**Title:** Building an Application for Plaster Creek Watershed

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**Introduction:** Plaster Creek Watershed is one of the most polluted watersheds in West Michigan. As such, there are many significant problems that need to be rectified, including sediment loading and the unacceptable amount of E. coli. These precarious issues need to be addressed by both researchers and the community at large. We attempted to accomplish this task in two ways: by determining the placement of four new water monitoring stations and building an online application that engages the community about the problems facing the Plaster Creek Watershed and how they can help.

**Research Methods:** We had to determine the different types of data this project would require. Then, this data had to be found and downloaded from a wide variety of sources, such as the USGS and the USDA. Included in this process was georeferencing many images, mosaicking, and redrawing features for certain datasets. When creating our application we used Microsoft Silverlight as the framework of development and ArcGIS API (Application Programming Interface) for Silverlight as our primary reference. We also tried to integrate practical and aesthetic values together in order to provide a pleasing experience for users.

**Results to date:** We have successfully created the beta version of our online application. This contains many valuable functionalities. Later on, in order to provide more detailed analysis, more tools should be added. These were not added simply because of a lack of time to do so. A preliminary placement of the four water monitoring stations has been determined.

**Personal Benefits:** This research project has given me an immense amount of quality research experience. I have learned how to more efficiently collect data from a wide variety of sources.
By reading papers, I have learned much more about the discipline of Geography itself and online GIS, more specifically. I have also learned more about how design affects usability and the importance of design in general.