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Effectiveness of Stationary Police Vehicles with Blue Lights in Freeway Work Zones

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Current Situation

Work zones can create hazards for both workers and drivers. Reducing vehicle speeds near work zones and increasing the separation between traffic flows and work zones have been shown to reduce both the number and severity of work zone crashes. However, increasing driver observance of reduced speed limits in work zones requires innovative and effective countermeasures.

Research Objectives

Florida International University researchers examined how drivers responded to work zones when stationary police vehicles with flashing blue warning lights were placed in work zones.

Project Activities

Two locations were selected for study. The first was a static work zone that was part of a project to widen I-95 near Daytona Beach, which includes changes to interchanges with I-4 and US-92. The study work zone, on I-4 eastbound approaching I-95 with the left-most lane closed at all times, remained in place for the entire six-week duration of data collection. The second location was a dynamic work zone that is part of a resurfacing project on I-75 in the Gainesville area. For this project, two or two-and-a-half lanes were closed nightly as milling and resurfacing operations moved along I-75. Data were collected when traffic was flowing freely and congestion did not interfere with driver choices of speed or lane.

In each study work zone, a police vehicle was parked with blue, nighttime emergency lights flashing. Data were collected using safety barrels specially equipped to detect vehicle speeds. Several of these barrels were placed along the highway before, in, and beyond the work zone to capture speeds. Video cameras were also used in order to capture drivers' lane use when approaching and passing the work zone. Data were collected during late night and early morning hours for two weeks before the police vehicles were present, for two weeks during which the vehicle was present, and for two weeks after. Data collection was prevented on a few days because of weather or mechanical issues.

In both study areas, the researchers found that average driver speeds were reduced when a police vehicle with flashing blue lights was present. Average speed was reduced by about 4% at both locations. The presence of the police vehicle had a pronounced effect on the number of cars speeding, reduced by 22% on I-4 and 16% on I-75. In both cases, a small reduction in average speed continued to be observed in the two weeks after the police vehicle was removed.

Lane use changes at the I-4 work zone were affected by an off-ramp just east of the work zone, which caused many drivers to select their lane regardless of the work zone. Lane use was not an issue on I-75 as only one lane was available to drivers to pass through the work zone.

Project Benefits

Measures that encourage drivers to be more aware and use more caution near work zones can reduce crashes and injuries near these zones.

For more information, please see www.fdot.gov/research/.



The presence of a police vehicle with flashing lights encouraged drivers to reduce their speed.