



FELSBURG
HOLT &
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A summer with Felsburg Holt & Ullevig
The MATC internship experience

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My first day as an intern with Felsburg Holt & Ullevig (FHU) began with the usual first day jitters. I wasn't quite sure if I could accomplish all my tasks, whether I would be a good fit with my sponsors, or if my work would even be good enough. These questions ran through my mind as I walked the stairs and opened the door to my workplace for the next three months. My sponsors made me feel very welcome, and even took me to lunch for my first day. During the morning, I read reports and navigated the company website to get an overview of the capabilities of the firm. It wasn't until the following morning that I would undertake my first real assignment.

The most important project I undertook during the summer involved a "quiet zone" study in Fort Scott, Kansas. The role of a "quiet zone" in a community is to eliminate the need for a locomotive to sound its horn at a highway-rail grade



crossing. My primary role in this project was to develop medians designs that were compliant with the Federal Railroad Administration (FRA) *Final Rule* regarding quiet zones. This project began with drawing designs over an aerial in Microstation, which required me to gain familiarity with a CAD package other than AutoCAD. This project also required me to research the railroad crossings to develop diagnostic review worksheets and crossing summary reports. The exciting thing about this project is that I was able to see my work being used in a public meeting I had the privilege to attend in Fort Scott. These were shown on

boards and handouts with designs I had drawn up in Microstation. While residents in the town looked at the boards, our professional engineers explained the pros and cons of each option. This allowed me to gain invaluable experience in interacting with the public and with clients.

During my internship, I was also given projects that required trip generations and signal warrants. A typical development will follow a pattern of trip distributions for traffic separated into in and out traffic. This is generally available in an equation that will use the size of the development to project the trips that will be generated. The trip generations for in and out traffic can then be added to the existing or future traffic conditions to aid in determining whether a



development might need another entrance, or if a signal warrant should be conducted. By meeting certain standards set in the MUTCD manual, a signal might be “warranted” at a particular intersection. This generally results in the

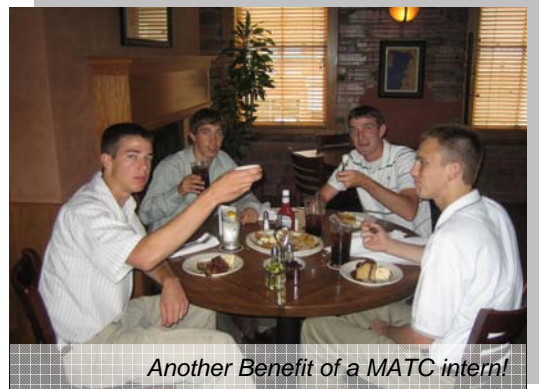
development paying a percentage of the signal construction costs, based on the percentage they contribute to future traffic conditions at the intersection.

Even with all this work, there were days that work was slow. My sponsors realized this would happen so they started me on a roundabout feasibility analysis for three intersections around Westroads Mall. I began this process by conducting separate traffic counts for each intersection using a video recorder. Upon accumulating this data, I was able to generate a peak hour volume for each

traffic movement. Using these initial volumes I could then balance the volumes between each intersection. At this point I was ready to input the information into our capacity analysis software (Synchro) to develop an existing traffic model. This determined the existing level of service (LOS) of each intersection. The next step was to evaluate the same conditions using the roundabout analysis package (aaSIDRA). At the completion of these analyses, I began work on a draft report to submit to the city.

The MATC program found me the perfect job to work at this summer. Interning with Felsburg Holt & Ullevig this summer was an excellent experience that allowed me to gain experience and knowledge that will be very useful in my future career. Since the Omaha office is new and small, I was able to interact with everyone in the office, allowing me to work on a variety of projects. My sponsors and the other engineers in the office were very responsive to my

questions and would take time out of their busy schedules to explain projects and concepts to me. Overall, I would highly recommend participating in the MATC program. The program is beneficial to the sponsors who get an



Another Benefit of a MATC intern!

individual that is willing to learn and work, while the benefits to the intern are going to be evident through their entire career as an engineer.