2007 MATC Internship

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I came into the summer hoping to learn about traffic engineering and I gained so much more. From traffic counts to pavement markings, I experienced many aspects of traffic engineering.

I worked on projects from Wisconsin, New Mexico, Kansas, South Dakota, and Nebraska. It exposed me to different standards and requirements. My tasks included pavement markings, trip generation, trip distribution, traffic counts, traffic signal design, editing figures, and writing reports. The wide array of tasks gave me a better understanding of traffic engineering.

My first day started with a tour of the office. It also included lunch with the traffic team and I familiarized myself with software I would use on a daily basis. Synchro, SimTraffic, and MicroStation were the programs I used. Reviewing previous traffic impact studies accounted for part of my first week.

My first undertaking was editing figures for a project in Ashland, NE. I used MicroStation and added alternative scenarios' level of services (LOS). Most of my time on the project was spent getting acquainted with MicroStation.

An exciting project was an ethanol plant near Orchard, NE. It was a straightforward traffic impact study, which allowed me to be involved with every aspect. I started by looking at Nebraska Department of Roads' annual average daily traffic (AADT) to determine existing peak hour traffic volumes, and then used the *Highway Capacity Manual (HCM)* to find directional distribution and peak hour volume factor. I created a trip distribution by routing expected site trip traffic volumes through the roadway network, including entry and exit traffic volumes. I combined existing traffic volumes with site trips. Next I entered the

data into Synchro, which provided LOS. From that, roadway improvement recommendations were made. Finally, I created figures and a report to summarize the project for the client. It was the most challenging part because I had to state assumptions and explain my methods.

My typical involvement in a project would start with trip distribution. Given the size and type of the land use, I established site trip traffic volumes from *ITE Trip Generation Manual (7th Ed.)*. I also was heavily involved in creating figures. The figures reflected the existing traffic volumes, typically obtained through traffic counts. Also, the figures show site trips and trip distribution. Expected LOS from Synchro, capacity analysis, and recommendation were displayed in the figures.

I went on numerous traffic counts. Despite the early morning commute and the repetitiveness, I enjoyed them. Normally they contained an AM and PM peak hour traffic count. Between traffic counts we collected intersection details and site characteristics; there was even time for leisure.

Being responsible for my work and interacting with other engineers were valuable lessons. Interacting with clients and government organizations is important as well. Engineers must be able to explain their reasoning and logic.

Looking back makes me appreciate the skills I gained; a difficult task at the time now seems simple. I appreciated the help and guidance I've received throughout my internship. It was a worthwhile summer. I would recommend the MATC internship program. It prepared me to be an entry-level engineer and I even managed to learn a thing or two.