
221 SPEED ZONING CONCEPTS

The majority of motorists drive at a speed that they consider reasonable and safe for existing conditions. Posted limits that are set higher or lower than those dictated by roadway and traffic conditions are ignored by the majority of motorists. A speed limit should be set so that the majority of motorists observe it voluntarily and enforcement can be directed to the minority.

Speed zoning in Arizona is based on the principle of setting speeds as near as practicable to the speed that 85% of the drivers consider to be reasonable and prudent, i.e., the 85th percentile speed. The 85th percentile correlates to the first standard deviation above the mean; statistically the first standard deviation is the average speed of motorists above the mean speed.

First, however, an engineering and traffic investigation shall show roadway conditions to be satisfactory for that speed. Speed limits thus established encourage voluntary compliance because they appear reasonable to the majority of motorists.

The roadway design speed has been cited by some transportation professionals as a basis for limiting the maximum speed limit. The determination of design and realistic speed zones are two separate and distinct activities that should not be combined to establish speed zones that are unreasonable to motorists.

The design speed is selected to establish roadway design criteria such as width, alignment, and profile. Once the roadway is constructed, the driver operates at a speed he/she determines is reasonably safe and prudent, usually represented by the 85th percentile speed. The engineering and traffic investigation evaluates the operating conditions on the highway and reviews the roadway characteristics and speeds that motorists consider reasonable.