Resilient Counties Forum

NACo Annual, July 2017

Franklin County, Ohio

Richard Leadbeater, Industry Solutions Manager | esri

Welcome to…

The Science of Where.

Richard Leadbeater, Industry Solutions Manager

esri

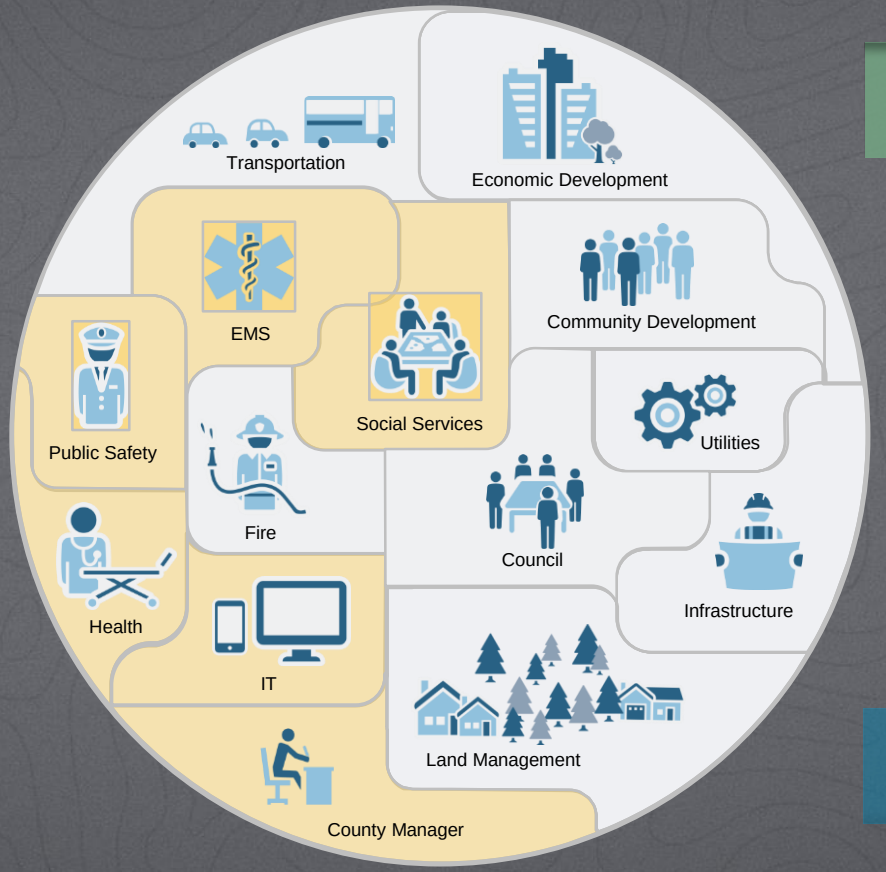
Every Community wants to be…

Aspirations get translated into actionable, real-world Initiatives

Initiatives Cross Departments

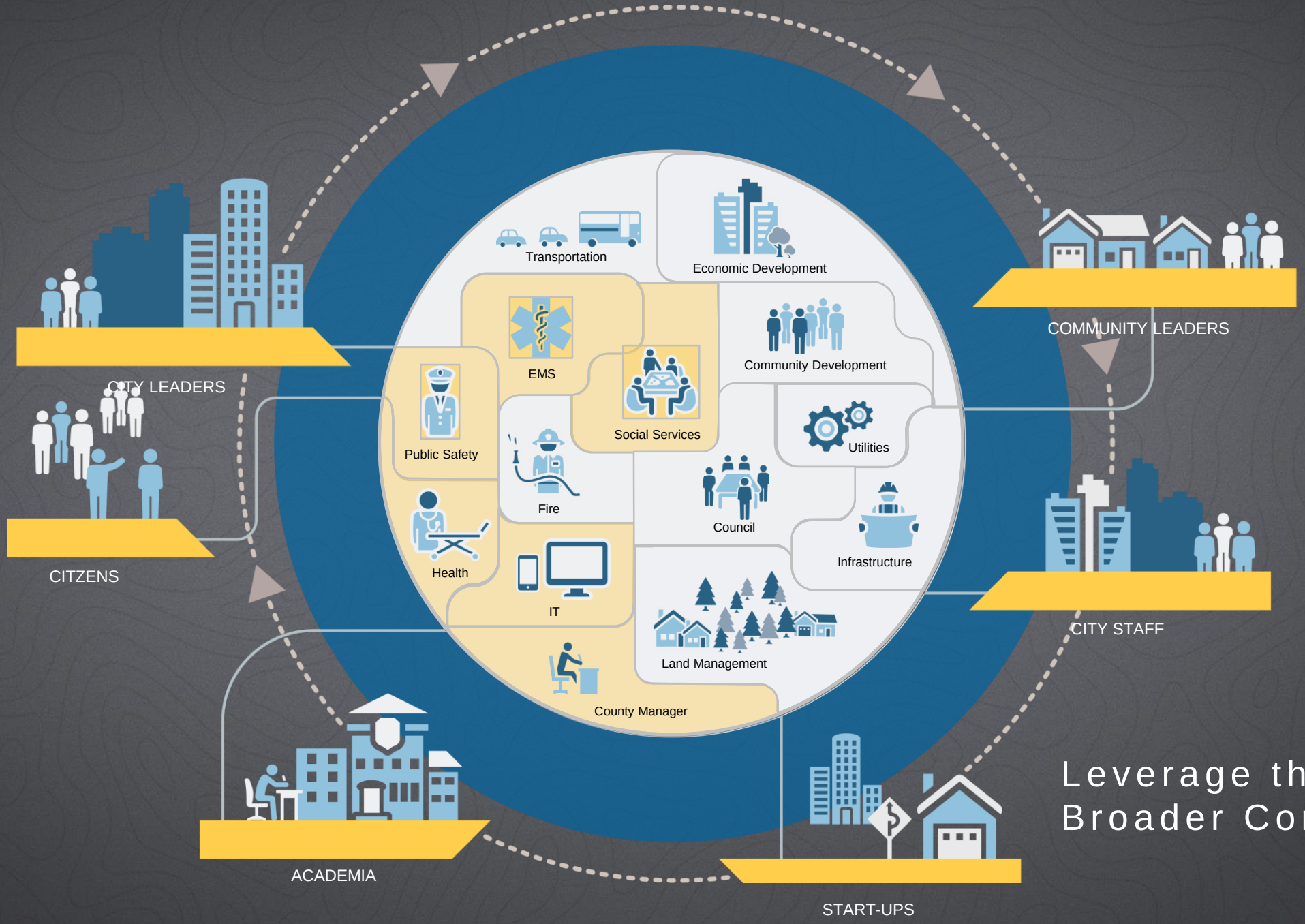
Sound Economics

Affordable Housing



Economic Development

Clean Water



Leverage the Broader Community

Geography Enables New Types of Collaboration

Connecting Individuals, Organizations and Communities

Individuals

Breaking Down Barriers

Organizations

Sharing Knowledge with Geographic Context

Networks of Organizations

- **. . . Creating a Nervous System for Our Planet**

Geography Provides the Framework and Process

For Enabling a Smarter World

Data Integration and Management

Visualization and Mapping

Science

Analysis and Modeling

Understanding

Planning and Design

Decision-Making

Action

Collaborating

Transforming How We Think and Act . . .
. . . Creating a More Sustainable Future

The Gaps

Government Executives

Have limited awareness of the tools and technology and how it could be applied.

Technology Managers

Are consumed by their regular departmental work. Don’t always seek out policy issues.

The Gaps

The Community

Not as aware or engaged as they could be. Not maximizing potential to help causes that matter.

Government Executives

Trying to engage the community, but in fits and starts. They are not capturing valuable input.

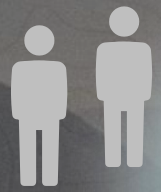
Technology Managers

Are consumed by their regular departmental work. Don’t always seek out policy issues.

Bridging The Gaps

The Community

Government Executives



Initiative working environment

Everything in one place

In the language of executives

GIS Managers

Bridging The Gaps

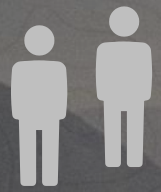
The Community

Systematized engagement

Add data to existing system

Participate in an ongoing basis

Government Executives



Initiative working environment

Everything in one place

In the language of executives

GIS Managers

Geography | Enables Multiple Types of Systems

THE SCIENCE OF WHERE

A Hub connects …
…Departments
…Community

VISION

Applying . . .

THE SCIENCE OF WHERE

The Science of Geography
The Technology of GIS

VISION

Why is . . .

THE SCIENCE OF WHERE

. . .So Important Now?

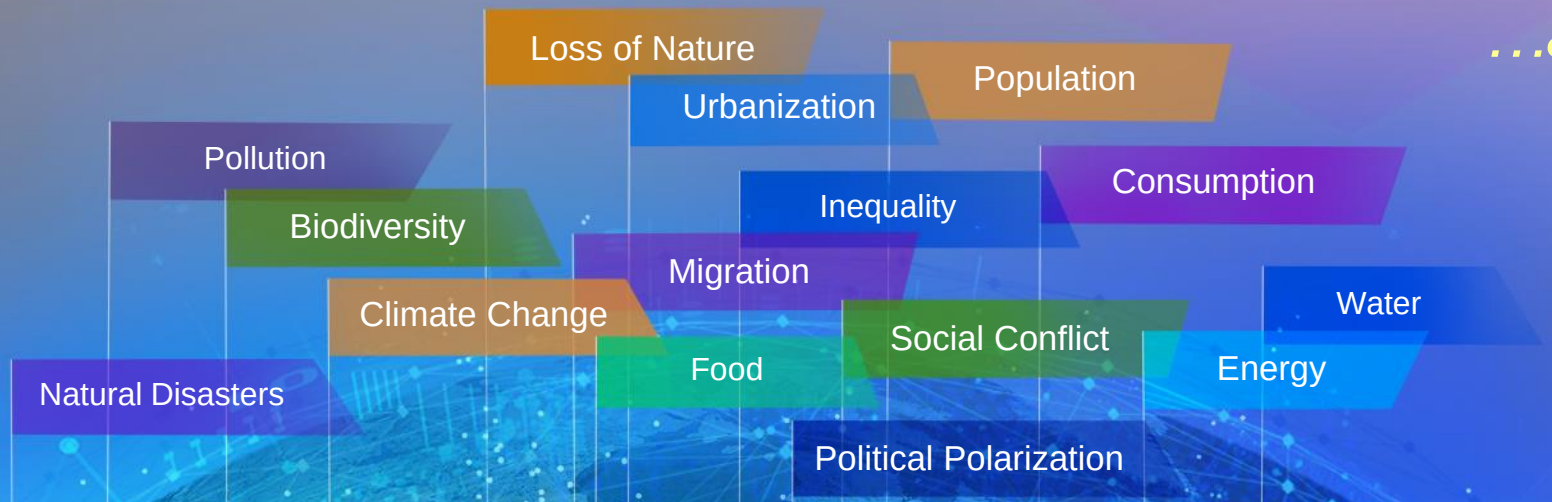
OUR WORLD

Is Increasingly Challenged

The Evidence Is Clear…

We Need Better Understanding…
…and More Collaboration

…and Action



OUR WORLD

Is Undergoing a Massive Digital Transformation

THE SCIENCE OF WHERE

A Fundamental Digital Language

For Understanding and Managing Our World

THE SCIENCE OF WHERE

A Framework and Process

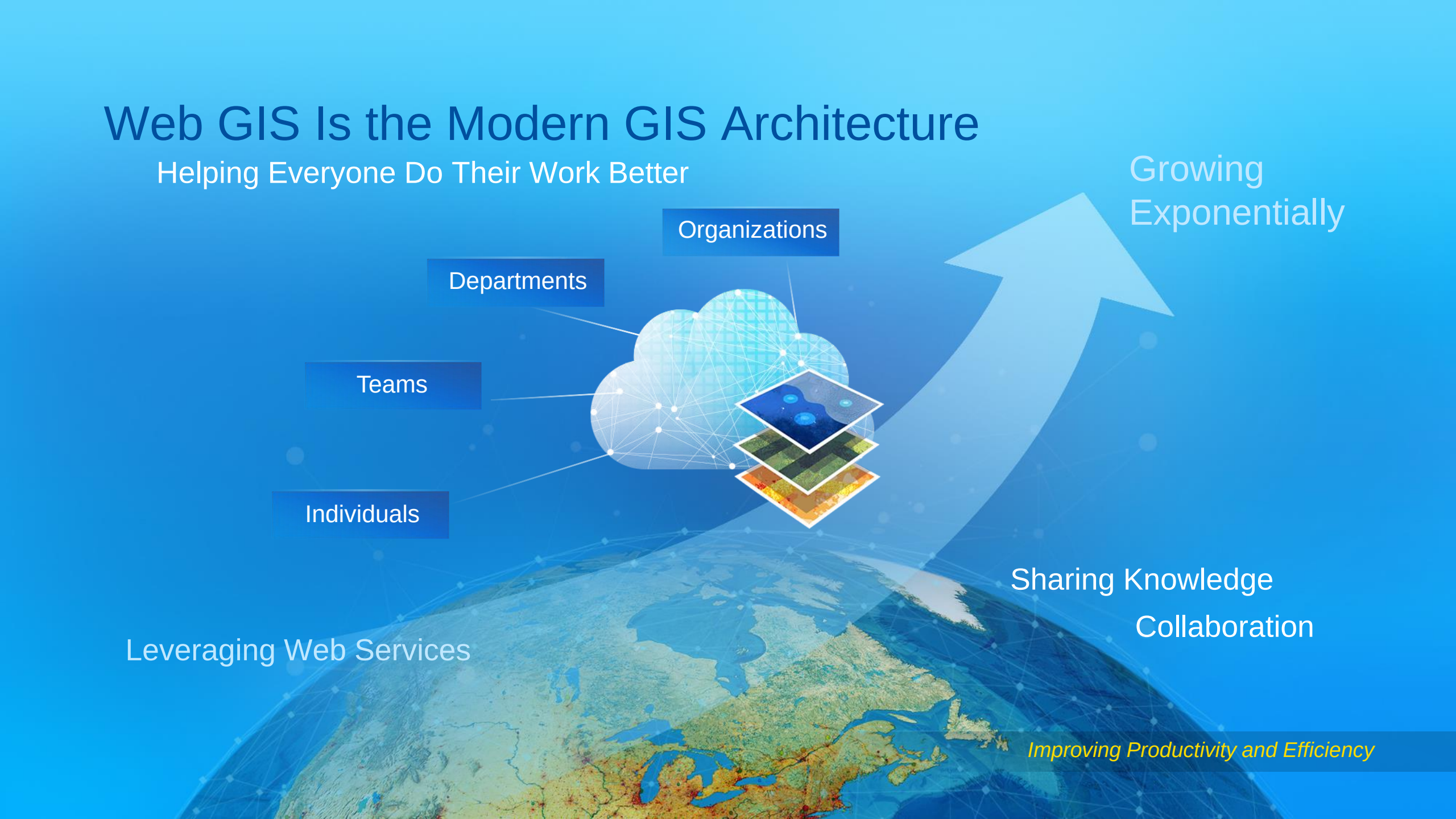
Transforming How We Think and Act . . .
. . . Creating a More Sustainable Future

The Field of GIS Is Advancing Rapidly

Integrating and Leveraging Many Innovations

Web GIS Is the Modern GIS Architecture

Helping Everyone Do Their Work Better



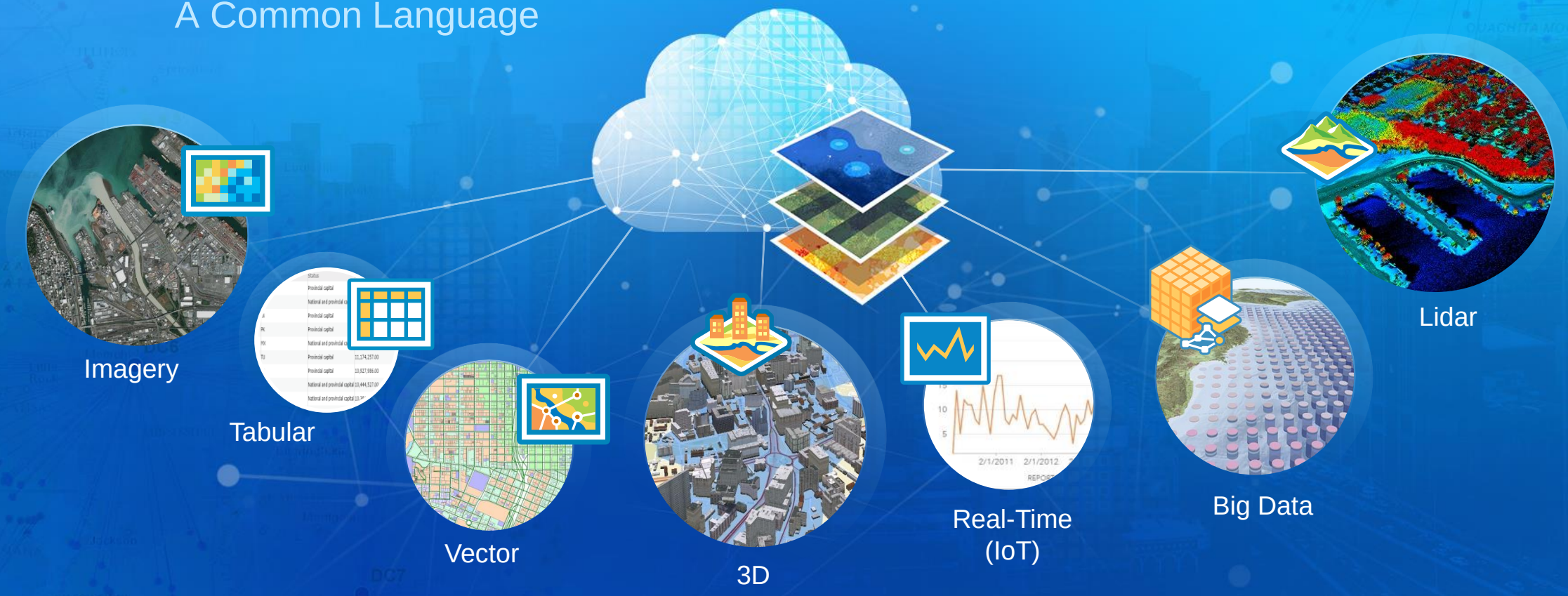
Web GIS Simplifies Working With All Types of Data

Using Web Maps, Scenes, and Layers

Creating
A Common Language

Apps

Distributed



Integrating Real-Time Information

Leverages Dynamic Data About Everything

Apps Are Bringing the Power of Geography to Everyone

Extending the Reach of GIS

Across Organizations and Beyond

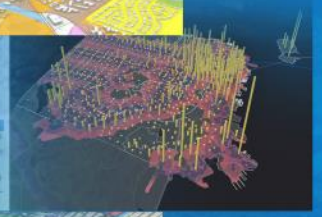
Web GIS Is Revolutionizing How We Plan and Design

Integrating Science Into the Design Process

Geodesign

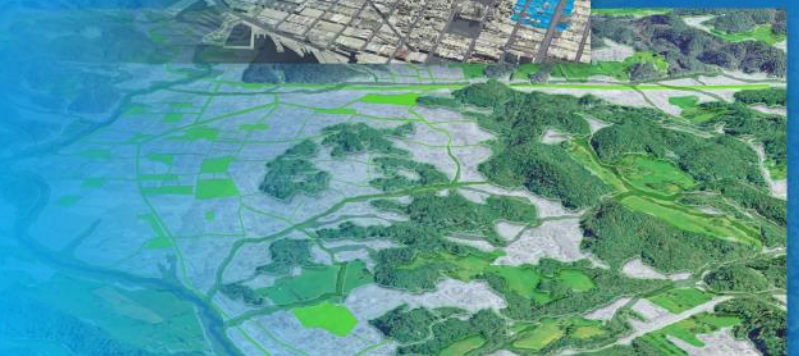
Economic Development

Urban Design



Transportation

City Planning



Green Infrastructure

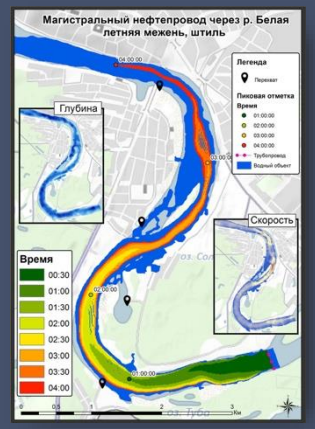
- Disseminating
- Visualizing
- Evaluating
- Designing
- Analyzing

Rapidly Creating and Evaluating Scenarios


Agriculture
Nature Conservation
Science & Technology
Water Resources
Pollution
YOUR WORK
Addressing All Our World's Challenges
Climate Change
Social Conflicts
Natural Disasters
Infrastructure
THE SCIENCE OF WHERE
Urbanization & Development
Energy
Business
Natural Resources
National Security
Economic Development
Environment
Transparent Government
Making A Difference

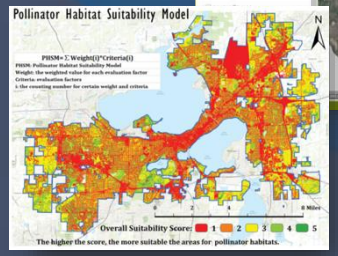
Environmental Modeling and Assessment

Oil Spill Simulation

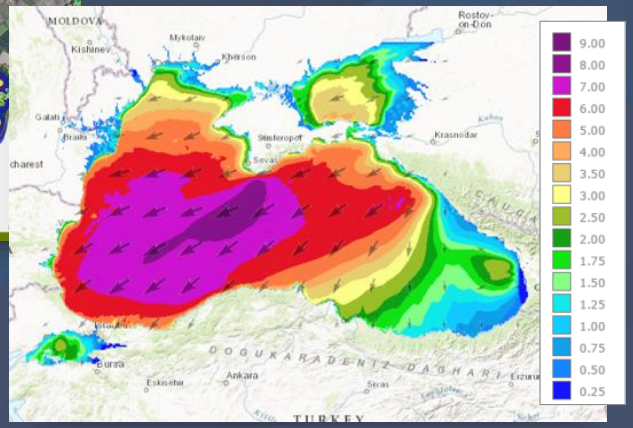


Endangered Insect Habitat

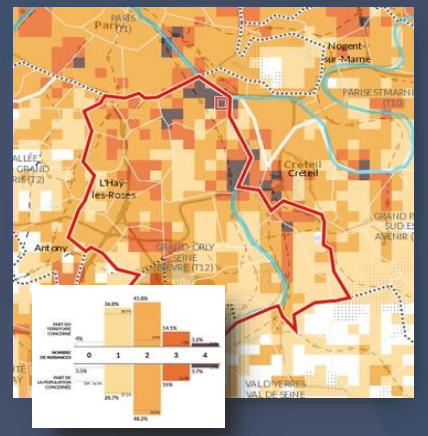
Bee Habitat Suitability



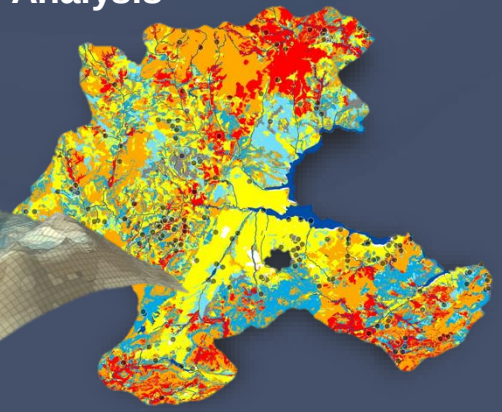
Storm Monitoring



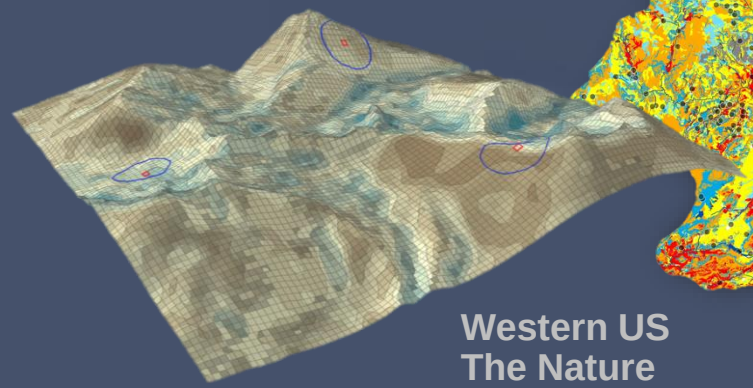
Environmental Nuisance Modeling



Landscape Character Analysis

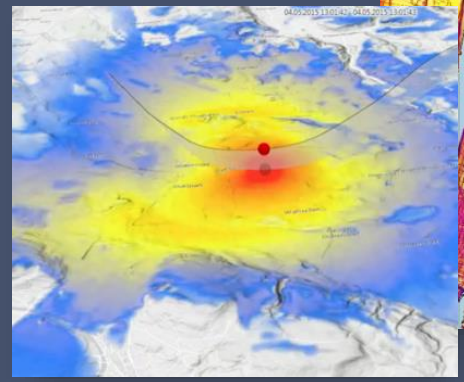


Landscape Resiliency Modeling

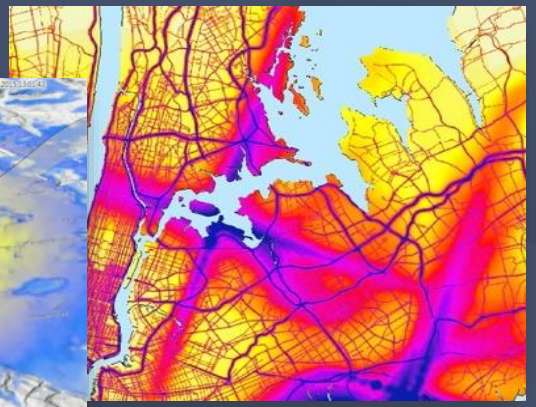


Western US
The Nature Conservancy

Noise Pollution



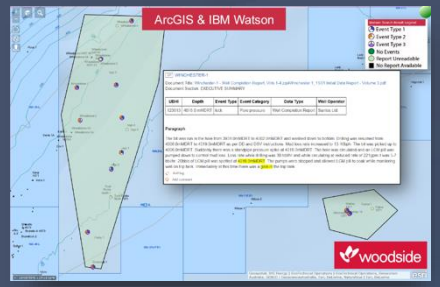
Aircraft Noise Monitoring



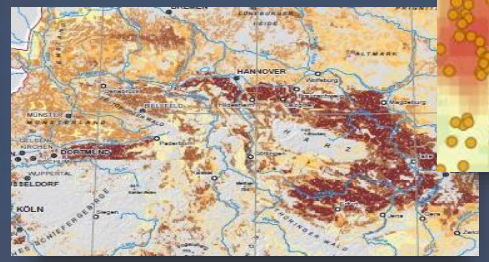
USDOT

Natural Resource Management

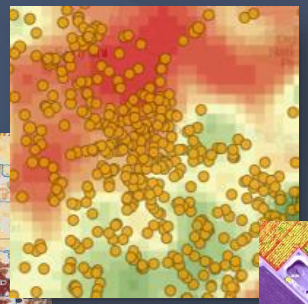
Oil Well Analysis (Using IBM Watson Deep Learning)



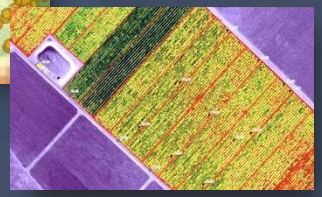
Soil Agriculture Potential



Environmental Stress on Farms



Vineyard Irrigation



California Scheid Vineyards

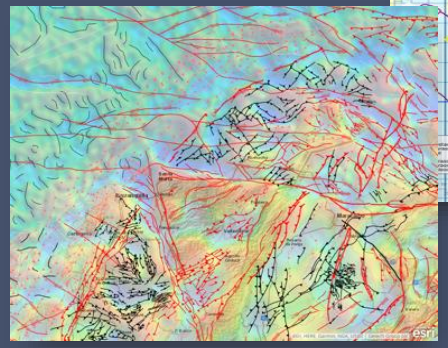
Managing Harvests and Timber Sales

Forest Planning

Minnesota

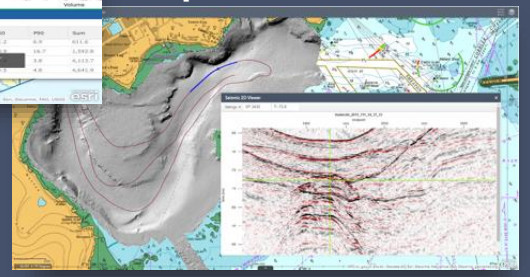
State Forests

Hydrocarbon Prospecting



Petroleum Exploration

Integrating Exploration Data



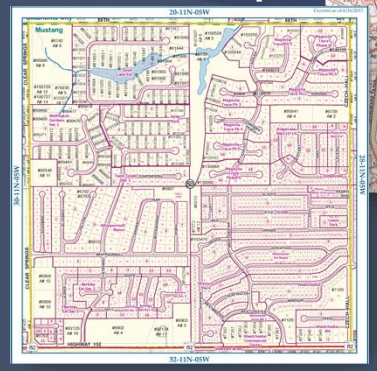
Modeling Citrus Disease

Florida Department of Agriculture

Managing and Analyzing Land Information

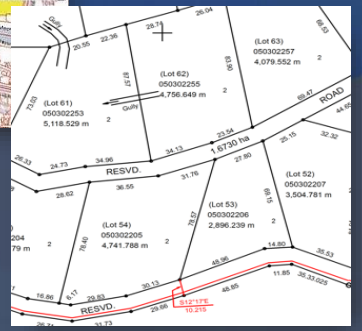
Land Registration

Tax Map



Canadian County,
Oklahoma

Cadastral

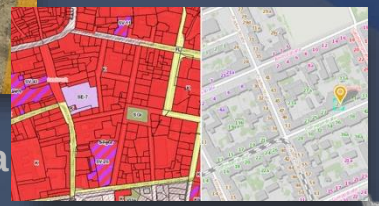


National Land
Agency

Predicting Vacancy

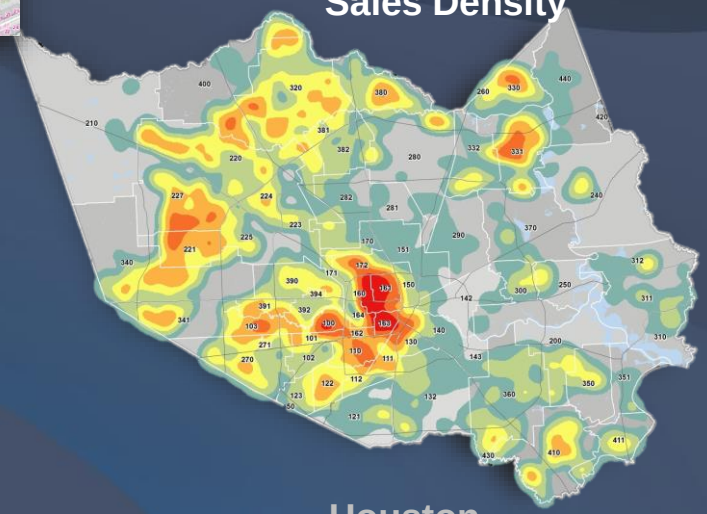
Pennsylvania
City of Philadelphia

Public Land Use Portal



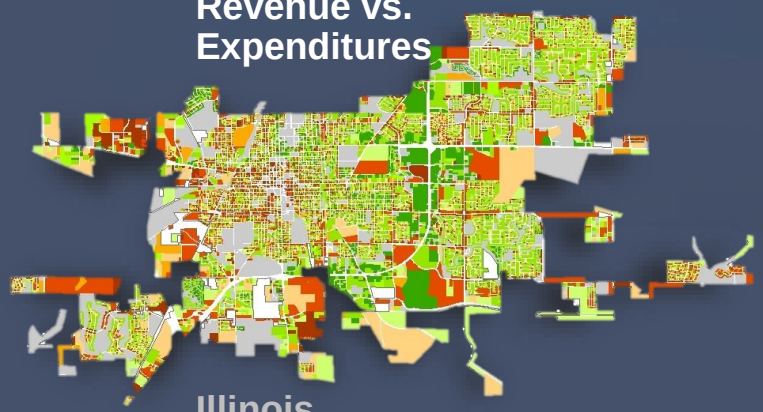
Interagency Collaboration

Sales Density



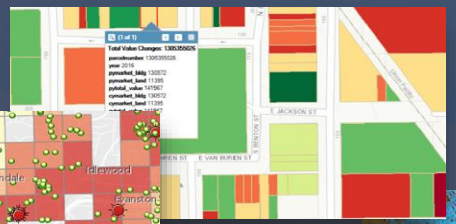
Houston
HCAD

Revenue vs. Expenditures

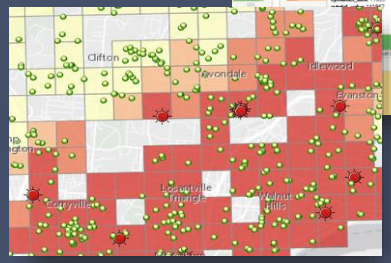


Illinois
GISRDC

Assessed Value

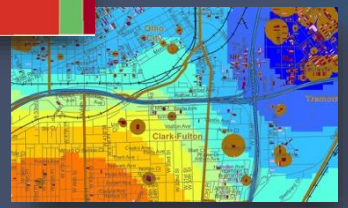


Tax Appeals



Ohio
DEVNET

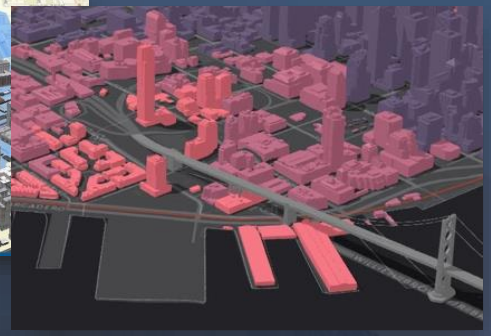
Change in Property Value



Ohio
Cleveland State University

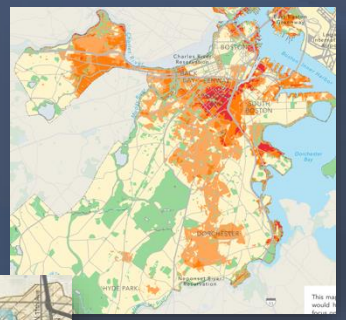
Urban Design and Planning

Transit Stop Walk Times



San Francisco
Planning

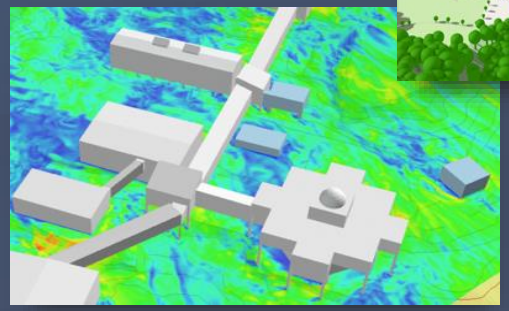
Green Infrastructure



Boston
The Trust for
Public Land

Viewshed

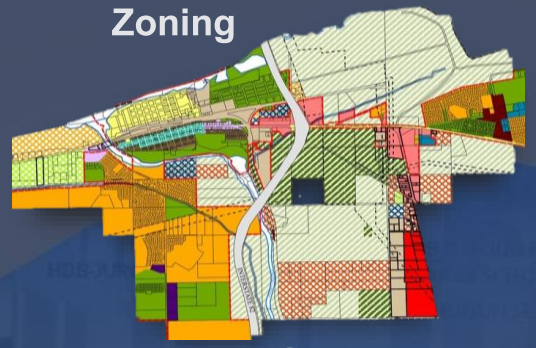
Air Flow Modeling



Open Space

Colorado
Design Workshop

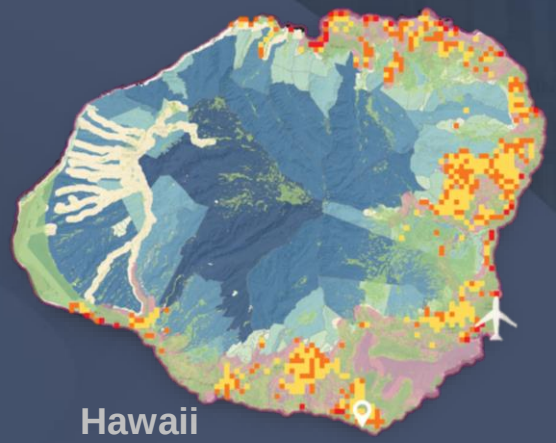
Zoning



Oregon
Umatilla

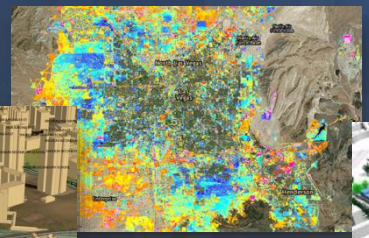
Comprehensive Plan

Resort Suitability



Hawaii
Ima Design

Change Detection



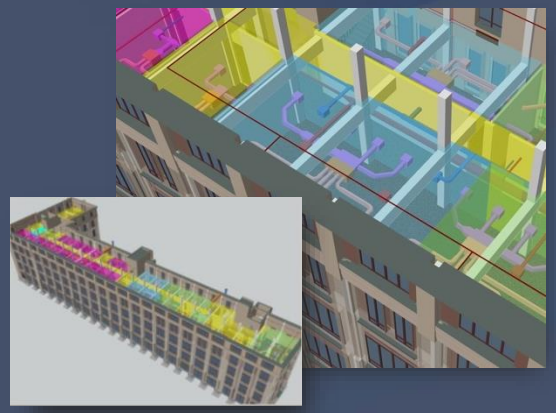
Visualization

Nevada
MDA
Information
Systems

Urban Design

3D Building and City Modeling

Building Asset Management



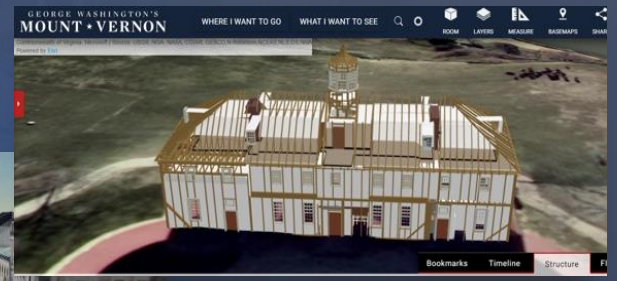
Planned Housing

New Building

New York
Bingham University

City Visualization

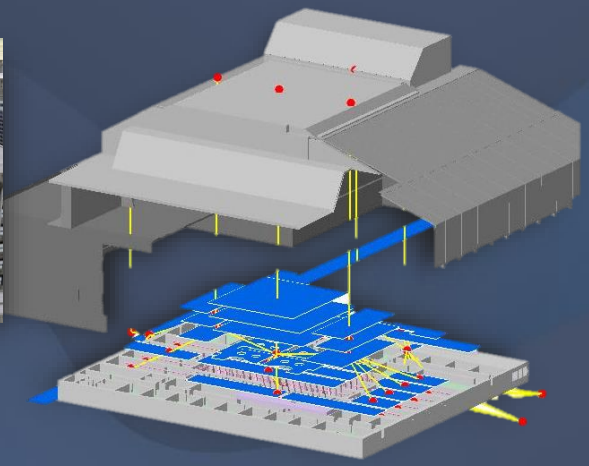
Historical Viewer



Virginia
Blue Raster

Integration of BIM and GIS

Chernobyl Containment Structure



Zoning Height Analysis

California
San Francisco Planning

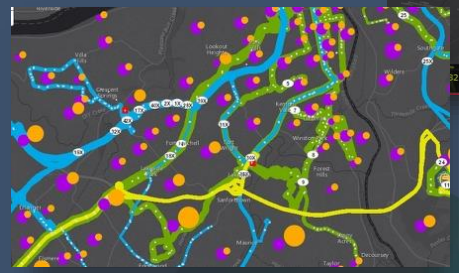
Underground Space Planning

Singapore Land Authority

Power Plant

Transportation Planning and Management

Transit and Population



Northern Kentucky
LINK-GIS / PDS

Transit Usage

Port Monitoring

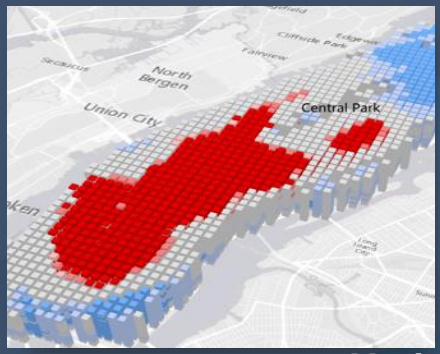
Pedestrian Safety

California
Mobileye

Parking Capacity

North Dakota
Fargo

Taxi Pick-Ups



New York
University of California

Commuter Traffic Modeling

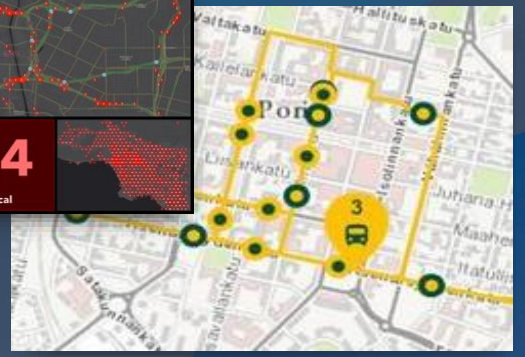
Waze Integration

San Francisco
Waze

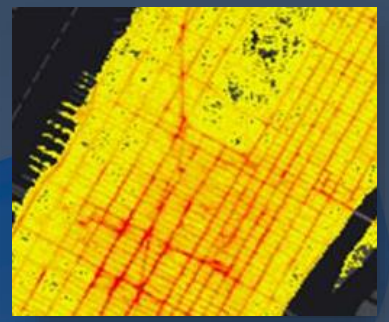
Traffic

California
Caltrans

Bus Tracking



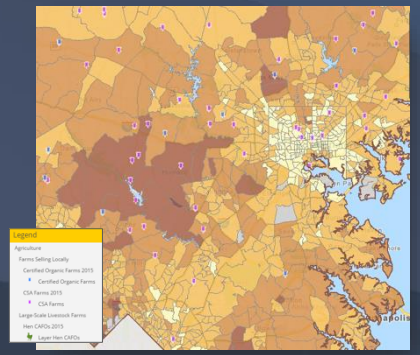
Human Movement



New York
SafeGraph

Public Health and Demographics

Healthy Food Access

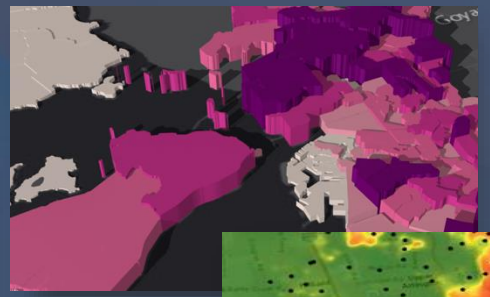


Maryland
Johns Hopkins University

Population Modeling

Oakland
Nic Jay Mapping

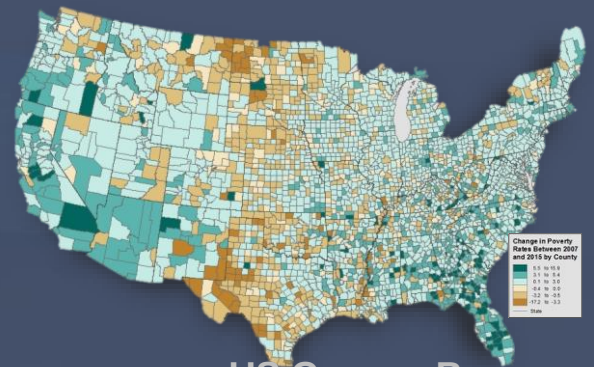
Population Change



Poverty and Schools

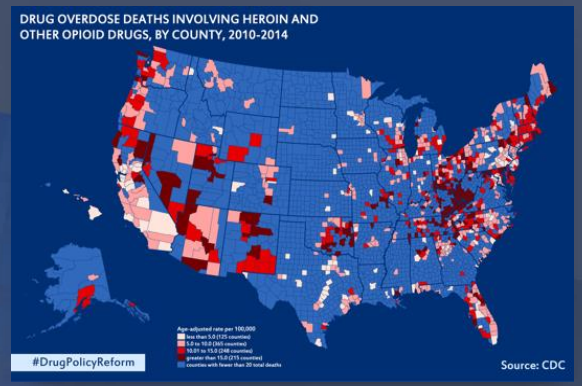
Columbus
NCES

Change in Poverty



US Census Bureau

Opioid Addiction

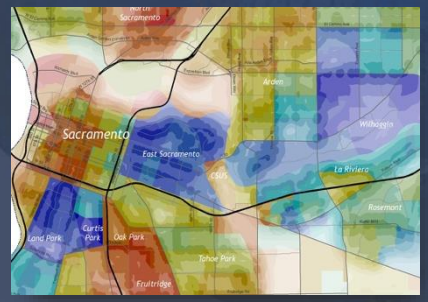


Office of National Drug Control Policy

Modeling Community Well Being

Philadelphia
OIT

Modeling Voter Characteristics



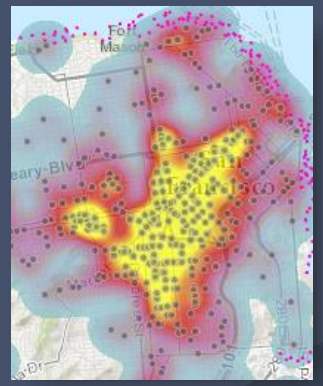
Sacramento
County of Sacramento

Access to Care

New York
MobiGIS

Public Safety and Security

Bicycle Collisions



San Francisco
Nic Jay Mapping

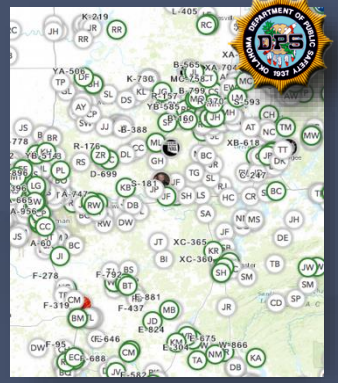
Marathon Tracking

Los Angeles
HSAC

Event Management

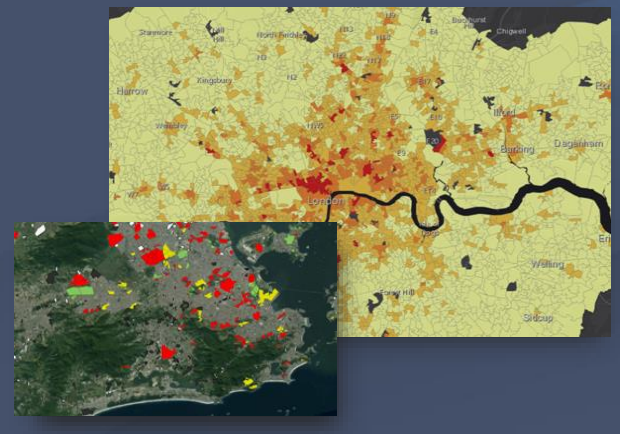
Philadelphia

Real-Time Officer Tracking



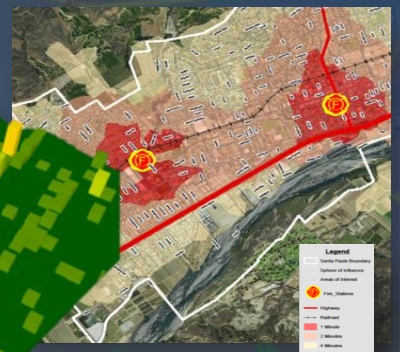
Oklahoma
Department of
Public Safety

Crime Prediction (Machine Learning)



Fire Incidents

Fire Response Times

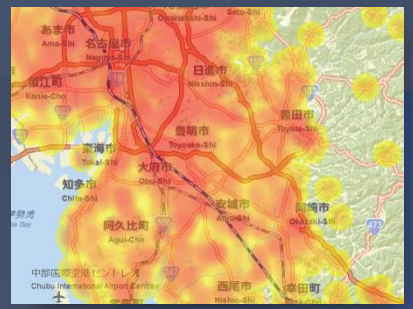


California
Santa Paula

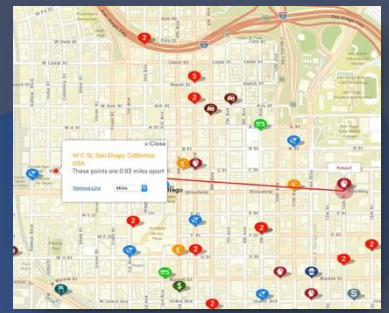
911 Dispatch System

North Carolina
BCS, Inc.

Crime and Traffic Accidents



Online Crime Mapping



San Diego
crimemapping.com

Preparing for and Responding to Disasters

Hurricane Modeling

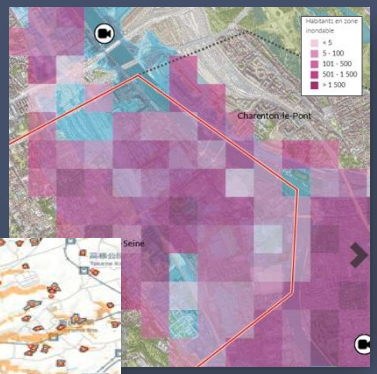
Georgia
Glynn County GIS

Interactive Plume Modeling

Tsunami Evacuation Routes

Washington

Wildfire Risk



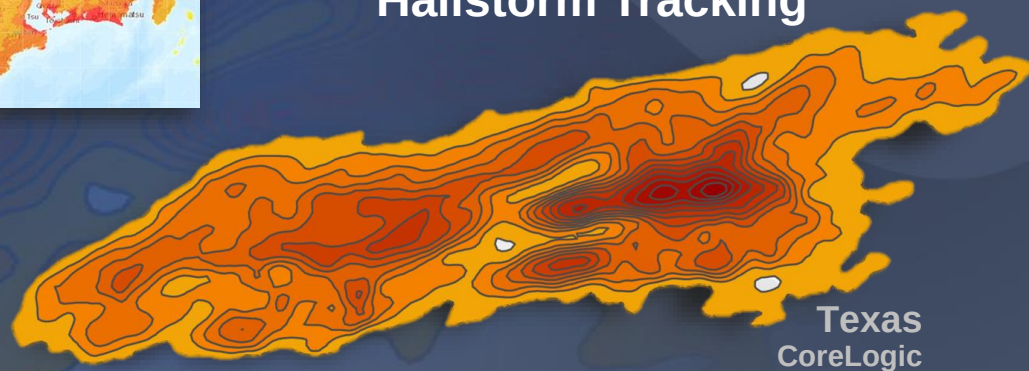
Liquefaction Risk

Disaster Preparedness

Emergency Management Center

Flood Impacts

Hailstorm Tracking



Texas
CoreLogic

Web GIS Is Making Spatial Analysis More Accessible

Advancing Analytics and Geo-Enabling Data Science

Exploratory
Data Analysis

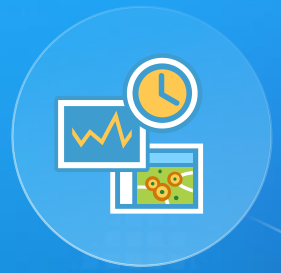
Opening Access

Analytic Services

Python API

Integration

Data Science



Spatial Analysis
& Geoprocessing

Big Data
Geoanalytics

Web GIS Is Connecting Everyone

Using Web Maps and Apps to Share and Collaborate

Web GIS Enables Community Engagement

Organizing and Managing Community Interactions

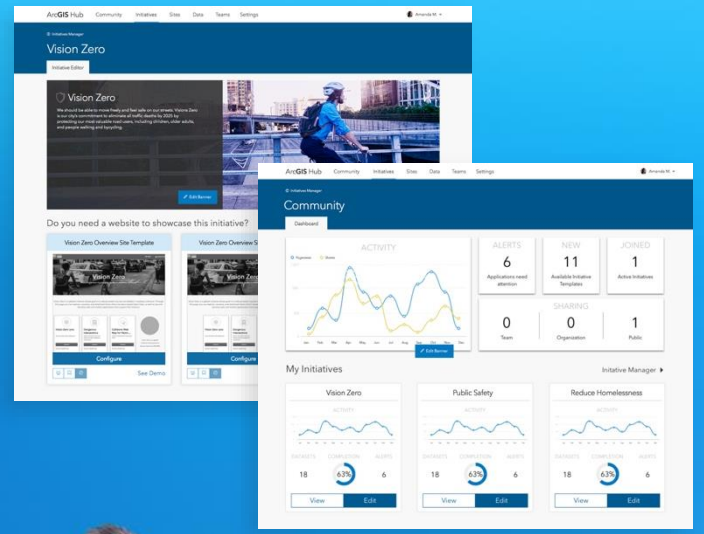
Providing Citizens Information . . .

. . . And Leaders Input

Community GIS Hub

- Citizen Communication
- Citizen Surveys (Crowdsourcing)
- Status Reporting
- Open Data
- Storytelling
- Demographic Information

Policy Initiative Based



Web GIS Enables a Whole New Scale of Science

Interconnecting Systems and Expanding Collaboration

GIS Now Provides the Means . . .

To Do Your Work Better. . .

. . . and for You to Apply The Science of Where

. . . everywhere

Knowing is not enough . . .

. . . we must apply.

Being willing is not enough . . .

. . . we must do.

— Leonardo da Vinci

Resilient Counties Forum

NACo Annual, July 2017

Franklin County, Ohio

Thank you

Richard Leadbeater, Industry Solutions Manager | esri