Hydrology Professional Services

KEY APPLICATIONS

- **Build a new flood warning system master plan from the ground up.**

- **Evaluate outdated and unreliable technology and tools.**

- **Enhance existing network capabilities to improve resilience.**

Trusted expertise to tackle rising flood challenges

As communities face more frequent and intense flooding, there's never been a more crucial time to be proactive. An effective flood early warning system requires precise knowledge to interpret rainfall and predict where it will flow, how quickly, and for how long.

At AEM, we're at the forefront of flood warning, providing the expertise, analysis, and accurate predictive models essential to building flood resilience. With 75% of U.S. flood early warning systems utilizing our hardware, software, or hydrology services, we are trusted industry leaders. Our expert team collaborates with you to assess your unique risks and design and deliver specialized solutions that maximize safety while maintaining operational continuity.

Vulnerability and hazard analysis

Network evaluation and design

**Real-time hydrologic modeling**

Benefits:

Predict movement of rainfall over land to uncover areas with highest risk to people, property, and infrastructure during extreme weather events.

Consult with trusted hydrology experts to design a master plan for flood early warning aligned with your risk analysis and economic objectives.
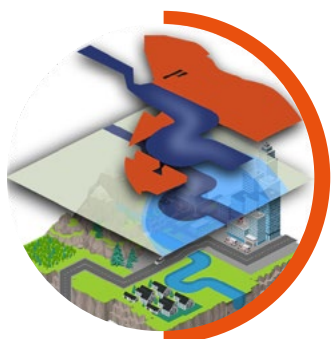
Translate flood data into mitigation strategies to inform your Emergency Action Plan, streamline disaster response, and increase flood resilience.
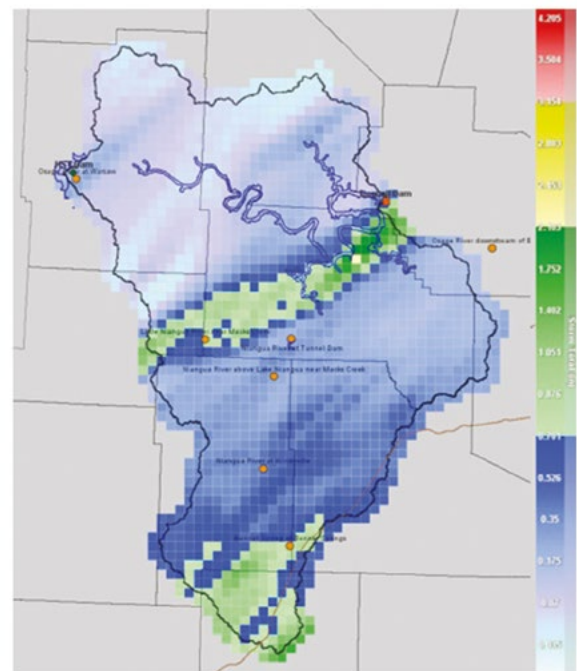
Industry-leading services for flood risk management

AEM's comprehensive portfolio of flood professional services is managed by a team of expert hydrologic engineers. We specialize in flood early warning systems, which includes assessing flood risks, planning for monitoring and forecasting technology, and real-time hydrological modeling.

AEM difference:

- 25+ years proven experience delivering support and professional services to modernize and optimize flood early warning systems.

- Proprietary physics-based, distributed hydrologic model that is uniquely tailored for flood warning systems.

- Unparalleled end-to-end system knowledge that leverages hardware, telemetry, and technology expertise to design the best solution.

- Flexibility to customize and scale to your specific needs and the flood resilience maturity level of your community.

RISK ASSESSMENT

- Evaluate intersection of vulnerabilities and flood hazards to identify high risk areas.

- Vulnerability analysis: where are people, assets, and infrastructure.

- Flooding hazard analysis: which areas have increased flood risk.

NETWORK DESIGN

- **Existing networks:** evaluate and recommend architectural changes and upgrades to enhance the system's reliability and resiliency.

- **New networks:** architect a robust and dependable network with sensors and telemetry configured to deliver the data you need where you need it.
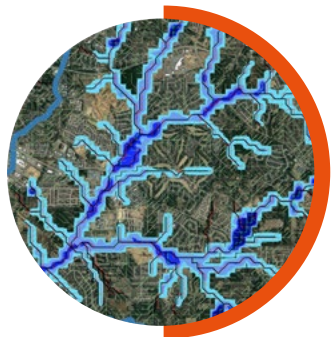
HYDROLOGIC MODELING

- Real-time and predictive hydrologic simulation of watersheds.

- Integrates hydrology and hydraulics to generate discharge, stage, and mapped inundation in a single platform.

- Innovative approach simulates both surface and subsurface runoff for increased accuracy.
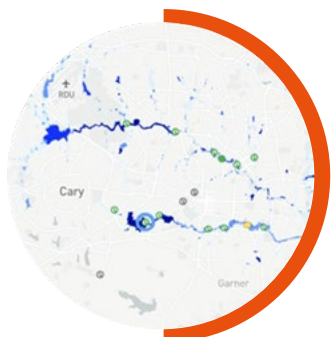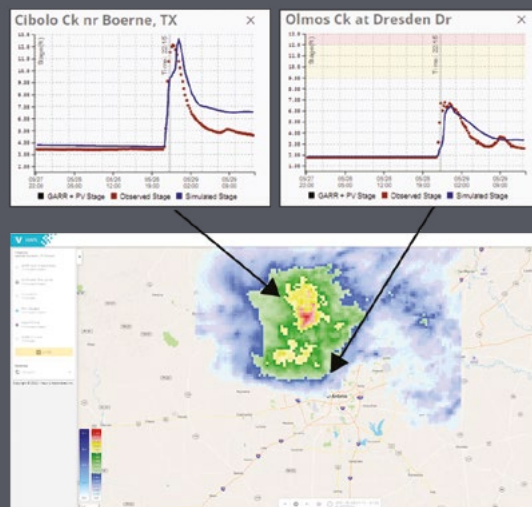
EAP CONSULTING

- Develop alerting threshold proposals aligned with flood risk and network design.

- Simulate severe storms and alerts to validate and enhance preparation and response.

GAUGE-ADJUSTED RADAR RAINFALL (GARR)

Enhance your hydrologic model with GARR, a gridded rainfall input that combines rain gauge and weather radar data for more accurate rainfall measurement.