CASE STUDY:

Charlotte-Mecklenburg Storm Water Services fills two needs with one tool

Improving both flood and water quality management with Contrail®

OVERVIEW

Home to more than 60 streams and sitting at a hydrological divide, Mecklenburg County, North Carolina, contains a vast network of flood-prone headwaters. And the cleanliness of those waterways can impact water quality for many miles downstream.

Charlotte-Mecklenburg Storm Water Services is the joint utility that manages flooding and surface water quality for the City of Charlotte and surrounding towns in Mecklenburg County. The utility utilizes AEM's OneRain Contrail® platform to help with the daunting challenge of keeping up with both flood and water quality issues throughout the county's nearly 20,000 acres of floodplain and 300 miles of monitored streams.

Overcoming operational challenges

Prior to adopting the Contrail platform, Storm Water Services utilized a variety of different applications to view fragments of data, but they had no efficient way to bring all those fragments together. This constrained their ability to interpret the data and gain adequate situational understanding before sending workers and emergency services into the field.

1. DATA FRAGMENTATION

Flood and water quality data were fragmented across disparate applications; there wasn't a single source of truth.

2. LIMITED ALERTING CAPABILITIES

The utility needed the ability to generate customized alerts that linked to dashboards summarizing current water conditions.

3. INSUFFICIENT CAMERA INTEGRATION

The utility wanted to better integrate camera imagery with other data sources to enhance situational awareness and facilitate decision-making.

IMPROVING SITUATIONAL AWARENESS

Storm Water Services maintains an extensive hydrological monitoring program that has grown to include 52 stream gauges, 72 rain gauges, and a variety of creek cameras across 124 sites – all of which collect data 24/7/365. AEM's OneRain Contrail software brings all that data together to make it actionable. Thresholds for automated alerts are defined around local parameters for flooding and water quality. Alerts link to comprehensive dashboards and camera imagery that equip workers and emergency services with the information they need to make faster, smarter decisions as they size up each situation.

> "When Contrail came on board, it was our one-stop toolbox…All the alarming, dashboards, everything that we had in multiple locations before were now consumed into one toolbox…Simple maps to go in and look at details of gauges and sensor types. Turning on and off layers…It finally all came together when we installed Contrail.
>
> **— Joshua McSwain**
> Senior Business Analyst
> Charlotte-Mecklenburg Storm Water Services

Solution: AEM's OneRain Contrail software

Contrail enables Storm Water Services to ingest vast quantities of differently formatted data into one central hub, thereby overcoming the problem of data fragmentation. To help their different stake holders maintain situational awareness, each group within Storm Water Services – flood and water quality management – has its own customized dashboards integrated with camera imagery. Each group also has customized alerts to keep their stakeholders informed of the most important information.

MULTI-TENANT SUPPORT FOR DIVERSE USERS

The Contrail platform was built to support multiple tenants with different needs – just like the flood and water quality management teams at Storm Water Services.

CENTRALIZED DATA AND ALERTING

Contrail is capable of ingesting data from many sources across many communication protocols and supports customized outbound messaging in email and SMS text formats.

PARTNERSHIP AND TRAINING

AEM provides ongoing training and support, so the teams at Storm Water Services can leverage Contrail with confidence to protect the communities of Mecklenburg County.

An evolving partnership

Partnerships tend to flourish or wither based on their success. Storm Water Services initially adopted AEM's Contrail platform to support their flood monitoring and notification program. More recently, the utility expanded its use of Contrail to also support its surface water quality management efforts. Looking ahead, they are considering yet another expansion in their use of Contrail – this time to support management of air quality and/or ground water quality.

Why AEM?

AEM's purpose is to empower communities and organizations to survive – and thrive – in the face of escalating environmental risks. Our vision is to be the world's essential source for environmental insights, enabling decisive action and positive outcomes.

We leverage our meteorological and environmental expertise to connect our customers with the highest quality data that enables actionable insights and optimized decisions. Our customer-centric approach to weather resiliency means we treat every engagement as an opportunity to craft a unique solution that's tailored to your challenges and situation.

1. CUSTOMIZED DEPLOYMENT

We help you build environmental monitoring and risk management systems that are aligned specifically to your needs, goals, and the work you do.

2. CLEAR, ACTIONABLE DATA

Contrail consolidates your water management data and presents it in a clear, easy-to-interpret manner. Programmable alerts ensure that important findings get the attention they need.

3. END-TO-END SOLUTIONS

The AEM family of brands can support all your environmental monitoring, risk management, and response coordination needs – including sensors and software for severe weather, flooding, wildfires, and more.

© 2022 AEM. All rights reserved. NOV2022-V1