My Summer as a MATC Intern

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Kimley-Horn and Associates, Inc.

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The future is a mysterious thing for most people. The uncertainty of what will happen next is both frightening and exciting. As a college student not many of us know what the future may hold, but through my experiences with the Mid American Transportation Center's Summer Internship Program, I have a better understand of the opportunities that are offered in the field of Transportation Engineering. This summer I was given the privilege of traveling to Dallas, Texas for an internship with Kimley-Horn and Associates Inc. This opportunity helped me develop a strong understanding of the daily tasks expected of a person in the competitive world of Transportation Engineering.

My summer begin by relocating from Lincoln to Dallas. Once this was accomplished I found myself in a city that had absolutely everything to offer. I began my first day with the usual tour, introductions, and paperwork that is typical for any starting employee. Soon thereafter I was given my first task. As a new intern I was expecting to be doing a lot of the clerical type work. This was not the case however; I was placed within the Dallas roadway design team working on a tollway ramp conversion project. I was in charge of labeling some of the pages of plans developed by the team; these pages are known as "sheets" in the engineering world. By labeling these sheets the client would be able to understand and identify specific details featured within the design plans.

This first task would have been very difficult to complete without a good operational understanding of the software program MicroStation. The Dallas design team relies very heavily on this software program for the production of the various documents they create for their clients. My training in this program was actually

obtained at my previous employer. The basic MicroStation skills allowed me to quickly adjust to the design team's existing system of operation. Had I not had this training I feel I would have been well behind the learning curve.

The tollway ramp conversion project was an effort by the North Texas Tollway Association (NTTA) to convert a large stretch of their Dallas North Tollway from the traditional cash and coin toll operation into a completely electronic collection system. This new system consists of the use of sensors mounted in vehicles that can be read by specific tolling equipment and can automatically deduct the appropriate amount of money from an account set up by the vehicles operator. This conversion consisted of the removal of the existing toll plazas and the construction of a gantry system upon which sensing equipment would be attached.

This project was about 75% complete when I was brought on board. At that time most of the actual designing had been completed. At this point the team was beginning to label the individual sheets as well as starting their Quality Control. Quality Control, or QC, involves the designer double checking all of his calculations and drawings, and then he delivers a copy of his designs to his superior who would then recheck all calculations and drawings. Any errors that were detected would be marked and would then be returned to be corrected. This process is also known as "red lining." I was a major contributor in the effort of labeling the 600 + sheets that would be delivered to the client as well as fixing numerous red-line comments that had arisen in the QC process. I learned a great deal from this project, it allowed me to see another side of the production process aside from the actual design and development. I was able to see

firsthand what additional effort went into the creation of a final plan set deliverable to the client.

Along with the ramp conversion, I also had the privilege of working on another design project for the city of Austin. This project was originally a simple roadway widening project until the city decided it would be beneficial to redesign the water drainage system at the same time. I was given the opportunity to work very closely with an engineer in charge of the majority of drainage work done by the roadway group. It was here that I had my first experience with the software program known as GEOPAK Drainage. This software runs using MicroStation and allows for the many drainage design calculations to be done much more efficiently than simple paper calculations. This software is used by the design team to calculate not only things for drainage but for almost any other aspect of roadway design. By interacting with this software I have a gained a greater understanding of how today's engineer designs almost anything roadway related.

This project was about half complete at the time I was brought onboard. During this time I learned a great deal about the process of designing a drainageway. A variety of equations used during this design process I had seen in previous coursework. I found the drainage work I was doing to be a nice change from the usual roadway design work. This project showed me the variety of tasks one could work on even within the roadway design team. It showed that a person was not limited to dealing with just typical roadway design, but a variety of tasks encompassing roadways.

My internship opened my eyes to the variety of options that are available to me with a Transportation Engineering degree. It taught me some of the many components

that go into creating a product for a client as well as some skill sets that will help me in my future classes and career. The ability to relocate to a different city has shown me that there are opportunities to take my degree anywhere I would want to live. The overall experience given to me through the MATC Summer Internship Program has been invaluable to my future. This experience will help me to make some of the difficult decisions of my life and career. My future may be a mystery but I feel confident that the knowledge learned this summer will help to guide me down a road that will lead to a successful career.