



Introduction to Roadside Safety

Design Manual

Chapter 8

Safety Design

Originally Issued: 12-13-10

This chapter discusses roadside obstacles encountered during the design process, and provides guidelines for how to treat them. This information is generally intended to conform to the 2006 edition of AASHTO's *Roadside Design Guide*, although some of the guidelines have been modified to apply to conditions in Iowa.

Creating a “Forgiving” Roadside

Despite all the effort that goes into keeping vehicles on the road, it is inevitable that some vehicles will leave the pavement and enter the roadside. To allow for these vehicles, a forgiving roadside is designed to be relatively flat and free of obstacles. This area is referred to as a clear zone. Providing a clear zone reduces the likelihood that a severe crash will occur.

Ideally, there should be no obstacles within the clear zone. However, if an obstacle cannot be removed, then engineering judgment must be used to determine how to treat it. Treatment methods include relocating the obstacle, reducing the hazardous potential of the obstacle by making it traversable or breakaway, or shielding the obstacle with a barrier. The method chosen depends on the probability of a crash occurring, its likely severity, and the available resources.

Use of Barriers

It should be noted that barriers themselves are fixed objects that may be impacted and that no barrier is 100% safe. Placement of a barrier to protect an obstacle is only justified when a crash into the barrier would be less severe than a crash into the obstacle.

Barriers must be crash tested in order to ensure they are strong enough and safe enough to use on our roadways. Since 1993, NCHRP Report 350 has been used as a basis for subjecting a proposed barrier design to full-scale crash tests in order to determine its crashworthiness. Recently, AASHTO's Manual for Assessing Safety Hardware (MASH) has been adopted as the successor to NCHRP 350. While these new guidelines are more thorough and more demanding, barriers designed and tested in accordance with either NCHRP 350 or MASH are acceptable for use in Iowa.

Chronology of Changes to Design Manual Section:

008a-001 Introduction to Roadside Safety

12/13/2010 NEW

An introduction to roadside safety