EXECUTIVE SUMMARY

The Pitt HEAD team was responsible for designing a water distribution system expansion to an existing system in the community of Kuna Nega, Panama. The community has plans to expand by adding close to 80 new homes and we were tasked to make sure that as they expand, they can still have a sufficient water supply. This project is an expansion to the work that Pitt HEAD performed in this community a few years ago which initially provided them with water.

Due to the circumstances in the community, they do not receive water from the Panama City mainline between 2-4 days per week. Therefore, not only did we need to design the pipe network, but also design a tank to store water to supply the community for the days the water is shut off.

During the month of September and the beginning part of October, the team designed the original water distribution system and a storage tank to hold the water. We also spent time preparing management plans, soil analysis plans and a plan for data collection during a site visit that will allow for the preliminary design of a septic system – something that the community does not have.

During the final week of October, seven out of the eight team members traveled to Kuna Nega and began to implement the design in construction. The team also used this trip as a site visit to gather data including but not limited to: soil properties and location of a potential septic system for the community. The team also gathered elevation data to verify the design of the water distribution system in addition to elevation data necessary to create a preliminary design for a 5-mile pipeline that will run along Kuna Nega to a nearby community of Mocambo.

During the site visit, there were changes to the original scope of work. The number of houses that were being added was cut in half, the size of the tank had to be cut in half and the client requested two smaller elevated tanks in separate locations in the community to supply additional water and pressure to some low pressure zones.

Upon returning to Pittsburgh, we completed the final design for the elevated tanks, as well as preliminary designs for a community septic system and the Mocambo pipeline.

Throughout the project, the team worked under the direction of Professional Engineers and in conjunction with our client Footprint Possibilities Inc. The team is made up of eight individuals, with two specializing in construction management, two in structures, two in water resources, one geotechnical engineer and one environmental engineer.

This report will detail the design and implementation of all components.