GEOSPATIAL INSIGHT

Storm Eva

LANDMARK USE OF DRONES FOR CLAIMS...

The Event...

December 2015 was Britain's wettest on record and included the highest recorded rainfall for a 24-hour period in Cumbria as a result of Storm Desmond. Many rivers in the region flooded and several towns were inundated, including Carlisle, where the River Eden burst its banks on the 5th of December.

Working on behalf of the UK's insurance industry, Geospatial Insight was tasked with rapidly gathering spatial data to assist in assessing the damage caused to properties and businesses inthe region.

Issues & Needs

When a major flood, or other disaster event, strikes, insurers and reinsurers need to quickly know the extent and severity of the event and its impact on the assets they insure/reinsure. This allows them to a rapid loss assessment to make sure they have the financial means to respond, and to reassure the regulator that they have sufficient reserves.

They also use it to assist in rapid claims assessment, to both settle claims quickly and to detect fraud. In terms of geospatial analytics, this means that they need to know, in the case of a flood, the flood extent and the water depth as it affects each property.

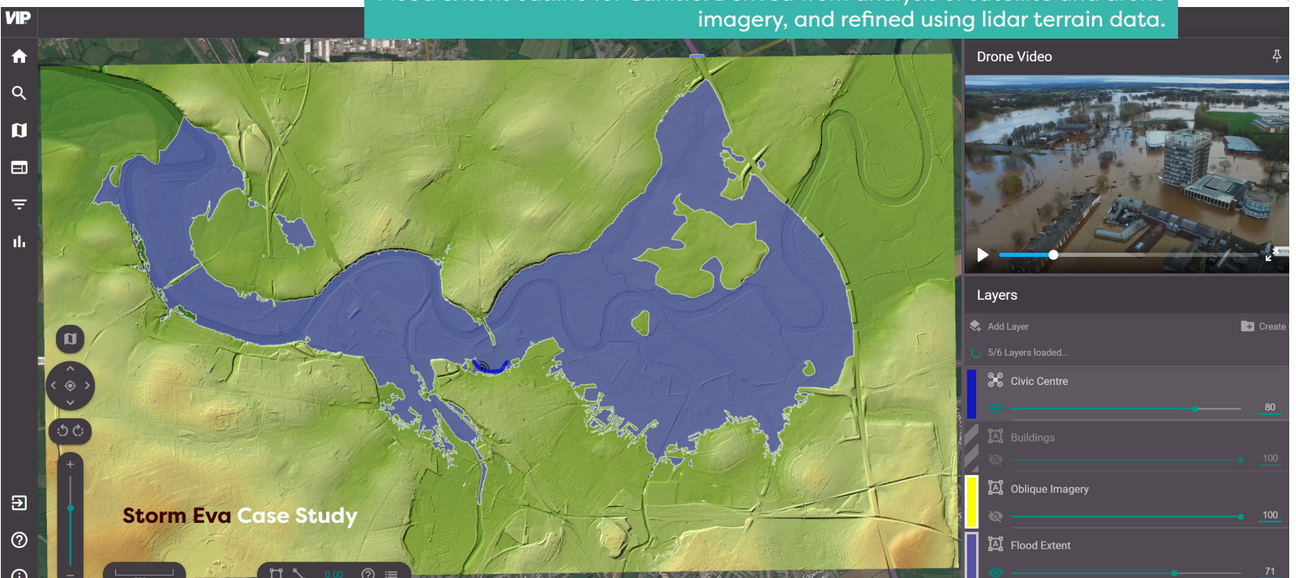
Our Solution

Within six hours of being notified of the need for flood impact analytics as a result of Storm Desmond, Geospatial Insight had despatched a drone to capture video imagery of the flooding in urban areas, downloaded available Sentinel-1 satellite radar imagery covering the affected areas and downloaded freely available Environment Agency lidar-derived terrain models.

Using a combination of automated and manual analysis techniques, Geospatial Insight rapidly produced a database of the flood extents as they affected urban areas – the results for Carlisle are illustrated below:

Flood depth was then derived using an algorithm developed by Geospatial Insight, using the lidar terrain data to combine terrain height with derived slope analysis and the flood extent data to rapidly estimate floodwater depth.

Finally, the flood depths were intersected with Ordnance Survey MasterMap™ building polygons to estimate flood depth at each property. An industry standard damage assessment classification was then applied to provide a damage assessment for every building in the affected area.



Flood extent outline for Carlisle. Derived from analysis of satellite and drone imagery, and refined using lidar terrain data.

Flood depth for Carlisle. Derived from analysis of lidar terrain data and a flood extent polygon.

Results & Perspective

Accurate flood extent, depth and property damage information for all areas impacted by Storm Desmond was generated and delivered by Geospatial insight within 48 hours of response triggering, enabling home owners damage claims to be settled more rapidly and graphically illustrating the benefits of automating spacial data analysis.

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About Geospatial Insight

Geospatial Insight is a leading provider of independent research derived from the analysis of satellite, aerial and drone imagery. We apply additional, sophisticated data sources and advanced technologies, including machine learning, to produce evidence-based alternative data that enables our clients to make better business decisions.

Visual Intelligence for Insurance

Geospatial Insight is leveraging innovations in drone, satellite and aerial imagery and combining with big data capabilities to revolutionise the Insurance sector.

We enhance traditional insurance data collection and assessment methods by providing a new source of actionable information that is backed by visual evidence. This Visual Intelligence provides insurers, loss adjusters and brokers with improved capabilities to monitor, analyse and respond to risk.