Coop Job Summary

A. Coop Work Assignment

The summer work term of my coop has differed from my fall work term in many ways, primarily because I have been working in only the engineering department, rather than rotating between all the departments of Wetland Studies and Solutions, Inc. (WSSI). Furthermore, I spent the summer working with another intern, Danyun, which provided a completely new environment. Dedicating all 11 weeks to engineering gave me the chance to work on multiple projects, three in all (the Signage Project, the Sediment Transport Intern Project, and a Low Impact Development (LID) Monitoring Project). I also worked individually on a small project for the company president Mike Rolband. It involved translating his design of a new fabric stake into AutoCAD dimensions.

At the beginning of the summer, we worked mostly on the Signage Project, a layout of signs to be displayed around the WSSI office that would highlight both LID and Leadership in Energy and Environmental Design (LEED) aspects of the building. We worked on site designs, brochures, and the text of the signs themselves. I gained more experience working in AutoCAD, and found that even though I hadn't used the program in 4-5 months, I remembered it very well. Additionally, I sometimes had to contact other companies (i.e. those that make signs) to obtain cost estimates, inventories, etc., which was good exposure to business communication.

Danyun and I spent a good portion of the summer working on the Sediment Transport Intern Project, the same project for which I had previously written a report during my fall term. We altered the entire approach to data collection, opting to paint the rocks and distribute smaller cross-sections. Furthermore, we wanted to locate the rocks using less sophisticated equipment, so that when a storm was predicted, we wouldn't need to wait for a surveyor to become available. The new method worked well, and we were able to collect some interesting data before the summer ended. Our hope is that future interns will be able to collect more useful information.

The bulk of my summer was spent working on the LID Monitoring Project. WSSI has a very unique site layout with about 8 LID features (including a rain garden, a green roof, pervious
concrete, gravel bed detention, and a bioswale). In addition to the features themselves, WSSI also installed sophisticated monitoring systems to record data for long-term studies. It was up to Danyun and me to analyze this data and come up with some useful conclusions. During the process, I learned a lot about different approaches to research, and how science is never as cut-and-dry as one might hope. We ultimately chose to focus on the bioswale because it generated the most sensible and easy-to-work-with data. At the conclusion of my work term, Danyun and I developed a Monitoring Report for WSSI to keep on-hand, so that in the future, it could be possible to extract a publishable article from all of our data.

B. Assessment of Learning and Development

During my previous work term, I learned how to be a bit more proactive in asking for help or work assignments. I developed these skills more fully this time around, and no longer have trouble emailing fellow employees with work-related questions or requests. My written communication also developed this term when I was asked to research a program and type up a short memorandum for Mike. He complimented my writing (and forwarded the memo to the entire company!), and made me feel confident in my skills as an effective communicator.

C. Life Outside of Coop

My roommate at Cornell was working in D.C. this summer, so we chose to live together in Springfield, VA. We lived in her mother’s house, so the rent was free. Even though my commute was about 40 minutes (and gas prices have reached ungodly prices), I was happy to be in Springfield because I was saving money. I was also lucky to be living with my friend rather than strangers, and it was great knowing someone in the area.

D. Evaluation

The best features of this job were the laid-back environment and the independence it allowed me to have. I was able to work at my own pace and take breaks when I wanted (for working out in the company gym, or eating lunch). I also worked on projects without constant supervision so that I could make mistakes and learn from them. The worst feature of this job was Imaginary Tick Syndrome (ITS), a condition I caught several times after working outside and finding ticks in my hair!
A. Co-op Work Assignment

I have worked at Wetland Studies and Solutions, Inc. (WSSI) for twenty-eight weeks straight. WSSI’s professionals provide customized services to help Virginia land developers meet both environmental regulations and land use requirements. Most of WSSI’s work involves wetland mitigation design, stream assessments and restoration design, assistance with permitting process, and archeological investigations. WSSI is a relatively small company with about ninety employees working in eight major departments.

For my second co-op term, I worked with archeologists digging soil test pits in the field and sorting out artifacts in the lab, took a 2-day summer plant class, and worked closely with another Cornell Co-op student, Meghan Travers, on three projects: signage design project and LID article project for WSSI’s Low Impact Development (LID) system, and Sediment Transport Project.

For the first project, our part mainly involved using AutoCAD to draw out sign layouts for various LID features. Although it was not too technical, a lot of research on LID background information and signage design was required. In the meantime, we were actively contacting materials suppliers and sign makers to determine approximate costs for signage needs. In order to generate a technical paper on LID system at WSSI, Meghan and I have been actively monitoring data output from each Integrated Management Practice (IMP) and performing intensive data analysis for a water budget schematic. However, due to issues with zero-depth flow and possible inaccuracy with the rain gauge, we decided to focus mainly on a bio-swale. We compared values predicted using various methods to results indicated by field data, and judge how much accuracy is lost when people don’t have monitoring apparatus as WSSI does. The last step was to combine our works into a useful, integrated format.
The Sediment Transport Project was carried over from past interns. The rocks of which we were studying the movement had been deployed in the stream and our goal was to survey-locate as many of them as possible. Then we compared field data to empirical equations in order to model particle transport in that type of streams. The project entailed a lot of coordination with the surveyors, my part-time research partner, and our project mentor. Based our previous experience, we believed that modifications to rock preparation and stream deployment were necessary. Our new plan is to survey new cross sections, distribute the rocks before a suspected rain event, and retrieve them immediately afterwards. We are trying a new method of deployment, by measuring the rock locations in the field rather than survey-locating them so that surveyors were not needed. After a small rainfall event, the rocks had unfortunately showed little movement, but we have recorded the data and will hold off on analysis for the time being.

For the most part, training was informally provided by my supervisor and co-workers. My supervisor gave me a LID/LEED tour around our green building and grounds to assist my understanding of the system. One environmental scientist also held a two-day plant class in which I learned quite a lot about wetland plant species.

I had an assigned mentor who was always available for any questions that I came up with at work. Co-workers were very helpful and willing to take the time answer my questions.

B. Assessment of Learning and Development

I am sure that I would like to pursue an environmental engineering track, and the co-op job has allowed me to experience many aspects of it. The co-op experience has opened up a whole new world for me in that the company does a mix of different types of water resources work, including Resource Protection Area (RPA) work, floodplain studies, permitting, et al.

Having worked with various departments I have gained considerable insight into the land development planning process from a design engineer's prospective. This insight has allowed me to see the unique challenges that a consulting firm faces while trying to balance land development with environmental stewardship.
Working together with another co-op student and my mentors has also taught me how to work as a team player. WSSI offers a relaxing and caring atmosphere that one probably would miss at the big engineering firms.

C. Life Out-side of Co-op

A big thanks to my supervisor for her housing recommendation: the house is located less than three miles away from office and the rent is totally acceptable. A car is a must in this area, because public transit is still under development. WSSI recently added a Yoga Mix Discipline Class to their fitness program, which is free for employees. The company also sponsors various social activities, whether it is a pool party, a Coldstone day, or a birthday celebration. WSSI is a community-minded business as they often send out employees for camp educational workshops and provide other environmentally-related community service.

D. Evaluation

The co-op position gave me a lot of flexibility in terms of daily work hours. I appreciate the independence I had at work, without constant supervision. I realized the worst feature of this job when I developed Imaginary Ticks Syndrome from pausing every few minutes to check my clothes for ticks in a hot day out in the woods.

E. Additional Info.

Two courses that I took at Cornell, Environmental Systems Analysis and Fluid Mechanics, proved to be of immense importance to many of my analyses. I would definitely recommend that future co-op students bring along their relevant textbooks, a botany guidebook, and possibly an AutoCAD handbook.