



MATC Intern Program Summer 2018

City of Omaha – Traffic Division

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My summer vacation was spent with the City of Omaha Public Works Division. When applying for this program, I knew I wanted to work in the public sector because my passion is to help and give back to the community. This experience has been an eye opener for me and allowed me to experience real world scenarios that are only talked about in the classroom. I was assigned to the Traffic Division and was able to work under a very knowledgeable engineer. I have learned so much throughout the summer and give credit to Bryan Guy for being an excellent teacher.

Every day was different working for the City of Omaha. I was able to be part of several ongoing projects. These projects included creating new signals for new developments, analyzing crash data to make the City of Omaha a safer place, and helping co-workers in the maintenance shop put up street signs or turn on signals.

My first project was to analyze crash patterns in the streets of Omaha and to create heat maps for better representation. This project contributed towards making Omaha part of the Vision Zero network. Vision Zero is a network that brings cities from all over the country together to share a common goal of eliminating traffic accidents resulting in fatalities or severe injuries. Vision Zero has proven itself throughout Europe and is now transitioning to the United States. Over twenty-five cities across the country have already committed to be a part of this network, with dozens more in progress, like Omaha. This isn't just a title for a city; it shows the nation that these cities are safe, healthy, and work together towards a common goal. This network also brings engineers, policymakers, health officials, police, and community members together to build and grow the community in the process. My role in the transition was to pull crash data from the past eight years to figure out the reason an accident occurred. Reasons

for accidents mainly fell into the categories of driver error, road interference, or a signal/sign issue. The City of Omaha worked hand in hand with the Nebraska Department of Transportation to gather this data and help Omaha become a safer city. Once the data had been gathered and a plan put together, city officials and community leaders came together to present information to the public at schools around the city, community gatherings, and even door to door. The City of Omaha plans to be on the Vision Zero map within the next five to seven years.

My next project was to create new signals for a new development in Boys Town called West Farm. West Farm is a multimillion dollar project that consists of office buildings, residential housing, and commercial retail units. This process begins with a planning board and going through a special approval process. This process includes planning enough side streets to supplement the main roads, considering various environmental aspects, and most importantly, predicting the amount of expected traffic flow through the area once the development is completed. The traffic flow expectation is called a traffic study, and it is performed by the contractor to allow the city to estimate and develop timing plans for each new intersection. The traffic study predicts traffic volume when the site is completed, as well as how traffic volume will look fifteen to twenty years in the future. I was able to calculate clearance distances for the new intersections based on the traffic study and construction plans. The calculations needed were the grade of each leg at each intersection and the traveling speed through each intersection. Once these calculations were determined, I was able to develop timing plans for the intersections. The clearance distance determines the green time allowed, the speed of the roadway determines the yellow time, and for safety purposes, an all

red time is factored into the plans. I was able to work on a handful of signals from start to finish.

On top of working in the downtown offices, I was given the opportunity to work in the maintenance traffic shop. During my weeks spent with the maintenance team, I shadowed co-workers in the signal and sign shop. Additionally, I rode around the city with traffic engineering aides where I plotted and collected data plots for each sign/signal with the GIS crew. As I stood roadside and figured out different problems that occur in the cabinet, everything began to come together for me. Developing timing and other associated plans for the specific cabinets to follow; all played an important role for the actual traffic plans processing in the field. I consider myself a hands-on person, and I was able to get my hands dirty over the last several weeks! For example, I went out to the field and pulled cable through conduits to connect power to a cabinet, and I also drilled signs onto poles. This was definitely one of the best parts of my experience. While riding around with the TE aides, we analyzed signs that had either been knocked down or were simply out of date. It was interesting and eye-opening learning about everything that goes on behind the scenes.

I am so thankful to be able to be a part of this program and honored to have learned so much from a great engineer by my side. My experience working for the City of Omaha has been thoroughly rewarding and will always remind me of the reason why I chose civil engineering as my future career. Throughout the summer, I was able to apply the things that I had learned and talked about in the classroom to real world situations. This program not only opened doors for me, but it also allowed me to improve my skills in all aspects. I would like to give a special thanks to my supervisor,

Bryan Guy, for not only teaching me important lessons, but for giving me the opportunity this summer to experience what it is like to be a civil engineer.