Location Analytics for
Insurance

A Knowledge Brief

esri

Build a
Profitable Portfolio

Because insurers closely guard how they balance exposure within their books of business, this use case represents how Esri helps leading insurers, reinsurers, and risk managers, like Zurich, Amica, Aon, Willis, and others, be successful.

Maintaining a profitable portfolio is a challenge that requires optimizing sales and managing risk globally, regionally, and locally. The ability to pinpoint authoritative and real-time information and analytical insight differentiates successful businesses from competition.

When one global insurance company noticed declining performance in its Southeast region, the management team decided to take a closer look.

Gain New Insight

By viewing and analyzing customers against hazard data by location, the underwriters and pricing analysts were able to better manage exposure and increase growth across every line of business—automotive, property, personal, and commercial. Location analytics created a collaborative environment that helped them reveal why and where profits were decreasing and how to reverse the trend.

Identifying Unique Local Pricing Needs

The insurer found that comprehensive claims severities were increasing at a fast pace. In some areas, year-over-year increases doubled, with no pattern that could be identified from poring over spreadsheets and charts. It needed to quickly isolate the root cause and solve the problem before spiraling costs would negatively impact pricing for all area customers.

Discover Patterns

Analysts mapped customers with large claims and high comprehensive coverage deductibles. By plotting customer relationship management (CRM) data on a map, the team was able to create clusters by region down to individual neighborhoods.

Next, the analysts mapped deductibles for the past three years. The Tampa area showed interesting patterns that were contributing to declining performance for the entire region. Viewing the deductibles, auto type and value, and losses, they were able to see changes over time.

Justify Rates

Pricing analysts could then implement truly local market pricing and justify increased insurance rate quotes in some areas as well as significantly reduce them in others.
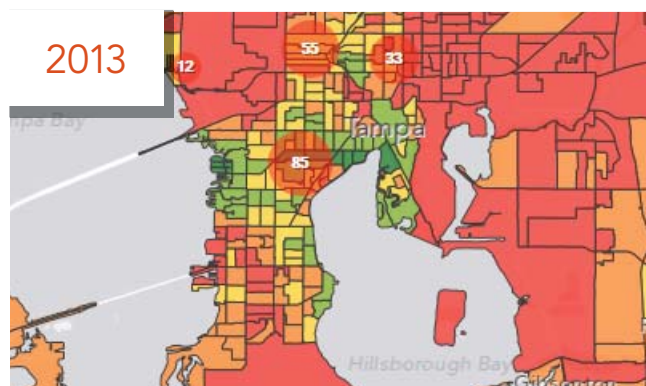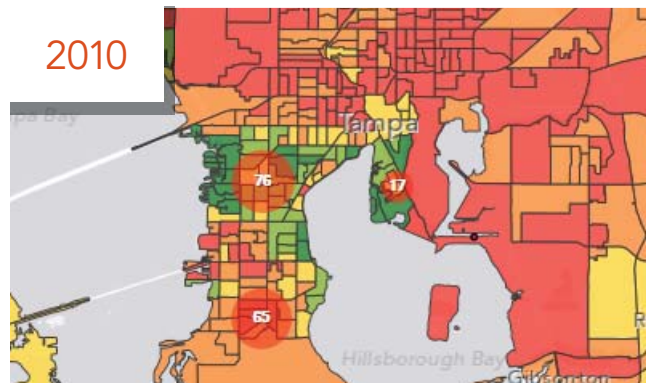
By mapping automotive claims severity for 2010 and 2013, analysts could see areas with severe claims (green and yellow), clusters, and how the patterns changed over time. Analysts could interact within the map by clicking through to individual claims data or to view aggregate data for specific geographies.

Reducing
Fraud Costs

Continuing to look at auto claims costs, analysts found unusual patterns in this same location when they mapped where claims were much higher than average for like repairs.

Analyzing Claims

Digging into claims data, they isolated high-priced claims to four service providers. Looking even closer, they discovered all were operated by the same corporate owner.

Curious, they mapped the provider locations as well as the claimants who visited. The analyses revealed that customers traveled unusually long distances for repair services, triggering an inquiry with the special investigations unit. As suspected, a sophisticated fraud network was eroding profits. The hyperlocal analysis paid off.

Detect Fraud Quickly

Since the scale of operation was small relative to total claims for the state and sales region, this fraud may have taken months to detect, if it was ever detected at all. Using location analytics, it only took a few hours to pinpoint the issue, drastically reducing the resources needed to find the problem and to take necessary action.
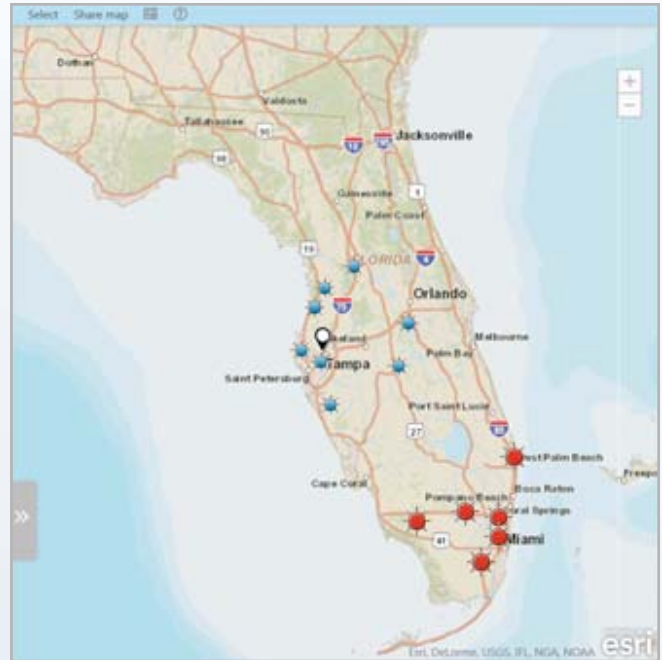
Mapping revealed that claimants traveled unusually far for repairs at a Tampa area repair shop.
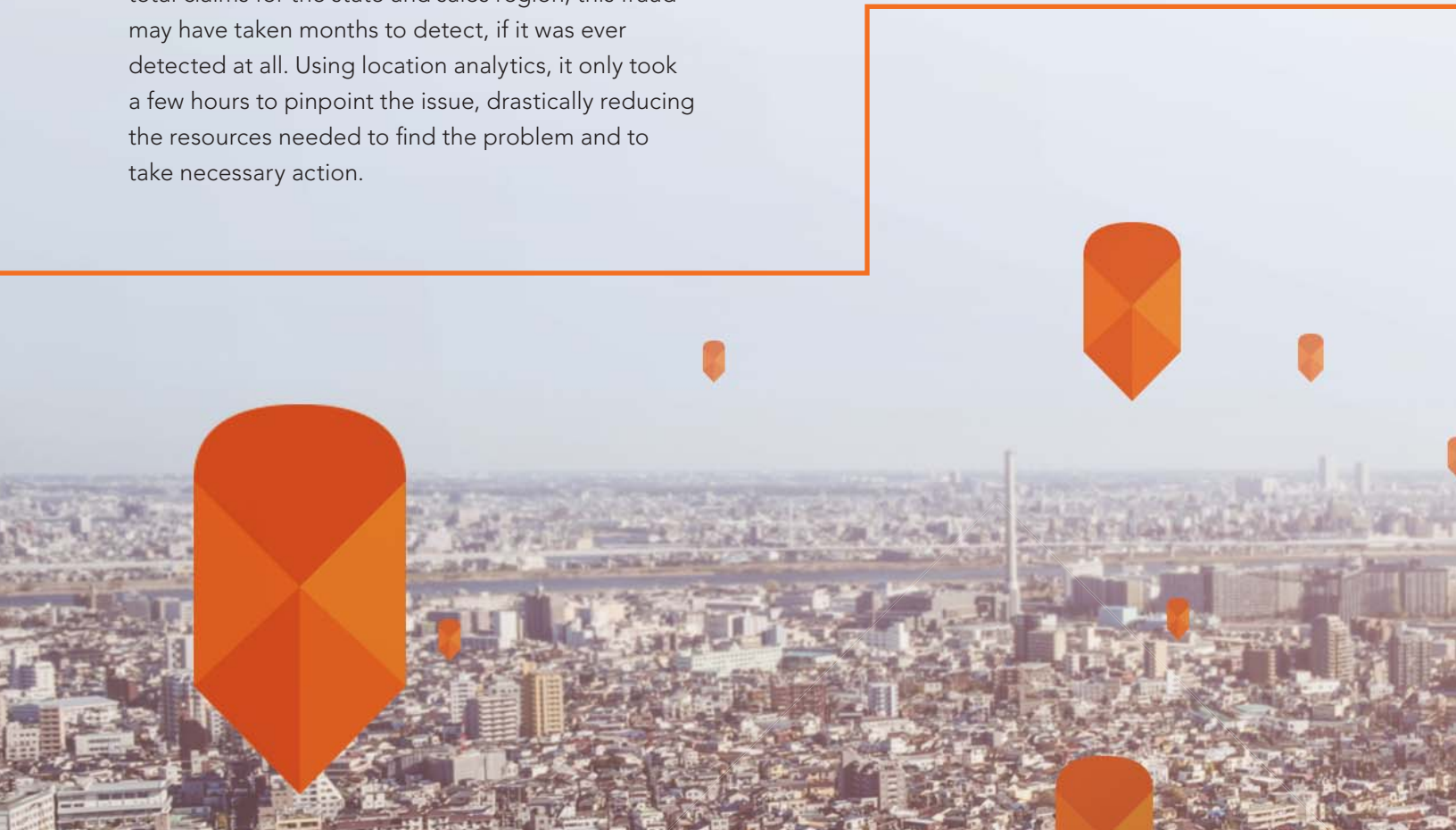
Optimize Market Coverage

Using spreadsheets to define territories and assess the impact of changes is cumbersome at best. Esri® Location Analytics speeds up territory design by allowing sales staff to visualize agent and customer locations and overlay business and consumer data.

Create New Territories

Staff tried out different coverage scenarios by modeling proposed territory boundaries on an interactive map, which displayed real-time recalculations of key metrics. They varied weighting of specific data to align with business priorities. Historical data was brought into the model as well.

Gaps in market coverage became obvious, and the staff were able to

- See high-potential, underserved market areas.
- Prioritize and make territories equitable.
- Set realistic goals for sales and market penetration.
- Benchmark performance.
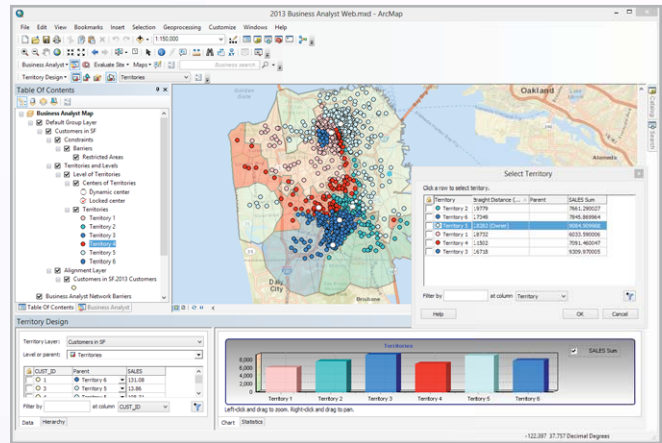
Create territories based on real customer metrics and historical data and weighted according to specific priorities to cover market gaps.
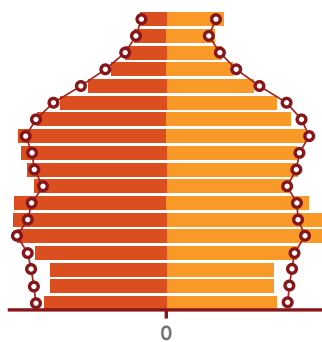
Prospecting for High-Value Customers

Like every insurer, this organization also targets specific customer types. It had not, however, segmented them down into neighborhoods and blocks—what's known as a hyperlocal level.

Location analytics gave it the power to see where targeted customers are located. Enhancing in-house data with lifestyle segmentation, demographic, and market potential data from Esri created understanding of

- Propensity to own and buy various types of insurance.
- Net worth.
- Home value.
- Housing type.
- Distance traveled to employment.
- Consumer spending.

Mapping Drives Strategy

The information was modeled to differentiate the locations of the most and least profitable customers to allow the analytics team to visualize both groups. As expected, clusters emerged, but not where the company had anticipated. Overlaying this information with existing customer addresses and sales coverage data revealed both coverage gaps and untapped opportunities.

11%

Metro Renters

7,678 households

Household Type: Singles/Shared
Median Age: 33.5
Income: Middle

Age Pyramid

The largest group:
Women, aged 20–24

The smallest group:
Men, aged 85+

Dots show comparison to United States.

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Targeting on a local level

Location analytics helped the team refine cross-selling. For example, within customer data, it matched products sold to specific lifestyle and demographic segments to reveal striking correlations. This drove cross-sell promotions to key customer segments within the base and influenced strategy to attract new customers.

The team used Esri Tapestry™ segmentation to find clusters of target lifestyle segments and promote corresponding products. Local agents were equipped with segment-specific point-of-sale and marketing materials to support these micromarket efforts.

7%

Metropolitans
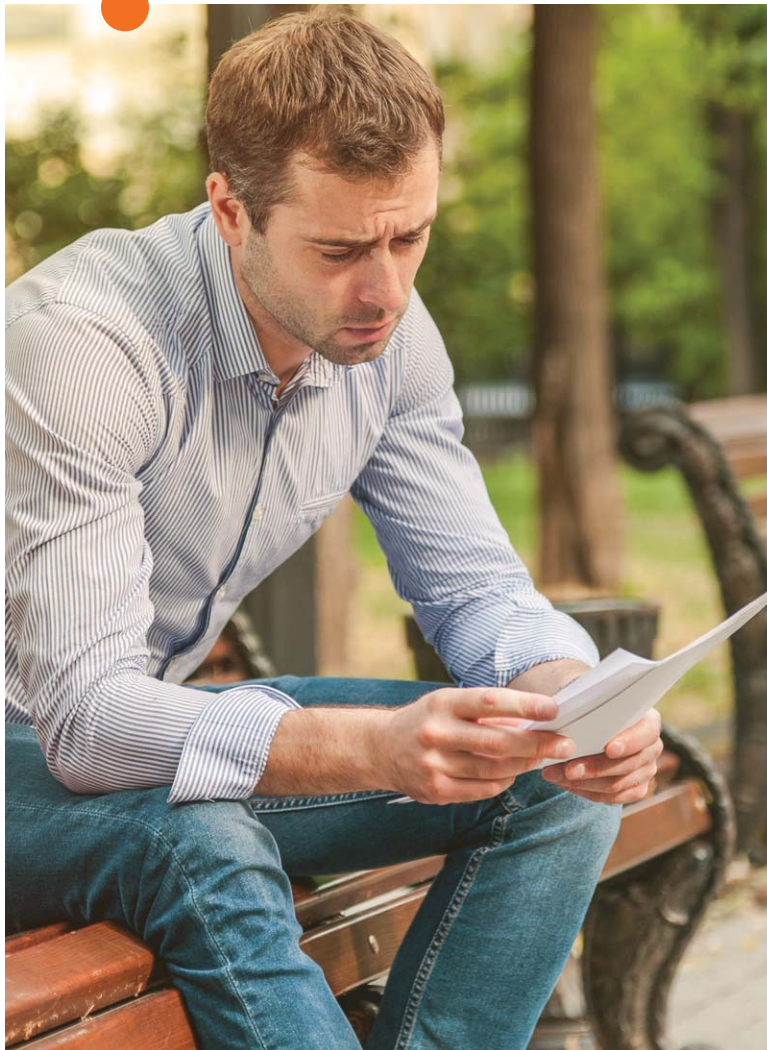
4,845 households

Household Type:
Singles/Shared
Median Age: 37.6
Income: Middle

6%

Silver and Gold

3,885 households

Household Type:
Singles/Shared
Median Age: 59.6
Income: Prosperous

Minimize Exposure from Weather Events

Hurricanes represent the most obvious catastrophic risk along the Florida coast. Hurricane Sandy bypassed the area in 2013, but Katrina and Wilma delivered devastating blows in 2005.

Predict Risk

It's impossible to predict exactly where a hurricane will hit, but exposure can be projected. Viewing exposure from natural disasters in charts and tables revealed vulnerabilities, but relationships and patterns weren't apparent until data could be correlated and visualized based on location. Analysts combined customer data with policy and claims information and historical weather patterns to predict where exposure was highest.

Refine Underwriting Practice

Understanding exposure at a local level helped analysts minimize the financial impact of various wind, hail, and flooding scenarios. Analyses that drilled down to specific policy information, claims history, building and infrastructure construction type, and inspection records ultimately influenced field underwriting practice in areas that presented the highest risk.

Drill down into your customer data and business intelligence system through interactive maps to expose opportunity and risk.

See the demo: esri.com/hurricanerisk

Proactive Customer Service Reduces Loss

When a hurricane is predicted, social media provides near real-time means for insurers to understand the situation on the ground. Tracking the storm via weather and integrated social media feeds, the insurer was able to minimize fraudulent activities within the potential impact zones.

Improve Customer Outreach

The insurer developed a system to rapidly deploy location-specific communications and services for all communities in the projected path of a hurricane. Customers received e-mails and texts with safety tips, links to resources for minimizing damage to their property, locations of evacuation shelters, and information to speed filing of claims.

Empower Field Adjusters

Immediately after the event, field adjusters deployed with digital customer location maps and up-to-date interactive disaster maps displaying real-time social media feeds. At a glance, adjusters could identify impassable roads, ensuring their safety when visiting customers to document damage and assisting clients in finding essential emergency services.

Expedite Claims

From the field, adjusters could also feed data directly into enterprise systems to expedite the claims process for customers in distress. Property damage was accurately assessed, loss was expedited and more accurately assessed, losses were reduced, and claims were processed quickly. Most importantly, customers were taken care of.
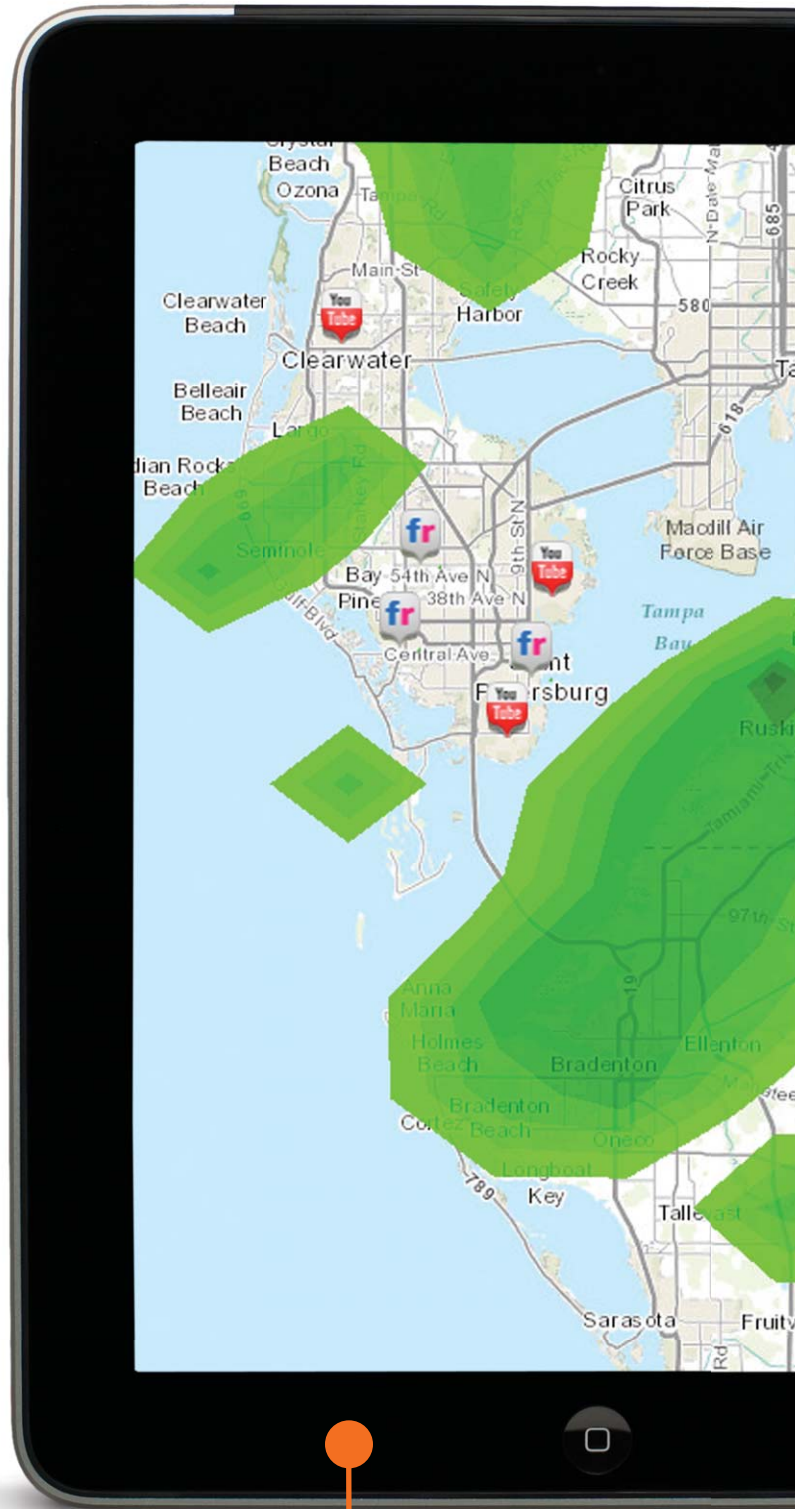
Gain More Insight from Your Data and Systems

Esri Location Analytics enhances your data
and systems to create insight. Interactive maps
incorporated into analyses and dashboards
simplify the complex and are a powerful platform
for collaboration—throughout your department,
across the country, or around the world.

Esri Location Analytics solutions are available for
your existing business systems, including

- IBM Cognos.
- Microsoft Office.
- Microsoft SharePoint.
- Microsoft Dynamics CRM.
- MicroStrategy.
- Salesforce.com.
- SAP BusinessObjects.

Custom solutions are available through Esri partners,
or you can develop your own in the API of your choice.

▶ Find out more at
esri.com/locationanalytics.

esri ®

Understanding our world.

Esri inspires and enables people to positively impact their future through a deeper, geographic understanding of the changing world around them.

Governments, industry leaders, academics, and nongovernmental organizations trust us to connect them with the analytic knowledge they need to make the critical decisions that shape the planet. For more than 40 years, Esri has cultivated collaborative relationships with partners who share our commitment to solving earth's most pressing challenges with geographic expertise and rational resolve. Today, we believe that geography is at the heart of a more resilient and sustainable future. Creating responsible products and solutions drives our passion for improving quality of life everywhere.

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