



SOUTH HOUSTON
PROFESSIONAL CHAPTER

Thailand Maejanoi Project

EWB-JSC



The Project

- **Project Name:** Water Containment and Distribution
- **Community Name:** Yom Maejanoi
- **Location:** Mae Hong Son, Northern Thailand
- **Requirement:** The community of Yom Maejanoi is in need of a system to collect water and distribute for both drinking and irrigation.
- **Purpose:** To provide improved water access to Maejanoi with hopes to develop an irrigation system.
- **Outcome:** The people hope to enhance quality of life along with farming capabilities, leading to a self sustaining community.
- **Partnering NGO:** Life Encounter Asia Foundation (LEAF)



The Project

LOCATION

- Remote location: Northwest Thailand bordering Myanmar
- 236 km from Chiang Mai to Mae Hong Son
- People migrated from mountains and settled in the community



Maejanoi Village

- Settled 20 years ago
- High growth rate
 - 5 -> ~40 houses in last 10 years
 - ~200 people currently
 - Road, water, power, schools add to appeal
- Sqwo Karen
 - 80% Christian, 20% Buddhist
- Villagers skilled at working in fields
 - Some weaving & woodworking
- Climate
 - Little to no rain during dry season (Nov to June)
 - Fires possible at end of dry season
 - Early rainy season – 1-2 hours heavy rain, then sunny
 - Late rainy season – drizzles all day



Project Status

- Program Development:
- July 2014: EWB-USA approved new program
 - EWB-SHPC adopted
- Assessment Trip: Completed
 - Traveled Nov. 1-15, 2014
 - Submitted post-assessment trip report on Jan. 18, 2015
 - Seeking approval to proceed with Design Phase
 - EWB-USA Board review and respond within 30 days of submittal
 - Water analysis results on-going
 - Potential second assessment trip during the dry season (Nov to June)
- Design
 - Target one year (Early 2016)
- Implementation Trip
 - Build project with community
 - Teach community how to maintain
 - Target 1-2 years after first assessment trip
- Monitoring and Evaluation
 - See how project is working, if there should be changes or improvements
 - Identify and assess other new projects



Life Encounter Asia Foundation - LEAF (NGO) (Partner)

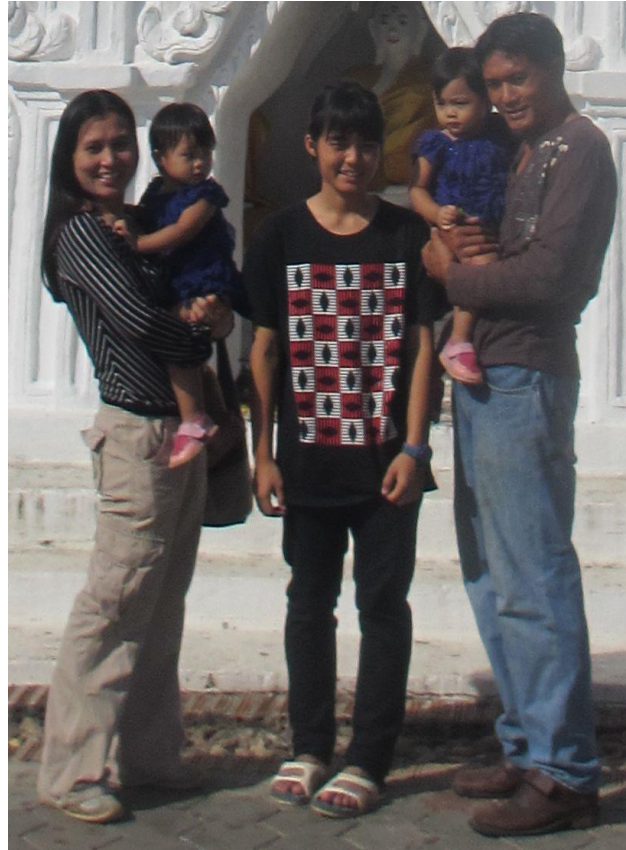
- Johanna and Dick de Koning
 - From Netherlands
 - In Thailand over 20 years
 - Fluent in Thai and English
 - Counsellors
- Visit Maejanoi 3 times per year
- First time working w/ organization like EWB
- Encouraged villagers to start savings plan for EWB project



Community Contacts and Leader

Be and Ke

- EWB's contacts in Maejanoi
- Be - Former housekeeper for Johanna and Dick in Bangkok
- Ke – driver, handyman
- Fairly good English



Village Leader – Phu Yai Ban

- Manages all 5 villages
- Lives in Maejanoi
- Elected, serves until retires
- Title means “big man of the village”

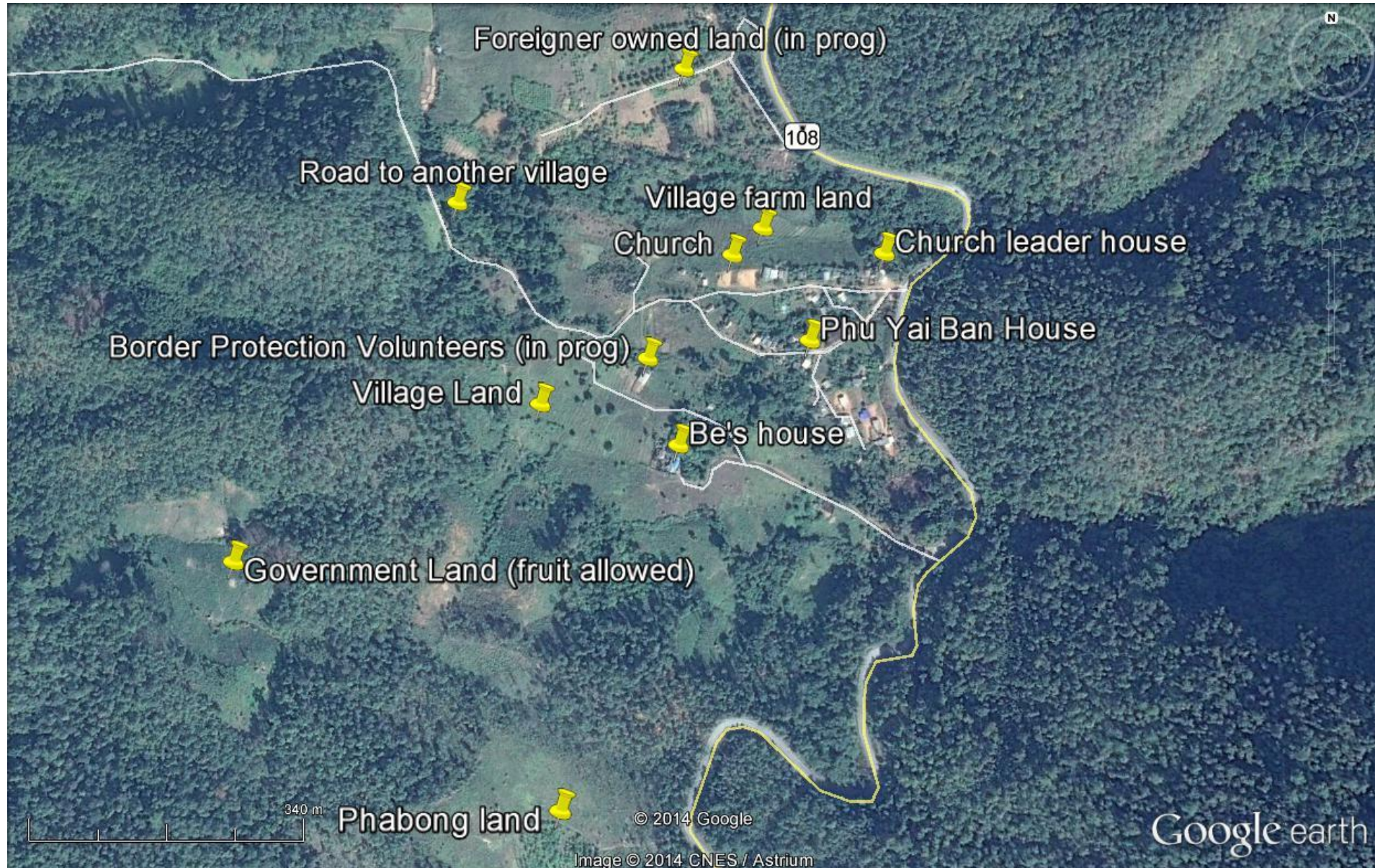


Meeting, Meetings, and more Meetings...

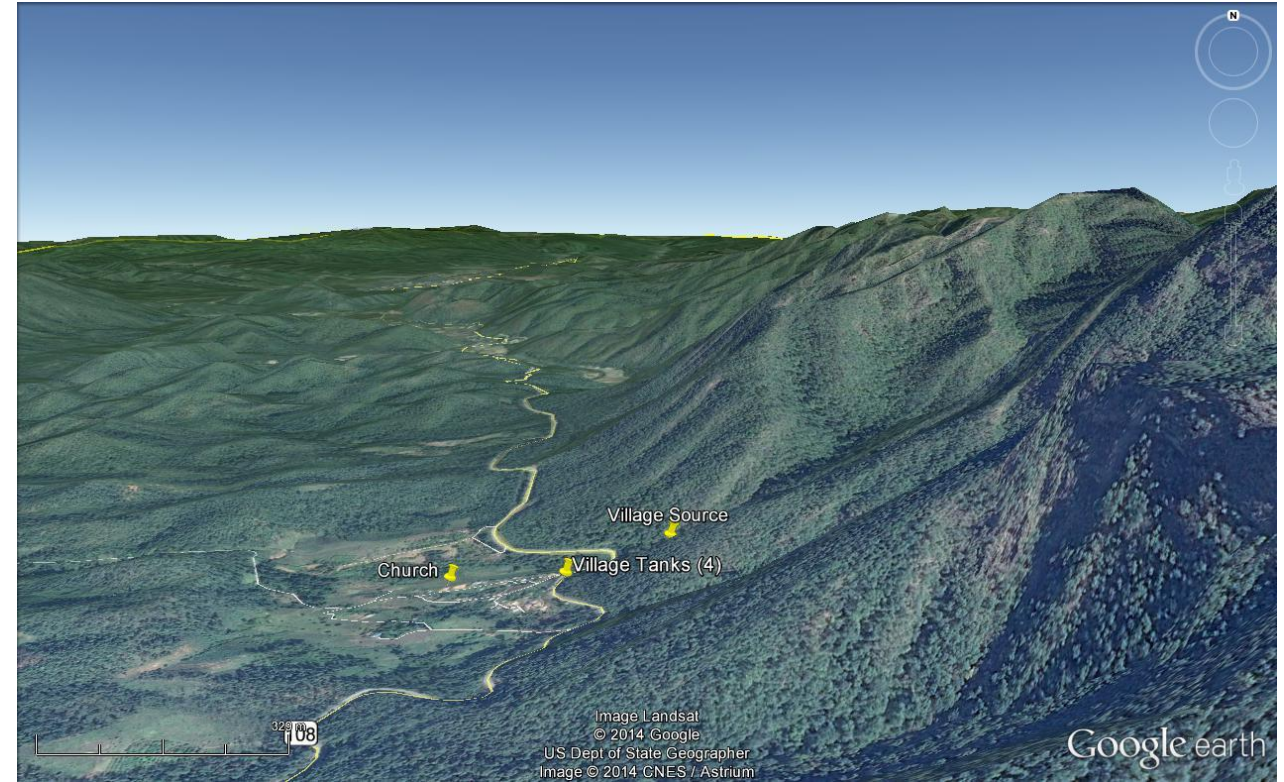
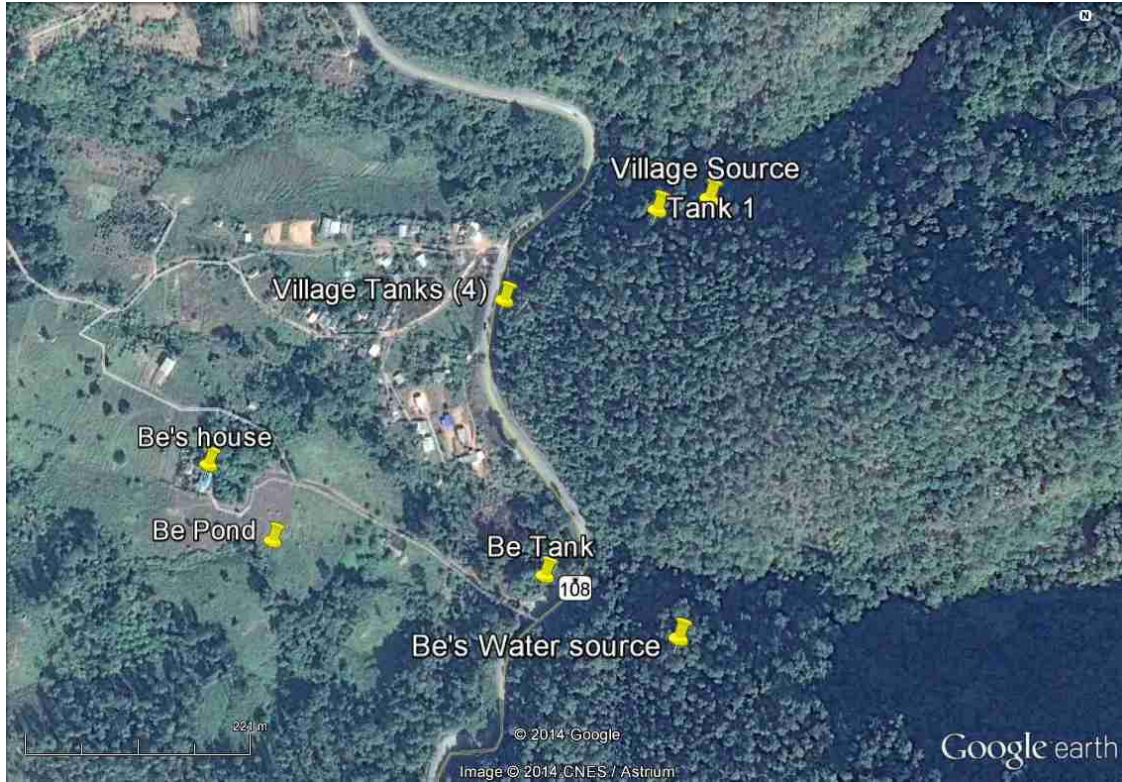
- w/ Officials
 - Forestry concerns are government priority
 - Land owned by government, villagers allowed to live on & use land
 - Supportive of EWB
- w/ Village
 - Good attendance/support
 - Identified water during dry season and road in rainy season as top priorities
 - Not enough water for vegetable gardens in dry season
 - Believe water quality different in homes than streams
 - Filmy/oily residue after bathing (worse in dry season)
 - Reported bladder stone issues
 - Want improvement to water system but don't know how
 - Concern about 5% capital contribution requirement
- w/ OBT (Subdistrict Gov't)
 - Purpose – to learn about government development plans in area
 - Concern about chemicals, forest, fires
 - Never done water testing in the area
 - Supportive of EWB



Mapping – Maejanoi



Mapping – Water System



Mapping – Drawn by Ke



Mapping – Flying the Quadcopter



Water Source

- Highest point in pipe system
- Natural pooling, water is exposed running down to this level from higher on mountain
- Sand/rocks can clog inlet
- Very rocky, difficult to dig
 - Most pipes above ground
- Dry season – source pond dries up
- Wildlife in mountains, can contaminate source
- Trail is steep, narrow, and slippery



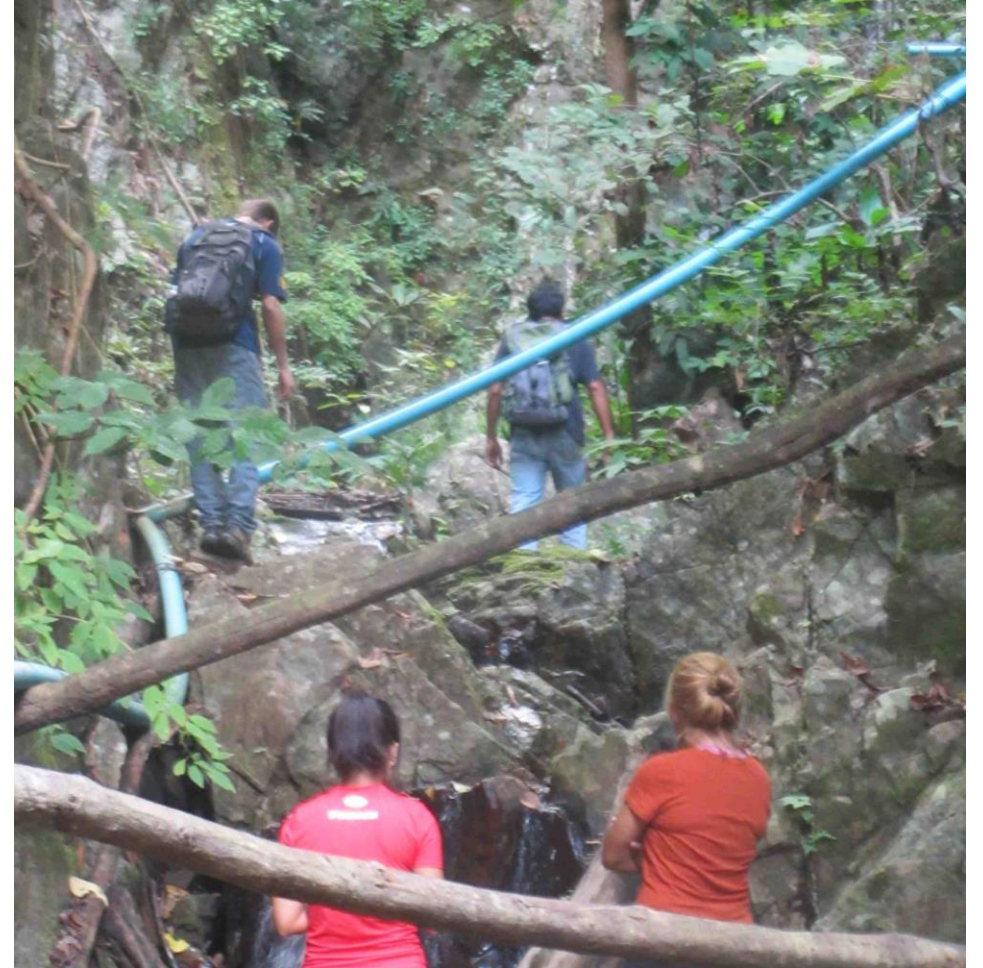
Dry Season Water Source

- Down hill from topmost house
- Pipe driven into ground at low point
 - Not connected to rest of water system
 - Small tank below pipe to collect water
- Pump used to bring water uphill
 - Often does not work
- Villager noted stream water tastes worse than from above pipe



Water Distribution System

- Blue PVC ubiquitous in area
- Falling trees and forest fires damage pipes
- Built and maintained by villagers over time
- Not all lines supported



Tanks

- Source concrete tank
 - 10-20 m downstream from source
 - Overflow pipe
 - Wooden lid, significant area exposed
 - Valve just downstream

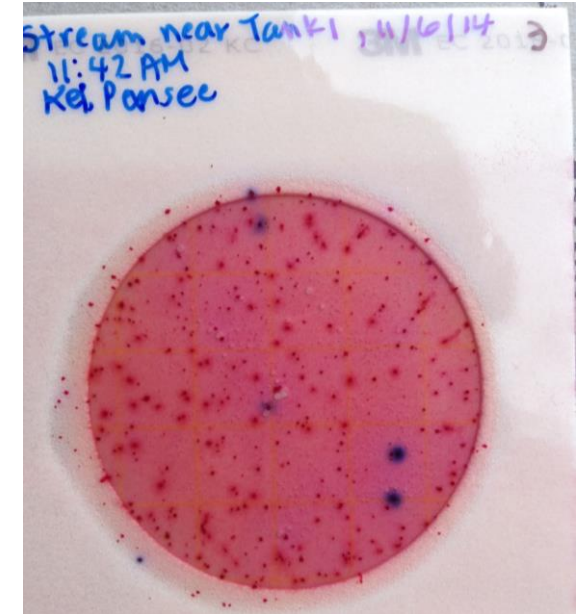


- Road Tanks
 - 4 large concrete tanks
 - Water turned off in dry season
 - Closed with concrete on top



Water Testing

- 3M petrifilm samples show E. coli and plentiful coliform in majority of samples
- pH consistently approximately 7
- Turbidity generally very low
- Samples returned from across the system and after rainy and dry periods for further analysis
 - Chemical testing?
- Villagers eager to help with sampling



Household Surveys/Samples

- Visited 7 houses in different parts of village
- Different faucet for bathroom washing
- Few have money for storage tank
- Often no vegetable gardening in dry season
- Kitchen/shower waste goes outside
- Use small buckets to carry water in dry season
- Some households boil drinking water
- Health concerns
 - 2 houses reported bladder/kidney stones
 - 1 house reported diarrhea
 - 2 mentioned oily residue



Hardware/Supplies

- Stores can order items from Chiang Mai
- Usually not willing to give prices
 - Bargaining, price depends on quantity
- Blue PVC
- Iron pipes
- Digging tools available in village
- Tanks
 - Cement rings
 - Plastic
 - Stone with cement



Interested in getting involved?

- Committees
 - Water distribution (improve current system)
 - Professional mentor: Available!
 - Conduct trade study for protecting pipe from fire and tree falls
 - Water quality
 - Professional mentor: Alesha Downs
 - Conduct trade study of water quality solutions
 - Water storage (tanks/structures)
 - Professional mentor: Giana Morini
 - Calculate estimated water needs for community for drinking and other needs
 - Gather data about how much water is available and when (rain water, etc)
 - Conduct trade study of water storage solutions
 - Outreach/social media and fundraising
 - Lead: Available!
- Positions
 - PMEL (Planning, Monitoring, Evaluation, Learning)
 - Construction Planning and Logistics
 - Design (CAD)
 - General help in ALL groups above!



Come to our next project meeting!

- Feb. 7th, Saturday @ 1PM
- Gilruth Center
- Decide on standard meeting time and location
 - Partnering with members of Central Houston EWB Chapter
- Discuss next steps in detail



Current Fundraising Campaign

<https://ssl.charityweb.net/ewbusa/pfp/bringingwatertoacommunity.htm>

BRINGING WATER TO A COMMUNITY

FUNDRAISER

Anqela Cason

FUNDRAISING GOAL

\$1000

TOTAL RAISED

\$2600

TOTAL NUMBER OF DONATIONS

25

START DATE

12/01/2014

END DATE

04/01/2015

FUNDS SUPPORT

SOUTH HOUSTON PROFESSIONAL
CHAPTER

[DONATE NOW!](#)

A MESSAGE FROM BRINGING WATER TO A COMMUNITY

The South Houston Professionals Chapter of Engineers Without Borders USA.....aka the JSC chapter has a brand new project! The travel team has just returned from Maejanoi, Thailand where the team spent 2 weeks completing an assessment by working with the community to identify their needs and complete tests.

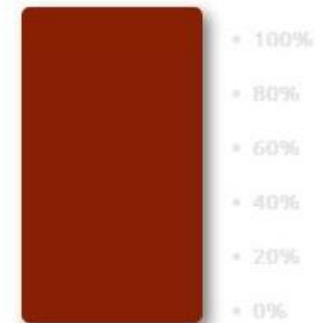
The biggest need identified by the community is clean water. The community currently gets it's water from runoff from the mountains that travels through PVC pipes that get damaged and destroyed throughout the years. The team tested the water at multiple sources and found that the closer you got to the homes the worse the contamination was. Ultimately the most contaminated sites were in the homes. There is also a shortage of water during the dry season when there is little or no rain.

They have asked the chapter to help assemble a robust storage system that also cleans the water and we're taking on that challenge. Now how you can help. Since this is our new project we've got some funds but not enough to help us get this system designed, tested, and implemented in Maejanoi. Any amount will help no matter how large or small.

- Donations can be as little as \$5.00 or up to whatever amount you'd like to give



\$ 2,600



Last updated: 12/25/2014

Fun Times



Culture Immersion

