Water Distribution System Design: La Peñita, Panamá

Project Location

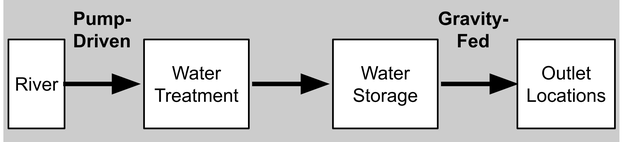
- Located in Eastern Panama along the Chucunaque River

La Peñita Location

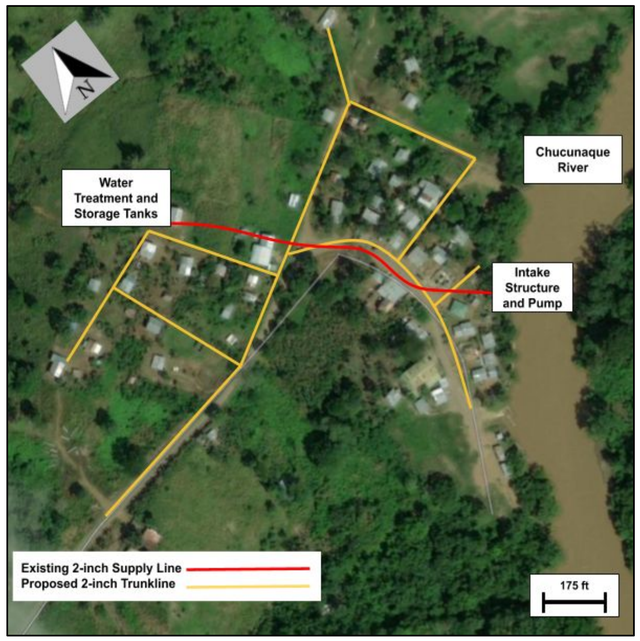
Project Background

- La Peñita is home to 177 residents and a substantial refugee population. The government provides the refugees with water, so the proposed design accounts for La Peñita community member water usage only.
- Rainwater and bottled water are the community members' current drinking water sources.
- A partial water distribution system has been constructed in La Peñita. Components of the existing partial system are incorporated into the proposed design, reducing project cost and duration.

Design Concept

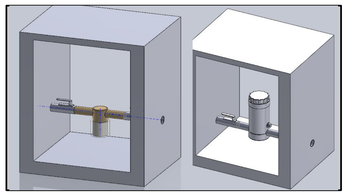


Design Components



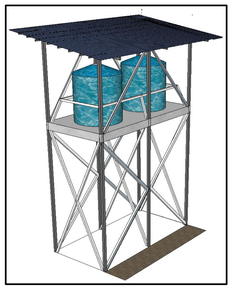
Proposed Design

Intake Structure: The intake structure is located in the river. Filter pack in the wet well will ensure low turbidity of the water being pumped.



Filter and Chlorinator

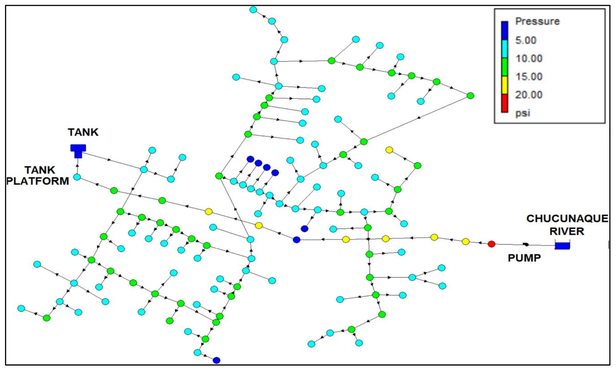
Water Treatment: Water is filtered and chlorinated to further reduce turbidity and eliminate the coliforms and *E. coli* present in the untreated river water. The filter and chlorinator are housed in concrete service boxes for protection.



Water Storage Tanks

Water Storage: (2) 1,000 gallon tanks store the treated water atop an existing tank platform. A mono-pitched roof shades the tanks while maintaining adequate clearance for tank maintenance. The platform elevates the tanks to the highest point in the community, so the distribution network is gravity-fed from the water storage tanks out to each receiving location.

Hydraulic Model



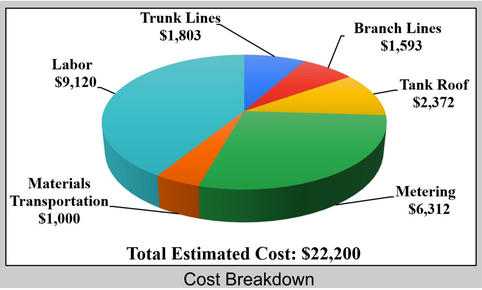
Hydraulic Model Schematic

Distribution Network: 2-inch PVC trunk lines and ½-inch PVC branch lines distribute water directly to community member homes, the school, police station, clinic, bank, and churches. Tap pressures at the receiving locations range from 4 psi to 15 psi.

A 20-year design life was considered for the system. The system will sustain the 20-year La Peñita population of 263 residents and the corresponding 20-year system demand of 5,500 gallons of water per day.

Construction Schedule and Cost Estimate

- Community members will perform the majority of the labor
- Expected project duration: 18 weeks



Cost Breakdown

Conclusion

- KSG WaterWays has designed a sustainable and economically feasible water distribution system for the La Peñita, Panamá community.
- Next Steps:
  - Send report to project partners
  - Implementation

KSG WaterWays

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