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iteris[®]

THE MATC INTERN PROGRAM
EXPERIENCE

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Entering the University of Nebraska-Lincoln, in pursuing my Civil Engineering degree, I placed my focus on Structural Engineering. I always wanted to build bridges and buildings. However, I was looking into venturing out and expanding my knowledge on other Civil Engineering emphases. In Spring 2019, I looked through the courses and found that Traffic Engineering, CIVE 463, would be an exciting course. To my surprise, CIVE 463 piqued my interest in Traffic Engineering.

It has never occurred to me before in educating myself about the engineering that goes behind designing roads and intersections. In the search for a meaningful internship, I talked to my professor about her knowledge of internship opportunities in the traffic engineering field. Luckily, I was informed by my professor about the internship program through the Mid-America Transportation Center (MATC). I started my application for the MATC internship experience around April. To my surprise, I received an email from MATC's Research Coordinator, Amber Hadenfeldt, that I would be given the opportunity to be working with Iteris, Inc.

The first task I was given at Iteris was to learn about the traffic impact studies. I started learning the impact of development on the traffic in the surrounding area, which requires a new design of transportation and traffic system. I never took into consideration how a new development causes an impact on traffic congestion in a new area. The traffic congestion that new developments are bringing in causes safety concerns and requires road infrastructure improvements. Traffic impact studies are also done to ensure there is no delay in traffic and that it meets the Level of Service (LOS).

After understanding the concept of traffic impact study, I was responsible to create drawings for the alternative designs of the new road reconfiguration for the area of the

new development. I had experience in drawing through AutoCAD, but this is my first time using MicroStation - which is pretty exciting. This task allows me to expand my software skills. Chris Soenksen, the Assistant Transportation Engineer, walked me through on how MicroStation works. MicroStation is one of the software skills that I always wanted to have the opportunity to learn, and it was great for me to have exposure to this software finally.

I had the opportunity to do a traffic count for an intersection for the new development area that I have studied. I went out on-site with David McClintock, my supervisor, to learn on how to do traffic counts. We went out early in the morning to ensure we will be on-site on time to count traffic volumes during the peak morning hours. It was a great hands-on experience for me to be able to study the area. It was a great learning opportunity for me to be on-site; observing changes that will happen in the future. Currently, a new traffic signal is in construction at the intersection in the area due to a new shipping warehouse that was recently built. I was intrigued by the engineering that goes behind installing a new traffic signal. David gave an insight and taught me a little bit more about the little things that go into the new traffic signals. The data we collect is used to study the traffic impact of the area further.



Figure 1. Traffic Count in Papillion, NE

I also learned a little bit more about the process of how the city chooses its new traffic signal monitoring system. I had the opportunity to be involved in working to create the city's bench test room layout for several vendors to set up a demonstration system. Steve Garbe, the Senior Project Manager, taught me on how to create a simple room layout through Microsoft's Visio. I have never heard of this software, and I was surprised by the simplicity of creating designs through Visio.

Another exciting task that I was exposed to was studying the master plan for the City of Des Moines. The master plan results in a multi-year series of projects. It was interesting to read through the existing conditions of the city and the improvements that they want to make.

I have also been assigned to organize data for the assets of the Park and Ride service in Minnesota. With this project I had the opportunity to improve my software skills in ArcGIS - a geographic information system software. Through ArcGIS, I would locate and determine the coordinate systems of the Park and Ride assets and create a spreadsheet to summarize the information I have gathered. I have created shapefiles for each asset so that these pieces of information are readily accessible in the future to determine the location of the assets.

I have also spent time organizing data for a project located on the highway connecting the state of Iowa and Illinois. I gained a couple of new Microsoft's excel skills that helped me organize a lot of data more efficiently.

I also had the opportunity to conduct a speed study test. It was a nice change of pace to be able to be working out in the field for the day. It was my first time using a speed gun, which is pretty exciting. I felt like an authoritative figure on the streets of Nebraska catching bad guys - but in reality, I am not. The reasoning behind the speed study test is to observe the vehicle speed in that specific location and determine if it is necessary to either increase or decrease the speed limit of the location. The speed limit of a particular location is mainly determined by the average speed of the 85th percentile of the vehicles. The field works I have done with Iteris have been a really great hands-on learning experience for me. It was great being able to observe out in the field rather than reading the data that came out of it - it gives a sense of realism.



Figure 2. Speed Study Test in Cass County, NE

Iteris is the first company I have worked with where there are multiple branches spread throughout the country. It was exciting being able to see how these different branches communicate. We have weekly meetings with the Iteris offices from different

states through a conference call. It was particularly interesting to be able to know the various projects each branch are responsible for and how they communicate through that.

On top of the workload, I had a great time bonding with everybody at Iteris through lunches or even car rides. I even had the opportunity to go out mini-golfing with other Transportation Engineers from different firms from Lincoln, Omaha, and Council Bluffs. I concluded that there is a magnetic force field that refuses me to score a decent point on the game - or maybe I am just terrible at mini-golf. These type of events and outings showed me that Engineers are more than just their work.

I began my internship at Iteris Inc. just a short two months ago. I can't believe how fast my experience with Iteris has gone past. I am grateful for the experience and knowledge that Iteris and MATC have given to me. I was able to spend my time meaningfully through the summer to further explore and gain insights into the career of transportation engineering.

I've learned a lot from this internship experience. I began to start appreciating and have gained more interest in the field of traffic and transportation engineering. The experience in learning the roles of what Iteris plays in the field and how it works with public and private sectors has been an amazing insight. The world of transportation engineering is so much bigger than I initially thought. I feel more prepared now and ready to explore the world of transportation engineering.