EWB Panama in Las Delicas & La Pedregosa

EWB -USA NEU 2024 PANAMA PERSONNEL

Program Director: Charlotte Andrews
Design lead: Oliver Orthwein
Professional Mentors: Korot, PE, Hornak, EIT

MISSION

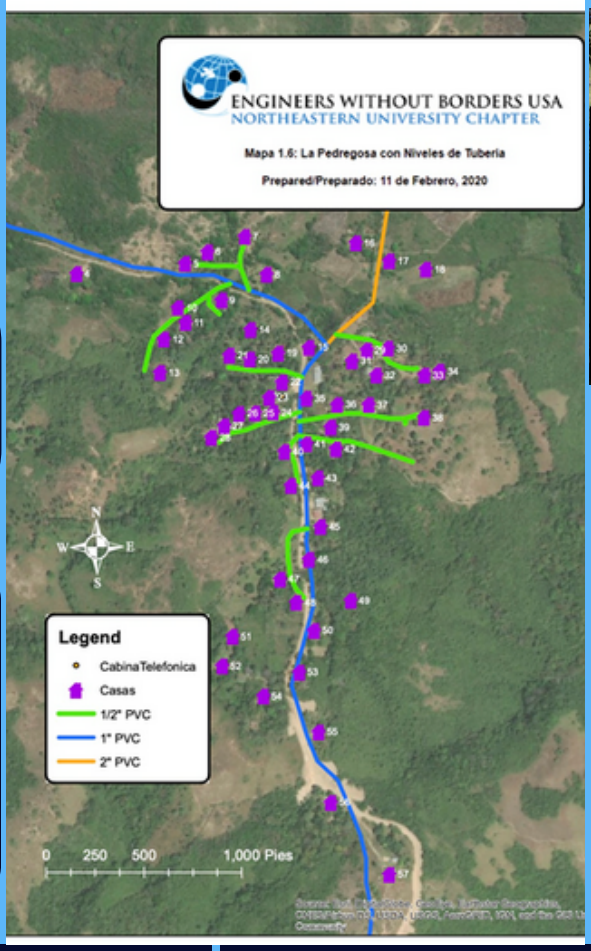
EWB-USA NEU and the Water Board of La Pedregosa began a goal of addressing the community's lack of reliable drinking water. The outcome of this project is to provide enough clean drinking water to completely support La Pedregosa in a manner that is sustainable, convenient, and equitable for all community members for the next 50 year s in accordance with EWB-USA's guidelines.

TECHNICAL SKILLS

- FLUID DYNAMICS CALCULATION
- AUTOCAD AND SOLID WORK DESIGN
- WATER QUALITY TESTING AND TREATMENT
- GARMIN GPS ELEVATION SURVEYING
- STORAGE TANK MEASUREMENT

NON-TECHNICAL SKILLS

- LONG DISTANCE COMMUNICATION
- FUNDRAISING AND GRANT WRITING
- BUDGET MANAGING
- PROJECT MANAGEMENT AND COLLABORATION
- COMMUNITY OUTREACH



"To aid communities in developing countries by using engineering solutions to address basic human needs, such as the need for potable water."

STAKEHOLDER

EWB - PANAMA

- Consist of undergraduate students majoring in various engineering disciplines, computer science, and physics
- Plan and design a new water source and storage for the community
- Educated community partners on necessary steps to maintain new water system

LA PEDREGOSA COMMUNITY

- Consist of 268+ members with expertise in local agricultural and environmental structure
- Establish funding for supplies needed to design a new water storage
- Assist with gathering logistical data for location of water source and safe piping passage

PROFESSIONAL MENTORS

- Consist of mentors with certification in Professional Engineering and Engineer-In-Training with multiple year working in large scale humanitarian projects
- Review design work and advise on design decisions in AutoCAD and SoildWorks

COMPONENTS OF IMPROVEMENT FOR LA PEDREGOSA

STORAGE TANK SYSTEM

- THERE IS A CURRENTLY A 2,300-GALLON CONCRETE STORAGE TANK TO STORE WATER FROM EL ESCOBAL AND PIPES SERVING TAP STANDS AT ALMOST EVERY HOUSE IN THE COMMUNITY.
- TO ADDRESS THE NEED OF THE COMMUNITY A NEW BOREHOLE WILL BE DRILL TO SUPPLY 14,400 GAL PER DAY
- A NEW 15,000-GALLON STORAGE TANK WILL BE DESIGN TO STORE THE WATER FROM THE BOREHOLE

PIPING SYSTEM

- THIS IS CURRENTLY APPROXIMATELY 2,400 FT CONNECTING THE 2,300-GALLON STORAGE TANK TO THE COMMUNITY
- A NEW PIPING SYSTEM WILL NEED TO BE ESTABLISH FOR THE NEW 15,000-GALLON STORAGE SYSTEM
- IF THE WEATHER AND TEMPERATURE CHANGE DRASTICALLY, THEY MAY AFFECT THE STRENGTH OF THE PIPES. THE INTEGRITY OF THE PIPES WILL ALSO HAVE TO WITHSTAND STORMS STRONGER THAN THOSE THAT CURRENTLY AFFECT THE AREA DUE TO INCREASING STORM INTENSITY.

TIMELINE

Completed — ASSESSMENT TRIPS IN 2015 AND 2016 FOR LAS DELICAS

Signed partnership agreement & collected necessary data to begin project design

Completed — MONITORING & EVALUATION TRIP IN 2022 FOR LAS DELICAS

Portable water to everyone's tap stand, and gathered data for new bridge crossing design

3/2/25 — IMPLEMENTATION TRIP #2 LAS PEDREGOSA

Construct additional water storage tank and perform supplementary surveying

Completed — IMPLEMENTATION TRIPS IN 2017, 2018, AND 2020 FOR LAS DELICAS

Rebuilt community relationship after COVID-19 pandemic and collected additional data.

3/2/24 — IMPLEMENTATION TRIP #1 FOR LAS PEDREGOSA

Begin drill, install pump, pump test, connect to water system, and install solar power

12/15/25 — M & E TRIP FOR LAS PEDREGOSA

Monitor the system performance and conduct minor repairs