

Reducing Traffic Fatalities Using Historical GIS Data as a Deployment Guide

The majority of Alabama State Troopers utilize a GIS-enabled electronic citation system that captures location information. This E-Citation software is developed and maintained by the CARE Research and Development Laboratory at the University of Alabama. To date over 272,000 citations have been issued using this system, with approximately 20,000 more added each month. At the time a citation is issued the GPS location is used to automatically populate county and courthouse information that appear on a printed ticket. Later the citation location is mapped. Each location is snapped to a state-route and milepost, the route is then segmented and displayed as part of a graduated line above the roadway. The locations used to create the graduated lines can be filtered by any field within the citation (e.g. speeding citations, alcohol related citations in a given county).

Alabama crash locations can also be mapped in a GIS environment. The CRDL group has processed Alabama crash data using CARE for over twenty years. As with the citation locations, the crash locations are mapped using graduated lines that correspond to state-route segments. These locations can also be filtered to select specific sets of crashes (e.g. alcohol-related, pedestrian-related, weekend, nighttime).

With the primary goal of reducing fatal and serious injury crashes, these two sets of locations are spatially analyzed, providing recommendations for Department of Public Safety deployments that will maximize Trooper effectiveness. This presentation will include preliminary deployment recommendation methods and visual representations of this spatial analysis.

Dana Steil

Doctorial candidate, Department of Computer Science, University of Alabama