

# REOR20's Breakthrough AI Flood Forecasting Engine Offers Critical Insight About Floods

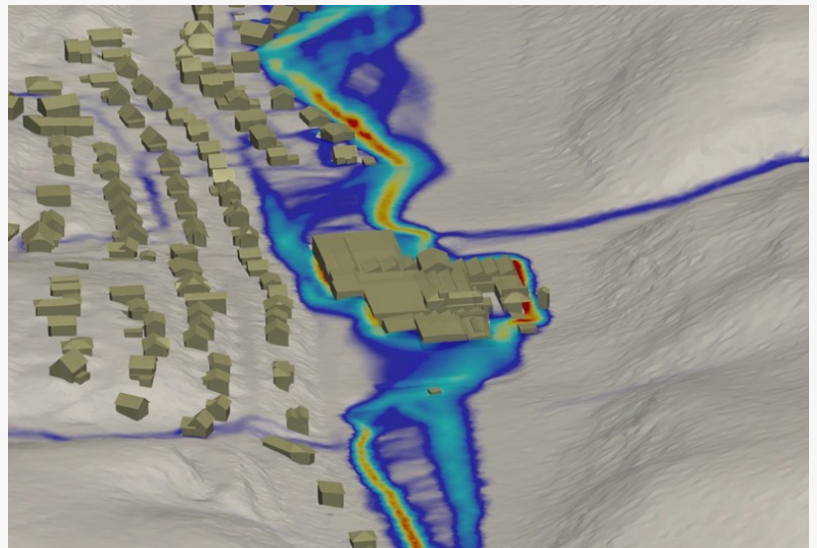
ZURICH, SWITZERLAND, July 16, 2025 /EINPresswire.com/ -- As Texas faces one of the worst floods in recent history, Swiss climate-tech startup [REOR20](#) is making headlines with a game-changing innovation that will change the way the world prepares for extreme weather events.

At the heart of this innovation is DeepWater, the world's first physics-based AI that simulates the behavior of [flood disaster](#) in real time—accurately, efficiently, and at global scale. While current flood forecasting models rely on slow, expensive computational fluid dynamics (CFD) simulations or oversimplified statistical tools, REOR20's DeepWater engine delivers minute-by-minute calculations of water flow, depth, and impact, not in hours or days, but in seconds.

During the recent Texas floods, DeepWater simulated a 12-hour event over 1,500 square kilometers in less than 2 minutes on a single GPU. A conventional CFD engine, running the same scenario on a high-performance supercomputer, would take over a day. This is not just a technological leap; it's a paradigm shift.

"We don't simulate floods like it's 2015. We simulate them like lives depend on it, because they do," said Danny Chatziprodromou, CEO and Co-Founder of REOR20. "With DeepWater, we can help governments, insurers, and emergency services know not just where it will rain, but what will flood, when and how severely, before it happens."

## Flood Disaster Is a Global Crisis and the Tools Are Broken



Simulation of the whole river catchment of the  
Guadalupe river status 8:15am CDT (local time)  
showing many tributaries and the Guadalupe river  
going over bank.

Flood disasters affect 2.4 billion people worldwide and are expected to cause \$1 trillion in annual damages by 2050. Yet the industry's modeling tools haven't kept up. Most [flood forecasting](#) systems today provide weather alerts, not impact forecasts. Agencies are often left guessing who or what is at risk, leading to bad decisions, missed evacuations, and billions in losses.

REOR20 was founded in 2019 with a bold vision: to power every flood decision on the planet. With DeepWater, that's now possible.

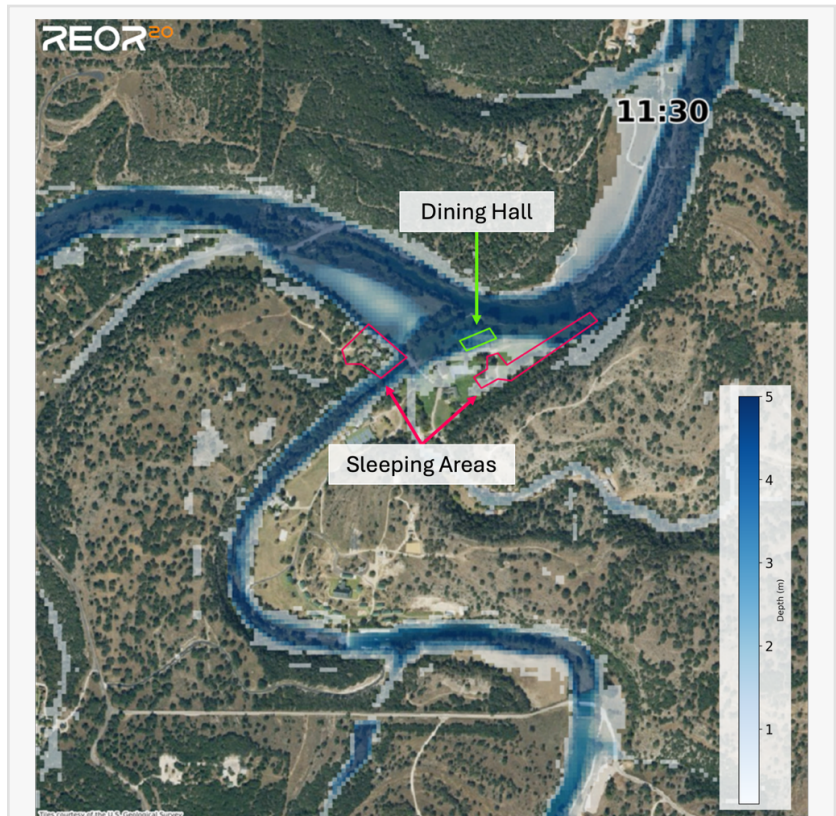
### Technology That Breaks the Limits

DeepWater is 100,000x faster and more cost-efficient than traditional CFD solvers. Trained on terabytes of high-fidelity fluid dynamics data, DeepWater emulates the shallow water equations—the gold standard for flood forecasting model—without sacrificing accuracy.

This means:

- Street-level and asset-level precision even in dense urban areas
- Scalable deployment across cities and countries with no retraining needed
- Thousands of simulations in parallel for risk assessment, underwriting, and urban planning

"This technology unlocks solutions that simply weren't possible before," said Chatziprodoumou. "You can now run simulations faster than the storm itself moves. That's not just fast, but game-changing."



Closeup of the site of Camp Mystic. First massive river swelling observed around 4-6am CDT, with further increases later on. Image shows situation at 11:30am CDT.



REOR20's DeepWater simulates both flood depth and momentum. Momentum is a very important factor that is often overlooked - even low water depths can lead to devastating flood disaster when the water flows fast

## A Texas Example and a Global Future

The Texas simulation, shared in a recent LinkedIn post by REOR20, showed the engine's ability to model rainfall impact over a large area—minute by minute—for a full 12-hour period. The simulation was completed in under 2 minutes.

That kind of power doesn't just serve emergency alerts. It transforms insurance modeling, climate research, infrastructure planning, and flood disaster response. REOR20 has pilot projects going across North America, Europe, South America, and Africa, with live projects underway and new partnerships accelerating globally.

## Validated, Award-Winning, and Designed to Scale

The company is integrating DeepWater into the flood forecasting system of one of the nationwide clients in Australia. This momentum builds on industry recognition, including:

- Supported by the Swiss Government (InnoSuisse)
- ESA-BIC Winner (2019)
- Lloyd's Lab Cohort 10 (2023)
- Lloyd's Lab Innovation Award Winner (2023)
- Plug and Play Top50 InsurTech (2023)

## Safety, Sustainability, and Scale

Beyond the headlines, DeepWater serves a deeper purpose: making climate resilience scalable and accessible. Not just that, here are some more advantages:

- It enables rapid response systems that can guide evacuations, inform infrastructure closures, and prioritize emergency services during flood disaster.
- It helps insurers and urban planners to stop using old assumptions and start using real-time data.
- And, crucially, it gives research institutions new ways to study climate change impacts. REOR20 is already talking to universities in the U.S., Europe, and Australia to provide the DeepWater API for academic use.

"We don't believe flood disasters should be a luxury problem solved only by rich countries or big corporations," said Chatziprodoumou. "That's why we built DeepWater to scale globally, run on modest infrastructure, and plug into existing weather or geospatial systems instantly."

## What's Next

REOR20 is expanding through alerting and risk solution providers worldwide, in sectors such as:

- Urban resilience and planning
- Disaster response and emergency management
- Geospatial data platforms

- Government alert systems

"This is a near-impossible technology," said Chatziprodoumou. "We're moving carefully to opening doors for global collaborations."

### A Call to Collaborate and Save the Planet

Flooding is a global disaster that has been made worse by climate change. REOR20 invites governments, cities, insurers, researchers, and technology providers to rethink flood risk with the tools now available.

"AI is the new flood disaster defence," said Chatziprodoumou. "And for the first time, we can see and simulate what's coming."

### About REOR20

REOR20 is a Zurich-based climate-tech company pioneering flood resilience through DeepWater, the world's first physics-based AI flood engine. Delivering real-time, high-resolution impact simulations at massive scale, DeepWater is 100,000x faster than traditional methods. REOR20's flood engine enables flood forecasting and risk model providers to serve governments, insurers, and other industries to make flood risk manageable in a climate-changed world.

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