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Reflective Essay

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### Infrastructure

Infrastructure to me before I step into Col. Hart class was not important at all, at least I didn't pay much attention to it. It actually never crossed my mind to even think about what it was. Don't get me wrong I had a little idea of what it was once I started to think about all possibilities of what it could be when we did the concept map assessment to show Col. Hart our current knowledge. Me personally, I believe there has been a significant change in the way I think about things now, than when I first enter the class having little to no knowledge about the topic. Col. Hart emphasizes that there is no right answer, he just wants to see us think. I believe the ultimate goal of the class was to grow our ability to think. Throughout the semester I have grown an understanding of the significance of our infrastructure and how it impacts me on a personal level, in society, and in my soon profession of civil engineering. In addition, writing about infrastructure current events that go on in the United States grew my ability to think about solutions for the big problems in our infrastructure.

My definition of infrastructure is as follows, a system that depends on key components that link back to the main components that create a functional society. Most do not know what the technical definition for infrastructure is. Infrastructure is defined as a foundation that has key elements that sustain the structure in order for the society it is working upon to be functional. That is the definition Col. Hart shared with the class on lesson 5. The way I visually see

infrastructure in the United States is like a huge spider web. If you ever seen a spider create its web it is quite entertaining. It is also fascinating that every spider that can create webs, create them almost the same way as each other's. The difference between a spider and our society is that a spider does it all on its' own. The spider finds a good spot to set up its web, which is like his home, and begins to work. A spider has to have 4 main components before it can actually begin to make its spiral web. The bridge thread, anchor threads, and frame threads are the spider's base foundation to hold his society, the web, together. Just like how we get electricity, the power plant, power grid and transmission lines are the foundation of that certain infrastructure. If a transmission line gets knocked down, most likely where that power is being transported will be shut down. Many power companies call the transmission lines feeders because without these transmission lines there would be no energy supplied and transported to nourish the way the United States functions, which is off electricity. This is a direct correlation to if the spiders anchor thread gets ripped off its anchor point or if the bridge thread get knocked down. The spider web goes out of commission for a while until the spider fixes it. That's how I see infrastructure; to me it is one enormous spider web that is held up by numerous foundations that link off to other key components to create a stable and functional society.

On a personal level the infrastructure in the United States affects me more and more as I grow older. The way the infrastructure affects me is usually the same way affects the other million citizens of the United States. The knowledge I have learned in class throughout the semester has really opened my eyes to ask the question why and grow my ability to think. In class one day we had did an exercise that showed how waking up to go places like work and school we use water, electricity, signals, and transportation and really never think about how this is all working together. Nobody ever thinks about where the clean water from the water fountain

comes from when we need something to drink. Well water is generated in supply reservoirs that dams create. Then to properly distribute the water, a pipeline or aqueduct carries water from the source to the specific city, leading to the water treatment and purification plant, and then to the distribution system. After the water goes through a filtration plant it is ready to be received by the user through pipes that run through the ground. There you have it, clean water off the tap. At first, I was wondering why I need to know this. As I went through all of the executive summaries either using the grizzly bear model, transportation model, or just having to summarize the three main points in the chapter it started to increase my ability to think about breaking a system down all the way to the backbone that starts the entire process of that certain system. So, this all affects me because if the water line gets contaminated by waste water and I go drink from the tap, I will be a real unlucky guy just drinking feces particles and any other toxic liquids that I don't want in water. Or if somebody crashes into a power lines and causes a blackout that affects me and hundreds of others in the neighborhood.

As a civil and environmental engineering major, I decided to pursue the construction management path after I graduate. I have worked as a field engineer for three internships with Skanska USA Civil Southeast and going on three different projects. The first project I worked on a 2 billion dollar project building the Midtown tunnel in Norfolk, VA. The Second project I worked on was building a new pier for the Navy to dock aircraft carriers in Portsmouth, VA. The third project I will be working on will be the I-4 Ultimate interstate/highway in Orlando, FL. Each of these projects that I have or will be working on are part of our transportation infrastructure. Throughout the semester I read various articles discussing our infrastructure to summarize them and share how would I solve the problem. That was such a stimulating exercise, but as I was told by Col. Hart, I was great at identifying them problem, but I never gave a

solution. In all these articles, it explained how our infrastructure needs serious modernization to keep up with other countries infrastructure. That's where my future profession steps in, as a civil engineer I feel as though I have took on the responsibility to modernize and fix our infrastructure. All highways, bridges, tunnel, roads, piers, and buildings need to be refurbished, renovated, and modernized.

Lastly, the most intellectual stimulating event I attended the four years I have attended VMI was the Infrastructure Symposium in Baltimore, MD. We were given a problem to find a way to integrate all forms of transportation to safely, effectively, and efficiently move people and commerce across America. The 24 hours we were given to complete the challenge made me take all of the knowledge I have learned the entire semester and apply to come up with a sensible and realistic solution. Our solution was to actually make traveling around the country seamless, transportation by checkpoints essentially. Airport or Marine port directly to a light rail to the Maglev station to take you around the country within hours to an autonomous uber car to escort you directly to your house. The system was called N.U.T.S, National Unified Transportation System.

Infrastructure: Foundation of Civilization, didn't know what I was stepping into when I signed up for the class, but I am glad I did. Being in this class I have learned useful information that pertains to how our country functions creating a stable society. The way I think and analyze problems and find a creative solution has significantly improved due to the exercises performed in and out of class. It's exciting to know that I will soon be able to be part of the modernization of our countries infrastructure. To conclude, I was given a new prospective on our country and how the infrastructure interdepends on each other to create a functional society.