An Intro to the World of Traffic

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Over the summer I worked a full-time internship with the great planes traffic group at the consulting firm Felsburg, Holt, & Ullevig. During my internship, I had the great benefit to learn much about the field of transportation consulting, got relevant hands-on experience, and met many great people. This internship has not only allowed me to expand my knowledge on the subject of my interest, but I believe that when I look back upon the experience, I will consider it to have a profound impact on my career, both in college and after.

When I first took up this internship, I was in the thick of the second semester of my second year at the University, I knew I was interested in transportation but none of my classes had anything to do with transportation, with the exception of the freshmen intro course which mentioned it was a subdiscipline of civil engineering. Despite this I was lucky enough to get an Internship with Felsburg, Holt, & Ullevig working with traffic. I later learned that while there are plenty of classes in the other disciplines, such as water, environmental, and especially structural, there isn't much for transportation. Just a few classes, but with the hands-on experience and mentorship I received during my internship, I was able to learn much, not only theory, but practical application of said theory.

During my time as an intern over the summer, I was a part of many projects from large city-wide signal updates to smaller single development traffic impact study. As a part of those different projects, I got to learn the nuance of many different parts of traffic engineering. One important part is traffic signal timing, which while it does results mostly

in a set of cycle times to determine how long to show each signal from each head, the factors that are involved are significantly deeper and more complex than I would have initially guessed. Interfacing and processing these factors are no trivial matter and anyone who competently deals with signal timing on a regular basis may receive a newfound respect from me.

Another common process that I learned involves determining the impact of a new development in an area. This starts with taking the number of trips made through each intersection and adding the trips that the new development would likely produce, estimating where those trips would go to and from using engineering judgement. From there we estimate the amount of traffic that flows through each intersection for future years and see how the intersections fares under the typically greater number of trips. We determined, based off this data, whether or not to add turn lanes and their lengths, if the intersection should be signalized or not, and much more for each intersection. Finally, we compiled all this data into a formal report and made recommendations based off this data. All this is done with fairly standard practices using standards form the Institue of Transportation Engineers and the Manual for Uniform Traffic Control giving me valuable knowledge and experience that makes me have a greater understanding and appreciation of traffic engineering beyond that which can be taught in a classroom.

That is a general overview of a traffic impact analysis which was the lion's share of projects that I worked on. And while I worked on many of such projects, each one had their own unique set of challenges and parameters that you would not find in a textbook. One had several different scenarios to analyze such as roundabouts, signalized, two ways stop controlled, four ways stop controlled, and each most of those with regular and greater curves on one of the intersecting roads. Another was complicated by data

given to us by the city for a downtown project which had both data collected from before COVID and after. To complicate things further, each set of data was collected over the course of a few years, muddling the data and adding farther noise that complicates the estimations. While the idea of a traffic impact analysis is fairly straight forward in reality it is never so simple.

I was also a part of different projects that gave me the chance to learn other skills. I got to learn how traffic counting cameras were set up and how the data was processed. I learned how consulting firms interface with governments. For some projects I got to go out into the field. I even got to do some proper intern work such as delivering a proposal packet to a city's city hall, which was a good learning experience for me. But while I spent much of the time learning I also had the pleasure of meeting many wonderful people.

All of the people in the traffic group were wonderful, super friendly, and always willing to answer my questions, which made for a pleasant experience and a great environment to learn. All of my coworkers that I didn't directly work with were also open, friendly and just enjoyable to be around. I also got the chance to go to several different conferences within the transportation world. Through these conferences I got the chance to learn from others that I didn't work with and saw many great presentations about the intricacies and future of transportation. I also got to meet serval professionals in the field of transportation, both from different consulting firms and from various government bodies. I even got to meet serval peers from different parts of the region, who I will likely be working with in the future.

Though out this internship, I was able to learn much about the process and application of said process in the world of traffic. I got to work on many intricate and

interesting projects and got to meet many wonderful people. All of this allowed me to learn beyond that which I would learn in a classroom and forge connections that will shape my career for years to come.