

Mapping Water Agencies in Santa Ana Watershed

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April 2014 – July 2014

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Date Submitted: August 11, 2014

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Acknowledgements

I have plenty of people to thank for the completion of this project. First I would like to thank my professor Dr. Bo Xu for giving me the opportunity to have this internship in the first place. Without her lectures on the topic of Geographic Information Systems I would not be in the position I am in now. This project requires some general to more advanced knowledge on the concept of GIS software. I have attended several of her lectures and have been able to use most of what I learned in the classroom and apply it to this project. Doctor Xu was excellent at guiding me through the project.

This project was supported by a United States Department of Education Grant No. P120A100072-11. The internship was made even better when I learned I would be paid for my efforts. Internships at this level are not always paid. So having this internship was a blessing and I am truly grateful for it. I have always told myself throughout my career as a student that internships are a must and if you are lucky get paid for it. Well I have been pretty lucky and got timesheets and pay stubs to show for it. The flexibility of the hours was also a huge plus for me since I was a full time student. My last quarter was 15 units so time was not always in my favor. Thus having the flexible hours made my life less stressful.

Next I would like to acknowledge my providers for the data I used in this project. The Santa Ana Watershed Project Authority assisted me with this project. More specifically, Peter Vitt, the GIS program manager, gave me the data used in my report. Mr. Vitt made my understanding of the data a lot easier. I made one call to his office regarding the data for this

project and in two days I was supplied with what I needed. Mr. Vitt is a professional and was very efficient with the data I asked for.

Executive Summary

I used various resources to obtain the water agencies' information including their boundaries and attributes in the east half region of the Santa Ana Watershed. This information was then edited using GIS techniques to provide the most up-to-date map of the water agencies in this area.

Project Objectives

The objective of this project was to map the water agencies in the Santa Ana Watershed. I was assigned to map the east part of this watershed including their boundaries and attributes. If the data is not formatted correctly I need to process the data so that it is.

Project Approach

First I researched the Association of California Water Agencies. I used this website to refresh my memory of what the watershed looks like on a map. The website also provided me with very important contacts for gathering my data for this project. On the website I noticed that the Santa Ana Watershed had a specific department that could answer my questions. After

calling around a few times I ran across the GIS program manager's number and decided to give him a call.

Peter Vitt is the GIS program manager for the Santa Ana Watershed Authority Project. He was the right man to speak with and has worked with interns like myself before. With the knowledge of what I was looking for he was able to provide it easily. In fact he gave another layer to my data that would enhance my project and make it up to date. He added all the retail water companies and their boundaries to the file. This was helpful to me because I also wanted to add a new layer to the project. Since Mr. Vitt has worked with interns like me, he was able to read my mind. This project was hard to understand in the early steps, but got easier as I worked on it. The good thing was that I had 120 hours to complete the project. In the beginning I had trouble contacting people that could provide me with the correct data.

After collecting all the files, I needed to process the data so that they were compatible with ArcGIS software. Data processing is a term that seems very complex and intimidating at first. This learning experience was not something that was achieved in one day. In fact it was the lengthiest portion of the project. My instincts told me to go back to my professor and look for an approach that will solve this in the most effective way possible. She then referred me to a lab that I had in the past that would solve this problem. As it turns out a lab that I enrolled in the previous year was where I could get the information necessary to process the data.

Project Outcomes

This project came together nicely. Finally I got a nice map of almost all the water agencies in the eastern part of the Santa Ana Watershed, as well as their attributes, in ArcGIS. I

did not have any issues in the end with the format or anything related to this project as a whole. I found all the necessary data and did so in a timely manner.

Overall this was a positive experience. I would not change anything about this project and it has been a great learning experience. Thanks to this project, I know whom to contact for GIS related questions. I also got to experience what it is like to work as an intern in this field.

Conclusion

I first heard about this internship from my digital image processing professor Dr. Bo Xu. She mentioned in her lecture that there is an internship for anyone interested in furthering their knowledge of Geographic Information Systems. Since this class was my fourth class in the GIS lab, I decided to give this internship a try. I believe I made a great decision and really can use this internship to my benefit. I gained a strong understanding of what the Santa Ana Watershed means to this section of California. This project allowed to me to strengthen my understanding of data processing, working with other associates in the field and organizing layers with GIS software.

My motivation as a student at California State University, San Bernardino is to take advantage of great opportunities. When internships or other job chances come up I like to seize them as soon as possible. This internship was great because I gained valuable career experience in the field of being an analyst. Since my degree is in not programmer related, learning as much about the analyst side of business is key and very important to me. I hope to expand more on my knowledge of the analyst position and see myself going in that direction in the future. Environmental Studies is the degree I selected, so knowing how natural resources are collected is vital to my interests. I feel my near expert level knowledge of GIS is going to make my career a

lot easier to display natural resources to others. The others I am referring to are the associates that work in the field with me on projects like this one.

My approach was to make this project as efficient as possible. I did not want this project to make my life harder than it already is. So I kept my approach methodical and that made the difference. This project was more about learning for me than getting it done in a short amount of time. This approach I had also made me familiar with what positions at different agencies do I have interest in. I used this project to my benefit in so many different ways. For example I found out what qualifications are needed for GIS related positions. I also found out what the positions names are and how I can find them in job hunting websites. In the past I had a pretty vague description of what I am looking for career wise. Now I have a very detailed perspective and I owe that to my approach on this project.

My personal favorite portion of this entire project was working with others to finish this project. I suppose that my best asset in this project was the many emails and phone calls I used to speak with others. First I am thankful for my internship partner and my professor. Once a week we met at my professor's office to discuss the process of the internship and other related topics. This was the most rewarding part of the project in my eyes. With the entire Santa Ana Watershed to be covered it may be a daunting task for one person to do without any support. Lucky for me I had plenty of resources that extended from not just my classmates and professor, but also my program manager and administrative support as well. This internship is great for my resume and will help me find a job. This internship is the first of several steps I will take towards becoming analyst of natural resources.

Last but certainly not least is the final report revisions; this portion of the internship was very helpful. Since this is my first time working on a project of this magnitude, I needed some

finishing touches. I have benefited greatly from professor Xu's experience and her expertise in this area. My report at first glance was rough around the edges. So getting my draft turned in with enough time to format it so it meets the requirements was essential. At the end of the day this project was a great one for me to learn collaboration tactics. I know how in the future I can make my projects better thanks to this internship. This project has taught me valuable lessons and I am forever grateful for each and every single one. Thank you.