Before the area was industrialized, Hoboken was a swamp like peninsula. After the industrialization and commercialization of the area, many of Hoboken's neighborhoods were left underwater. During the right combination of heavy rainfall and a high tide in the Hudson River, parts of Hoboken experience moderate to severe flooding because the water is unable to find a drainage point. These floods can come unexpectedly and do not happen every single time it rains. In addition to the flooding, Hoboken's infrastructure is beginning to crumble. Something as simple as a water main break can cause city wide problems that can take nearly a week to resolve. Overall, the city of Hoboken does not have adequate information about the current sewer and drainpipe systems. As a result, the pipes are only replaced when they break. These weak pipes and drain breaks lead to an even higher chance of flooding during heavy rain.

The goal of the ARK App is to aid Hoboken residents, Emergency Response Teams, and the North Hudson Sewer Authority in predicting floods, relaying real time data, and aiding in a rapid emergency response and recovery plan. There is a mobile application that Hoboken residents will be able to use to see accurate flooding prediction, and take real time photos of current flooding situations. The app will also be able to push notifications to the mobile device to let users know of important information. In addition to user inputs, the app will monitor social media posts to gather more information about floods and situations. There will also be a desktop available for emergency response teams and the North Hudson Sewer Authority to monitor current predictions, collect data from sewer exploration robots (a project being researched by a separate Senior Design team), and track all real time data being received and sent by the mobile application users.