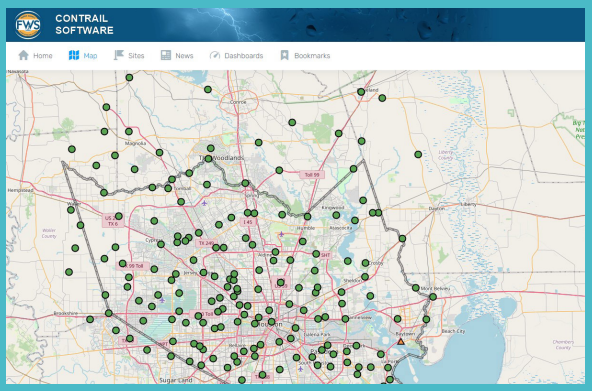
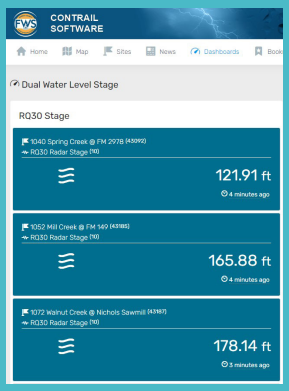
PROJECT OVERVIEW

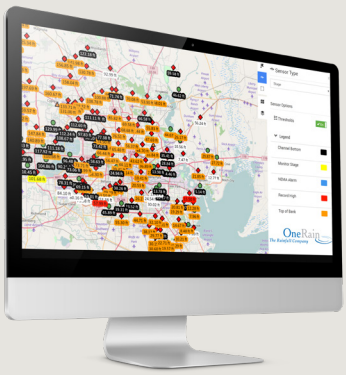
Harris County, TX Flood Control District





PROJECT STATUS

- **2008 – ongoing**



Contrail software showing HCFCD Stage Map during Hurricane Harvey, August 2017.

Regional Flood ALERT System Architecture Project and Early Warning System

OneRain upgraded the Harris County Flood Control District's (HCFCD) regional ALERT network, which included ALERT2 upgrades to the three primary repeater sites in the network, base station upgrade to a three-server Contrail® software implementation, and full support for nine (9) partner agencies.

OVERVIEW

In 2010, Harris County selected OneRain to implement "Regional ALERT System Architecture". The tasks contracted included documenting the existing architecture, making recommendations for improvement to the network and upon approval, making those changes, upgrading the base station servers to provide (1) redundancy, and (2) Web-based access to environmental data and administrative tools for managing and understanding the data. OneRain also designed a plan for partner agencies to access their data and to continue to participate in the benefits of a regional ALERT network. OneRain recommended that HCFCD use ALERT's next generation ALERT2 protocol to achieve much higher data quality due to faster data rates and the use of time division multiple access (TDMA), error detection and forward error correction.

BENEFITS OF IMPROVEMENTS IN NETWORK DESIGN

All systems are operational and functioning more efficiently and robustly than before the upgrade. The HCFCD agency is knowledgeable on how to use and maintain the system to support their mission.

The end result was that HCFCD created a new regional real-time hydrologic monitoring network with the potential for up to ten times the capacity and throughput, significantly less data loss and more complete, usable data, allowing HCFCD and its partners to have excellent decision support during weather events. Additionally, the Contrail centralized on-line archived data serves and supports HCFCD and partner agencies in their future planning and historical analysis activities.

> **HCFCD upgrade to ALERT2**
>
> Analysis of the collected data indicates that over 99% of the data reports transmitted were successfully received. Comparable events using the legacy ALERT protocol resulted in less than 65% successful radio transmissions in the HCFCD network.
>
> **— National Hydrogoic Warning Council**
> Article, October 2016