Augmented Speed Enforcement (aSE)

Project Funded Under FHWA Rural Safety Initiative Program (RSIP)
The Problem

• More fatal crashes in rural areas compared to urban areas.
• Aggressive driving behaviors such as speeding are primary factors contributing to major-injury and fatality crashes.
• Higher crash rates at work zones where lower speeds are set temporarily.
• Rural crash rate at work zones is even higher compared to urban areas.
Related Discussion

• Automated versus Augmented
• Existing Automated Speed Enforcement project
The Solution

• Designing a system to communicate relevant vehicle speed, violation, and hazard information to the Driver, State Police, and Worker.

• Research Question: Whether the deployment of an Augmented Speed Enforcement (aSE) system will change driver behavior and reduce crash rates?
The System

Worker
Belt unit on worker (e.g., belt) in proximity receive vibration alert from pylons. Automatic EMS link

Sensors
Roadside (and pylon) sensors track vehicle speed and communicate

State Police
Officer receives automatic notification on display about identified speeding driver “ZXD 135 Speeding Prosecution – Prepare to Stop”

CMS
(maybe)
Inform driver that they are subject to speeding stop.

Smart Cones
Pylon sensors track car and estimate speed based on sonar → “tracer” lights to alert work crew (and driver)

Speeding Car

Down Road CHP

19 August 2009
Caltrans Improves Mobility Across California
Challenges

- Project site selection.
- California Highway Patrol System Integration.
- Driver behavior, before and after, study -- Time limitations.
- Emergency medical services integration.
Project Tidbits

• 32 month, $1.5M study.
• Inclusion of all four “E” elements i.e. Engineering, Enforcement, Education and Emergency medical services.