

TRAFFIC AND SAFETY INFORMATIONAL SERIES

FREQUENTLY ASKED QUESTION #10

HOW ARE POSTED SPEED LIMITS AND THE LOCATIONS OF SPEED LIMIT SIGNS DETERMINED?

DETERMINATION OF THE POSTED SPEED LIMIT

In Iowa, several jurisdictions (e.g., the state, counties, and cities) have the authority to establish speed limits on roadways. City and county agencies may establish posted speed limits of up to 55 mph, and the Iowa Department of Transportation (DOT) may establish speed limits of up to 70 mph.

The actual posted speed limit on a particular roadway, however, is typically established based on the results of a traffic engineering study. In general, these investigations analyze existing roadway conditions, crash data, and/or the prevailing speed of most drivers. The following factors are typically considered:

- The 85th percentile speed (determined by a speed study)
- Roadway type and surface characteristics
- Roadside development
- The safe speed for curves or hazardous locations
- Parking practices and pedestrian activity
- Crash history

In many cases, the primary determining factor is the 85th percentile speed of the vehicles already using a particular segment of roadway. This is the speed at or below which 85 percent of vehicles travel on a given roadway (see Figure 1 for a typical distribution of speeds on a roadway). This speed is generally considered reasonable and safe.

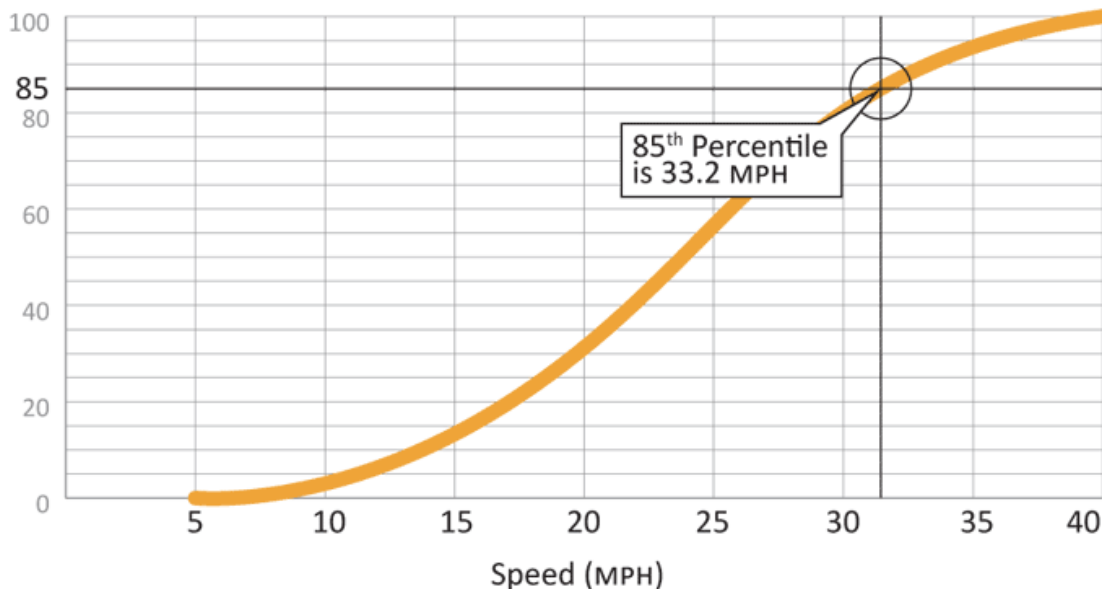


FIGURE 1 Typical distribution of vehicle speeds.

Reference: Speed Management: A Manual for Local Rural Road Owners, Federal Highway Administration.

The 85th percentile speed is primarily based on most drivers' sense of comfort and safety along a roadway segment and the characteristics and overall environment of the roadway. Therefore, setting a speed limit at or near the 85th percentile speed is desirable because the overall objective should be to set a speed limit most drivers will obey. If the speed limit is set too low, some drivers will obey it while others (possibly the majority) will ignore it. This situation will actually decrease the overall safety of the roadway because it will result in a large range of vehicle speeds. A speed limit that is set too high can produce a similar situation. The safest situation is when every vehicle (or at least the majority of vehicles) on the roadway travel at the same speed.

The speed limit sign for a roadway segment displays either what is considered to be a reasonable speed (i.e., the posted speed limit, as determined by the results of an engineering study into the factors listed above) or the statutory speed (established by the state legislature for specific types of roadways) for the segment during typical driving conditions. Speeds are displayed in increments of 5 mph.

LOCATION OF THE SPEED LIMIT SIGN

There is no standard spacing for speed limit signs along roadway segments. The only requirement in the *Manual on Uniform Traffic Control Devices* (MUTCD) is that speed limit signs be located at the points of change from one speed limit to another, beyond major intersections, and at other locations where it is necessary to remind road users of the applicable speed limit. Speed limit signs are also generally placed to the right of the roadway, but supplemental signs may be placed to the left along one-way roadways because the view of the driver in the left lane may be obstructed to the right.

SPEED RESTRICTIONS IN THE IOWA CODE

There are also legislative restrictions on speed limits in Iowa. In the Iowa Code, speed limits are restricted to 20 mph in any business district, 25 mph in any residential or school district, 45 mph in any suburban district, 55 mph on rural highways, 65 mph on selected multilane highways, and 70 mph on Interstate highways.

A general application of these restrictions, however, can produce unreasonable situations in which drivers tend to ignore the speed limits. The local governmental entities in control of a particular roadway segment can therefore increase the speed limits required in the Iowa Code when the results of an engineering and traffic study indicate that a higher speed limit is more reasonable and safer. However, local authorities in Iowa do not have the ability to authorize speed limits greater than 55 mph.

The Iowa DOT may establish speed limits higher than 55 mph on roadways under its jurisdiction, but such roads must first be analyzed by the Iowa Department of Transportation to confirm that the higher speed is warranted.