

# How Neural Earth Helped SIGMA Actuarial Build a Captive Insurance Program for a Florida Property Portfolio



SIGMA Actuarial Consulting Group is an independent property and casualty actuarial firm headquartered in Brentwood, Tennessee. Founded in 1995, SIGMA has spent three decades helping brokers, risk managers, and captive insurance companies improve decision-making through advanced analytics. The firm's services include captive feasibility studies, reserve analyses, loss projections, and financial modeling.

## neural earth

Neural Earth brings clarity to physical risk, enabling leaders to act with confidence and make resilient, business-critical decisions. Today's environmental and infrastructure challenges are deeply interconnected, yet the data required to understand these relationships is scattered across siloed and aging systems. Prometheus by Neural Earth is a single AI-powered decision intelligence platform that unifies planetary, governmental, and asset-level data with your portfolio, turning complexity into decision-ready insight in seconds, not weeks.

## The Captive Opportunity

*"Neural Earth is going to verify what you're doing or it's going to give you something that you probably wouldn't have seen if you'd only used traditional sources. Either way, you come out ahead"*

**Al Rhodes, ACAS, MAAA**

President & Senior Actuary, SIGMA Actuarial Consulting Group

A Florida-based warehousing and logistics company with approximately 20 properties dispersed across the state faced a familiar question: after years of paying commercial property insurance premiums with minimal claims, was it feasible to form a captive insurance program and capture some of that profit themselves?

The company engaged SIGMA Actuarial Consulting Group to lead the analysis. Al Rhodes, President & Senior Actuary at SIGMA, explains the logic that drives companies toward captives.

*"The client looked at their historical spend on property premiums over 10 or 15 years, and they want to know—'is it feasible for us to take some of that profit ourselves?' That's where SIGMA Actuarial came in."*

For a captive to work, however, it has to be real—not a tax shelter or a paper exercise. A regulator must approve the structure as a legitimate insurance entity. That means the actuarial analysis behind it needs to hold up under scrutiny: the risks must be genuine, the premiums actuarially justified, and the financial projections defensible. SIGMA's job was to build a feasibility study that would satisfy regulators and give the warehousing and logistics company confidence that their captive could sustain itself over time.

## Building The Case For A Captive

SIGMA's feasibility study required several elements: an exposure base built on the total insured value of each property, historical loss data, premium history, industry benchmarks, and a five-year financial pro forma. For this particular client, the loss history was thin—roughly five claims over 10 years.

That's not necessarily a problem. Property insurance is characterized by long stretches without claims, punctuated by occasional severe events. A company that hasn't filed a claim in a decade doesn't have "no data"—it has very positive loss history. But a regulator is going to ask hard questions about how you're projecting future losses when your historical record is that quiet. *"Regulators are going to ask: 'you've got five claims in 10 years. How did you come up with the numbers?' You need to be able to answer that question with something more than just the client's own data."*

The underlying principle is trust but verify. SIGMA trusts the data its clients provide—premium history, loss records, property details—but when the output is a feasibility study that a regulator will scrutinize, that trust has to be backed by independent corroboration. The question is where that corroboration comes from.

Traditionally, SIGMA supplements client data with industry benchmarking reports, sources that have been standard in actuarial work for years. Those reports provide useful context, but they tend to describe broad regions or statewide averages rather than the specific risk profile of individual properties.

For a portfolio of 20 warehouses scattered across Florida, each with its own flood, hurricane, and storm surge exposure, regional averages can only go so far. *"We'd get a report that talks about this area of the country or this area of the state,"* Rhodes says. *"But it's not digging deep into exactly what we want. It gives us useful information, but it's not as specific as it could be."* There was another limitation. Much of the external benchmarking data SIGMA relied on arrived indirectly—sourced through the client's carrier, passed through a broker, and received thirdhand. The data was useful but not independent, and its provenance made it harder to present as a fully objective input to the feasibility analysis.

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## Trust But Verify

Neural Earth changed the equation. The platform allowed SIGMA to go directly to property-level risk data for each of the client's locations—geocoded flood exposure, hurricane risk, storm surge history, fire risk, and other environmental parameters—without relying on the client's own data or third-party intermediaries. *"Going to Neural Earth gave us an opportunity to look at something that is completely independent and say, does this support what we're seeing from the traditional data? And that was very important to our analysis."*

When Neural Earth's independent data confirmed the client's positive loss history—showing that these specific properties, based on their exact locations, genuinely carried moderate and manageable risk—SIGMA could present the feasibility study with greater confidence. Now SIGMA's analysis wasn't built solely on what the client reported. It was corroborated by millions of independent data points.

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## Stress-Testing The Captive

A captive feasibility study doesn't just project expected outcomes. The regulator wants to see what happens when things go wrong—an adverse scenario analysis that models how the captive would perform under stress.

Before Neural Earth, verification meant toggling between multiple third-party tools and FEMA flood maps. For larger portfolios with many locations, that's a multi-day task—and in a market where speed determines who gets the quote, days might as well be weeks. *"A regulator wants to see what the expectation is. They also want to see what an adverse scenario looks like. Using Neural Earth, we can look at the various risk scores and the historical patterns of hurricanes and storm surges and say, what would a bad year actually look like? The platform helps us model that."*

Rhodes describes a hypothetical that illustrates why this matters: *"If we go into Neural Earth and it looks like a client's property has had probable loss-producing incidents four times in 10 years, but the client isn't reporting any claims, we need to understand what's going on. We want to make sure the data adds up."* Neural Earth's ability to catch anomalies is what makes the SIGMA analysis defensible.

For a Florida property portfolio, adverse scenarios aren't abstracts—they're hurricanes, storm surges, and flood events tied to specific locations and specific return periods. Neural Earth's property-level data allowed SIGMA to model these scenarios with a granularity that regional benchmarks couldn't provide, strengthening the pro forma's credibility with regulators.

## From Analysis To Workflow

Beyond the analytical value, Neural Earth also streamlined SIGMA's process. Rhodes notes that traditional benchmarking data was sometimes difficult to obtain, inconsistently specific, and dependent on intermediaries. The Neural Earth platform consolidated what had been a fragmented, multi-source research effort into a single workflow. *"It's firsthand information when we're digging into the platform. We're not dependent on getting a report thirdhand through a carrier. It's more efficient because we're not trying to reconcile data that's pretty good but not exact."*

The captive was successfully formed. And because the Neural Earth workflow is repeatable—the same platform, the same property-level data, updated in near-real time—the renewal analysis doesn't start from scratch. What began as a one-time feasibility becomes an annual process, with SIGMA continuing to use Neural Earth to support the captive's ongoing actuarial requirements.

When asked whether he would recommend Neural Earth to a peer, Rhodes is direct. *"Neural Earth is going to verify what you're doing or it's going to give you something that you probably wouldn't have seen if you'd only used traditional sources. Either way, you come out ahead."*



**Neural Earth surfaces risk that other data sources miss, scores every location against flood, wildfire, and wind, and flags outliers before a quote goes out.**



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