

Flood Resilience and Forecasting

The problem

Flooding is increasing in intensity and frequency in both urban and rural areas. Intense rain events causing dynamic flooding shaped by local morphology, slopes, structures, elevations, and density.

Accurate flood modeling is essential for risk assessment and damage prediction, ensuring community safety. Historically, high-resolution regional geospatial data was prohibitively expensive, and small-scale topographic models lacked sufficient accuracy.

What's required

Large-scale, physics-based fluid dynamic models provide daily forecasting but require high-resolution sub-watershed topography maps

Reliable models need decimeter-scale vertical and horizontal data. Current flood risk models use resolutions as low as 100 x 100 m, causing guesswork for stakeholders.

Wide-area maps are essential to capture the entire sub-watershed, as all surrounding topography impacts flood risk.



3DEO DEMs and DTMs

The 3DEO solution uses next-generation sensor technology for regional-scale accuracy.

Regional Scale with Local Precision: Characterizes the regional/sub-watershed level with the high resolution for accurate urban planning.

Reliable DEMs and DTMs: Integrated processing converts raw data into finished, high-density point clouds, exported as accurate elevation and terrain models.

DEM collected by 3 DEO Sequoia system in Easley, MO at 28,000 ft at an 900 km² / hr area collection rate.

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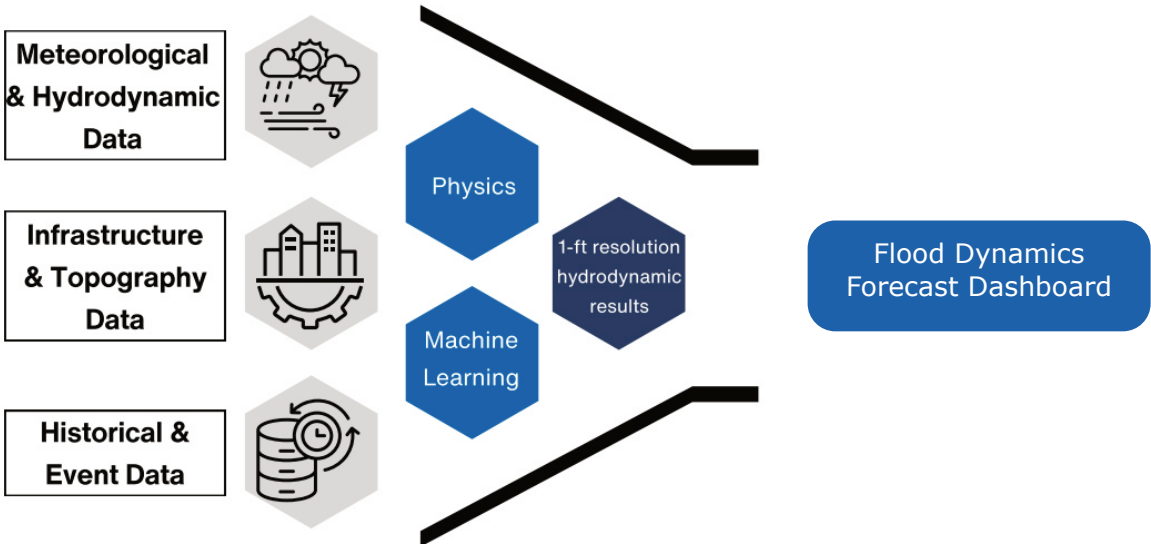
Flood Dynamics models

Flood Dynamics models help governments, infrastructure operators, and insurers understand risks and prepare for disasters.

Flood Prediction: High-resolution rainfall, riverine, and coastal flood models offer street and asset-level accuracy in a single dashboard.

Mitigation & Preparation: Model software identifies cost-effective strategies to prioritize infrastructure investments and boost resilience.

Active Protection: Forecasts detect threats and provide early warnings to trigger emergency protocols.

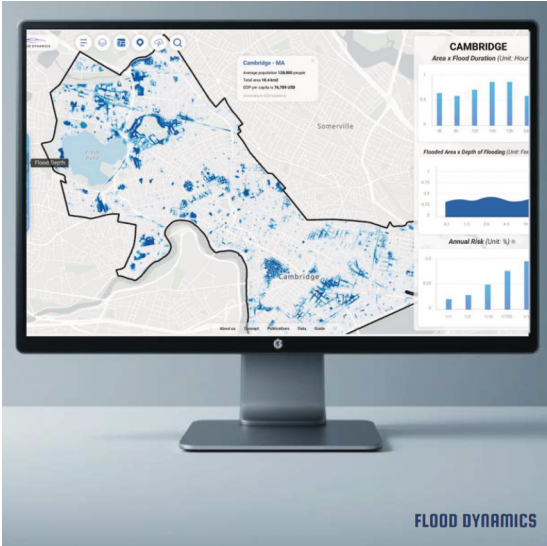


Graphic courtesy of Flood Dynamics.

Day-to-day forecasting

This is not a one-time exercise, it's living data. 3DEO provides a baseline characterization and Flood Dynamics maintains an active forecasting dashboard that updates as weather changes.

Flood dynamics logo and contact information



FLOOD DYNAMICS