

Effects of Enhanced Law Enforcement on Vehicle Speeds

Both transportation and law enforcement agencies in Oregon face increasing challenges to maintain vehicular speeds at safe and legal levels. Vehicle Miles Traveled (VMT) in Oregon has consistently outpaced population growth in the state. Reduced manpower and limited law enforcement budgets are a further constraint.

The combination of increased demands on Oregon's transportation system and restricted resources in law enforcement led the Oregon Department of Transportation (ODOT) to investigate the relationship between motorists' speeds and law enforcement levels. If an optimum level of law enforcement could be identified that reduces the number of motorists exceeding the posted speed, the end result could be a more efficient deployment of scarce law enforcement resources.

The main objective of this project was to evaluate different levels of law enforcement to determine if one particular pattern was more effective than others in controlling motorists' speeds.

Research Methods

Six sites were selected for various levels of enhanced enforcement in cooperation with local law enforcement agencies. All of the sites were located on highways with a posted speed of 55 mph for all vehicles, with the exception of one, which had a posted speed of 50 mph.

Levels of enhanced enforcement were divided into three different categories: Heavy – 25 hours of additional enforcement per week; Medium – 15 hours of additional enforcement per week; and Light – 10 hours of additional enforcement per week.

In addition, law enforcement personnel were placed on either a "Fixed" or "Random" schedule. A Fixed schedule specified certain hours of the day that the given level of additional enforcement would be applied, typically during morning or afternoon peak traffic times. A Random schedule

allowed the given level of additional enforcement to be applied at any time during an enforcement shift.

Patrols at each of the six sites were operated on a rotating schedule. Officers provided enhanced patrols over a two-week period at each site, followed by six-weeks with no enhanced patrols. This eight-week cycle was repeated over a period of 1½ years at each site. To minimize the effects of recreational and leisure travel

associated with each site, all of the enhanced patrols were on weekdays.

All of the sites had automated traffic recorders to collect speed data throughout the study. Each of the recorders was configured to count vehicles and record their speeds. Traffic volume and speed data were collected at each site for a two-month period prior to the deployment of enhanced enforcement, to establish a baseline condition.



Research Findings

Median and 85th percentile speeds decreased from the Baseline speeds at five of the six sites when enhanced enforcement was present, but they were still higher than the posted speed. For these five sites, statistical tests showed that there was a significant relationship (albeit small in magnitude) between speed and the presence of enhanced enforcement.

The greatest reductions in median and 85th percentile speeds occurred at the site with a Heavy enforcement pattern on a Fixed schedule and at the site employing a Light enforcement pattern on a Fixed schedule. Overall, the Fixed enforcement schedules produced greater speed reductions than Random enforcement schedules. However, identifying an optimum level of enforcement proved difficult, since the reductions in speed did not consistently correspond with the levels of enforcement.

The data also showed a wide variation in the number of citations issued per hour, independent of the designated level of patrol. Further analysis revealed that the observed differences in speed reduction among sites may have been more closely associated with the citations issued than with the level of patrol. This evidence suggests that increased visibility of law enforcement patrols may have limited effects on speeds if these patrols are not accompanied by vigorous enforcement activities.

This makes it difficult at best to reach a conclusion as to the optimum deployment of law enforcement resources in Oregon. Related research suggests that most Oregon drivers will drive at a speed that they believe is reasonable for the conditions outlined in the basic rule, regardless of law enforcement presence or posted speed.

Recommendations

Where speeds are found to be excessive, especially in areas with high crash rates, enhanced enforcement is recommended. Given the evidence of Oregon drivers' perceptions of speed enforcement, however, it may take considerable effort for enhanced enforcement to be effective. Until revisions are made to Oregon speed laws allowing the establishment of enforceable maximum speeds on non-interstate rural highways, the effectiveness of enhanced enforcement may be compromised.

Recent legislation was passed by the Oregon Legislative Assembly in 2003, allowing ODOT to increase posted speeds on interstate highways up to a maximum of 70 mph (65 mph for trucks and buses). Since posted speeds on Oregon's interstate highway system represent an absolute maximum (as opposed to rural, non-interstate highways), it is recommended that further research be conducted on the interstate system. ODOT could examine different levels and patterns of enforcement to find an optimum level of law enforcement deployment on the interstate system, an objective that was not accomplished in the current research effort.



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