



IPRO 327

Sustainable Water Distribution
System for Pignon, Haiti

Needs of Pignon, Haiti

- A water distribution system to supply 20 gallons per person per day to the town
- Technical support to design the system
- Easier access to the system
 - more public fountains
 - more private household connections
- Ability for future growth of the system

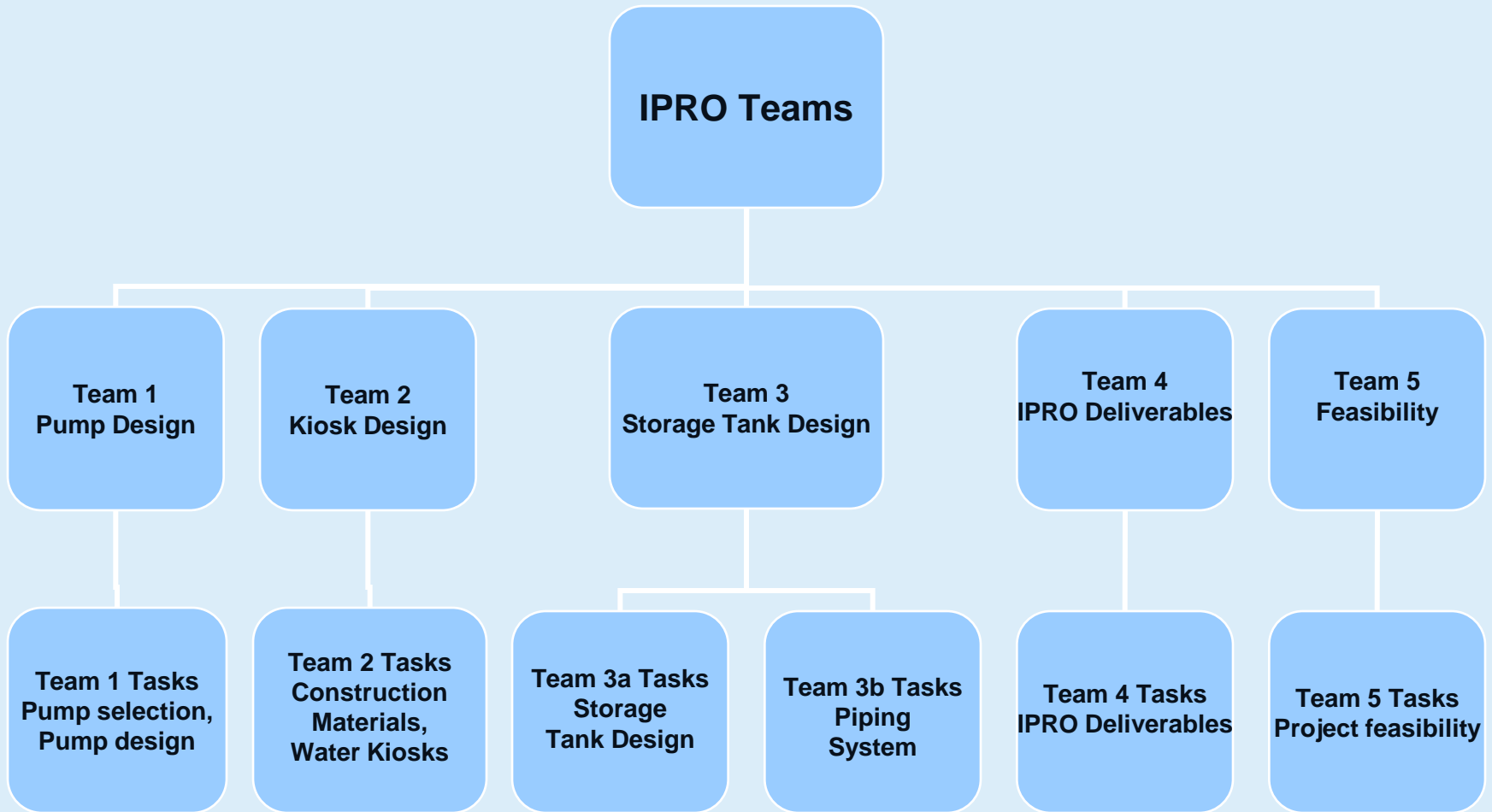


Goals of the IPRO

- Update the digital map of Pignon, Haiti
- Analyze survey data and update population estimate
- Update EPANET
- Size pipes, create AutoCAD plan
- Design water kiosk
- Design 15,000 gallon, reinforced concrete rectangle storage tank
- Design disinfection system

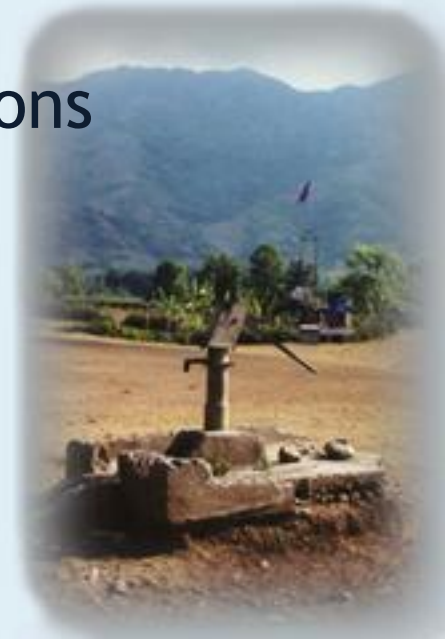


Organization of the Team



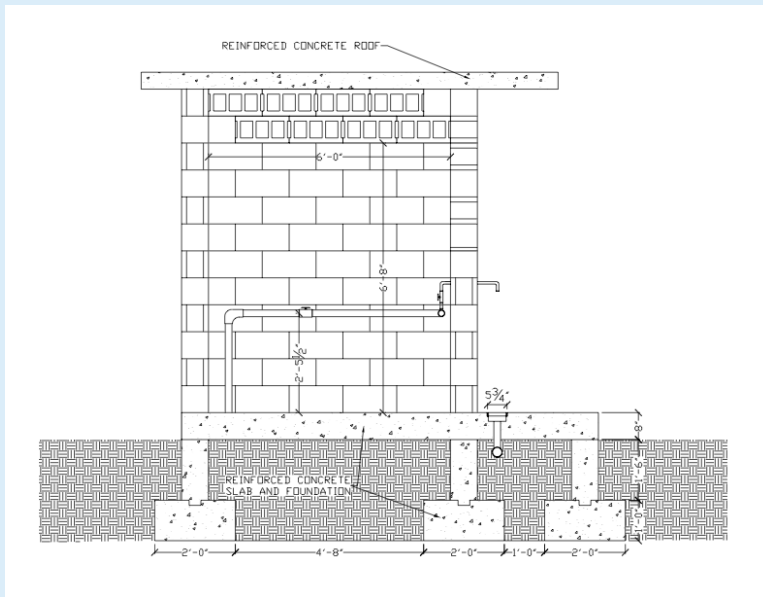
Pipe Design

- Analyze and design the pipeline through use of EPANET
- Created models for present and future periods of operation
- Demand and design parameters based on standards developed by SNEP
- Use maps and surveys to predict locations of kiosks and private connections
- Use the results of the analysis to properly size pipelines and pumps used



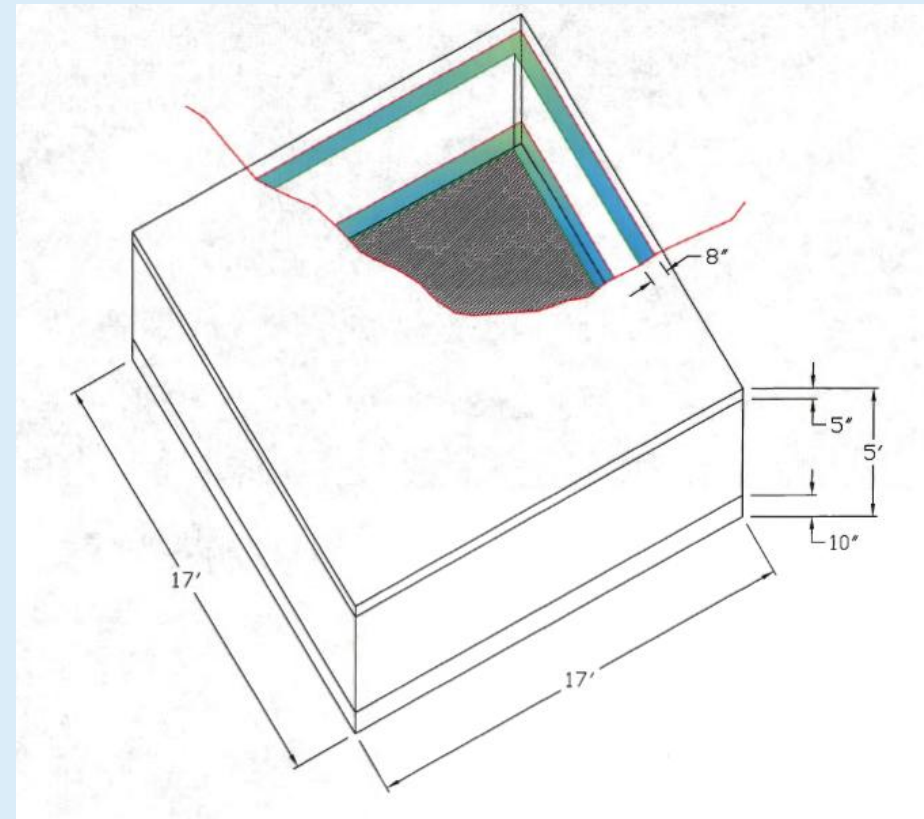
Kiosk Design

- Design based of similar kiosks throughout Haiti
- Concrete Masonry Unit (CMUs) contain piping and valve necessary to control water distribution

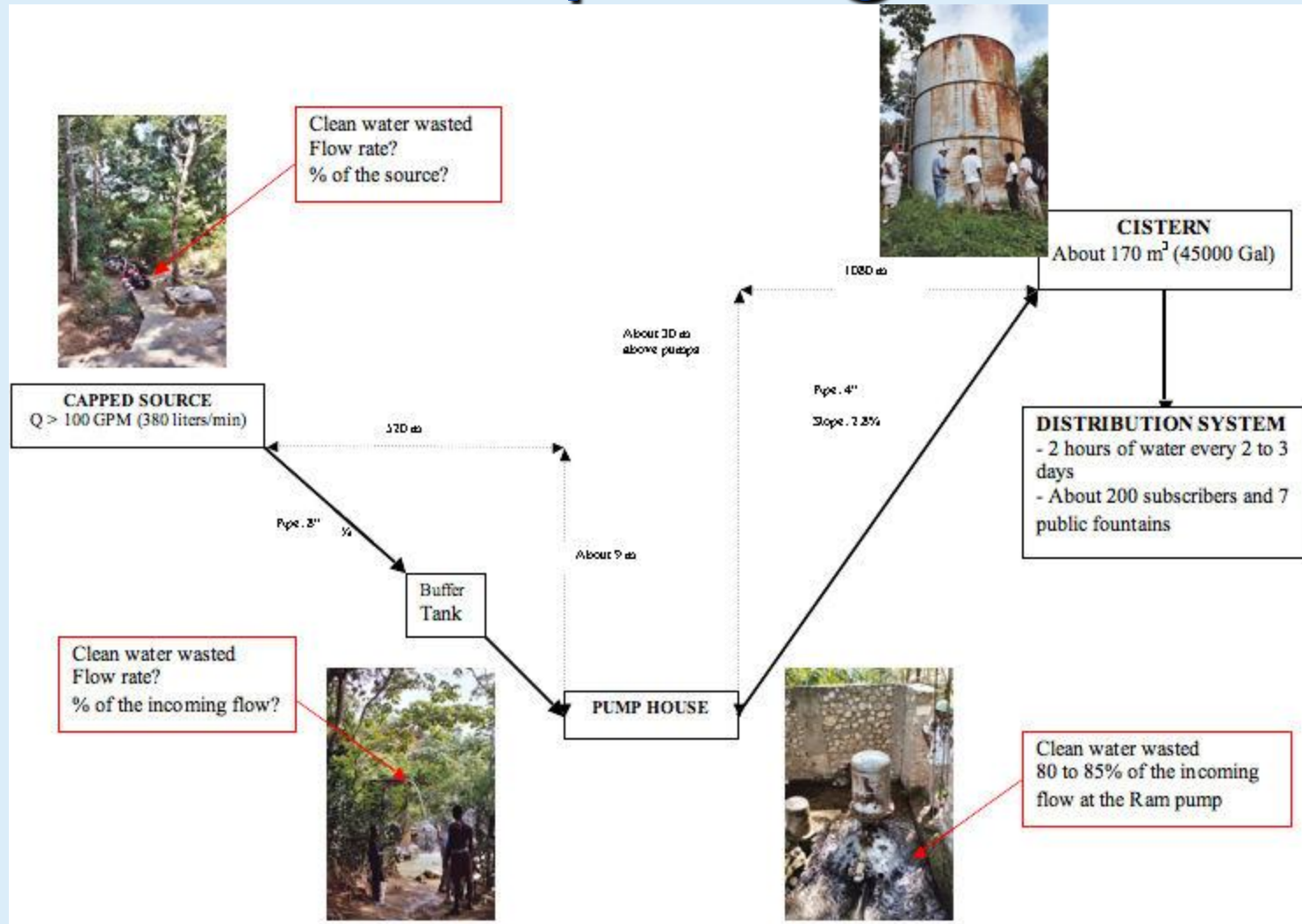


Tank Design

- Size of the tank will be as follows:
 - 17 ft x 17 ft x 5 ft
 - Made from Reinforced Concrete
 - Need a tank to store 15,000 gallons of water



Pump Design



Ethical Issues / Obstacles

- Using AutoCAD and EPANET to accurately design systems
- Working effectively - project management
 - Splitting in groups for optimal performance
 - Groups splitting into subgroups for efficiency
- Professional approval for design



Ethical Issues / Obstacles

- Lack of design experience - Design needs professional approval
- Design Standards - Water distribution system based on US standards
 - No guarantee for quality construction materials in Haiti
 - Availability of proper materials pending



Results

- Major designs completed
 - Kiosk
 - Cistern / Tank
 - Pipe / Pump Systems
- Next step: professional approval





Any questions?