GIC GEOSPATIAL INSURANCE CONSORTIUM

Improving Loss Estimates Using Damage Assessment Data After Catastrophic Events

Vave has become well known for being catastrophe (CAT) experts. It delivers precision algorithmic underwriting for high-risk residential and commercial properties in the United States.

After the devastation of Hurricane Ian across Florida in September 2022, Vave used the high-resolution aerial imagery and data analytics of the Geospatial Insurance Consortium (GIC) to improve its loss estimation and solidify its book of business.

VAVE

VAVE is a fresh approach to insuring high-volume risk. It brings clarity and efficiency to the traditional delegated authority model by combining science, data and underwriting expertise in one team.

An Unprecedented Storm

Hurricane Ian struck southwest Florida on September 28, 2022, as a Category 4 storm, smashing into major waterfront communities such as Fort Myers and Cape Coral, communities designed to maximize waterfront access. Powerful winds and storm surge cut down entire neighborhoods, pushed buildings off their foundations, cut electrical power to 2.7 million people, and did extensive damage to road infrastructure, including several causeways connecting mainland and barrier islands.

Being the CAT experts, Vave was not unprepared for a storm of this magnitude. But working around the many challenges of a hurricane's aftermath is no small feat.

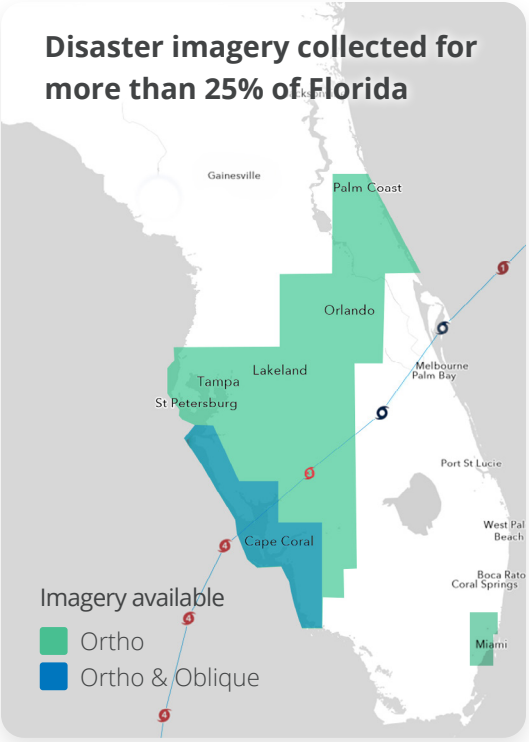
"Following a hurricane, the biggest challenge is understanding what exactly happened and where," said Marek Shafer, Managing Director of Vave. "You want to start assessing your portfolio, see what kind of damage impacted it. And in the immediate aftermath of a catastrophic event, there's a lot of misinformation, a lot of hyperbole in the media, and you're really just searching for truth, for those eyes on the ground which after Hurricane Ian was a massive challenge because of the limited access due to road damage."

Catastrophic damage can make it challenging for loss adjusters to access Florida's barrier islands. And that's where their membership with the GIC came into play.

High-Res Disaster Imagery and Damage Assessment Data at The Ready

As GIC members since 2022, Vave knew that the GIC's Gray Sky program was going to be a key part of their response to managing their portfolio following Hurricane Ian. Gray Sky is a premier disaster imagery collection program where the GIC, in partnership with Vexcel, sends planes up in the air following hurricanes, tornadoes, and wildfires as soon as safely possible and delivers imagery to their members typically within 24 hours after wheels down on their planes.

But the aerial imagery is just the beginning. The GIC, in collaboration with its technology partners, utilize AI and machine learning across the high-resolution imagery to deliver automated damage insights on properties. These damage ratings are typically available within hours of the post-CAT imagery being published, allowing insurers and GIC members, such as Vave, to evaluate and pinpoint quickly where the greatest damage occurred.



"We had GIC imagery in our hands before the storm clouds had cleared, providing crucial early insight on the most impacted locations," said, Tim Spencer, Vave's Head of Portfolio Analytics. "A couple of days later we received building-level damage data from the GIC allowing us to perform building damage assessment on our portfolio, and generate initial portfolio loss estimates."

10 planes engaged

Multi-day collection

Over 44,000 km² collected

Damage Assessment for millions of buildings

High-res Oblique & Ortho imagery available

Damage Assessment Report

Attribute	Value
Catastrophe score	43/100
Approx. FEMA score	2—Moderate
Missing roof material	46.87%
Roof structural damage	0%
Tarp coverage	0%
Debris coverage	0%
Discoloration	0%

Vave's Expertise + GIC's Data = Near On Point Loss Estimate Valuation

Vave's precision underwriting algorithms are informed by huge proprietary and third-party data sources. The success of this approach requires a commitment to continual learning and refinement of these algorithms as new information becomes available. Data gathered by GIC in the aftermath of Hurricane Ian represents a step change in the industry's collective understanding of hurricane damage, and Vave is well-positioned to maximise the benefits this can bring - learnings can be rapidly implemented at the point of underwriting. This is a strong impetus to derive unique insight.

"We used GIC imagery to validate what we were seeing and what the damage data from the GIC models were suggesting by categorizing structure damage in terms of minor to severe," said Tim Spencer. "When building initial loss estimates for the business it's very helpful to be able to show we have explicitly estimated damage to more than 75% of the individual properties in our portfolio impacted by winds above 100 mph. Mapping the distribution of estimated damage, in relation to wind speed is a powerful approach and helps to develop our understanding of the event, build out our initial loss estimate for capacity providers in our portfolio and enhance our underwriting approach in the wake of the event."

There are still many factors that play into a loss estimation and Vave did its best to allow for inflation when it came to materials and prices. But now, over a year out following the event and with a high proportion of claim settled, its initial loss estimates remain robust.

"It is testament to the real-time data available that estimates made in the initial weeks after the event have held up. It adds to the credibility of our underwriting recipe," commented Marek Shafer. "And because we have this enriched dataset driving deeper insight, we can up our game in advance of the next hurricane to hit the United States."