Traffic Engineering Research in South Carolina

Timothy J. Lewis
171 Moultrie St. MSC#1352
Charleston, SC 29409
Lewist1@citadel.edu

During my junior year, I took my first transportation engineering class and developed an immediate interest in the subject. My interest in transportation led to me to seek opportunities in research and analysis outside of the classroom. Beginning in October of my junior year, I was able to work as a research assistant for The Citadel's Department of Civil and Environmental Engineering where I had the opportunity to work on research projects that involved:

- *Traffic analysis for West Carolina Avenue*. This research was requested by a neighborhood association in the historic area of Summerville, South Carolina due to excessive traffic in the area. The project consisted of extensive data collection including 24 hour traffic counts, intersection turning movements, corridor inventory, stop sign compliance, and travel time studies. I was also responsible for evaluating data and developing the findings into a capacity analysis, travel time comparisons, traffic circulation patterns and improvement alternatives. A final report was prepared and presented during a neighborhood association meeting and at a town meeting where the Mayor and Town Council were present. Traffic calming alternatives that I recommended included speed humps, intersection diverters, as well as both short and long one-way pairs.
- *Scenic corridor study in conjunction with the local government on Bohicket Road in Charleston, South Carolina*. The Bohicket Road research consisted of conducting highway safety and crash analysis, involving 239 crashes occurring over a three year period. I was also responsible for calculating crash rates, identifying causation factors, conducting highway capacity and level of service analysis for two-lane and four-lane roadway segments using present and future traffic volume flows. The project also required a detailed inventory of corridor conditions including fixed object hazards, roadway geometric features, access points, and traffic control devices, and preparation of materials for a policy report.
- *Rural crashes in South Carolina communities*. For this project, I collected data and evaluated site conditions at rural locations across the state in order to evaluate roadway safety. This research was conducted in conjunction with Clemson University, Department of Civil Engineering, and included documenting site conditions and inventorying roadway/land use features in Sumter, Camden, Dillon, Conway, and Latta, SC for the purpose of analyzing the relationship between site conditions and vehicle crash factors.

The technical results of these projects will be summarized in my presentation. Through participation in these research projects I have learned how to use scholarly references, technical standards, developed familiarization of traffic analysis methods/software, how to properly present technical issues to the public, ability to defend my work, knowledge of the public and private sectors of work, and it has helped me choose transportation engineering as my career path.