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# Community Water Pumping System
## Engineers Without Borders Johns Hopkins University

At the end of May 2007, three groups of Johns Hopkins University Students will travel to Guatemala, South Africa, and Ecuador to implement various projects improving the sustainability and standard of living for villages.

The Guatemala Team is planning on building a pump to supply clean drinking water to one community. Five communities have been identified as candidates (San Bernardino, Filo Mojanales, Gracias a Dios, El Terrero and El Volcan). In all five, women spend substantial periods of their days hauling water from a well or lake. This takes time away from other activities which could be economically or otherwise beneficial to their families. The five candidate communities all have an identified need for improved water supplies and have worked with development agencies in the past.

In March of 2007, three students, Hope Corsair, Katherine Watlington and Maya Sathyanadhan, will travel to Guatemala to do preliminary assessments of the communities, collecting data on population, head (elevation difference), sunlight and community organization. The daily water demand, the distance the water must be pumped and the amount of sunlight at the location will determine the technical feasibility at each location. Equally important, the community's organization and history of managing collective projects will suggest the sustainability of the pump within the community.

Based on the data collected in March, a decision will be made about the community in which we will be working. A group of nine students will then participate in the design process during the spring semester of 2007. The same nine students will travel, with a professional partner, to the village to implement the project during the last two weeks of May.

This project is expected to have a broad impact. The Johns Hopkins University students will gain practical experience in project design and the community will gain an easily accessible source of potable water. But most importantly this project will build a cross-cultural relationship between the Guatemalan villagers and the students. The students will thereby learn first hand about the culture and socioeconomic difficulties facing people living in developing nations. JHU students will most importantly learn first hand about the living and cultures of persons in developing nations. This relationship will be built upon as EWB-JHU students travel in subsequent years to implement other projects within this community.

This project will increase the sustainability of the village because the EWB-JHU Guatemala team is committed to building the pump using green technology. Solar energy will be used to operate a pump; it is environmentally sustainable, easily maintainable, and does not leave the community at risk of rising fuel prices or environmental degradation as a diesel-powered pump would.