



Learning to See What Others Can't

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Esri

2019 INNOVATION SUMMIT FOR PREPAREDNESS & RESILIENCE



The logo for GISday, featuring the word "GIS" in a bold, sans-serif font, followed by a stylized white arc that curves over the "S" and under the "d", and then the word "day" in a lowercase, sans-serif font.

GISday

November 13, 2019

A large, stylized world map in the background, rendered in shades of green and yellow, with a blue ocean. The map is composed of concentric, wavy lines that create a sense of depth and movement. The text "DISCOVERING THE WORLD THROUGH GIS" is overlaid on the map in a large, white, sans-serif font.

**DISCOVERING
THE
WORLD
THROUGH
GIS**

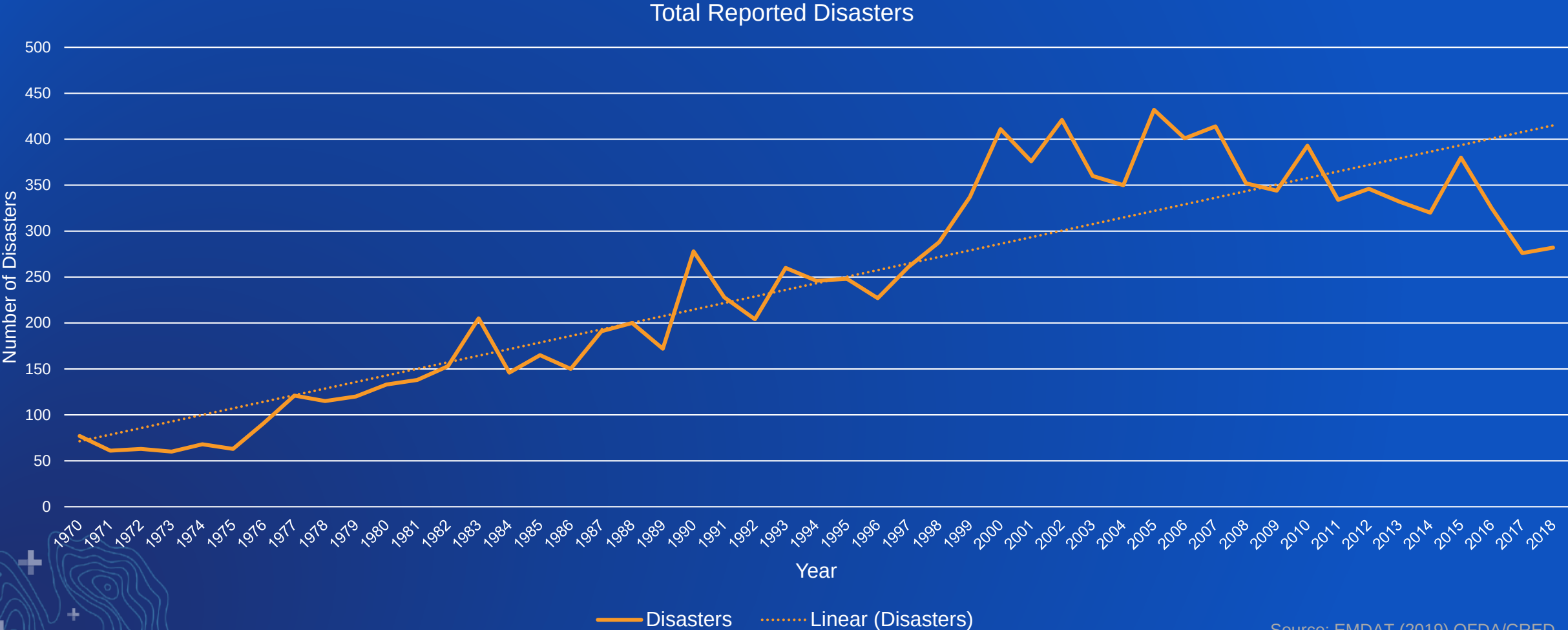




SEE
WHAT
OTHERS
CAN'T

Our World Today is Increasingly Challenged

The trend continues upwards



Source: EMDAT (2019) OFDA/CRED

Our Costs Continue to Rise

2018 in the United States

\$91 billion USD

80% from 3 events

\$24 billion USD for wildfires

\$1.6 trillion USD since 1980





Hurricane Harvey 7 Day Maximum Precipitation

Click on the tabs below to see updated population, housing, and business counts per area affected.

This analysis was completed using the [Enrich Layer](#) tool in ArcGIS Online. For more information on how data is summarized using GeoEnrichment see this [explanation](#).

Original [7 day total precipitation](#) from NOAA and the National Weather Service.

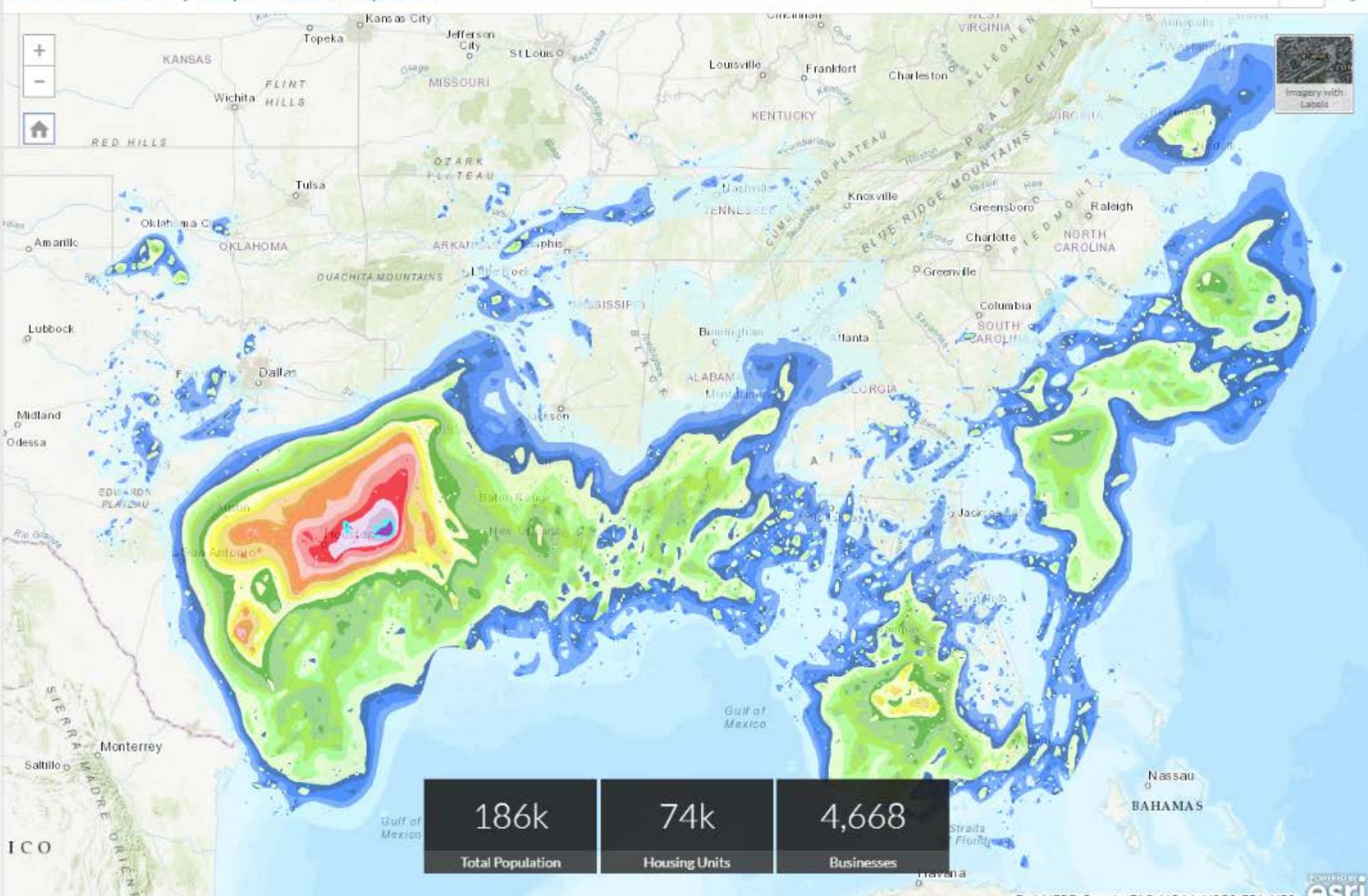
Modified 9/4/17, 9:57 AM

[Find out more](#)

Enriched Total Precipitation - Past 7days From 8/31

- Over 50 in
- Up to 50 in
- Up to 45 in
- Up to 40 in
- Up to 35 in
- Up to 30 in
- Up to 25 in

Hurricane Harvey 7 Day Maximum Precipitation



An aerial photograph of a residential neighborhood completely inundated with floodwater. The water is a murky, brownish-grey color, covering the streets, lawns, and surrounding areas. Numerous houses with various roof colors (red, grey, brown) are visible, some partially submerged. A large, dark rectangular area in the center of the image serves as a background for the text. The overall scene depicts a severe natural disaster.

The New Normal















GIS

Supports Three Fundamental Systems

System of Insights
(Analytics)



System of Engagement
(Apps and Maps)



Real-Time Measurement
(Field / IoT / Remote Sensing)



System of Record
(Transactions)

Bringing Together Systems, Workflows and Content

3 Critical Concepts

Prepare for the New Normal



**Information
Sharing**



**Decision
Support**



**Operational
Agility**

Boston Marathon

Portal-to-Portal Collaboration



Information
Sharing

2018 BOSTON MARATHON DASHBOARD - Developed by the Massachusetts Emergency Management Agency

PRIORITY EVENTS

0 

PRIORITY EVENTS TRANSPORTATION EVENTS

PRIORITY EVENTS LIST

Click list item to zoom to location.

PRIORITY EVENTS TRANSPORTATION EVENTS

EMS
TRANSPORTS

1 

Active Calls

EMS
TRANSPORTS

2

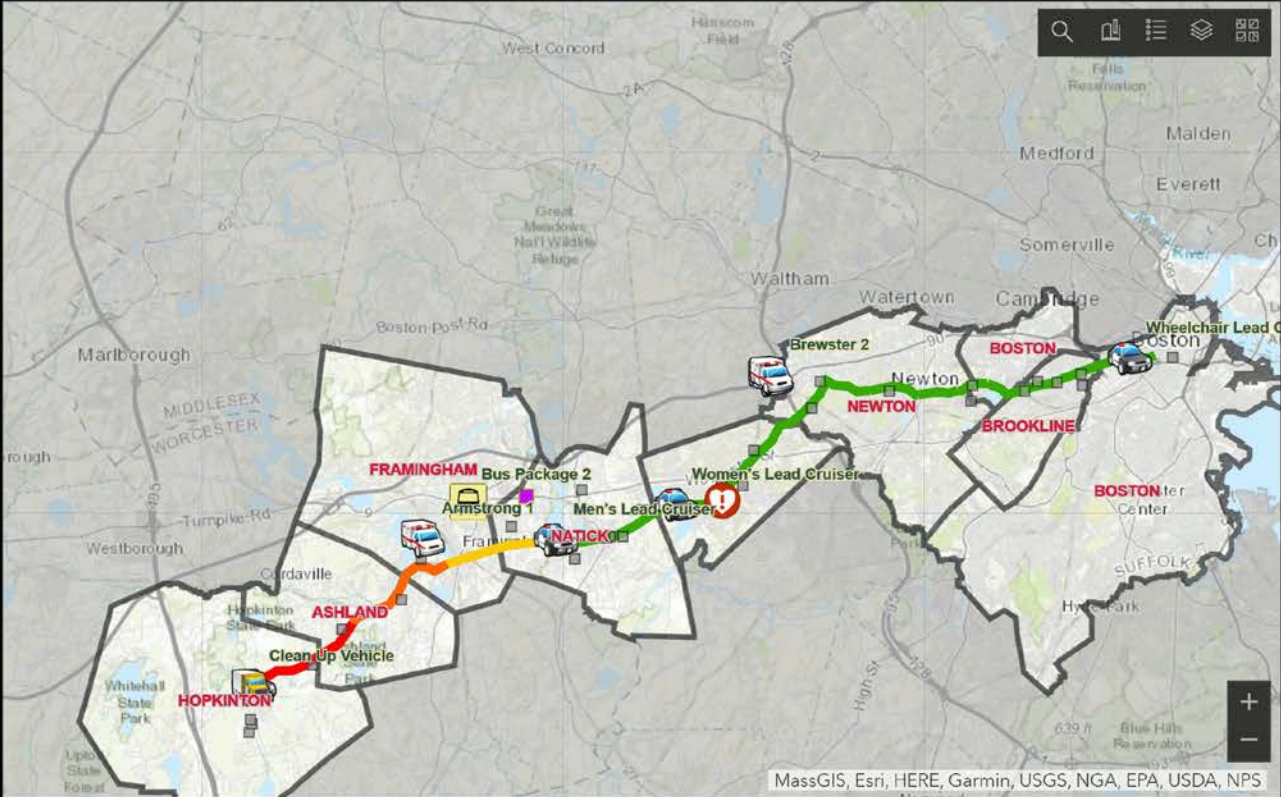
Total Calls

MEDICAL TENTS

7 

MEDICAL TENTS

13



OPEN RECEPTION CENTERS

3 

OPEN RECEPTION CENTERS

- Natick Mall: 1245 WORCESTER STREET
CAPACITY: 12,500
OCCUPANCY: 0
 - Newton Wellesley Hospital- East Lobby: 2014 Washington Street
CAPACITY: 20
OCCUPANCY: 0
- Click list item to zoom to location.

SHELTERS LEGEND

LIVE WEATHER

* Use Drop-Down to Select a Different Community

Boston

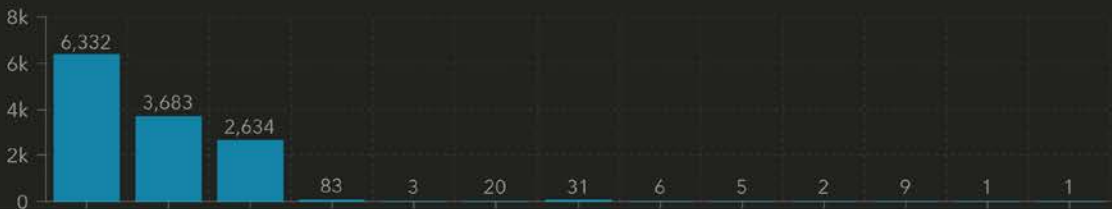
Weather Wind Rain Sun UV

39.2 °F
Rain
43 °F 50 °F

NE Wind 24.2mph

WEATHER RADAR

RUNNER TRACKING (kilometers)



RUNNERS PAST
HALF WAY

0.2%

RUNNERS PAST
FINISH

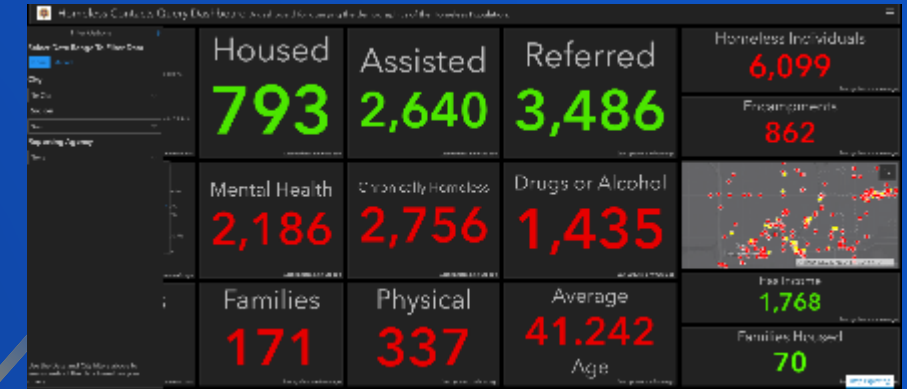
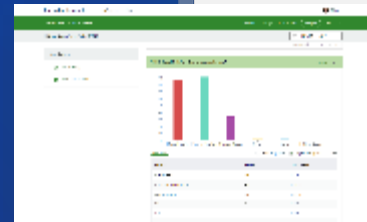
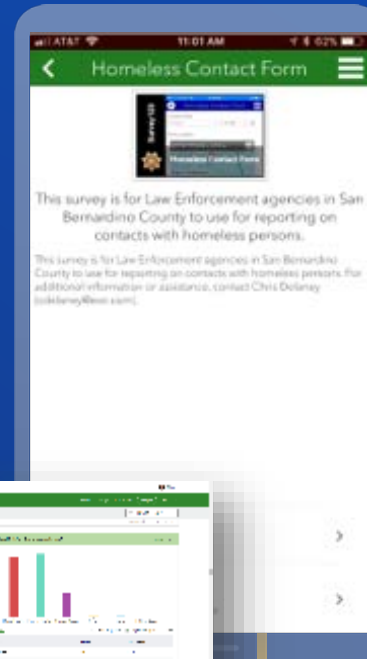
0%

San Bernardino Sheriff- Homeless Outreach

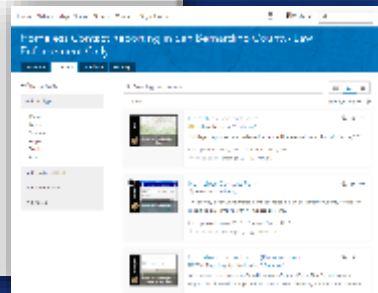
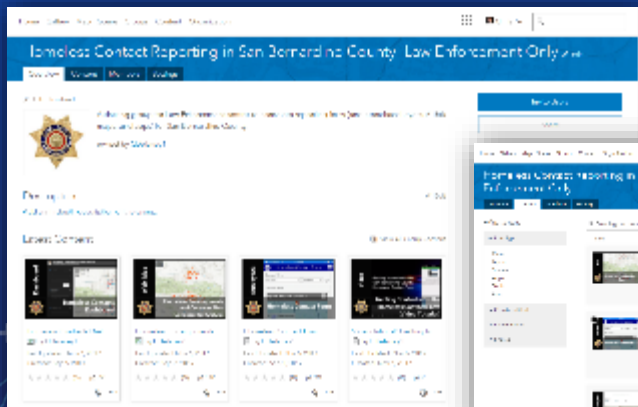
ArcGIS Online Cross-Agency Collaboration

- SBSD
- 10 City PDs
- County-Wide service providers
 - Veterans Support
 - Mental Health Services
 - Faith-based providers

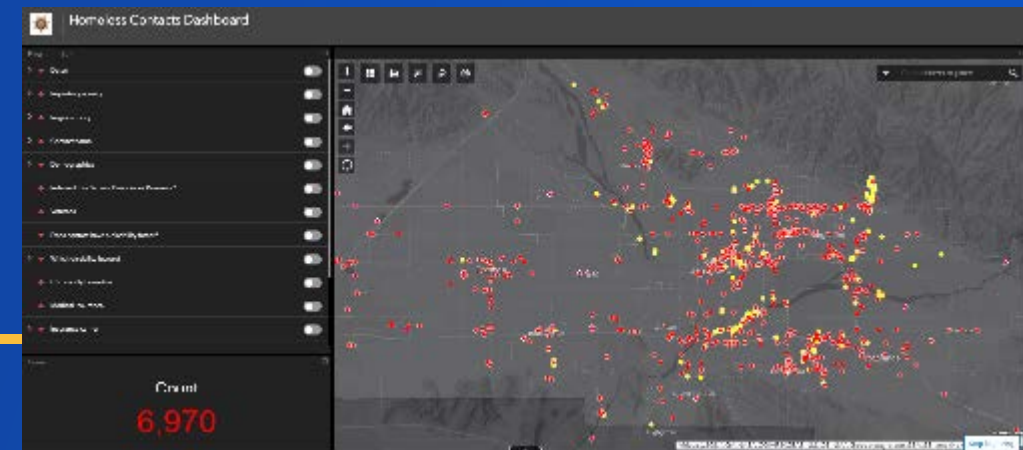
Homeless Contact & Encampment Reporting



KPI Dashboards



ArcGIS



Homeless Contact Search Tool for Service Providers

Homeless Contact Collaboration Group

Arizona Department of Emergency & Military Affairs

Shared Situational Awareness & Decision Support



Decision
Support

AZ ESF/RSF Operations Dashboard

SERRP



Governor's Briefing

Weather

ESF 4 - Firefighting DFFM

ESF 5 - Emergency Management DEMA

ESF 6 - Mass Care DEMA

ESF 7 - Logistics DEMA

ESF 8 - Health ADHS

ESF 9 - SAR DEMA



AZ Engines Supporting Out of States

35

Last update: 2 minutes ago

Individual Engine Assignment (Click to Zoom)

- Department: Avra Valley Fire District
Mob Date: 10/23/2019, 12:00 PM
Incident: OSC/SQF SUPPORT
- Department: Beaver Dam / Littlefield Fire District
Mob Date: 10/27/2019, 4:05 PM
Incident: 2019 OSC SUPPORT
- Department: Buckskin Fire District
Mob Date: 10/27/2019, 5:05 PM
Incident: 2019 OSC SUPPORT
- Department: Christopher-Kohl's Fire District
Mob Date: 10/27/2019, 5:00 PM
Incident: OSC/SQF SUPPORT
- Department: Concho Volunteer Fire Department
Mob Date: 10/27/2019, 4:45 PM
Incident: OSC/SQF SUPPORT
- Department: Corona De Tucson Volunteer Fire Department
Mob Date: 10/23/2019, 11:00 AM
Incident: CNF OSC SUPPORT
- Department: Elephant Head Volunteer Fire Department
Mob Date: 10/23/2019, 11:00 AM
Incident: CNF OSC SUPPORT

Last update: 2 minutes ago

DFFM

DFFM Resources

County

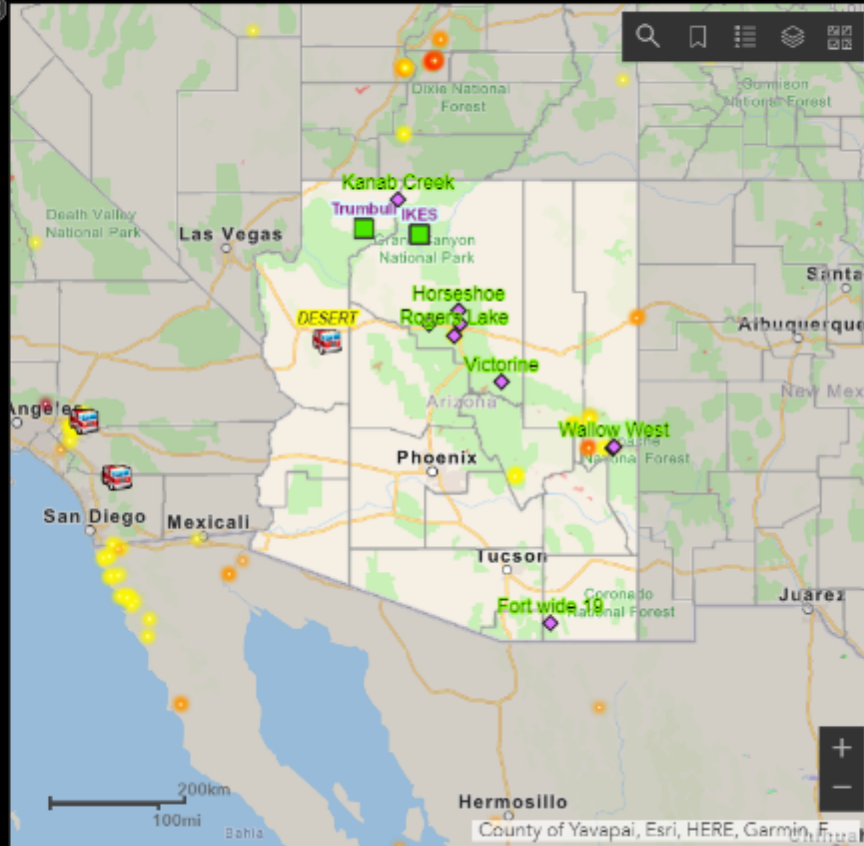
Chart

Map

Predictive Services

Drought

Fire Weather Outlook



WebEOC Fire Reporting

(Click Icon to Zoom)

No Significant Wildfires to Report

Initial Attacks (Click Point to Zoom)

DESERT:
0.1 Acres 11/4/2019, 4:00 PM
Discovery Date Mohave County

Prescribe Fires (Click Point to Zoom)

Horseshoe: 2,528 Acres
Agency: U.S Forest Service, Coconino National Forest
11/5/2019 Ignitation Date

Green Base: 460 Acres
Agency: U.S Forest Service, Kaibab National Forest

Last update: 2 minutes ago

Last update: 2 minutes ago

Type 1 Fires (National)

KINCADE: 77,758 Acres & 84% Contained

Last update: 2 minutes ago

Type 2 ICS Fires (National)

No Fires

Last update: 2 minutes ago

Type 1

ICS Fires

Type 2

Type 3

International Association of Fire Chiefs (IAFC)

Search & Rescue (SAR)

Operational
Agility



SAR Field Data Collection

38.977°N 76.487°W

contributors

USNG

18S UJ 7119 1532

Waypoint *

Victims

Hazards

Damage

Other

Victim Type

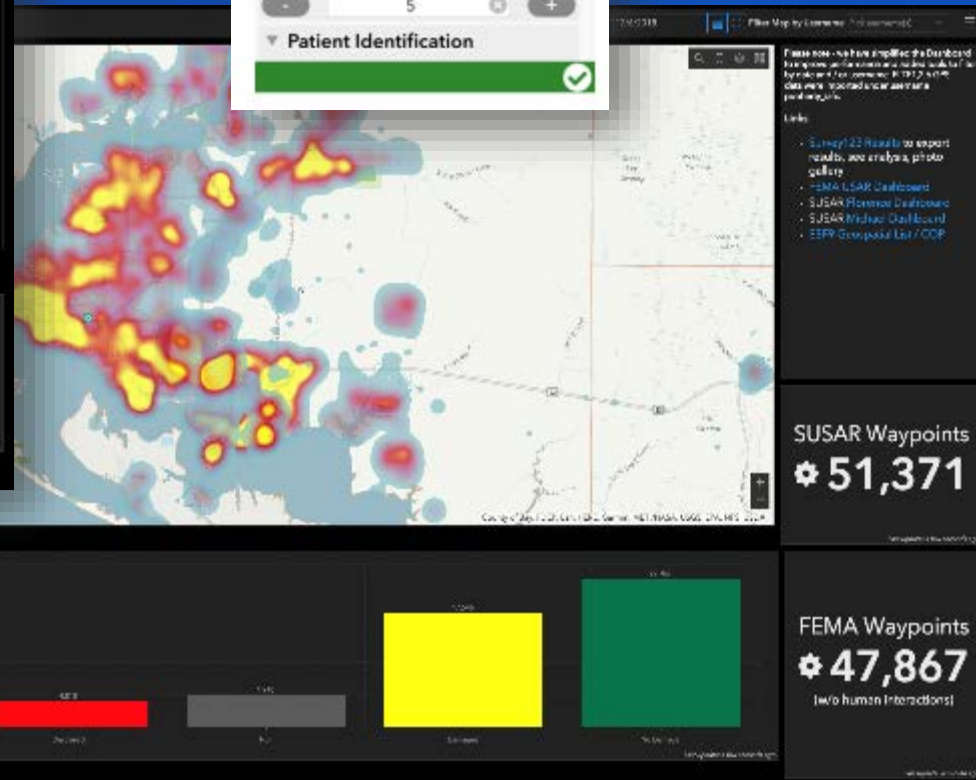
Evacuated

Victim Count

5

Patient Identification

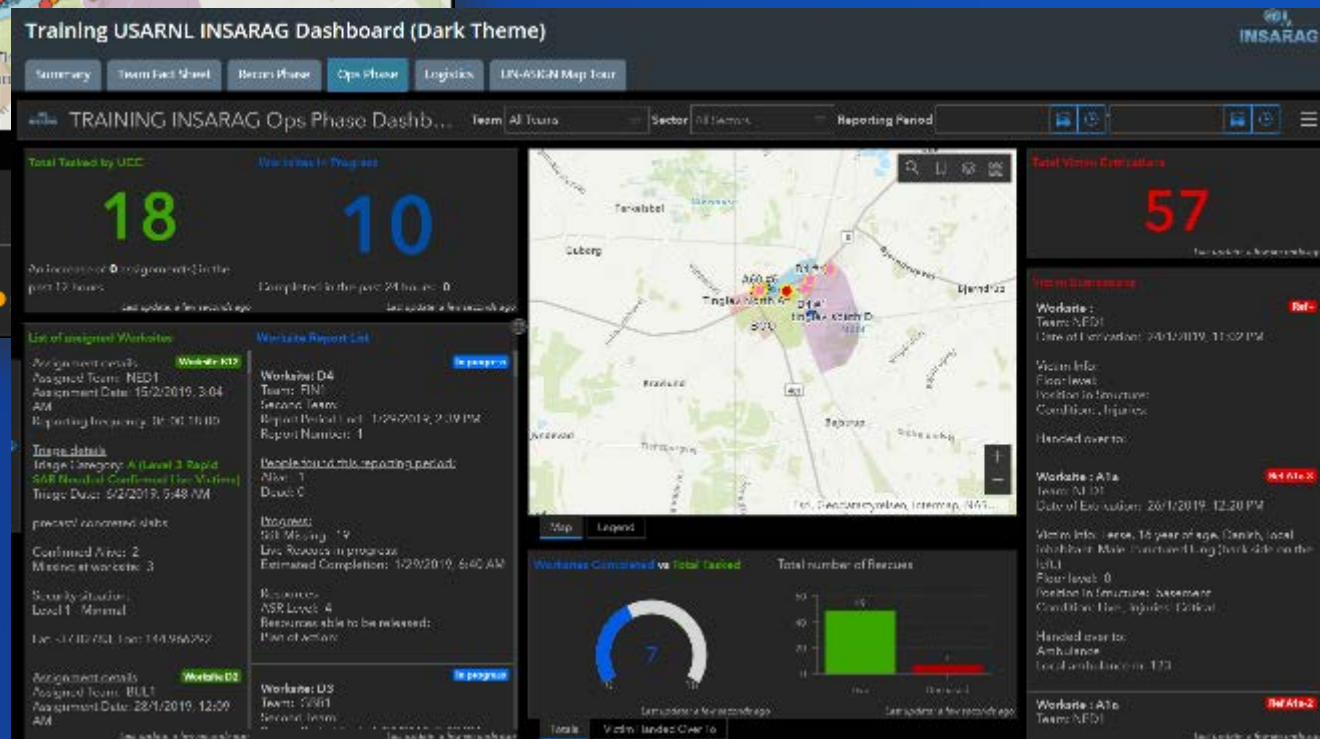
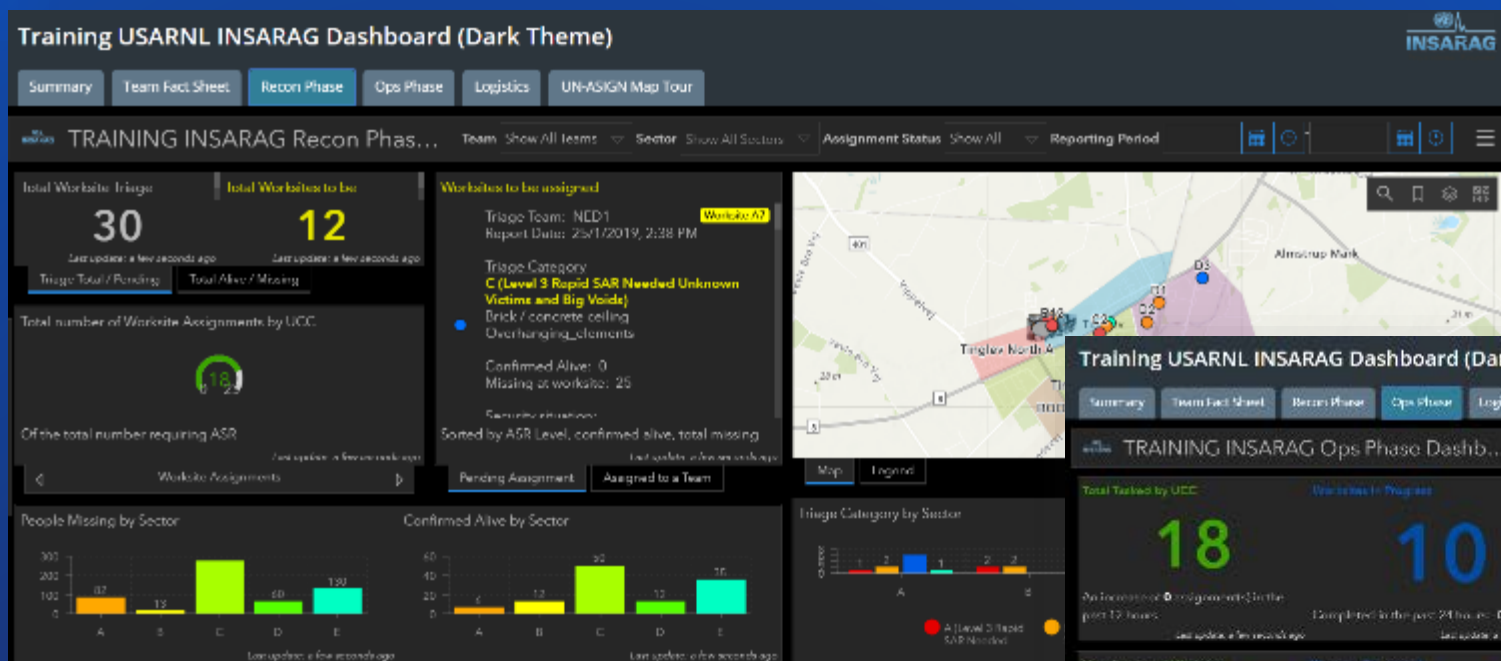
✓



Supporting global Search & Rescue (SAR)



Operational Agility





Technical Challenges

Legacy
technology

Staff with
training
needs

Poor public
facing content

Limited
exposure to
new tech

Unreliable
architecture



Technical Steps

Upgrade
to 10.7

Train staff on
ArcGIS Pro

Create a Hub
Premium site

Deploy
GeoEvent

Go to the
cloud



Or maybe these steps...

System
architecture

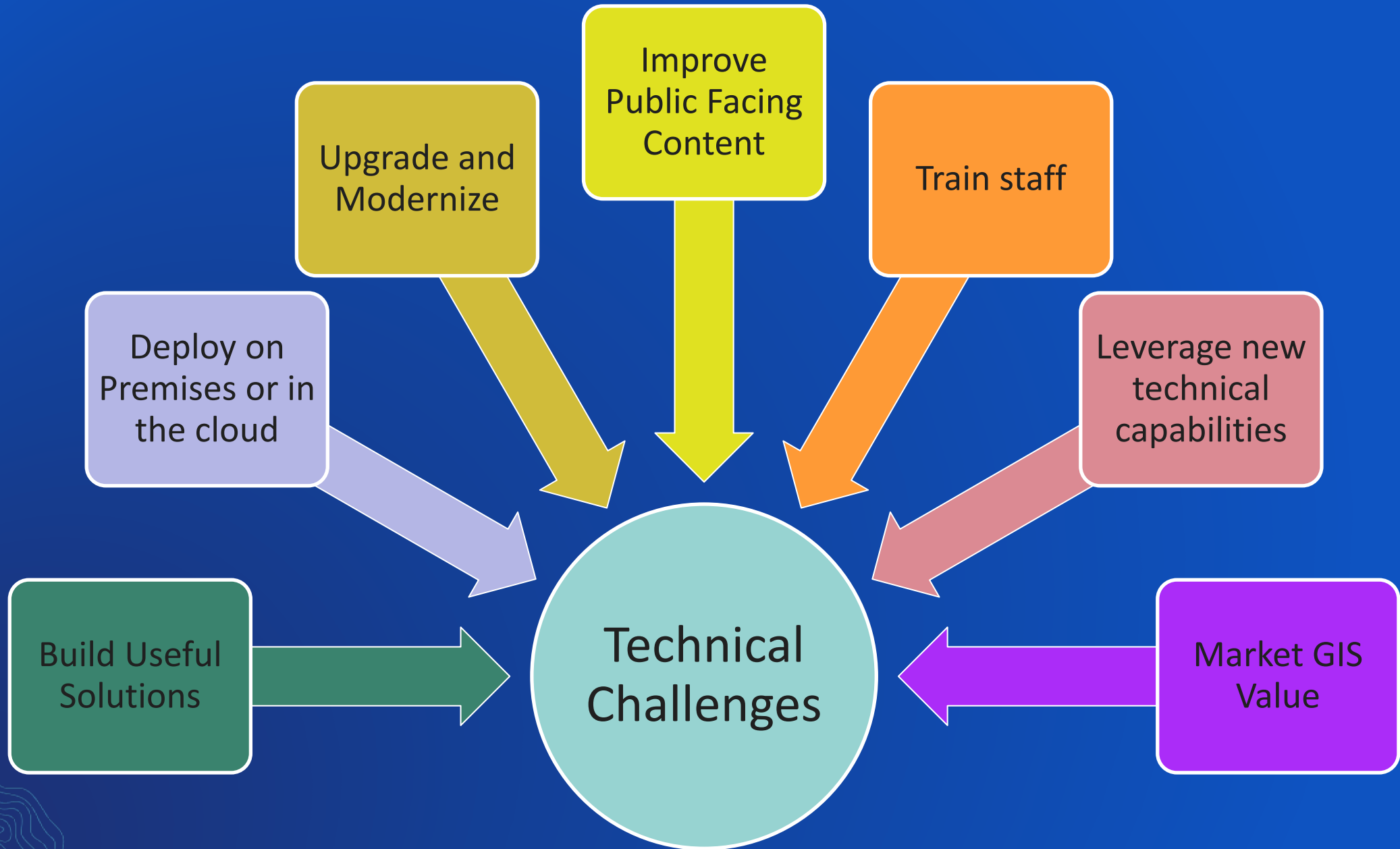
Train staff on
ArcGIS
Enterprise

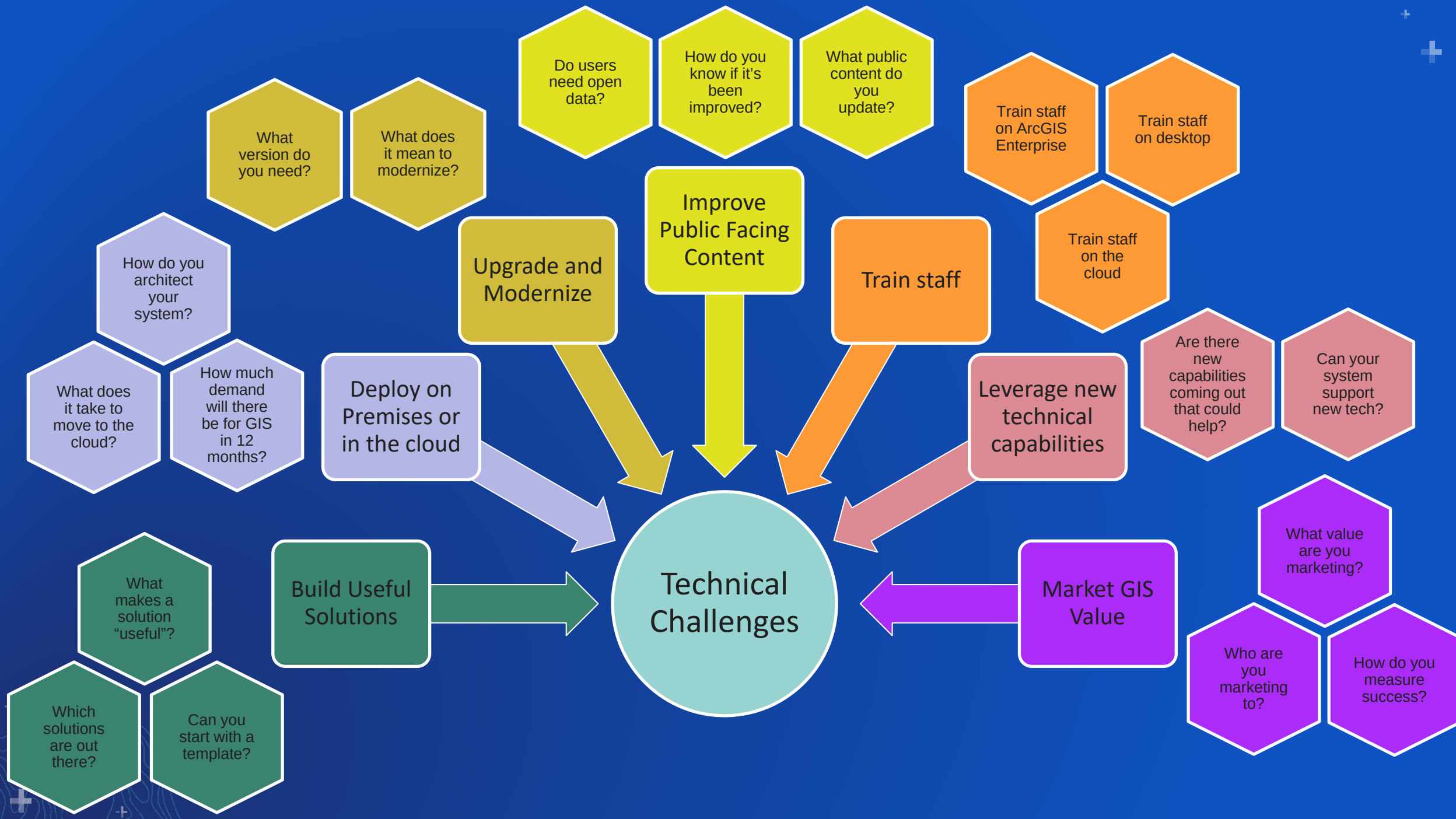
Upgrade
existing web
content

Deploy
Insights for
ArcGIS

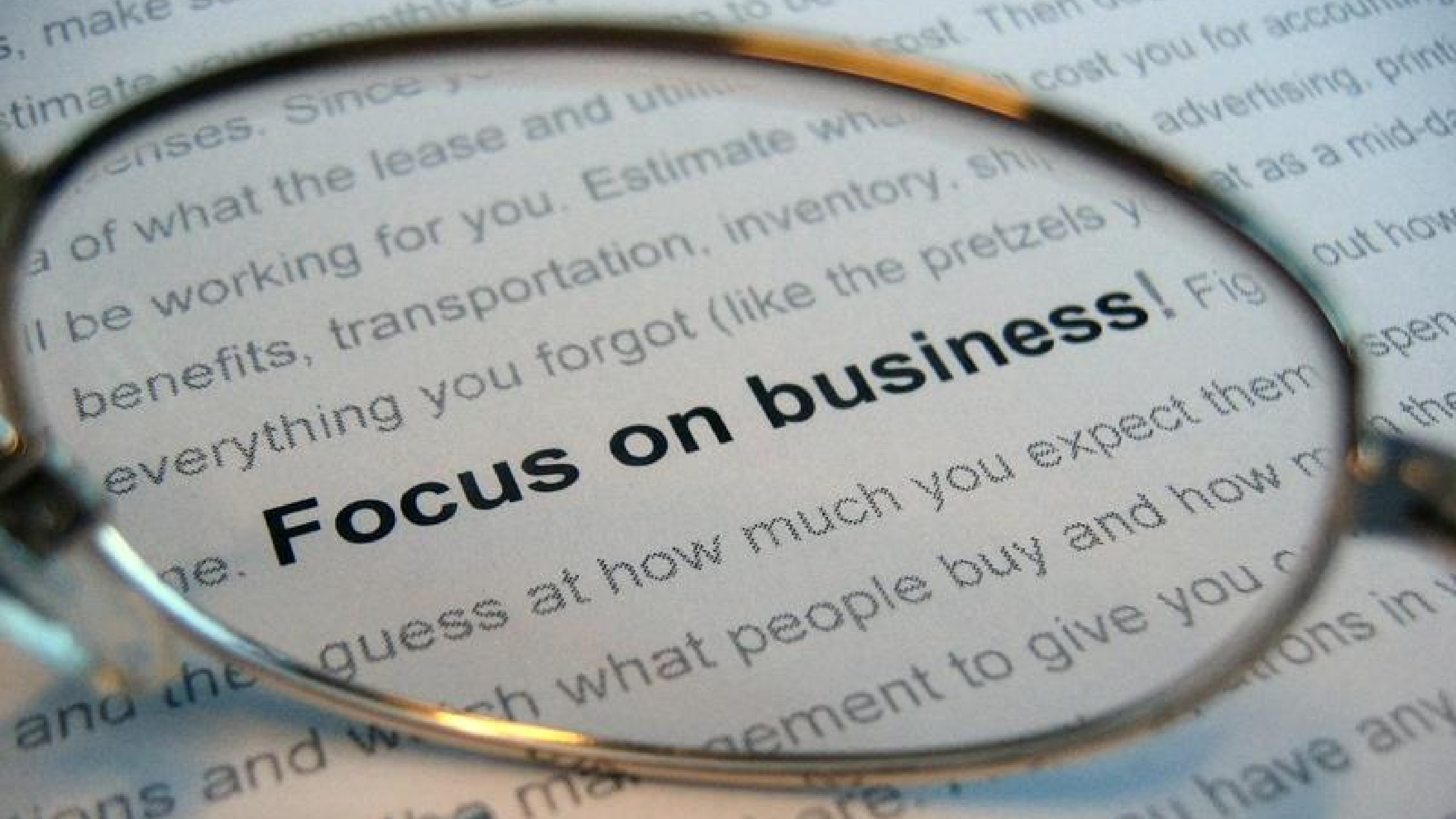
Rebuild On
Premises
System









A magnifying glass with a gold-colored frame is positioned over a document. The lens is centered on the bold text "Focus on business!". The background text is blurred but legible, discussing business expenses and accounting. The lighting is soft, and the focus is sharp on the magnified text.

Focus on business!

Assemble Your Team



Executive Sponsor

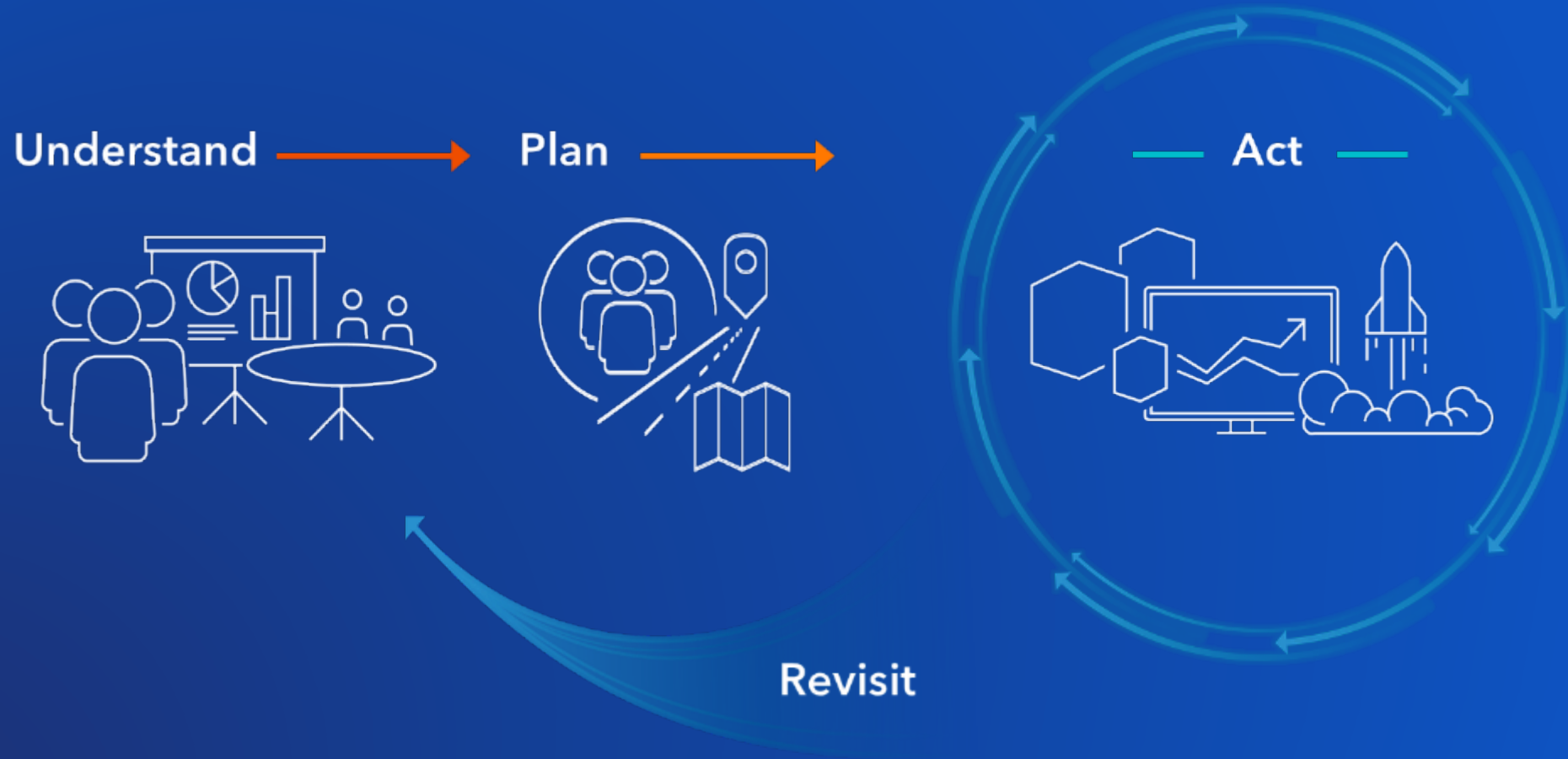


Champion



Technical
Leadership

Developing & Executing a Geospatial Strategy

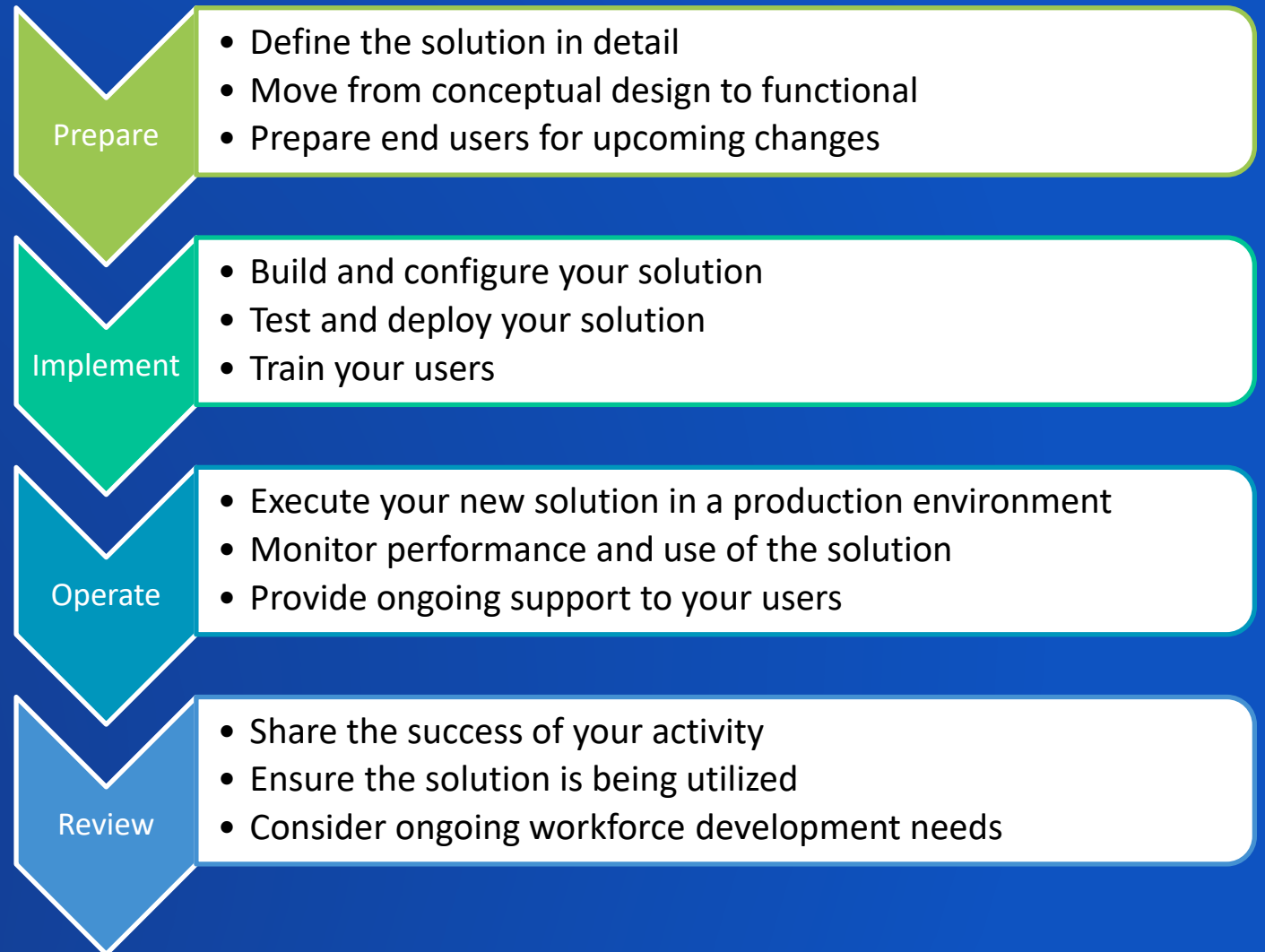


...Maximize Impact

Prioritization



Execute Incrementally



The New Normal will never be Normal

We need to see what others can't...

In this age of data, information and connectivity,

. . . even though we can quantify more of what was previously uncertain,

...it makes apparent how much more we don't know.

What is evident, is that change is happening more quickly and surprisingly...

...across multiple dimensions and scales than we ever thought possible.

We can no longer use the past as a reliable indicator of the future...

. . . and new risks and correlations are emerging...

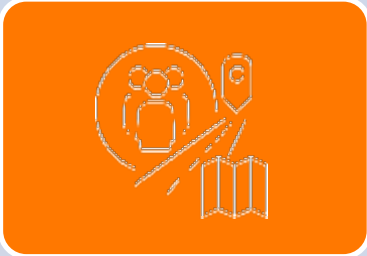
...in a way that we have not anticipated.

What can you do?



Understand

- Assemble your team
- Engage across your organization
- Articulate your organizations' goals and challenges



Plan

- Identify ways GIS can bring business value
- Create a plan that takes into account people, process, and technology
- Prioritize and sequence your work



Act

- Bring your solutions to life: prepare, implement, operate, and review each one
- Share your strategy and successes
- Revisit your strategy



Thank you!

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