My Summer MATC Internship

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Helping with environmental studies for a proposed bridge across a wetland

Volunteering at the 50th Anniversary of the Interstate

Giving my MATC presentation at Kirkham Michael

My

workspace

The moments leading up to an internship are both exciting and nerve racking. That was true for me at least. I was very excited to get the opportunity to be exposed to the "real world" yet nervous about entering unfamiliar territory. My first day at Kirkham Michael couldn't have gone better though. It started with the tour of the building and meeting new people and followed with my sponsor, Rick Haden, explaining the background behind the Lincoln Crash Study.

The Lincoln Crash Study is what I spent most of my time on during my internship. The City of Lincoln hired Kirkham Michael to analyze the top 5% intersections in Lincoln that scored a high rate for crashes. Once these intersections were determined, then we went to each one of them and decided what measures we could take to improve them. I was able to accompany Rick and another co-worker, Murthy Koti, to Lincoln a few times to analyze the intersections and meet with the City of Lincoln and get their feedback on our countermeasures for the intersections. I really enjoyed this trip because it showed me that engineers don't have to spend *all* their time in a cubicle. It also helped me understand the purpose of the crash study.

Once we were finished looking at the intersections, there was plenty of work for me to do. I used MicroStation® to draw some of the treatments we had come up with for the different intersections. Some of these treatments included: adding an acceleration lane, tightening the approach and adding a "No Turn On Red" sign. Once those were complete, I was able to use the knowledge I gained from my technical writing class to write a report about right-turn rear-end collisions which I handed in to the City of Lincoln for review.

Another task I was able to work on was creating collision diagrams which show every collision at a specific intersection. This diagram includes: the time of day, the day of the week, the road and weather conditions and what kind of collision it was. These are helpful in coming up with countermeasures because it shows what patterns are present at the intersection.

Some of the other things I helped with on the crash study were updating charts with the data Murthy and another co-worker, Nick Gordon, had calculated. I also helped with making the final product by adding the tables, pictures of the intersections, the striping plans, and the collision diagrams into an excel file.

Other than the Lincoln Crash Study, I was also able to experience what the environmental scientists work on. One of my co-workers, Ruth Bentzinger, took me with her to a site where they planned on building a bridge across some wetlands. Our task was to determine how much wetland existed at the site so we would be able to mitigate, or replace, all of the wetland we would destroy by building the bridge. I found this experience very rewarding because it gave me an idea of what goes on before structural and transportation engineers start their projects.

Some other projects I briefly worked on were two different bike trails in Lincoln and a traffic signal design in Arizona. I was given the task to lay out the path of the two bike trails and draw them in MicroStation. For the traffic signal project, I was able to help create the cover sheet and I read a manual which described the steps to designing a traffic signal. Even though I only worked on

these projects for a brief time, they helped me get acquainted with other aspects of Transportation Engineering.

To finish my internship at Kirkham Michael, I worked on a Traffic Study for Kansas. For this project, our task was to determine how the addition of an Ethanol Plant would affect the flow of traffic at a certain intersection in the future. In order to do this, we have to determine the current conditions of the intersection: the peak hour volumes, peak hour level of service, and the delay from all directions. Once this task is complete, we will determine what the traffic will be like with and without the Ethanol Plant by using different equations and trip generations to estimate the traffic volumes.

So far, I completed drawing the intersection and surrounding areas as well as creating an aerial view of where the plant will be located. I added all of the information we had on the existing conditions such as the traffic volumes and the level of service. I should be able to complete most of the remaining tasks to this project before my internship is over.

This internship has been nothing but beneficial to me. I have learned some of the ups and downs of working with smaller firm. I have learned the steps to different types of projects such as crash studies, traffic studies, and before and after studies. Familiarizing myself to multiple computer programs was another benefit to this internship as well as learning new tricks to programs I've already been introduced to. One of the big things I will take from this internship is how essential it is to review and have someone else review your work over and over to catch as many mistakes as possible, creating less work later on. I am

sure this experience will be very beneficial to me in the future when I am looking for a job and I can’t wait to put it to good use.