

Study into the effectiveness of rural speed limits

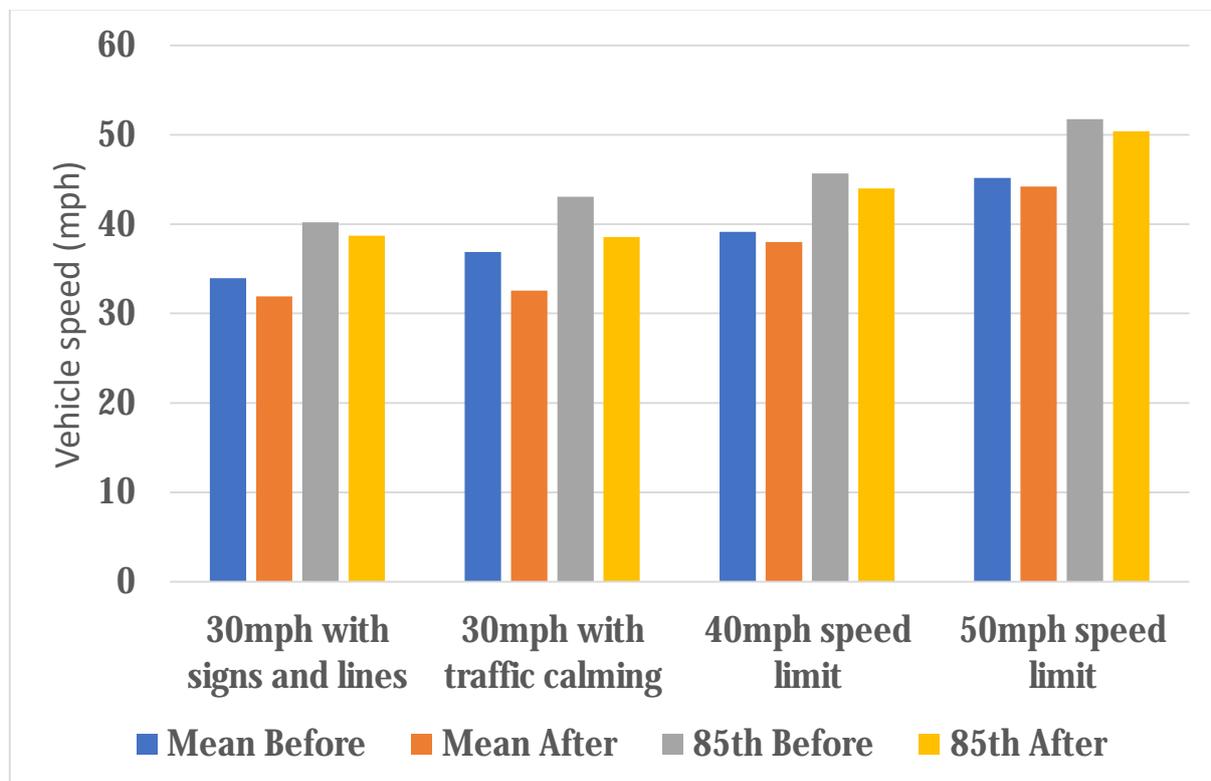
Executive Summary

The study considered all the reduced speed limits that were progressed by the Road Safety Team under the rural speed limit review which followed the release of the DfT circular 01/2006. The study considered collision and speed data from the following categories of speed limit:

- 30mph speed limits with signs and lines alone (25 no. sites),
- 30mph speed limits with supporting traffic calming measures (16 no. sites),
- 40mph speed limits (55 no. sites),
- 50mph speed limits (22 no. sites).

Impact on vehicle speeds:

The following chart compares the speed reductions across the four different categories of speed limit. It displays changes to both the mean speeds and 85th percentile speeds (the speed at which 85% of traffic will be travelling at, or below).



30mph speed limits with signs and lines alone

These 30mph speed limits were implemented on highly developed roads that recorded mean speeds in the region of 30mph to 35mph prior to implementation. These were installed with *signs and lines alone*.

This type of speed limit was typically implemented on low-speed roads which did not have a pre-existing crash record. The reduced speed limits were therefore intended to align the posted speed limit with the driving environment and not specifically to address a road safety issue.

The implemented speed limit resulted in a moderate reduction in mean speeds (2mph on average). However, a smaller reduction in 85th percentile speeds (1.5mph on average) meant the variance between the two measures increased slightly. This indicates that this type of speed limit had the least impact on the fastest drivers, resulting in the widest speed distribution of vehicle speeds recorded across the four types of speed limit.

30mph speed limits with supporting traffic calming measures.

The 30mph speed limits were implemented on highly developed roads that recorded mean speeds in the region of 35mph to 40mph prior to implementation. These were installed with *supporting traffic calming measures*.

This type of speed limit was typically implemented on moderate speed roads which did not have a substantial pre-existing crash record. This reduced speed limit was therefore intended to change the character and appearance of the driving environment to one that was commensurate with a 30mph speed limit and not specifically to address a road safety issue.

30mph speed limits with supporting measures achieved the greatest reduction in both mean speeds (4.4mph) and 85th percentile speeds (4.5mph), causing both to reduce by a uniform amount. There was little change to the variance between mean speed and 85th percentile speed. This suggests that the supporting engineering measures were effective in reducing the speed of the faster drivers and as a result maintained a narrow distribution of vehicle speeds.

The data from both types of 30mph speed limit indicates that appropriately set 30mph speed limits can have a positive impact on vehicle speeds.

40mph speed limits

40mph speed limits were typically implemented on higher speed, moderately developed rural roads. The recorded mean speeds prior to implementation varied widely between 34mph to 48mph. In most instances these roads were derestricted (60mph) and many featured a notable crash or KSI problem. Where lower mean speeds were recorded, the speed limit was reduced with signs and lines alone, whilst the sites with higher recorded speeds included supporting traffic calming measures to help bring vehicles speeds down.

40mph speed limits achieved modest reductions to mean speeds (1.1mph). They had a more pronounced effect on the faster drivers with 85th percentile speeds reducing by 1.6mph. As a result, this type of speed limit recorded the closest spread between mean speed and 85th percentile speed, indicating a reduced speed differential between the slowest and fastest and drivers. This may have been particularly pronounced on previously derestricted roads where some drivers may have had difficulty selecting an appropriate speed for the conditions. 40mph speed limits therefore maintained the narrowest (and thereby the safest) distribution of vehicle speeds of all the different speed limits.

50mph speed limits

50mph speed limits were typically implemented on higher speed, lightly developed rural roads, and usually featured a moderate number of crashes. The recorded mean speeds prior to implementation varied widely between 42mph to 50mph. The speed limit was set to reflect the driving environment, which typically featured a lower level of frontage development than the 40mph speed limits. The recorded mean speeds prior to implementation were usually too high to support a 40mph speed limit. Although the recorded mean speeds were often substantially lower than 50mph, many of the 50mph limits were progressed in response to local concerns, rather than an identified road safety issue.

As with 40mph speed limits, the 50mph speed limits achieved modest reductions to mean speeds (1.1mph) but a more pronounced impact on 85th percentile speeds (1.6mph). This type of speed limit was effective in reducing the speed differential between the slowest and fastest and drivers. This was the only speed limit where the 85th percentile speeds fell within the posted speed limit, indicating a high level of compliance.

August 2021