IPRO 327: Sustainable Water Distribution System in Pignon, Haiti

Midterm Report

1. Current Objectives

Our objectives for the semester are:

- Produce or procure a topographical map of Pignon, Haiti
- Map the current structures on a topographical map
- Design a preliminary water distribution system
- Work with Haiti Outreach to foster relations between IIT, the organization, and the community of Haiti
- Raise funds to cover partial costs of trips to Haiti to gather data
- Research and incorporate into design a water purification system

The only change in definition of our objectives comes at the subteam level: For the design team, it has now become apparent that it is necessary to construct a new cistern for our water system, and that the current water source is nowhere near sufficient. Also, the fundraising goal has expanded to raise more money, specifically to cover the costs of software and tools, and other technical necessities for our project. The subteams found, in the course of work, that there was a need for specific programs not available through the university. None of the other tasks have been changed because their tasks have not been fully completed.

The only added objective deals with water purification. After the trip, it also became apparent that the contaminated water, if purified systematically, would greatly increase the utility of this system for the town.

2. Results to Date

To summarize what has happened so far, the original Work Breakdown Schedule is listed below, with colors to reference status of completion of the task. The red are completed tasks, gray are in progress, and green are still to be started.

Group 1: Topographical Mapping	Group 2: Site Map, Existing Structures, End User	Group 3: Fundraising and Administration	Group 4: Design	Spring Break
Convert collected data into topographic maps: 100 hrs	convert site map to topo map: 40 hrs	Get Funding: 60 hrs	Research pumps and fountains: 30 hrs	Survey needed points: 40 hrs
Make other useful maps 30 hrs	estimate population: 20 hrs	Keep Accounts of all money received: 30 hrs	Identify and acquire needed software: 10 hrs	Locate current fountans, pipes: 10 hrs
Prepare list of needed data for next trip to site: 10 hrs	Determine average Haitian water usage: 25 hrs	Keep up to date with all deliverables: 40 hrs	Design pump improvements: 20 hrs	Examine link from source to pump, pump to cistern: 15 hrs

Collaborate with design team on what file type needed for maps: 2 hrs	Required v. Current Capacity: 40 hrs	Inform team of deadlines: 5 hrs	Work with End User Group on current system issues: 30 hrs	Examine other possible water sources: 20 hrs
Deliver useable maps to design team: 5 hrs	Identify locations of existing fountains and wells: 25 hrs	Help organize trip: 10 hrs	Design pipe network path: 35 hrs	Check water quality: 10 hrs

For the completed tasks, there were several different end results. The surveying data is being incorporated into the preliminary data and double checked. The information gathered about the state of the current water source, cistern, and system in general is causing us to change the direction of one of our subteams. From checking the water quality, it also became apparent that if we could provide some way of treating the water, it would greatly increase the utility of the system for the city.

None of our work so far has deviated from the original plan. The work that is continuing was designed to do so.

3. Next Steps

After the return of the surveying team, it became obvious that our subteams needed to be reorganized. Our current subteams are now:

Group 1: responsible for producing a topographical map that the design team can use for their design. Also, integrate end user group info into map format where applicable.
Group 2: research and suggest plausible water purification systems
Group 3: manage and/or produce all IPRO Office Deliverables. Also, fundraise money to pay for trips and needed equipment.
Group 4: design the preliminary system, research and suggest alternative water sources/cistern design

Here is the projected Work Breakdown Schedule for the rest of the semester:

Group 1: Topographical Mapping	**Group 2: Water Purification**	**Group 3: Fundraising and Administration**	**Group 4: Design**
Convert collected data into topographic maps: 20 hrs	research possibilities: 40 hours	Write letters for money, software, other help: 30 hrs	Research alternative water sources: 30 hours
Make other useful maps 10 hrs	research local resources: 40 hours	Keep Accounts of all money received: 20 hrs	Design pipe network path: 25 hrs
Deliver useable maps to design team: 5 hrs	present suggestion to design team: 5 hours	Keep up to date with all deliverables: 20 hrs	Add purification system to design: 15 hours
Assist other groups when needed	replan ideas: 15 hours	Inform team of deadlines: 5 hrs	

We have set April 17th as our stop work date for the project, so that no matter what, we have time to wrap up everything at the end.

With the exception of changing the focus of a subteam, nothing else has changed in our organization. Our subteam leaders, and subteam responsibilities, are the same as originally. Also, none of our team members have switched teams:

Assigned positions:

- Team leader is David Williams
- Secretary (minutes taker) is Chi Tam; he is also responsible for the management of iGroups, summary of weekly tasks, and organizing and filing timesheets.
- IPRO Liaison is Alayna George
- Subteam 1 Leader: Shawn Shoulders
- Subteam 2 Leader: Alex Kircher
- Subteam 3 Leader: Alayna George
- Subteam 4 Leader: Matt Ballog

Group 1	**Group 2**	**Group 3**	**Group 4**
✓ David Durra ✓ Mark Rokita ✓ Shawn Shoulders ✓ Eric Radliff	✓ Ermin Skrebo ✓ Amy Sissala ✓ Alex Kircher ✓ Garret Forkan ✓ Joel Zook ✓ Nate Hollister ✓ Kinjal Tailor	✓ Chi Tam ✓ Chon Pong Chung ✓ Alayna George ✓ Shoiab Ratnani	✓ Joshua Sullivan ✓ Ivan Rasic ✓ Ashfaq Mohammad ✓ Piotr Sawulski ✓ Matt Ballog ✓ David Williams ✓ Ben Susek

There are no listed tasks assigned to individuals in this report because the tasks for each subteam are assigned within the team itself.

Group 1 is our lag group; if there is need, the members will be assigned to help on other tasks. This is one way we hope to circumvent the time crunch we anticipate toward the end of the semester as well.

4. Budget:

Activity	**Amount**	**Date**
Fundraising	6000	5-Mar
Trip	-5000	12-Mar
GPS Equipment	-1000	4-Mar

Funds have come from: ASCE, Illinois Chapter; IIT IPRO Office, Office of David Baker, and private donations.

5. Obstacles

The greatest obstacle faced so far by our team was the short time period between the beginning of the semester and the mid-term trip. This made fundraising very difficult. To overcome this, we focused primarily on on-campus donations for the first few months. We are now working with companies in the area on smaller donations.

Looking forward, the only obstacles that we anticipate are time related. Because of this we have set a stop work date. After this date, there will be no more work on the project, and all of our energy will go into detailing progress so that the next team can continue on with the project. Group 1 has very few assignments for the rest of the semester, and this is intentional because the members can they be temporarily assigned to other areas to help with critical tasks.