



**NORTH CAROLINA**  
Department of Transportation

# **NCDOT Speed Management Plan** **An Overview of What's to Come**

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Executive Committee for Highway Safety  
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Connecting people, products and places safely and efficiently with customer focus, accountability  
and environmental sensitivity to enhance the economy and vitality of North Carolina

## **Speed Management Plan for NCDOT**

- Overview
- Why a plan is needed
- Other efforts nationally
- What our approach will focus on:
  - Build on previous efforts in NC
  - Review recent efforts on Speed Management (Nationally and Locally)
  - Identify and converse with peers and experts.

# Why is a Speed Management Plan Needed?


- Consistent emphasis area in every Strategic Highway Safety Plan since 2014.
- Goal “Reduce speed-related fatalities and serious injuries by 50 percent by 2035, moving towards zero by 2050.”

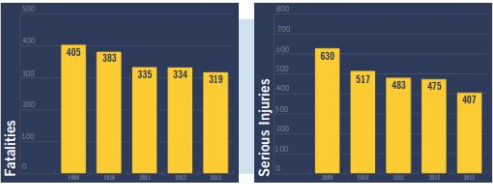
## 2014 SHSP

### SPEED

As is the case in much of the country, speeding persists as a highway safety problem in North Carolina. The North Carolina General Statutes (§20 – 141) refer to speeding as driving at a “speed greater than is reasonable and prudent under the conditions then existing,” while the State crash report form (Form DMV-349) defines speeding as either exceeding “authorized speed limit” or exceeding “safe speed for conditions.” Not only do higher speeds leave less time for drivers to perceive and react to roadway conditions or situations, they also lead to more severe impacts when collisions do occur. Because excessive speed can exacerbate all other roadway safety issues in North Carolina, progress in addressing speeding has the potential to positively affect other areas, as well.

It takes the involvement of many parties to create a culture that encourages and expects safe speeds. Such parties include law enforcement, roadway designers, driver educators, and drivers themselves.





#### NOTABLE FACTS

- 2 of 5 fatal crashes in North Carolina are related to speeding.
- Speeding is a contributing factor in more fatal crashes in North Carolina than alcohol or seatbelt use.

#### EMPHASIS AREA GOAL

In 2013, there were 319 fatalities and 407 serious injuries from speed-related crashes. The goal for this emphasis area is to reduce speed-related fatalities and serious injuries.

North Carolina Strategic Highway Safety Plan - 2014

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## 2019 SHSP

NORTH CAROLINA STRATEGIC HIGHWAY SAFETY PLAN

### Speed

**FOCUS AREA:** Human Behavior

**EA DEFINITION:** Crashes where the reporting officer noted the driver's contributing circumstance as “exceeding authorized speed limit” or “exceeding safe speed for conditions.”

**EA GOAL:** Reduce speed-related fatalities and serious injuries by 50 percent by 2035, moving towards zero by 2050.

#### Description of the Issue

In North Carolina, crashes are considered “speed-related” if a driver contributing circumstance included “exceeding authorized speed limit” or “exceeding safe speed for conditions” on the Crash Report Form (Form DMV-349). Speed limits are set based on roadway design, anticipated traffic volume, and other characteristics, like travel speed. On existing State-owned roads, if a speed limit change is requested, a traffic engineer considers characteristics like road geometry, existing land use, presence of curves, crash history, and operating speeds to determine if a change is appropriate. Over 75 percent of speed-related crashes involved a single vehicle and 77 percent of speed-related fatalities involved a vehicle leaving the travel lane.

Establishing a culture of safe speeds is a vital component in reducing fatalities and serious injuries in North Carolina. The effects of speed are fundamental in a crash outcome. The human body has a limit to the forces it can withstand before sustaining an injury. It is a matter of physics that in a crash, higher speeds result in higher forces. Drivers must use judgment to choose appropriate speeds to safely navigate the conditions of the roadway. In North Carolina, there are more than twice as many rural roads than urban roads.

25 Corral Gates Public Works Department (P.W.D.) Traffic Calming (COPY 5). <https://www.corralgates.com/traffic-calming-copy-5>

meaning the concept of safe speeds will differ in these area types. Although speed limits are highest on interstates, there are more speed-related crashes (including fatalities and serious injuries) on State secondary routes in rural areas and local roads in urban areas. This illustrates that speed in and of itself is not the primary issue, but the selection of appropriate speeds based on the context of the roadway and its users. For example, a downtown corridor may have a posted speed limit of 35 mph, but a “condition” of high pedestrian activity at nighttime should necessitate drivers reduce speeds. In a rural context, a speed limit may be set at 55 mph on a two-lane road, but the presence of sharp curves (especially at night or in wet conditions) should necessitate drivers to reduce speeds.

A pedestrian's chance of survival exponentially increases at lower speeds.<sup>25</sup>

If hit by a vehicle driven at this speed a:

- Person survives the collision
- Collision results in fatality

30 MPH: 100% survival (10 people icons)

35 MPH: 100% survival (10 people icons)

40 MPH: 100% survival (10 people icons)

45 MPH: 100% survival (10 people icons)

50 MPH: 100% survival (10 people icons)

55 MPH: 100% survival (10 people icons)

60 MPH: 100% survival (10 people icons)

65 MPH: 100% survival (10 people icons)

70 MPH: 100% survival (10 people icons)

75 MPH: 100% survival (10 people icons)

80 MPH: 100% survival (10 people icons)

85 MPH: 100% survival (10 people icons)

90 MPH: 100% survival (10 people icons)

95 MPH: 100% survival (10 people icons)

100 MPH: 100% survival (10 people icons)

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## 2024 SHSP



### SAFER SPEEDS

**EA DEFINITION:** Crashes where the reporting officer noted the driver's contributing circumstances as “exceeding authorized speed limit” or “exceeding safe speed for conditions.”

**EA GOAL:** Reduce speed-related fatalities and serious injuries by 50 percent by 2035, moving towards zero by 2050.

#### Building a Safer System

Previous SHSPs have focused on “speeding” when drivers travel over the posted speed limit or too fast for the roadway conditions. While it is important to curb speeding, the 2024 Update shifts the focus to address and prevent speeding and also promote safer speeds. The concept of safer speeds emphasizes the role of speed as a contributing factor in a fatal or serious injury crash, regardless of the posted speed limit. Creating a transportation system that features safe speeds surely depends on drivers obeying the posted speed limit. Roadway designers and operators have the shared responsibility of creating infrastructure that encourages these safe speeds. This reframes the concept of “exceeding safe speed for conditions” to be about more than the weather or other dynamic conditions. It also considers the

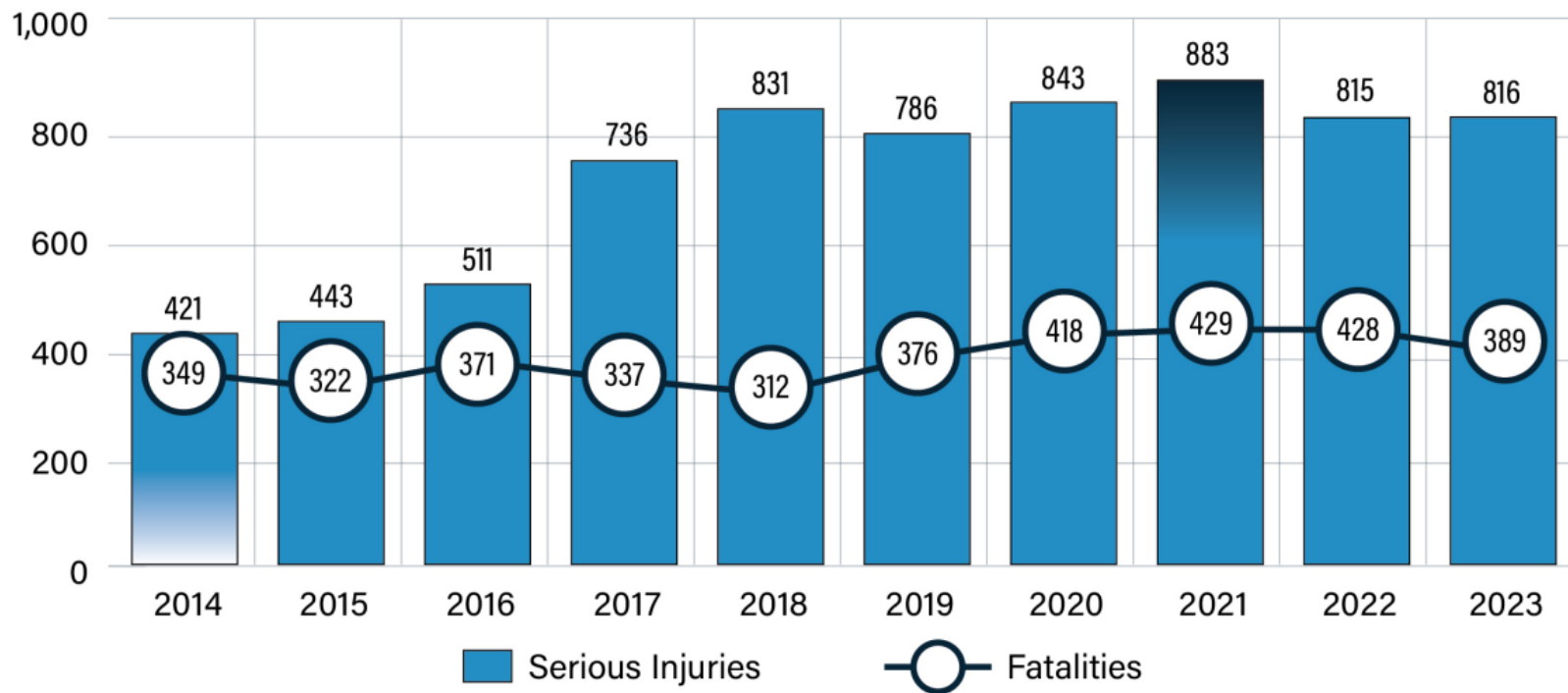
context and surrounding land use and the effects of roadway design on user behavior. For example, while a vehicle may be traveling at the posted speed limit of 40 mph at the time of a crash, it may not be traveling at a safe speed if the crash involved a pedestrian in an area with pedestrian activity. Alternately, a road may have a posted speed limit of 30 mph due to the surrounding land use context, but if it features certain characteristics like wide lanes then it may inherently feel like a faster road, resulting in drivers exceeding the posted speed limit.

NCDOT has the authority to set the speed limit on state-owned roads, with statutory speed limits set at 35 mph inside municipal limits and 55 mph outside of municipal limits. Cities can set speed limits higher or lower on the roads they own.<sup>26</sup> Land use, geometric design, pedestrian volume, bicyclist activity, and driveways are all considered when

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## Why is a Speed Management Plan Needed?

- Opportunity to reduce fatalities and serious injuries.



*Total Speed-Involved Fatalities & Serious Injuries (Last Decade).*  
*Sources: NC Crash Database as of April 2024 (2016 to 2023); HSIP 2022 Report (2013 to 2015).*

## **Why is a Speed Management Plan Needed?**

- Speed is a major topic for NCDOT
  - Most roads in NC have speed limits set by general statute or by NCDOT
  - Speed (and the perception of speed) is a consistent community concern of neighborhoods, towns, and cities
  - Design speed is a central driver of planning and design of roadways



# Speed on the National Scene

USDOT National Roadway Safety Strategy

<https://www.transportation.gov/NRSS>

Click Images  
to access  
dashboards

## SPEEDING



Geography



Crash  
Characteristics



Environmental  
Characteristics



Drivers



Restraints



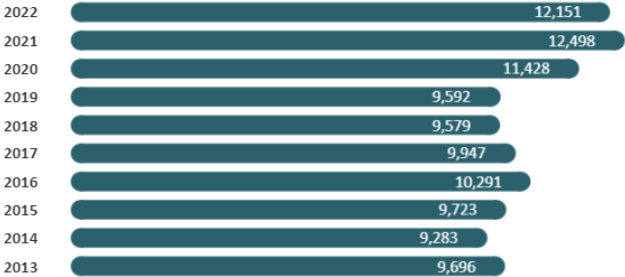
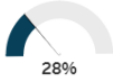
Alcohol



Percentage of Speeding Related Fatalities

<25% 25%-37% >37%

National  
Speeding-Related Fatalities, 2013-2022  
104,188



Note: Select one year or consecutive years only



Daytime  
25%



Nighttime  
31%

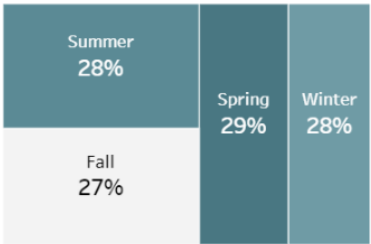


Male  
29%

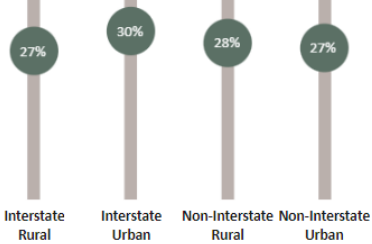


Female  
25%

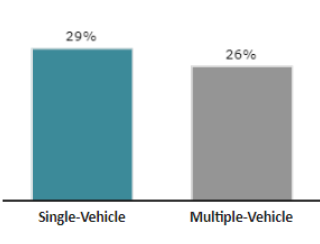
### Season



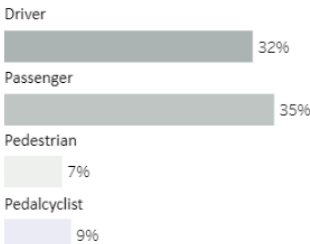
### Roadway Function Class



### Crash Type



### Person Type

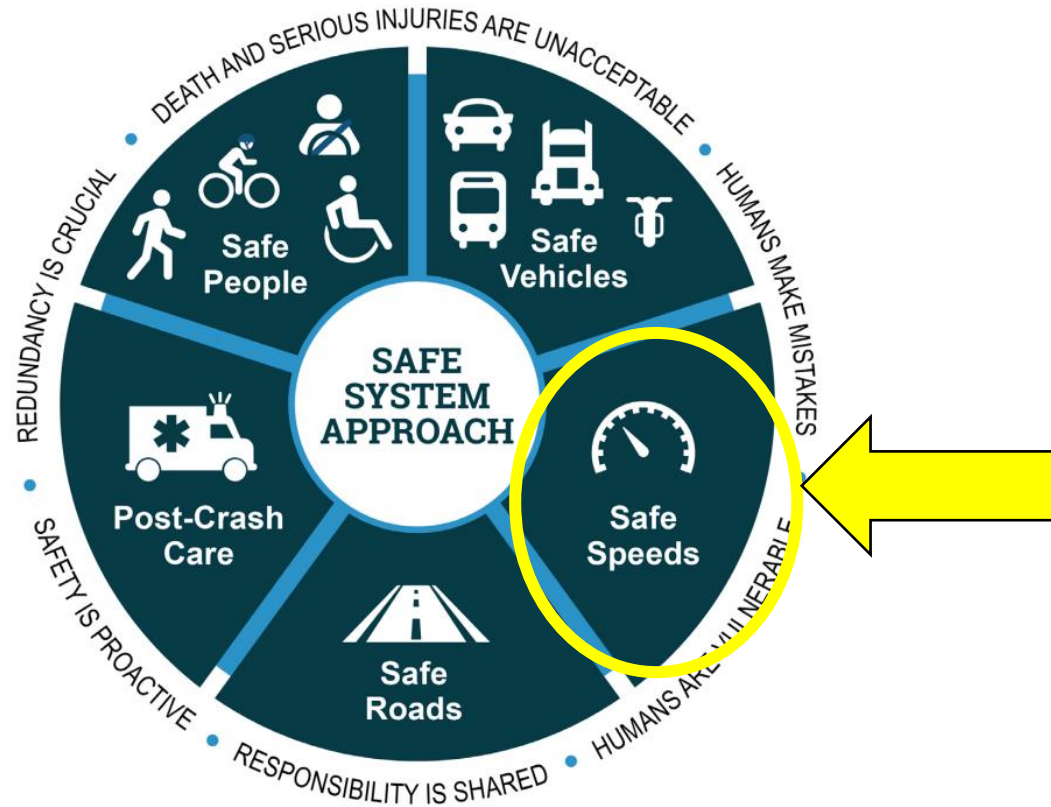


NHTSA considers a crash to be speeding-related if any driver in the crash was charged with a speeding-related offense or if a police officer indicated that racing, driving too fast for conditions, or exceeding the posted speed limit was a contributing factor in the crash. A speeding-related fatality is any fatality that occurs in a speeding-related crash.



## Speed on the National Scene

Safe Speeds - a core concept of the Safe System Approach





## Speed on the National Scene

ITE - Speed Management for Safety (toolsets and case studies)

<https://www.ite.org/technical-resources/topics/speed-management-for-safety/>



ABOUT MEMBERSHIP RESOURCES PROFESSIONAL DEVELOPMENT EVENTS / MEETINGS CONNECT

### Speed Management for Safety

The Speed Management for Safety resource hub is an interactive website on speed management for all transportation professionals seeking to safely manage speeds. The [Institute of Transportation Engineers](#) developed this resource hub, with funding from the [Road to Zero Coalition](#), to provide transportation professionals with tools when considering the intricate factors in advancing effective speed management and road design. Creating a comprehensive speed management program can be an element of a successful Vision Zero plan toward eliminating roadway-related fatalities in the United States by 2050.

**“In 2050, those crashes are less severe, in part because of changes to how we build roads. Roadways are designed to reduce speed in safety-critical areas and lessen the chances of the most severe crash types...”**

**- The Road to Zero, a Vision for Achieving Zero Roadway Deaths by 2050**

Transportation professionals understand the critical connection of vehicular speed to fatalities and serious injuries, but the factors in designing a road for safe speeds, mobility, and context is complex. With the use of roads evolving, speed management must take into consideration policy, road design, and enforcement to provide a safe environment for vehicles, freight, public transit,

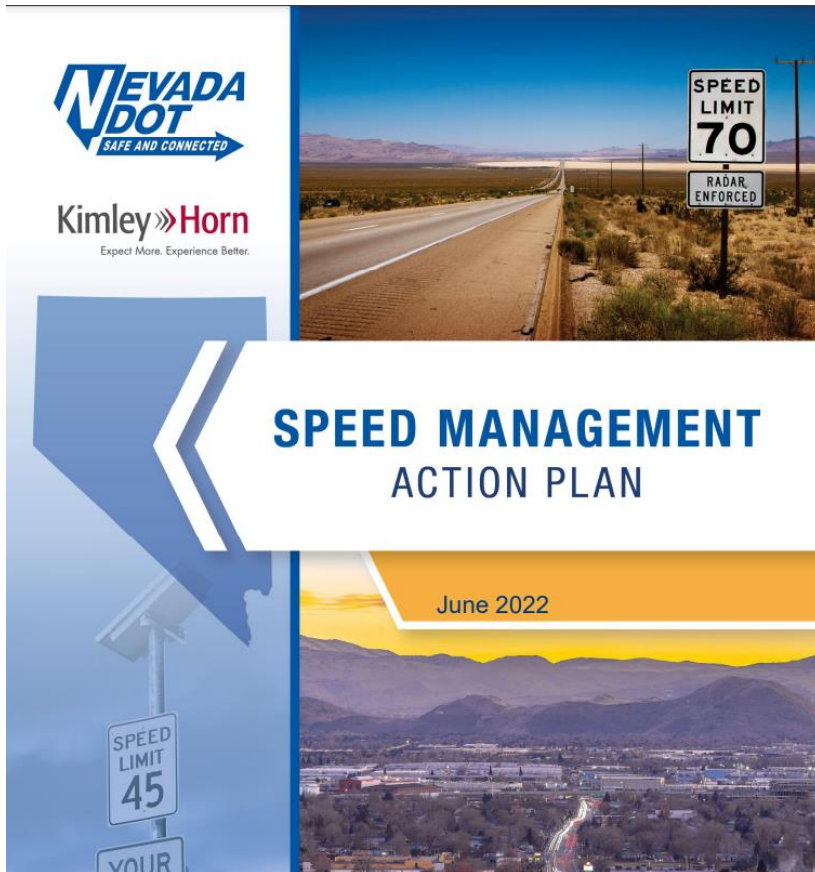
pedestrians, bicycles, and other modes.



## Speed on the National Scene

Many states, cities, and MPOs are addressing speed in intentional ways

Nevada



Bellevue, WA



## NCDOT activities on speed management

### We're not starting from scratch

- Speed limit setting policy (2018) de-emphasizes the 85th percentile; other factors are more fully evaluated and considered.
  - [https://connect.ncdot.gov/resources/safety/Teppl/Pages/Teppl-Topic.aspx?Topic\\_List=S40](https://connect.ncdot.gov/resources/safety/Teppl/Pages/Teppl-Topic.aspx?Topic_List=S40)
- Statutory speed review program for rural roads
- Road diet guidance (done but not released)
- Implementation efforts / Evaluations
  - Worked with City of Raleigh to change operating speeds in downtown Raleigh from 40-45mph to 25mph speeds through signalization changes



## Next Steps



**Thank you!**

