



August 10th, 2010

# **MATC Internship Report**

John Coburn - MATC

For the second year in a row, I had the opportunity to participate in the Mid-America Transportation Center Summer Internship Program. In the summer of 2009, I worked on a project at MATC for Union Pacific Railroad involving weather trends and the Geographic Information System (GIS). This summer, I was able to build on last year's acquired skills, along with having a role in the MATC Summer Institute. This institute is for Nebraska middle school and high school teachers, and it allowed me to teach these individuals about GIS, UNL, and Civil Engineering.

Starting at the beginning of the summer, I worked on a project for Dr. Larry Rilett involving the City of Lincoln StarTran bus system. Due to a rather large headway of 30 minutes to an hour, waiting for a bus is almost a necessity in Lincoln to ensure you don't accidentally miss it. We started to develop a system, including past research by MATC Doctoral student Bhaven Naik, to predict travel times for buses around town using traffic sensors. We are currently in the process of obtaining data for this particular project, but the next step would be to create a dynamic website that the public can access. This system would inform individuals to leave their current location at a specific time, to catch their bus with minimal waiting based on factors such as age, pace, and walking distance.

The rest of the summer, I have been involved with the Summer Institute for Engineering Excellence, hosted by MATC and the *Nebraska Center for Research on Children, Youth, Families, and Schools* at UNL. For my first task within the institute, I presented a GIS PowerPoint to 30 teachers around the state. I demonstrated many

features of Google Earth, and gave examples of Civil Engineering lesson plans that could be used in their classrooms this coming school year. I next created a GIS presentation for students in Lincoln, Lexington, and Hastings. Along with demonstrating the technology in Google Earth, I showed the students online tools such as Bing Maps that allow them to explore the world they live in.

This summer also allowed me to gain leadership experience, as I was a mentor for a high school student interested in engineering. I guided him through many different facets of Transportation Engineering, including intersection design, GIS, and research. Finally, I also was able to use my web programming skills to create a dynamic pushpin map representing the hometowns of graduate and undergraduate students that work for each MATC institution.

Overall, I would summarize my experience at MATC this summer as very beneficial to my future transportation career. It was very neat that I was able to build on skills that I acquired last summer in the intern program, and be able to apply my knowledge to new tasks and goals in this year's projects. I would recommend all Civil Engineering majors who are remotely interested in transportation to apply to the MATC Summer Internship program in future years to gain valuable experience that can't be found anywhere else.