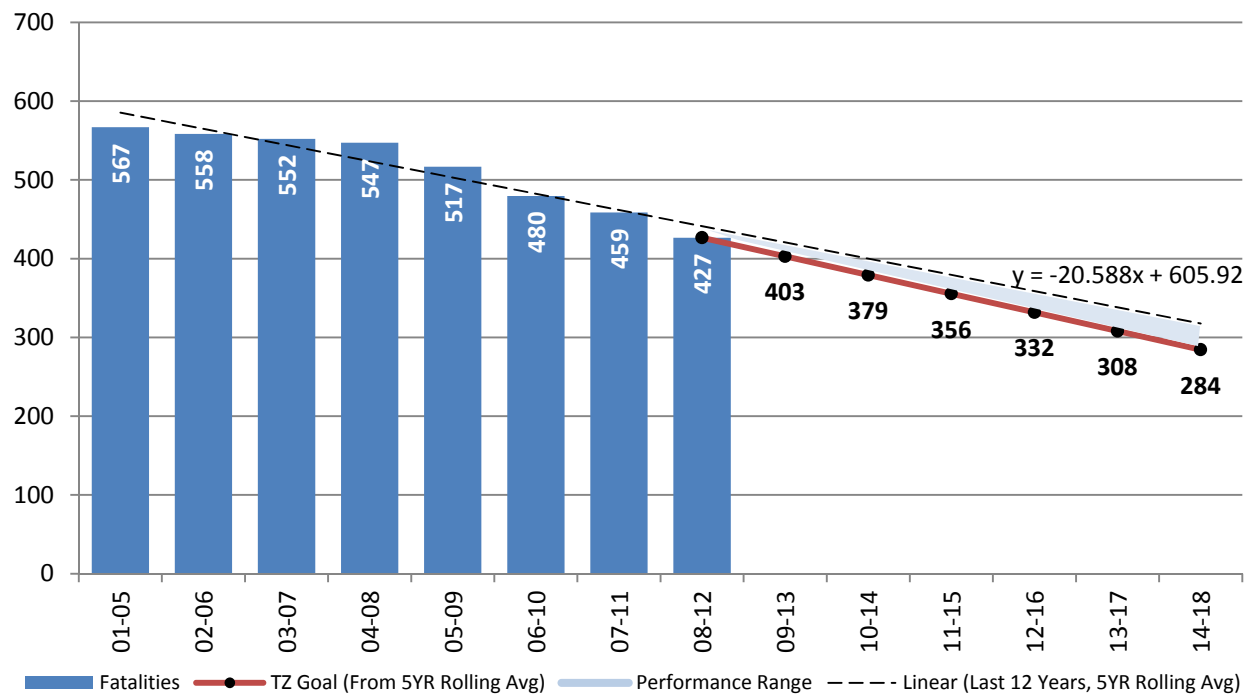


Figure 17. In order to meet the Target Zero benchmark of 284 roadway departure fatalities by 2018, fatalities must be reduced by an average of 24 per year.

Roadway Departure Severe Injuries, 2001-2018

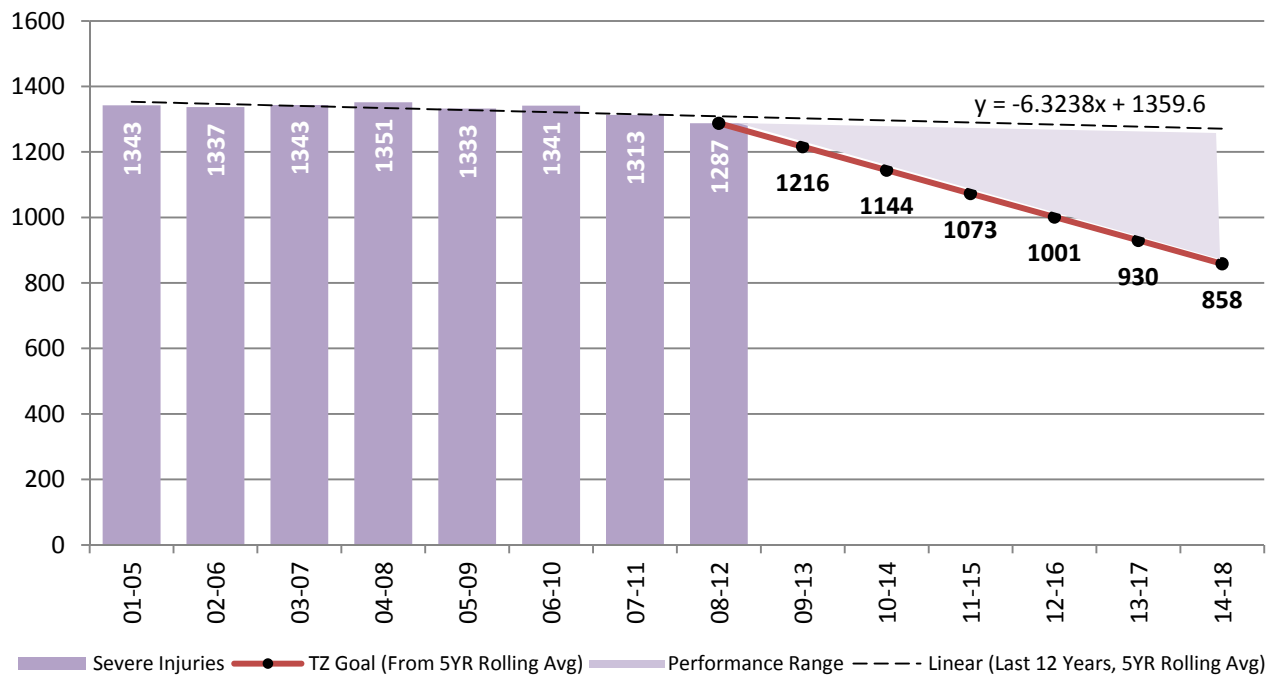


Figure 18. In order to reach the Target Zero benchmark of 858 roadway departure severe injuries by 2018, severe injuries must be reduced by an average of 72 per year.

Roadway Departure-Related Collision Objectives & Strategies		
Objectives (What)	Strategies (How)	Implementation Area(s)
1. Minimize the adverse consequences of leaving the roadway by improving the roadside.	1.1 Provide proper clear zone.	Engineering
	1.2 Improve median cross-slope and/or install barriers where left side roadway departure crashes occur.	Engineering
2. Reduce the likelihood of vehicles leaving the travel lane(s) at high-crash/risk locations by improving the roadway.	2.1 Deploy centerline and edge line rumble strips in accordance with SCDOT policy.	Engineering
	2.2 Maintain shoulders to reduce debris and edge drop-offs; use safety edge (i.e., pavement edge taper); identify opportunities to upgrade or improve shoulders to provide additional recovery area for vehicles that leave the roadway.	Engineering
	2.3 Expand the use of and maintain existing roadway delineation and visibility features, which include geometric alignment pavement markings, raised markers, signs, and other devices.	Engineering
3. Reduce the number of crashes involving impaired and/or speeding drivers.	3.1 Perform targeted enforcement with an emphasis on speed and DUI on roads with a high percentage of roadway departure crashes.	Enforcement
	3.2 Utilize Law Enforcement Networks to conduct briefings with local law enforcement agencies with high-risk rural roads in their jurisdictions.	Enforcement
4. Educate roadway users to understand the contributing factors in roadway departure crashes.	4.1 Educate roadway users on proper recovery once a vehicle leaves the roadway; utilize media, community resource officers, websites, etc., to increase awareness of the dynamics of roadway departure crashes to the public.	Education

Roadway Departure-Related Collision Objectives & Strategies		
Objectives (What)	Strategies (How)	Implementation Area(s)
4. Educate roadway users to understand the contributing factors in roadway departure crashes.	4.2 Work collaboratively with partner agencies and others to integrate new content into the driver education curriculum and the driver manual.	Education
	4.3 Raise awareness about the dynamics of texting and other distractions while driving by sharing effective messages with all safety partners.	Education
5. Improve incident response.	5.1 Improve emergency response times to rural crash locations.	Emergency Response
	5.2 Work with state and local fire, EMS, law enforcement, and incident response personnel to identify opportunities for reducing secondary crashes through coordinated incident response.	Education, Engineering, Emergency Response