

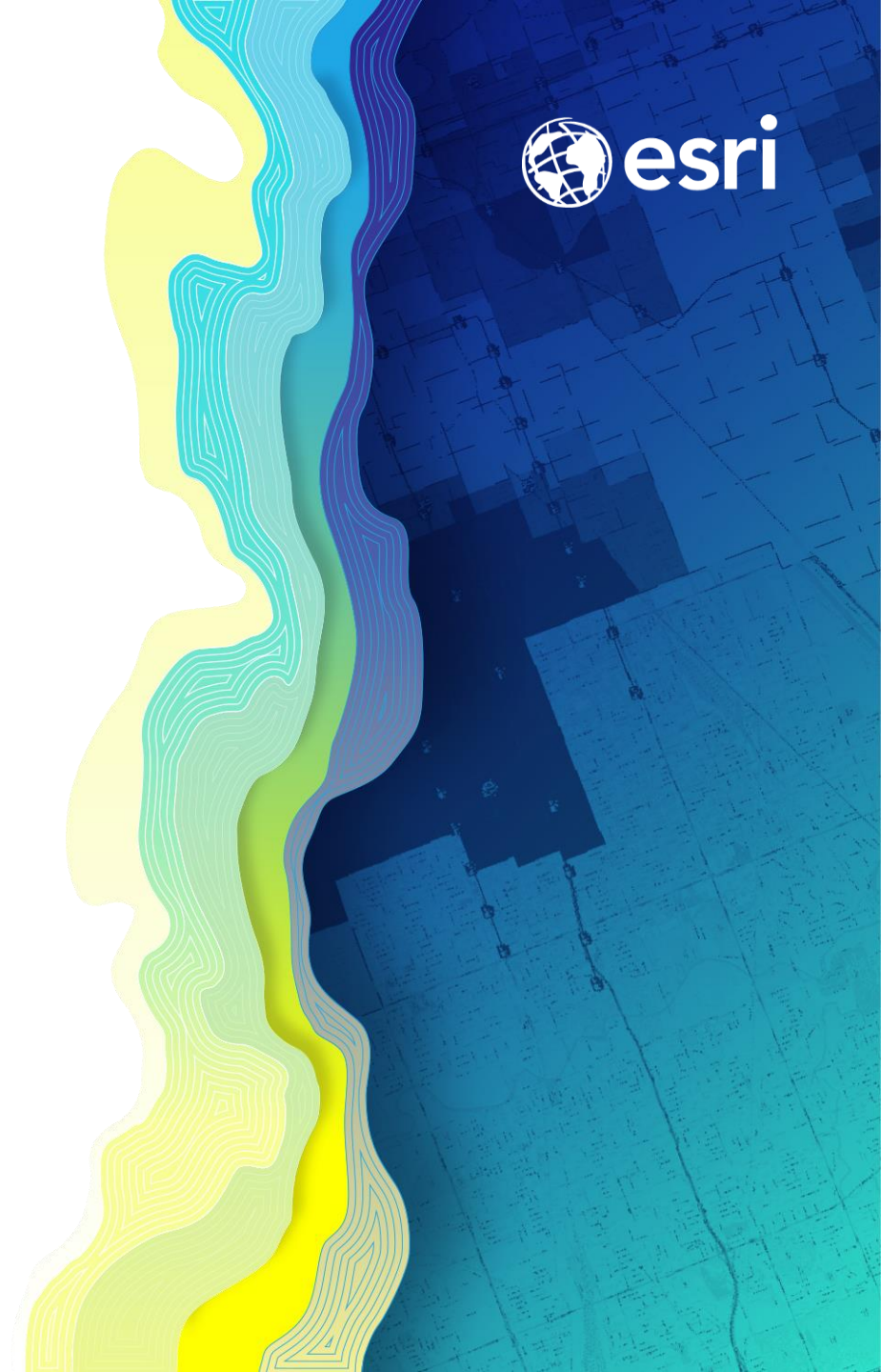
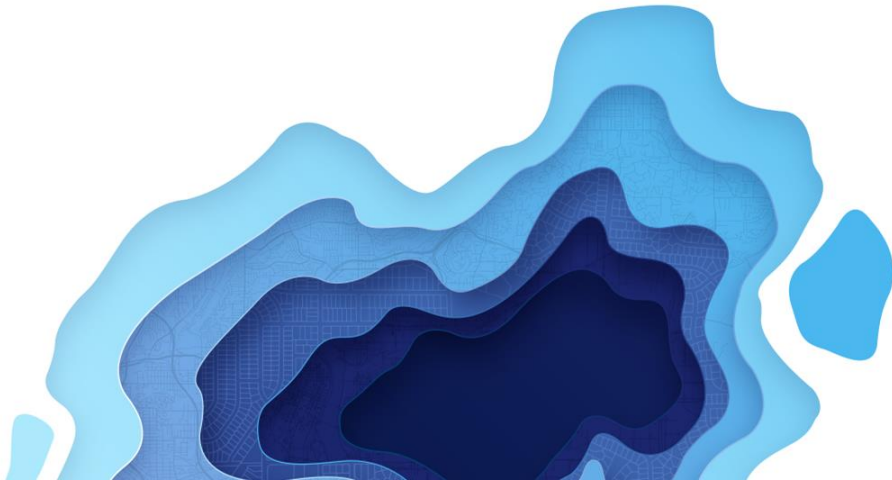


Leveraging New Analytic Capabilities for Gas Utilities

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The slide features a dark blue background with decorative map-like elements. On the left, there are stylized landmasses in shades of light blue and white. On the right, there are stylized landmasses in shades of light blue and yellow. The title 'The Asset Intelligence Imperative' is written in a bold, orange font at the top left.

The Asset Intelligence Imperative

A hallmark of the highest-performing gas utilities is the ability

- to connect all data about their *entire* network from disparate sources on a common geographic basis,
- to visualize that integrated data,
- and to work with it through an intuitive map interface to perform spatial analysis that effectively reveals trends, patterns, and answers that are not as easily detected.

GIS Turns Data into Insight

Providing a “vocabulary” for examining how geography intersects with your business



understanding *WHERE*

1. Understanding where things are (location maps).
2. Understanding where the variations and patterns in values are (comparative maps).
3. Understanding where and when things change.



measuring *SIZE, SHAPE, AND DISTRIBUTION*

4. Calculating individual feature geometries.
5. Calculating geometries and distributions of feature collections.



determining *HOW PLACES ARE RELATED*

6. Determining what is nearby or coincident.
7. Determining and summarizing what is within an area(s).
8. Determining what is closest.
9. Determining what is visible from a given location(s).
10. Determining overlapping relationships in space and time.



finding *THE BEST LOCATIONS AND PATHS*

11. Finding the best locations that satisfy a set of criteria.
12. Finding the best allocation of resources to geographic areas.
13. Finding the best route, path, or flow along a network.
14. Finding the best route, path, or corridor across open terrain.
15. Finding the best supply locations given known demand and a travel network.



detecting & quantifying *PATTERNS*

16. Where are the significant hot spots, anomalies, and outliers?
17. What are the local, regional, and global spatial trends?
18. Which features/pixels are similar, and how can they be grouped together?
19. Are spatial patterns changing over time?



making *PREDICTIONS*

20. Given a success case, identifying, ranking, and predicting similar locations.
21. Finding the factors that explain observed spatial patterns and making predictions.
22. Interpolating a continuous surface and trends from discrete sample observations.
23. Predicting how and where objects spatially interact (attraction and decay).
24. Predicting how and where objects affect wave propagation.
25. Predicting where phenomena will move, flow, or spread.
26. Predicting what-if.

ArcGIS Toolboxes for Analytics







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esri

**THE
SCIENCE
OF
WHERE**