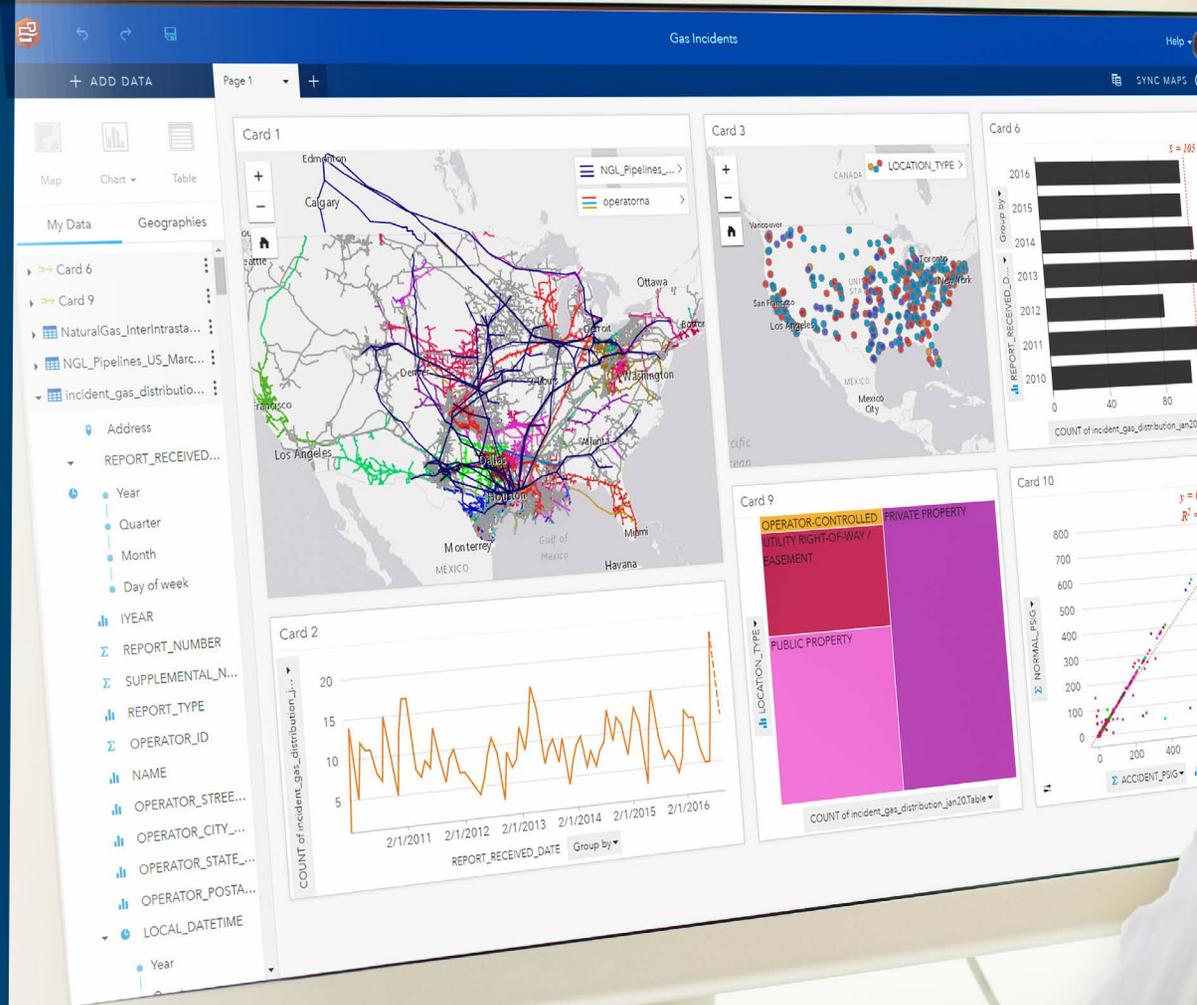


5 Tips to Jumpstart Your Spatial Analytics



Introduction

The Road to Value

As an analyst or geographic information system (GIS) professional, you understand the value of analysis. Through analysis, you bring to light an abundance of insight that may have otherwise remained unseen by your organization. Your methods and data are good, but could they be even better? Could you work faster and produce more powerful analyses?

Welcome to the New Spatial Analytics

This e-Book introduces you to new capabilities. It shows you how to merge business intelligence (BI), like capabilities with the best of spatial analytics. You will learn how to maximize your productivity, analyze data more intelligently, and use data to tell better stories.

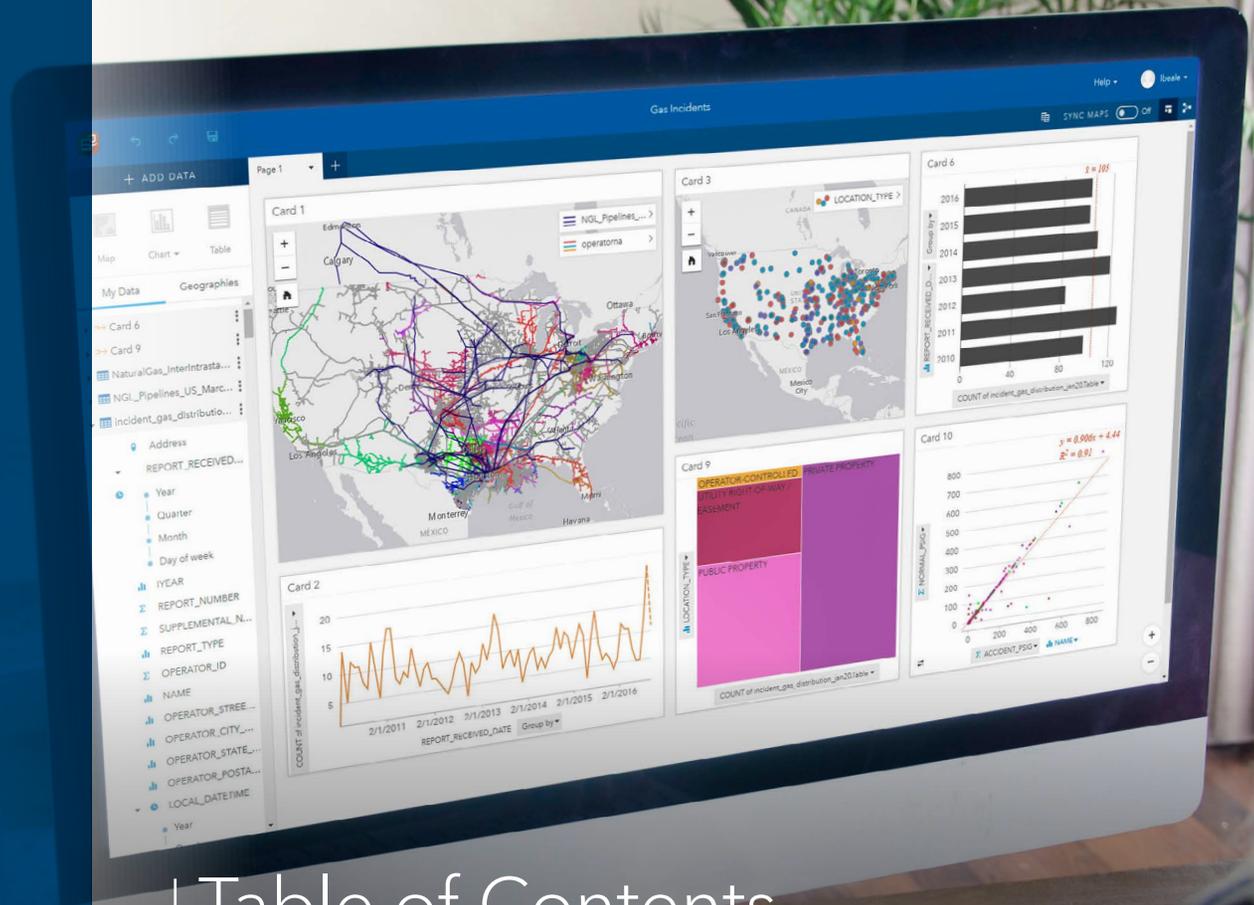


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Maximize Productivity

We all know that data is important, but it's not as important as the answers it provides or the stories that it tells. GIS helps you manipulate and analyze data to tell an accurate story. When searching for patterns or specific items in a dataset, you no longer have to put all your analytical focus on a single map. Instead, maximize your productivity by using maps, charts, and tables side by side to see and analyze all your data simultaneously. There's no need to jam tons of layers onto a single map—unless you really want to.

One Workbook, Endless Visualizations and Analyses

Better, faster spatial analytics begins with Insights for ArcGIS. Insights helps you deliver powerful data exploration and discovery. Within Insights, you use workbooks to manage your projects, including data connections, iterative analysis, visualizations, workflows, and discoveries. Within a workbook, your work can be divided among different pages. A page is where you connect to data, explore themes, and collect related content. On a page, your data is visualized on cards as maps, charts, and tables. These cards bring your data to life and unlock endless possibilities for analysis and interactive data exploration.

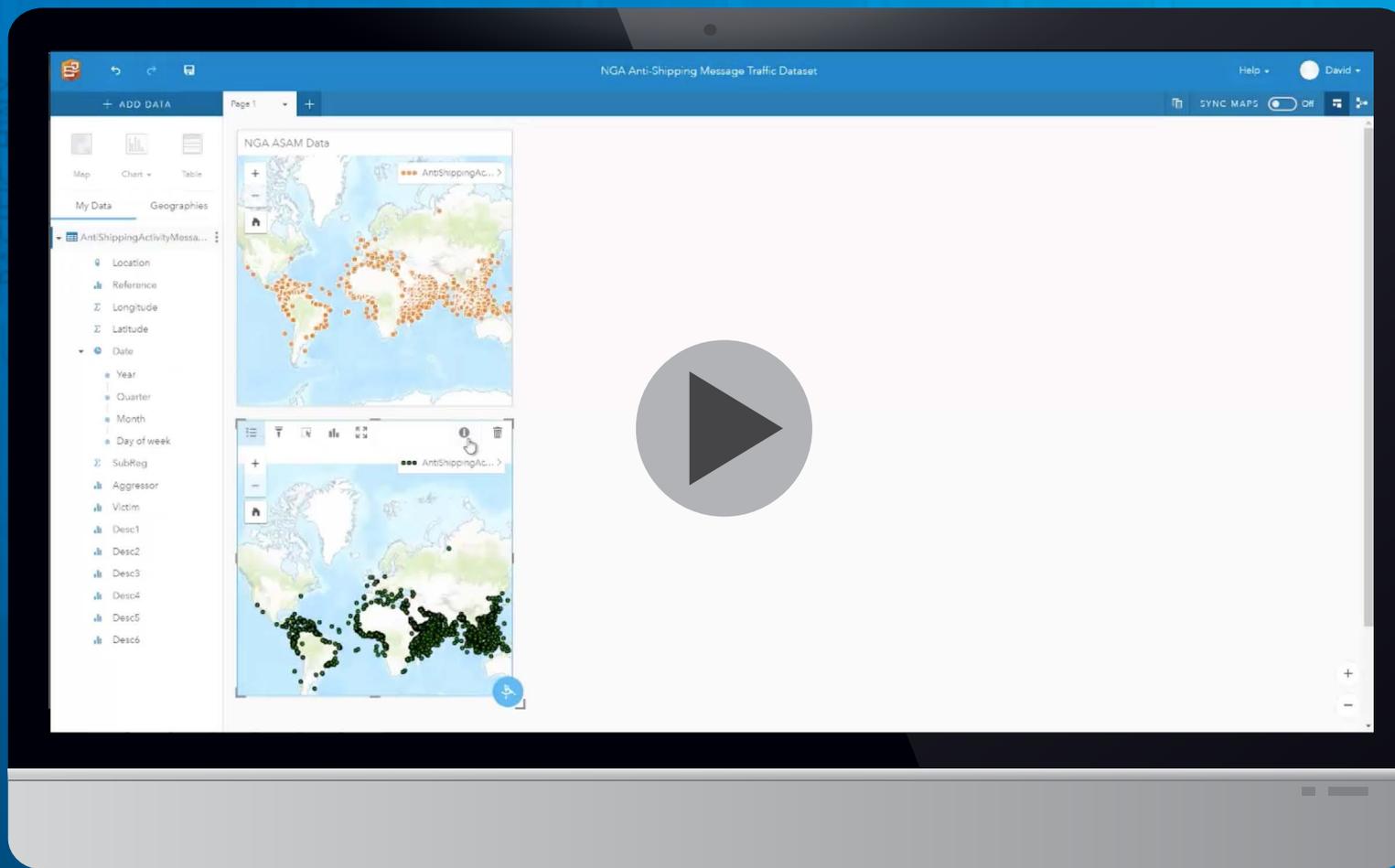


In Insights for ArcGIS,

cards are more than visualizations—they're live snapshots of your current analysis.

Tip #1: It's All Drag and Drop...and You'll Love it

As you can see, Insights is not your father's GIS. Its minimalist design provides maximum punch when you need answers from your data. It's a simple drag-and-drop process. Use your cards and leverage familiar GIS tools for summarization, aggregation, and more.



Drag and Drop Process

1. **Add data**
2. From My Data, click one or more fields that you want to visualize as a map, chart, or summary table.
3. Drag your selections onto the Create Map, Create Chart, or Show Table **drop zone**.
 - a. After you have a map on your page, you can do the following:
 - i. **Apply spatial analytics and find answers** to questions.
 - ii. **Change the map style** to show a different field, add or remove a layer, and more.
 - b. After you have a chart or table on your page, you can **change your chart or table**.

Force Multiplier for Analysis

Insights integrates BI-like capabilities to offer you convenience and ease of use when analyzing data from multiple sources. As with most BI tools, analysis work is done first. Then, it gets pushed to an optimized dashboard where you can view results at a glance. If changes need to be made, individual pieces of the analysis are corrected and then pushed out again to the dashboard.

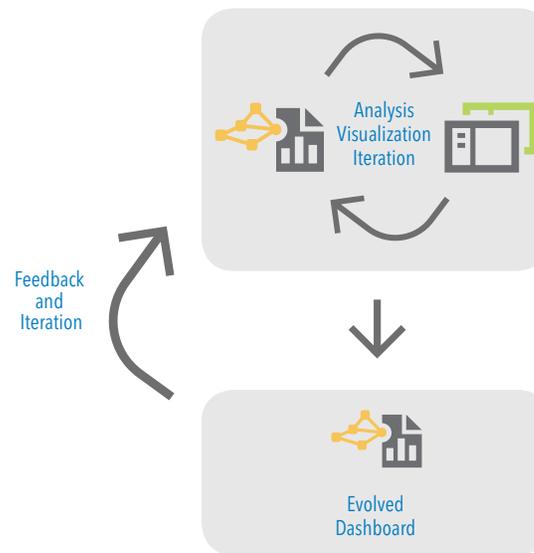
Inspired by this process, Insights offers a powerful yet fluid approach. Analysis and visualization happen at the same time, on the same screen, thereby transforming the concept of a traditional dashboard into an evolved dashboard. This empowers you to rapidly iterate on your analysis. Ask questions, get answers, and keep going using both spatial and nonspatial data.

“Force multiplier to the great work you do every day. Add deeper insight using information that expands across your organization.

Typical Analysis Software



Insights for ArcGIS



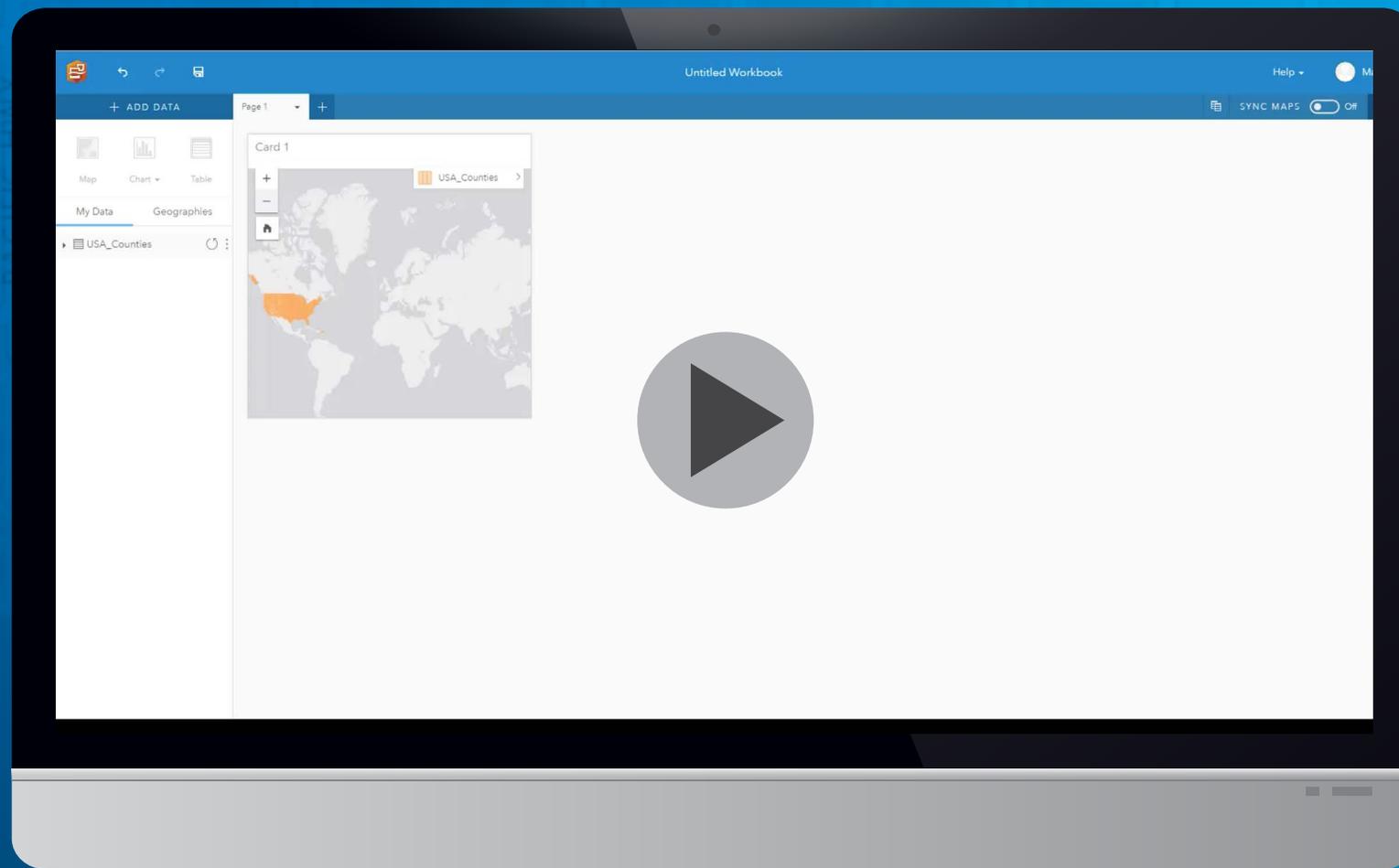
Quick Summary

How does Insights for ArcGIS maximize your productivity?

- ⊕ Analysis and visualization happen at the same time, on the same screen.
- ⊕ Linked cards allow you to interact with more than one map or chart at a time (e.g., click a bar on a chart and see related features light up on a linked card).
- ⊕ Page-level filters refine results for an entire dataset.
- ⊕ Data from multiple sources can be blended and used in your analysis.
- ⊕ Demographic data from ArcGIS will enrich your analysis.

Tip #2: Get Your All-Access Pass to Data

End the struggle of acquiring siloed data. Easily bring data from other departments into your analysis. Insights empowers you to integrate and analyze data from enterprise databases (including SQL, SAP HANA, Teradata, and Oracle), ArcGIS data, geodatabases, Excel spreadsheets, and ArcGIS demographic data for contextual analysis. Use Insights to optimize your data queries with a fast, interactive analysis experience. Insights brings value to your work whether you're a database analyst, data modeler, data scientist, business analyst, or GIS professional or simply a GIS user.



Add Data

1. [Access Insights for ArcGIS.](#)
2. Access the Add to Page window by doing one of the following:
 - a. Click Start new workbook from the My Workbooks page.
 - b. From an open workbook, click + ADD DATA.
3. In the Add to Page window, click one of the following:
 - a. [My Content](#)
 - b. [My Organization](#)
 - c. [Excel](#)
 - d. [Database](#)
4. Click to choose data from the middle pane.
5. Click Add.

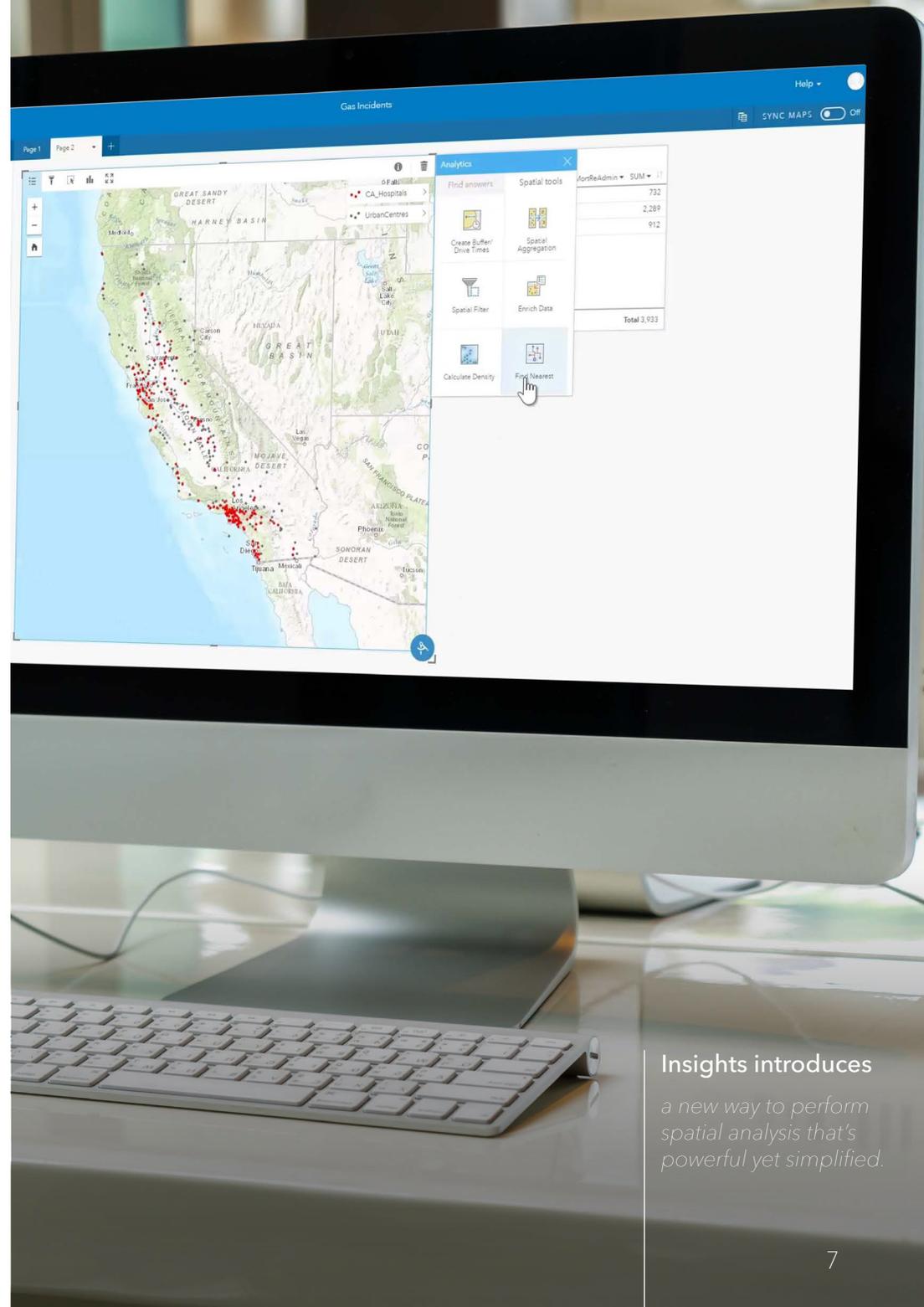
Analyze Data More Intelligently

There is no doubt that your organization can capitalize on the large amount of data it collects. You can use that data to understand spatial relationships and patterns and to ask questions and make sense of the world around you. Spatial understanding is most expansive in terms of opportunities and benefits. The challenge, however, is in asking the right questions of your data. It's not just about where you are or how to get there. There are usually much bigger questions to answer and problems to solve. But with all the data that is available, where do you start?

Your Analysis Time-Saver

Insights works with you and your data to jumpstart spatial analysis. Through dimensional modeling, Insights intelligently determines which visualizations best suit your data. From there, Insights can provide guided workflows to help you quickly ask and answer spatial questions. From data visualization to analysis, Insights feels familiar because it employs the powerful GIS capabilities you already know.

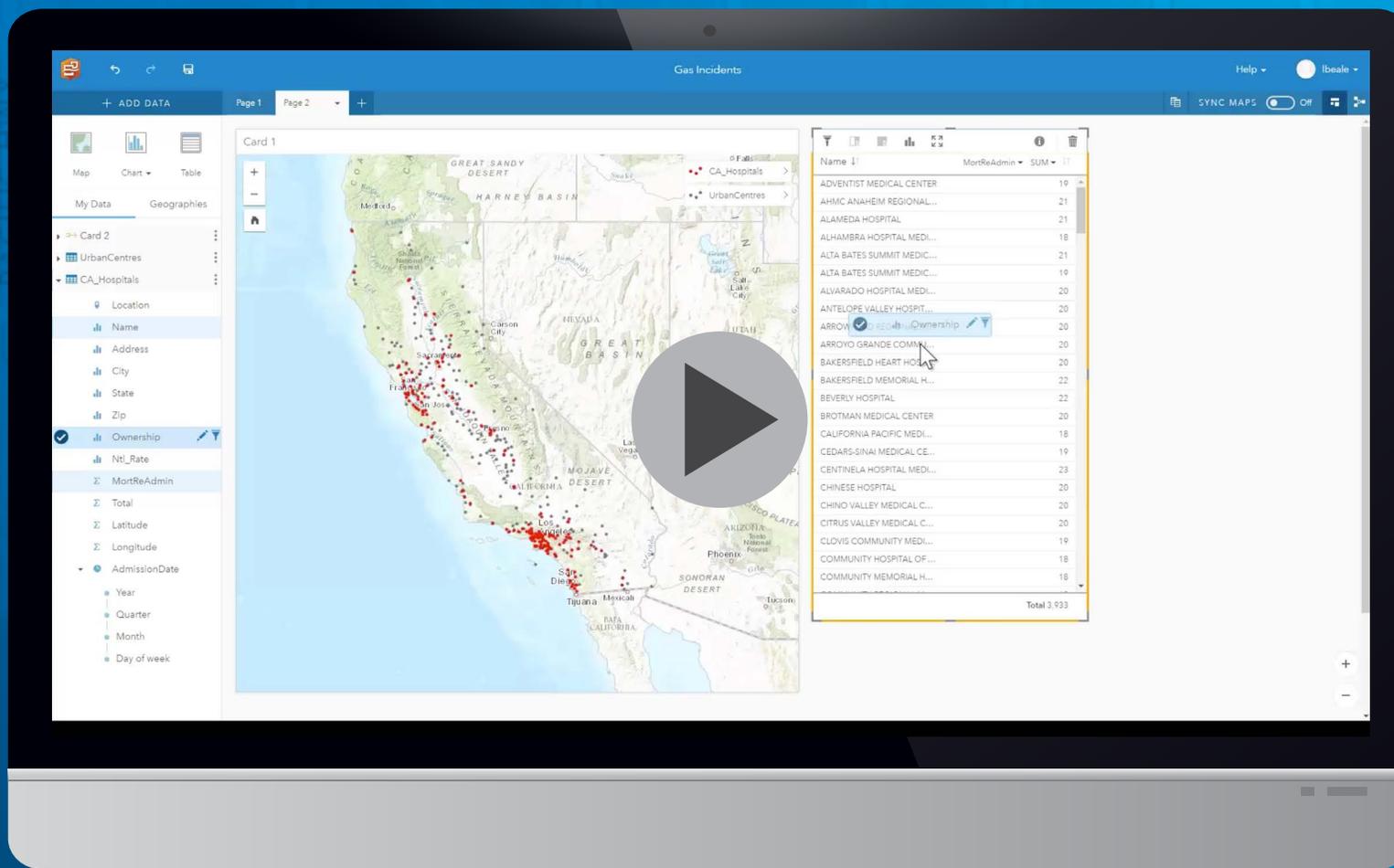
You will enhance the speed of your analysis without sacrificing value. Within the same interface, Insights also allows you to formulate hypotheses, break down problems into solvable components, and evaluate the results.



Insights introduces
*a new way to perform
spatial analysis that's
powerful yet simplified.*

Tip #3: Take a Shortcut to Spatial Thinking

All you need is data—large amounts included. Insights can guide you through the rest. With a few clicks, you will be able to create and update maps, draw buffers, aggregate numeric data across any geography, and more. Find answers by applying spatial tools and slicing and summarizing data by any field. Insights provides the workbench you need to quickly discover your data and seek answers. For complex GIS questions, Insights will help you piece together the framework for your advanced analysis.



Find Answers

1. Click the map you want to analyze.
2. Click the Action button.
3. Click the **Find Answers** tab.
4. Select from the following questions:
 - a. How is it distributed?
 - i. Select from the following:
 1. **Spatial aggregation**
 2. **Calculate density**
 3. **View histogram**
 4. **Classification**
 - b. How is it related?
 - i. Select from the following:
 1. **Enrich data**
 2. **View scatterplot**
 3. **Calculate ratio**
 - c. What is nearby?
 - i. Select from the following:
 1. **Create buffer/drive times**
 2. **Create attributes filter**
 3. **Spatial filter**
 4. **Find nearest**
 - d. How has it changed?
 - i. Select from the following:
 1. **Time series**
 2. **Calculate % change**

See Underlying Patterns

Visualizing patterns is an important part of analysis. Yet often you must go beyond simple visualization to detect patterns. Spatial analysis reveals patterns in your data that you can't see in raw points, spreadsheets, or other tabular formats. You can quickly tease out and verify patterns using spatial aggregation, density calculation, and heat maps. Insights gives you more for your time and analysis.

Understanding Spatial Relationships

Spatial relationships, such as distance or proximity, are common in the spatial analysis process. Distances can be measured and features selected based on distance characteristics. Insights helps you understand distance or proximity by computing a summary of buffers or drive times. You can give context to your analysis by adding authoritative demographic data such as households, income, Tapestry Segmentation, consumer spending, and market potential.

Take Analysis a Step Further

Insights also works alongside and takes advantage of other leading ArcGIS products. For example, you can do quick data discovery in Insights and then continue this spatial analysis in [ArcGIS Pro](#). Employ feature layers from [ArcGIS GeoAnalytics Server](#) or [ArcGIS GeoEvent Server](#) to analyze massive amounts of historic data or a snapshot of real-time data to perform analysis in Insights.

Quick Summary

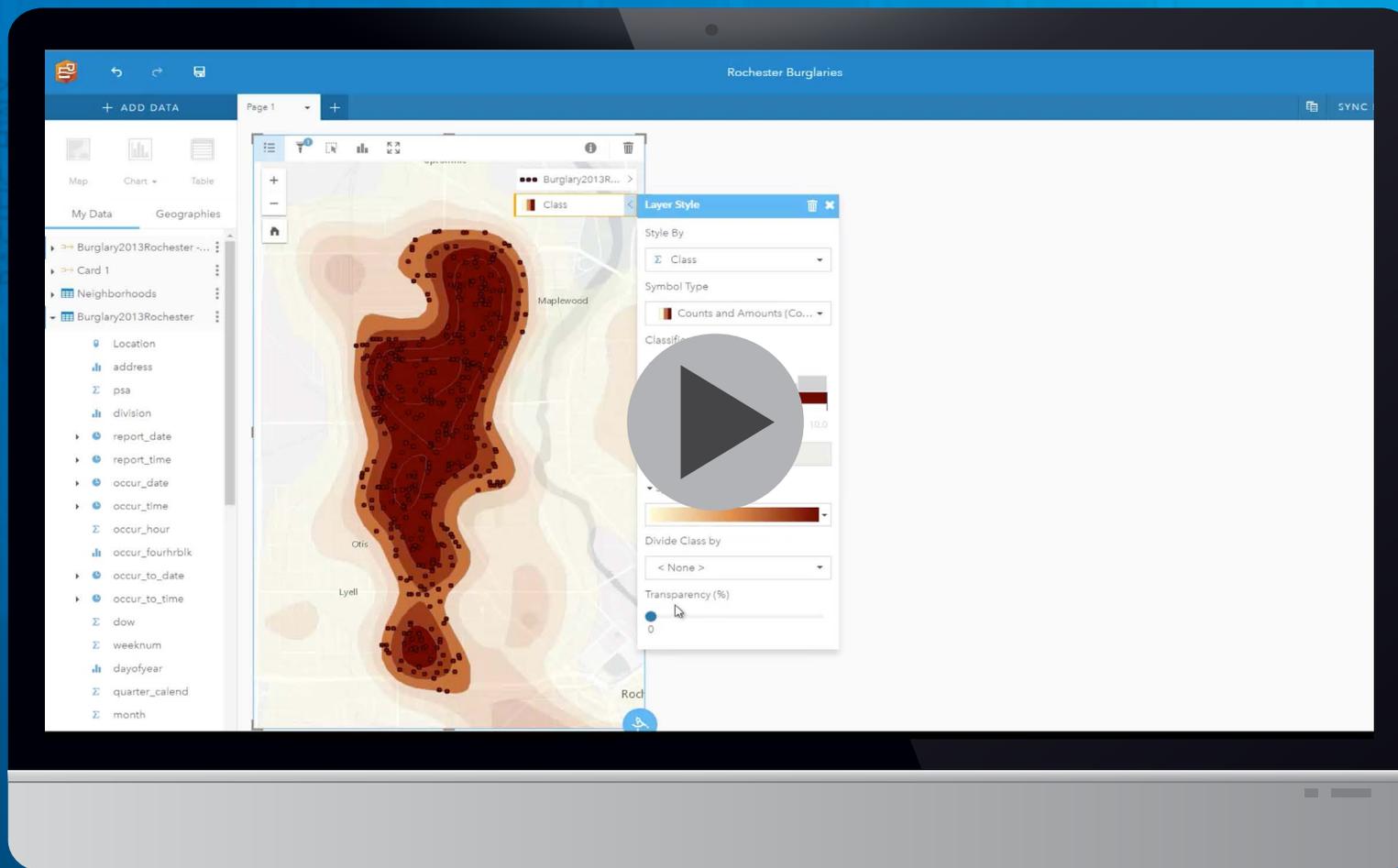
What type of spatial analysis can I do in Insights?

- ⊕ Create buffer/drive time—Create a zone around a point or line feature measured in units of distance or time.
- ⊕ Spatial aggregation—Work with a layer of point features or area features to first figure out which points fall within each area. After determining this point-in-area spatial relationship, statistics about all points in the area are calculated and assigned to the area.
- ⊕ Spatial filter—Filter points based on a single area feature or an area layer that you select.
- ⊕ Enrich data—Enrich your point or area data by getting facts about the people, places, and businesses that surround your data locations.
- ⊕ Calculate density—Create a density map from point or line features by spreading known quantities of some phenomenon (represented as attributes of the points or lines) across the map.
- ⊕ Find nearest—Find the nearest features and, optionally, see reports and a ranking of the distance to the nearby features.

Tip #4: When Nonspatial Meets Spatial

If a picture is worth a thousand words, what is the value of maps, tables, and charts visualized together for analysis? Use Insights to simultaneously visualize and analyze data in maps, summary tables, and an assortment of charts including bubble, histogram, scatter, time-series graph, and treemap, as well as traditional bar, line, and donut charts. You also get filtering and statistical summaries. Filter your data at the dataset or card level using both attribute and spatial filters. Calculate the average, count, and sum or identify the maximum and minimum values of numerical fields directly within Insights.

Discover all the ways to filter your data. [Learn more.](#)



Filter at the Card Level

1. Click the card you want to filter.
2. Click the Filter button.
3. If there's already a filter for this card, click Create New Filter. If this is the first filter for the card, skip to the next step.
4. From the list, choose the field you want to filter.
5. Adjust the **filter slider** or **check boxes** to include the data you want to show in your cards.
6. Click Apply.



Tell Your Best Story

Information and analysis are increasingly valuable when effectively presented and shared with a larger audience. Across domains and industry (from government and retail to petroleum and utilities), the purpose of analysis is to use data and increased understanding to help you make better decisions. Insights streamlines your entire process—from beginning to end—by making it simple to communicate your findings with key stakeholders. It integrates with ArcGIS Enterprise, so you can share your workbooks throughout your organization or embed them within web pages to make them publicly accessible from any device.

Clearly communicate

how you arrived at your conclusions. Share a step-by-step model of your analyses and/or the final results of a workbook internally or externally.

Conclusion

Spatial analysis has always been top of mind for Esri, the market leader in GIS. Since 1969, Esri has built the most powerful mapping software in the world—connecting people with maps, data, and apps through GIS. In 2016, Forrester named Esri “the wave leader” in geospatial analytics tools and platforms, citing “Esri’s consistent and constant focus on serving the GIS market for decades has matured into a platform with some of the most extensive capabilities for capturing spatial data and the analysis, presentation, and delivery of spatial insights.”

As more and more professionals turn to spatial analytics to understand relationships and make better decisions, Esri strives to make the process easy, regardless of GIS expertise. Insights for ArcGIS marks a milestone in this evolution. Developed by Esri, Insights for ArcGIS brings fast, powerful data discovery to everyone. By blending BI-like capabilities with the best in spatial analytics, users can quickly and easily explore both spatial and nonspatial data from one application. With Insights, you will maximize your productivity, analyze data more intelligently, and begin telling your best story with in-depth spatial analysis.

