

An aerial night view of a city capitol building, illuminated with warm lights. The building features a prominent dome and classical architectural elements. The scene is overlaid with a complex digital grid of blue and purple lines, suggesting a smart city or geospatial data environment. In the foreground, there are glowing blue lines that resemble a data waveform or a network map. To the left, a vertical rectangular panel displays a colorful, abstract pattern of dots in red, orange, and yellow, possibly representing a data visualization or a map overlay. The overall atmosphere is futuristic and technological.

Delivering Smart Communities & Smart Cities through a Geospatial Strategy

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esri

THE
SCIENCE
OF
WHERE



Empowering an Analytics-Driven Organization through a Geospatial Strategy

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What is
smart?



smart communities
smart roads

smart tech
smart luggage

smart appliances
smart tv

smart watch

smart transit
smart bed

smart garden
smart parks

smart car
smart bulbs
smart security

smart phone
smart government

smart planning

smart app

smart engineering

smart maps

smart banking

smart growth

smart clothes

smart operations

smart house

smart cities
smart devices

smart performance

smart factory

smart view

smart tablet

smart packaging

smart budget

smart goals

smart pens

smart plugs

smart buildings

smart mirror

smart school

smart hubs

smart solutions

smart software

smart glasses

smart coffee

smart business

74.7k

23

In Government, Location is Never an Afterthought

GIS is Recognized as a Foundational System

Citizen

Health
Connected
Homelessness
Equity
Livability
Opioid Crisis
Mobility
Housing
Public Safety
Aging Population
Economic Opportunity

Infrastructure

Broadband
Aging Structures
Telecommunications
Airports
Highways and Roads
Buildings
Water
Bridges
Land Use
Sewer

Environment

Green Infrastructure
Open Space
Climate
Sea-Level Rise
Air Quality
Inclement Weather
Renewable Energy
Pollution
Habitat Preservation

Technology Advancements

Sensors
Artificial Intelligence
Autonomous Vehicles
Machine Learning
Intelligent Things
AR/VR
Cloud
Drones
Internet of Things

GIS supports all aspects of government

It starts with identifying priorities...

Livable

Sustainable

Resilient

Well-Run

Healthy

Safe

Prosperous



Four Technology Tenets



smart

Planning & Engineering

Modeling

Broadband

Multi-Modal

Mobility

Economic Growth

Natural Environment

Sustainability

Green Infrastructure

Infrastructure as a Sensor

Transit

Imagery

Climate Change

Human-Centered Design

Infrastructure

3D

Resiliency



A Redevelopment Success Story

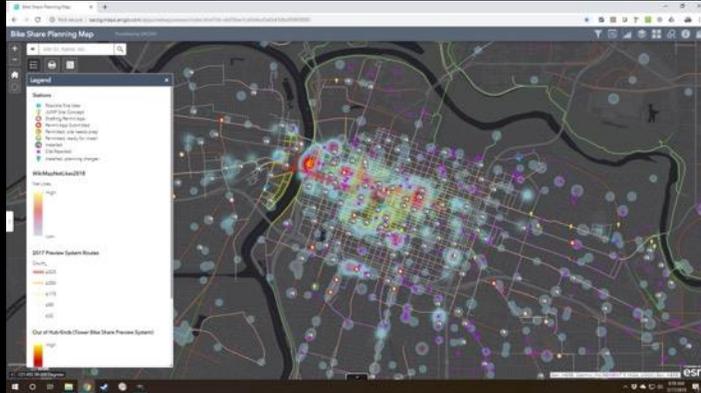
Oshkosh, WI

Seeing industrial businesses leave their community, the city decided to use GIS to develop a new plan called Imagine Oshkosh to secure economic and investment opportunities for the future.

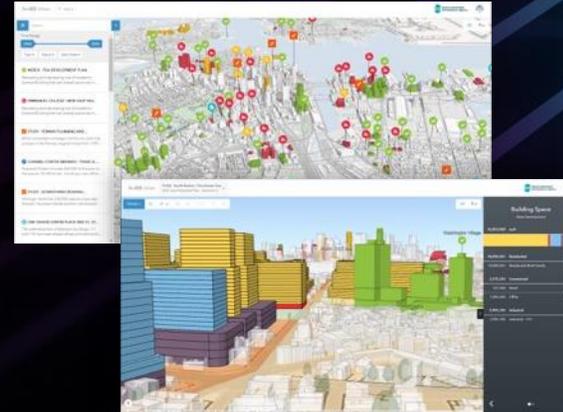


Planning and Engineering

Smart Communities Happen When Location Helps Great Things Get Built



Sacramento Area Council of Governments, CA – Identify Key Locations to Install Bike Parking



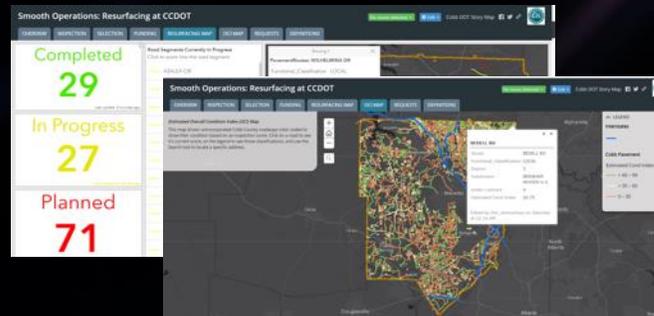
Impact of Proposed Development



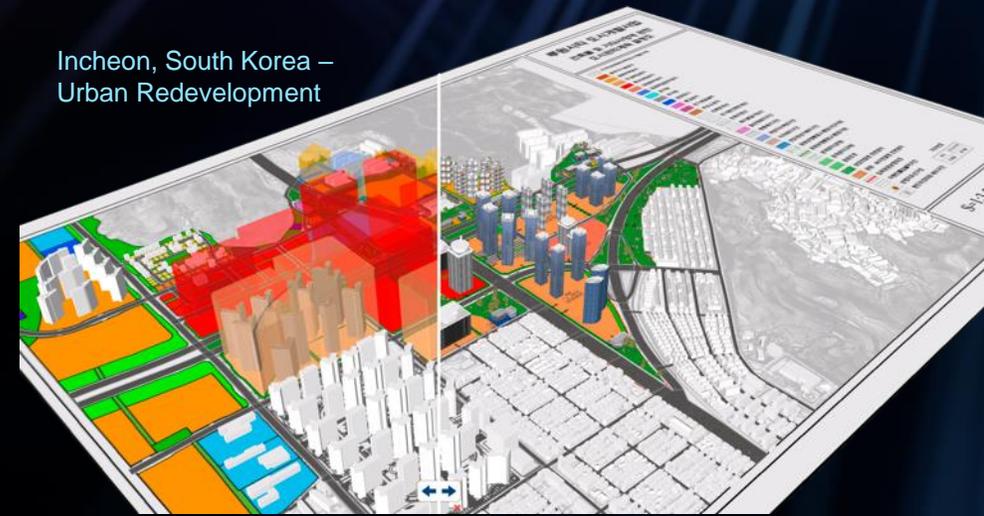
City of Peachtree Corners, GA – Autonomous Vehicle Test Track



Manatee County, FL – Sea-Level Rise Analysis



Cobb County, GA – Prioritization of Street Repaving



Incheon, South Korea – Urban Redevelopment

Planning and Engineering

In Action

ArcGIS Pro



3D



Web GIS



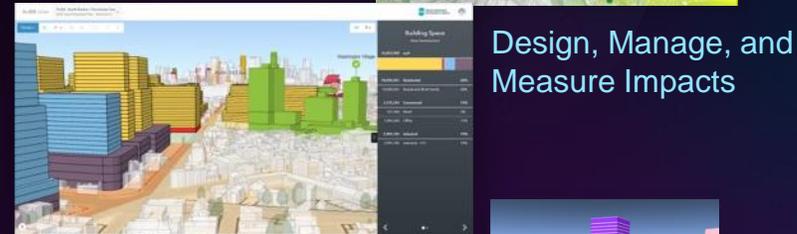
3D Mobile Web

BIM Integration

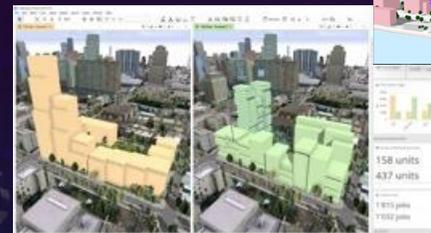


Image Analyst

Collaborative 3D Design

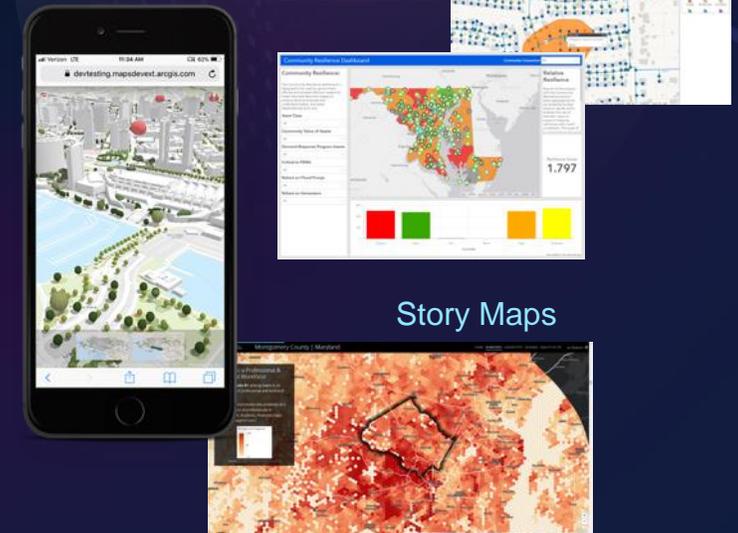


CityEngine



3D Analyst

Story Maps





smart Operational Efficiency

Asset Management

Fleet Management

Field Mobility

Streamlined Workflows

Inspections

Data Collection

Facilities

Service Delivery

Navigation

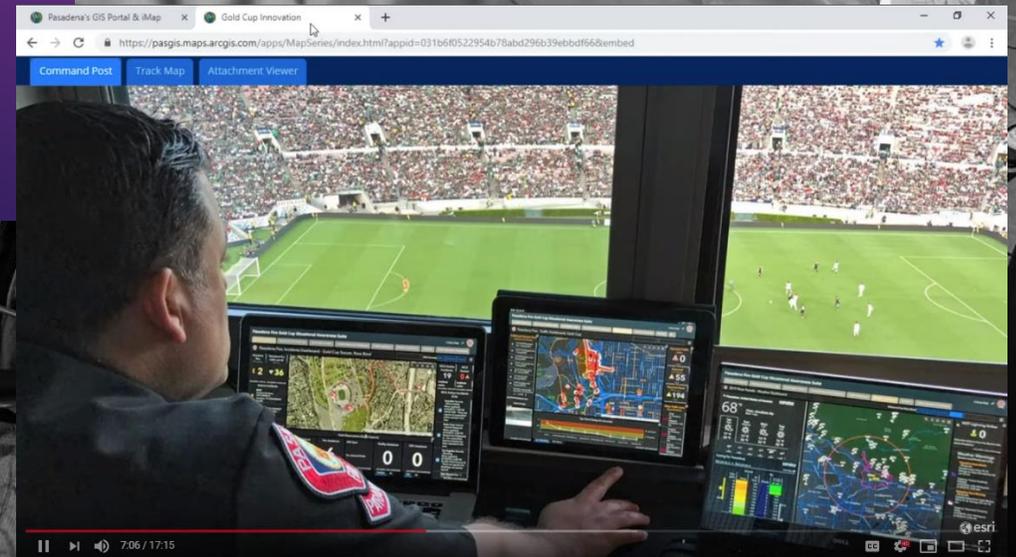
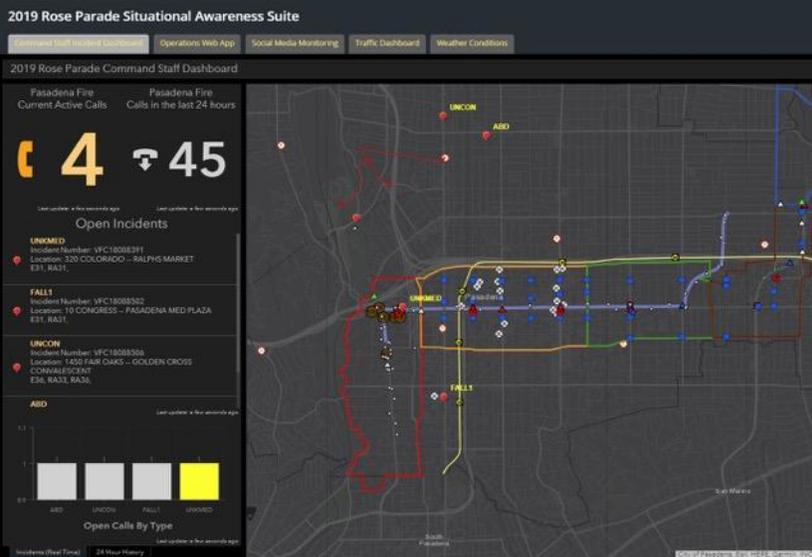
Managing the Rose Parade

Pasadena, CA

With 700,000 people in attendance at the Rose Parade, the city needs to ensure public safety. GIS is helping them monitor weather conditions, improve mobile workflows, leverage live dashboards, and achieve cross-agency collaboration to keep crowds safe.



OPERATIONAL EFFICIENCY



Operational Efficiency

Smart Communities Happen When Location is Used to Improve Efficiency



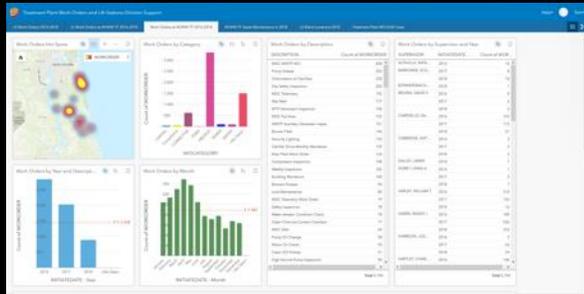
Palm Beach County, FL – Mosquito Inspection



Johns Creek, GA – Alexa Skill Connects the City's Open Data



Iowa DOT – Bridge Conditions



St. Johns County, FL – Asset Maintenance



Facilities Management



Seminole Tribe of Florida – Inspections with Drone Imagery

Operational Efficiency

In Action

Apps for the Field

Smart Forms

Survey123

Collector

Workforce

Drone2Map

Inspections and Asset Management

Connected and Disconnected

QuickCapture

Tracker

Navigator

Explorer

Augmented Reality (AuGeo)

ArcGIS Solution Templates

Local & State Government

Emergency Management & Public Safety

...and More

Real-Time Dashboards



Analytics-Driven Performance

Dashboards

Performance Management

IoT

Autonomous Vehicles

Real-Time

Analytics

Situational Awareness

SPEED

Sensors

Artificial Intelligence

Environmental Monitoring

Machine-Learning



Pioneering Future-Ready Mobility

Cobb County, GA

The county is consuming vehicle and pedestrian data, along with real-time road closure and traffic accident information, to modify traffic patterns in real time.



ANALYTICS-DRIVEN
PERFORMANCE



Analytics-Driven Performance

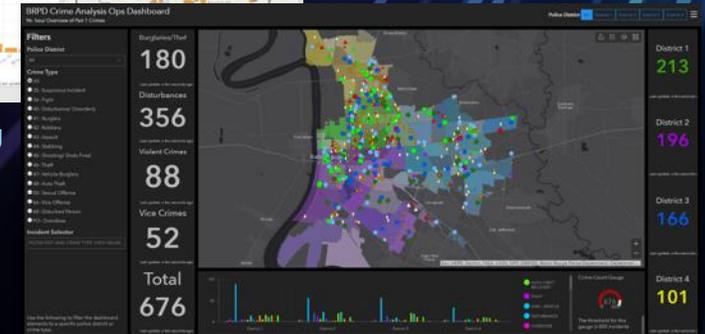
Smart Communities Happen When Governments Achieve Analytics-Driven Performance



Cobb County, GA – Traffic Management Using Artificial Intelligence



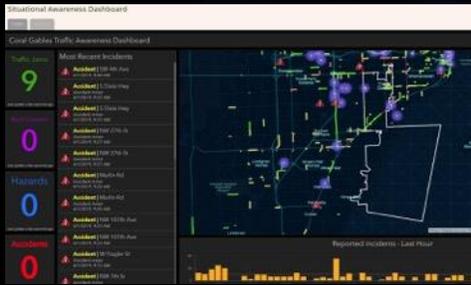
Tempe, AZ – Opioid Abuse Monitoring



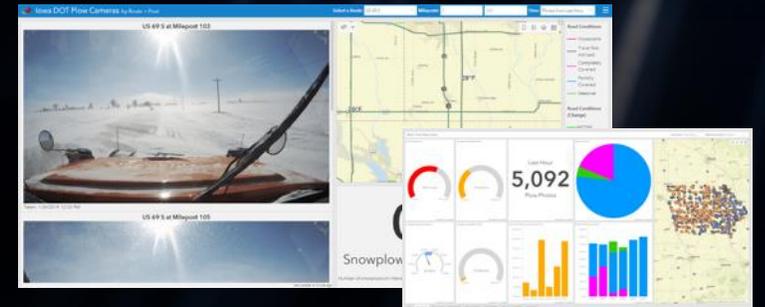
Baton Rouge, LA – Crime Analysis



Community Intelligence Center
Smart City Monitoring and Engagement



Coral Gables, FL – Community Intelligence Center



Iowa DOT – Real-Time Monitoring of Snow Operations

Analytics-Driven Performance

In Action

Web GIS

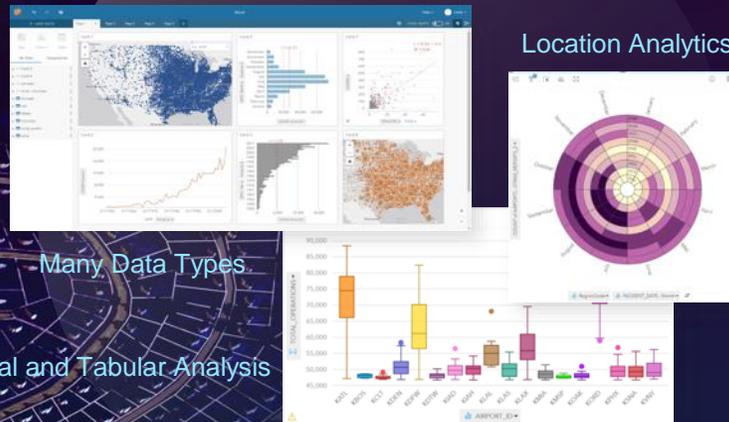


ArcGIS for Solutions



Spatial and Tabular Analysis

Insights for ArcGIS



Real-Time

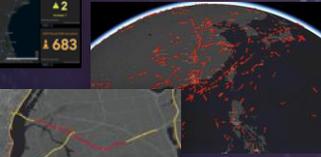


Supporting High-Velocity Data Streams

Tracking, Monitoring, and Alerting



AVL Integration



Integrating Sensor Networks and IoT



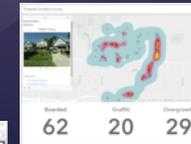
AI and Machine-Learning



Accident Prediction



Feature Identification



Property Condition Survey

Civic smart Inclusion



Communication

Public Participation

Demographic and Lifestyle

Collaboration

At-Risk Populations

Crowdsourcing

Humans in Crisis

Citizen Engagement

Connected Citizens

Social Equity

Economic Opportunity



Counting Homeless Population San Bernardino County, CA

With just a few hours to act after a flooding, San Bernardino County's Homeless Outreach and Proactive Enforcement (HOPE) team had to relocate homeless populations that lived in the floodplain. Using mobile tools, they were able to make faster decisions

CIVIC INCLUSION

USER STORY

ArcGIS Apps Help County Sheriff Provide Targeted Assistance to Homeless Populations



"With the ArcGIS apps, we are able to provide a more targeted approach, saving us an additional hour to an hour and a half a day."

Mike Jones, Deputy Sheriff, San Bernardino County Sheriff (SBSD), Homeless Outreach Proactive Enforcement (HOPE) team

Housed
2,193 1,807 548

Last update: a few seconds ago

Last update: a few seconds ago

Last update: a few seconds ago

Race

White: 62.34%

Black: 15.73%

Hispanic: 20.87%

Asian: 0.10%

Native American: 0.03%

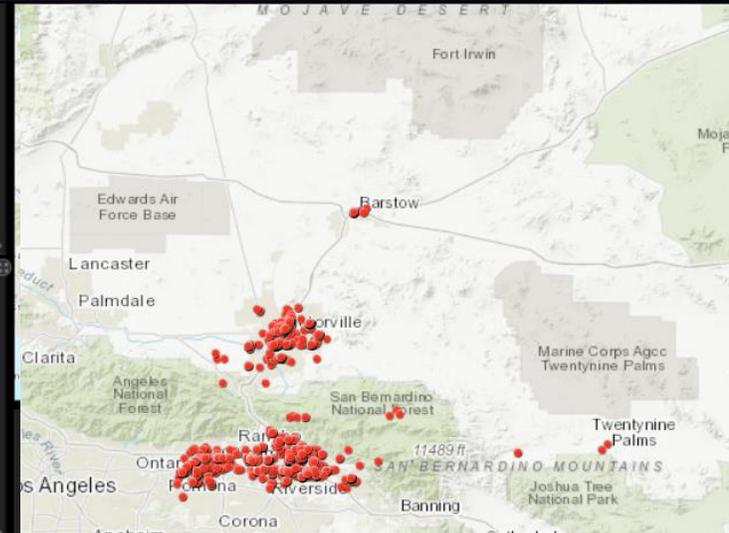
Pacific Islander: 0.03%

Other: 0.90%

Gender

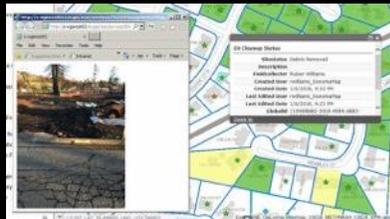
Male: 65.33%

Female: 34.67%

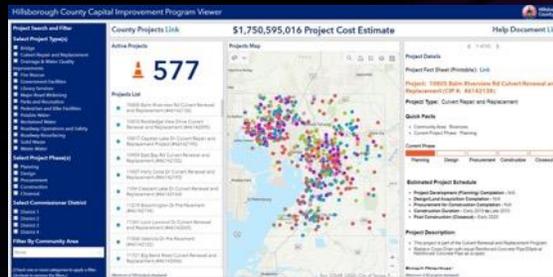


Civic Inclusion

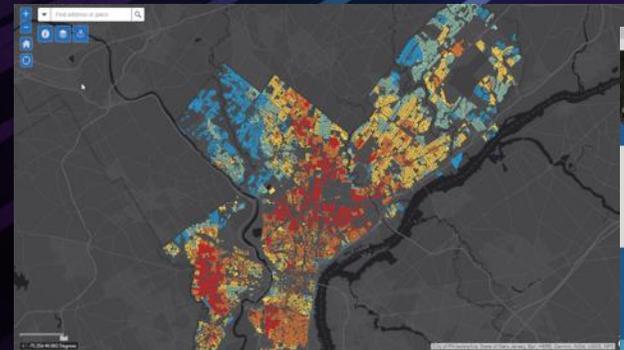
Smart Communities Happen When Governments Focus on Civic Inclusion



Sonoma County, CA – Fire Debris Clean-Up Status



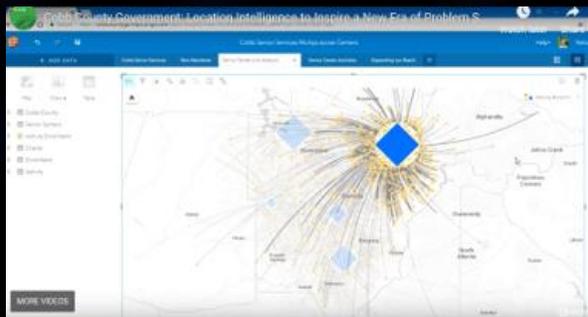
Hillsborough County, FL – Capital Improvement Projects & Expenditures



Philadelphia, PA – Stress Index



Santa Clara Valley Transportation Authority, CA - Hub



Cobb County, GA – Enhancing the Lives of Senior Citizens



Grand Rapids, MI – Housing Choices for All



San Bernardino County, CA – Addressing Homelessness

Civic Inclusion

In Action

ArcGIS Hub

Community Portal



Open Data



Performance Reporting

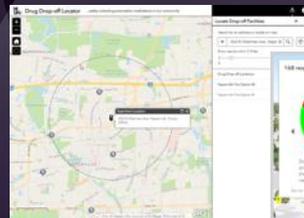


Initiative Based



ArcGIS Solutions

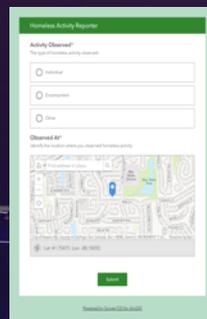
Civic Engagement



Crowdsourcing

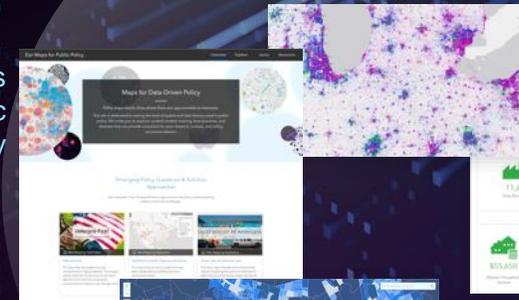


Citizen Reporting



Community Data

Esri Maps for Public Policy



Population Change



Infographics



Behavior and Lifestyle Data

Story Maps



Public Information

Smart Communities

Planning & Engineering

Operational Efficiency

Analytics-Driven Performance

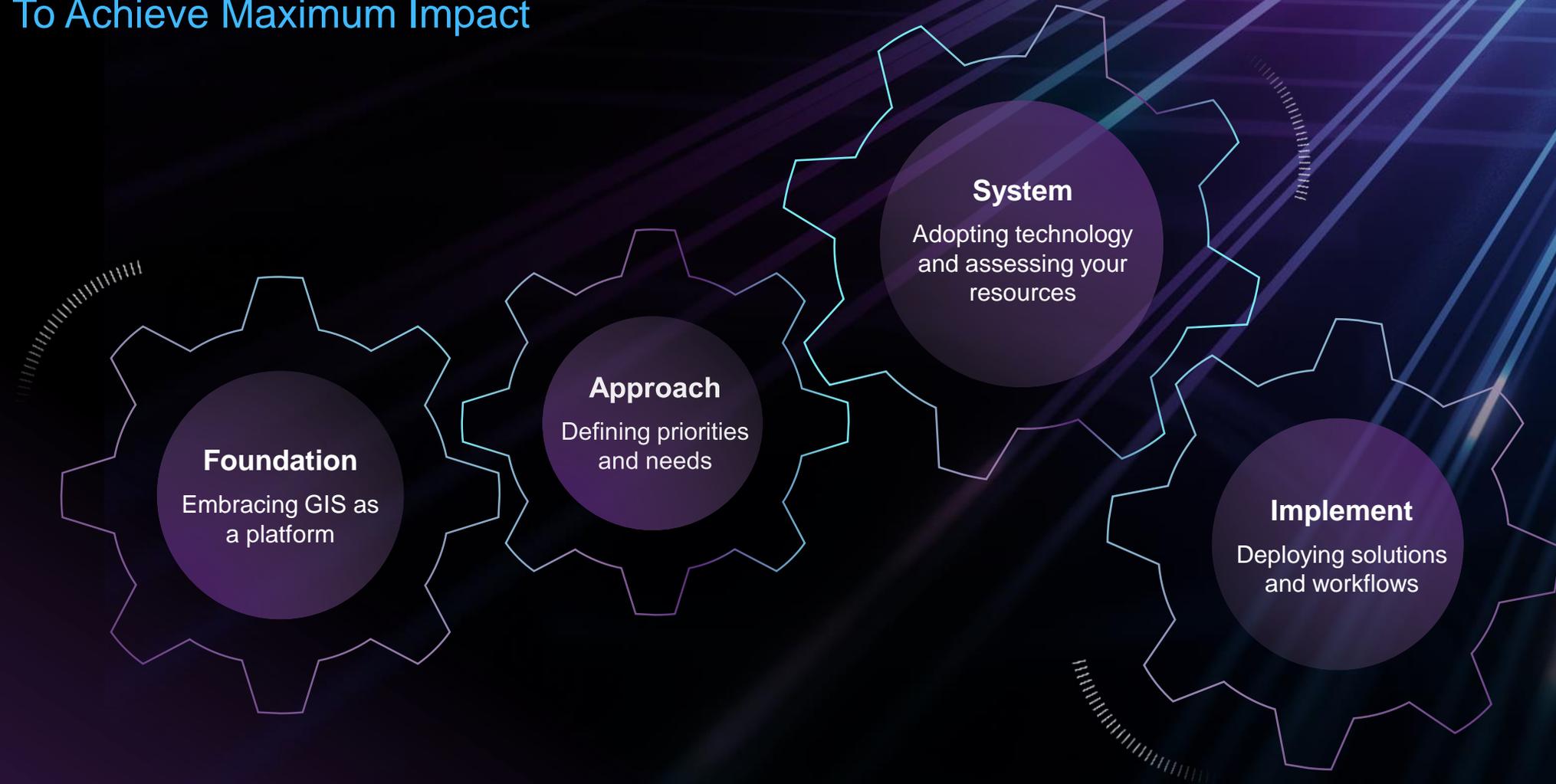
Civic Inclusion

Start with Location



Develop a Geospatial Strategy

To Achieve Maximum Impact





Business
Goals

Business
Challenges

Business
Driven GIS
Solutions

Business
Value of
GIS



Developing & Executing a Geospatial Strategy

Understand



Plan



Act

1 Prepare



2 Implement



4 Review



3 Operate



Revisit

...Maximize Impact

Every Community Can Be a Smart Community

esri.com/smart-communities

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esri

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