# RiverSignal

*Real-time alerts enable communities to predict the timing and extent of future flood events*

### Imagine the possibilities

What if you had the ability to forecast flood events and receive alerts that predict not only the timing, but also the extent of future flood inundation–hours or even days in advance? RiverSignal application provides interactive visualizations showing potential flood scenarios at inland riverine flooding sources and gives communities the ability to plan and respond to extreme weather.

## OUR SERVICES

### Key features:

RiverSignal enables efficient flood communication through its online portal, where individual users can specify where current hydraulic modeling and NOAA's National Water Model (NWM) are synthesized to predict flooding risks in their areas of interest. Within this interactive portal, customizable alert options enable advanced notification of changing conditions, allowing for proactive decision making and emergency planning.

- A client-tailored interface. RiverSignal provides a user specific, interactive online portal to customize alerts and access additional forecast details such as dynamic flood maps.
- Real-time notifications. Users can customize when and how they receive alerts for their flood stages of interest.
- Smarter, more resilient decision-making. RiverSignal improves the analytical process to convert NOAA NWM streamflow forecasts into on-the-ground flood forecasts. Get flood alerts not only for large rivers, but also smaller headwater streams.

### Unlocking improved flood planning

RiverSignal promotes preparedness and confidence throughout the journey to achieve a resilient future. Informative and scalable, the app creates a customized experience, allowing the user to receive real-time notifications when severe weather has the potential to cause a significant flood event.

## Flood Forecast Consulting in Chattanooga, TN

### Public preparedness in flood prone regions

The Tennessee River is one of the most significant river systems in the U.S. and the largest tributary of the Ohio River.

While Chattanooga is largely protected by a series of 32 upstream dams and reservoirs that rank among the greatest irrigation and hydropower systems in the world, the city still has vulnerabilities. In addition to sitting on nearly 18 miles (28.9 km$^2$) of riverfront, a series of local creeks and streams pass through low-lying suburban areas before feeding into the river.

As an extension of earlier contracts with USACE and in partnership with the city of Chattanooga, WSP was invited to create a capability to recognize potential flooding threats in advance, with the ultimate goal of reducing time needed to warn citizens.

Prompted by a long history of flood inundation and triggered by the 1,000-year flood in May 2010 we worked to develop what would become RiverSignal flood alert tool.

Two days of record rain, caught many communities by surprise, especially the city of Nashville, which struggled to communicate flood risks to the 181K residents during an ongoing flood event.

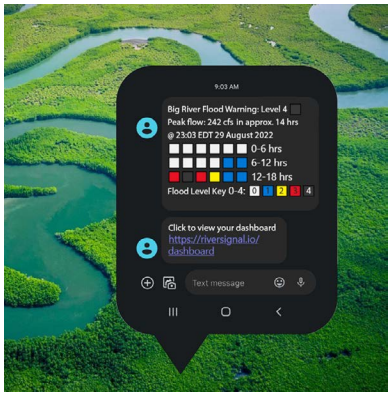
We customized the RiverSignal tool as a web-based interactive user portal showcasing inundation boundaries and depths based on a wide variety of inputs such as current USGS levels, forecast data from the U.S. National Oceanic and Atmospheric Administration's National Water Model (NWM), user defined flooding scenarios and the current NWS forecast. The result is an early warning system allowing municipalities the insight needed to prepare residents for flood impacts.

Our partnership with Chattanooga makes us one of the first to incorporate the national water model into the forecasting that populates our public-facing web tool.

## Digitally enabled resiliency

### Future-focused solutions proved by RiverSignal alert system

The ability to have tools, like this, readily available in advance of and during flood emergencies also holds benefits for first responders and the wider emergency management teams in any community that faces a risk of flooding.




RiverSignal leverages current rainfall data and prior flood modeling to predict what magnitude of flooding could occur at any size tributary in a specified location. Within a 6-to-48 hour range alerts are sent to users "signaling" it's time to take action, creating proactive flood responses and better prepared communities.

## ABOUT WSP

WSP USA is the U.S. operating company of WSP, one of the world's leading engineering, environment and professional services firms. Recognized in 2023 on TIME's list of the world's best companies and Fortune's Change the World list, WSP is driving social impact and commitment to ESG. WSP in the U.S. brings together engineers, planners, technical experts, strategic advisors and construction management professionals who are dedicated to collaborate in the best interests of serving local communities. WSP designs lasting solutions in the buildings, transportation, energy, water and environment markets. With approximately 14,000 employees in 300 offices across the U.S., WSP partners with its clients to help communities prosper.

## CONTACT US

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