MATC Internship

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When receiving this internship I didn't know what to expect. I had previously been a delivery driver and worked on roofing, so working in an office was a new experience for me that my previous jobs had not prepared me for. For the larger portion of my internship, I have been working with Huiyuan Liu on his research project for his dissertation. For Huiyuan's research project I was given the task of watching the collected rail crossing videos and extracting data from them.

The goal of this project has been to see how rail crossings affect traffic flow at different crossings around the Lincoln area. Each site has a different reason for why it is being studied. For example, the 141st and Cornhusker intersection is being studied for safety reasons. This intersection is one of only two ways to get to the northern side of Waverly, which is the most common and direct route. The reason this is important is that the deceleration lane is rather short, coming off of highway speeds, and is complicated by the fact that there is a grain elevator directly on the northern side of the tracks which has a heavy traffic flow of large semi trucks and trailers hauling grain. This can cause a safety issue when a train is crossing because the deceleration lane can fill rather quickly and spill over into the right lane on Cornhusker, which is not safe due to other vehicles traveling at highway speeds. There are other intersections like 33rd and Cornhusker that have a large volume of traffic that are also being studied with hopes that this data will give some insight on how to improve traffic flow. Other sites, however, have a rather low traffic volume and while the train can cause a minor inconvenience for the drivers caught waiting on it, there isn't any real traffic back up that could cause any major issues.

The other major project I helped work on was Myungwoo's. His project correlated with Huiyuan's project. For this project, we were looking at the railroad crossing that affects the intersection of Old Cheney and Warlick Blvd. Anyone who has traveled around this area in south Lincoln knows that a train crossing causes major traffic delays. The goal of this project is to see the effects of using Variable Message Sign (VMS) to inform the oncoming traffic that there is a train present and a timer for how long they will be delayed to see if they will choose to take the alternate route or just wait on the train. Another reason this is being studied is for safety reasons. This is because many vehicles will make illegal lane changes at the last second to make the left hand turn onto the alternate route. It was hypothesized that along with helping traffic flow, giving the drivers notice early enough would lower the number of traffic violations, therefore, making the intersection safer.

So far this summer, I have learned a lot about how universities conduct scientific studies and research and how they have an impact on the community. This is probably the most exciting part for me because I decided I wanted to be a civil engineer so that I could have a positive impact on the community. I have also learned a lot about traffic engineering; as I have not taken a large amount of course work in this particular discipline. Finally, I have met and worked with some great people. The graduate students and the other undergraduate intern are a great group of people to be around and work with. Going forward I hope my experiences from this internship and the classroom help me have an even larger impact on my community.