

Traffic Safety Facts

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A Field Test of Rational Speed Limits in Gulfport, Mississippi

In an effort to address restoring credibility to speed limits, the National Highway Traffic Safety Administration and the Federal Highway Administration (FHWA) have jointly undertaken tests of speed limits. These speed limits have been established by a formal engineering review that starts with the 85th percentile speed of free flowing traffic. However, these speed limits could be set as low as the 50th percentile speed based on access, pedestrian activity, crash history, and other factors. Speed limits so set are referred to as “rational speed limits.” The overall objective of these tests is to determine whether speed limits so set, when combined with well publicized and targeted enforcement, result in greater compliance, more-uniform speeds, and improved safety.

This approach of setting speed limits is based on work showing the 85th percentile to be an acceptable limit from a safety perspective, as well as the assumption that most motorists will select a safe speed on their own when given the opportunity.

This report presents the evaluation results from the first of six projects being conducted jointly by NHTSA and FHWA on the demonstration and evaluation of rational speed limits. The evaluation was conducted by an independent contractor (Westat, Inc.). Following data collection and engineering analyses, the speed limits on various portions of a demonstration road in Gulfport, Mississippi (a 7.5-mile segment of U.S. Route 49), were raised 5, 10 or 15 mph at selected sites, creating five speed zones (35, 40, 45, 50, 60 mph). The increases in limits were accompanied by public information and education, and stricter enforcement of the raised limits.

Data on speeds, crashes, citations and enforcement hours were collected in both Gulfport and a comparison community prior to and quarterly during the one-year demonstration period.

Findings

Figure 1 shows the improvement in speed limit compliance following introduction of rational limits in the demonstration community. The black bars depict the proportion of drivers exceeding the limit by 10 mph or more at each of 6 representative speed measurement locations along U.S. Route 49 during the baseline period prior to the introduction of rational limits. The grey bars depict the proportion exceeding the limit during the period rational limits were implemented. This figure shows that compliance with the newly introduced rational speed limits was better than compliance with the prior limits (except for site 1, where the speed limit was unchanged).

Figure 1. DEMONSTRATION COMMUNITY: Percent of Vehicles Traveling at Least 10 mph Over the Speed Limit

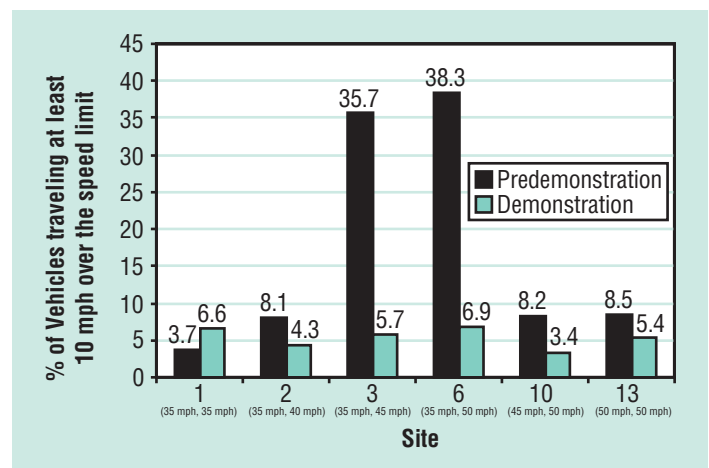


Figure 2 shows the comparable data for 10 mph+ over the speed limit for the comparison community. Note that compliance with the limit was mostly unchanged or somewhat worse during the equivalent periods.

Figure 2. COMPARISON COMMUNITY: Percent of Vehicles Traveling at Least 10 mph Over the Speed Limit

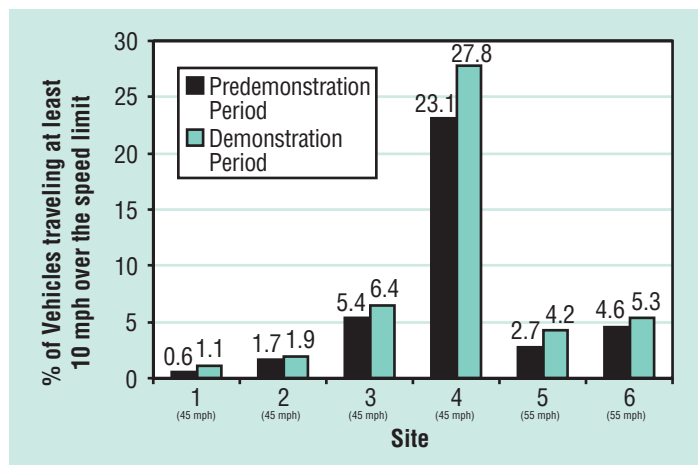
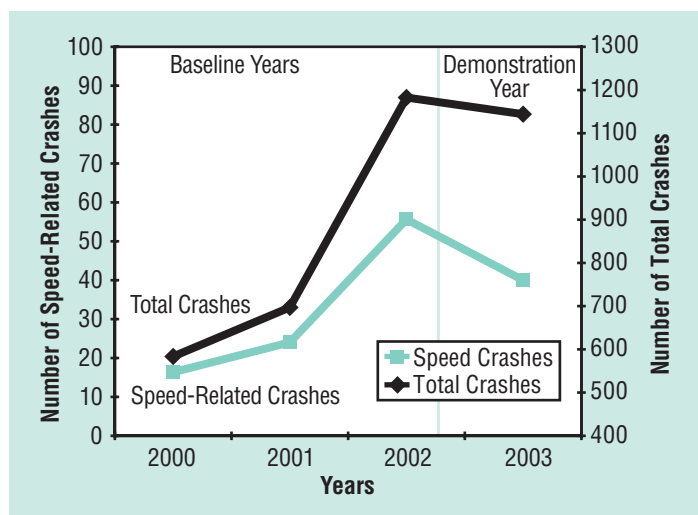


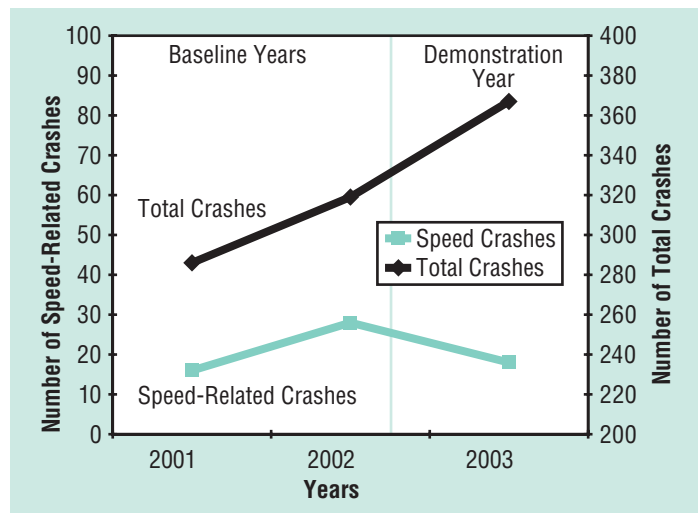
Figure 3 shows that total crashes and speed-related crashes decreased in the demonstration year, reversing a 3-year upward trend. Nevertheless, this should be interpreted with caution because compared with the prior 3 years, both speed-related and total crashes were somewhat higher during the demonstration.

Figure 3. DEMONSTRATION COMMUNITY: Speed-Related and Total Crashes



It is also noteworthy that total crashes increased in a comparison community where no rational limits were imposed (see Figure 4). This provides some support to the view that the rational limits did not have a negative impact on safety since no corresponding increase was found in the demonstration community. However, it is not possible to determine the effect of rational speed limits on crashes from this limited amount of data.

Figure 4. COMPARISON COMMUNITY: Speed-Related and Total Crashes



Further evaluation studies (currently ongoing in 6 other communities) are required to determine the overall safety effect. However, these findings suggest that rational limits can be implemented without compromising safety.

How to Order

For a copy of *Field Test of the Impact of Setting and Enforcing Rational Speed Limits* (38 pages plus appendices), write to the Office of Behavioral Safety Research, NHTSA, NTI-130, 1200 New Jersey Avenue SE., Washington DC 20590, send a fax to 202-366-7096, or download from <http://www.nhtsa.dot.gov>. Paul J. Tremont, Ph.D., was the project officer.



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