Bridging the Gap

Your Connection to Engineering Services

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Work Zone Speed Sensor for Safe California Road Work

Caltrans demonstrates its commitment to putting people first and prioritizing safety by ensuring secure working conditions for highway construction crews. One of the tools used to do this is the Work Zone Speed Sensor.

The Work Zone Speed Sensor was designed by Materials Engineering and Testing Services (METS) to monitor speeds throughout construction work zones. The system was initially deployed in District 3 as part of the Fix-50 project, following reports from construction staff of high speeds.

Data was recorded, including speed averages by length of vehicle, and sorted into bins that could be adjusted to compare the number of cars driving within the posted speed limit and those traveling above. Initial data from this project showed a high number of grossly speeding vehicles, which included those traveling 70 miles per hour (MPH) and above, with multiple vehicles traveling more than 100 MPH through the work zone.

The unit can be deployed on battery and solar power for remote fixed locations or attached to a generator light tower for portable deployments, as shown in the image. A cellular modem is an integral part of the system so that the unit can communicate remotely, and data can be accessed at any time by anyone on the Caltrans network.

After the District 3 deployment, the unit was deployed in District 8 to monitor the impact of lane shifts on speed. The goal of the system was to determine if speed deterrents (both intentional, such as rumble strips, and unintentional, such as the lane shifts) impacted the speed of travelers.

Data from this deployment showed that the time of day had a much larger impact on travel speeds than the lane shift.

Currently, METS is working on advancing the system to include automatic notifications to the California Highway Patrol (CHP) when the radar system records speeds of over a certain limit An example would be, if a vehicle is recorded at 100 MPH, a text or email would alert CHP of the location.

If you would like to join our team to work on projects like this, visit Working with the Division of Engineering Services for more information.