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United Nations Group of Experts
on Geographical Names



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Addressing Data Challenges: Responding to Emergencies and Disasters Enhancing Global Resilience through Collaboration and Innovation

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International Strategies
Esri

Discussion Points

- Overview of GIS and the Geographic Approach
- Importance of the Geographic Approach in Responding to Emergencies and Disasters
- Data Challenges
- Call to Action
- Recommendations for Promoting Standardization



Addressing Emergencies and Disasters Requires We Consider All the Factors

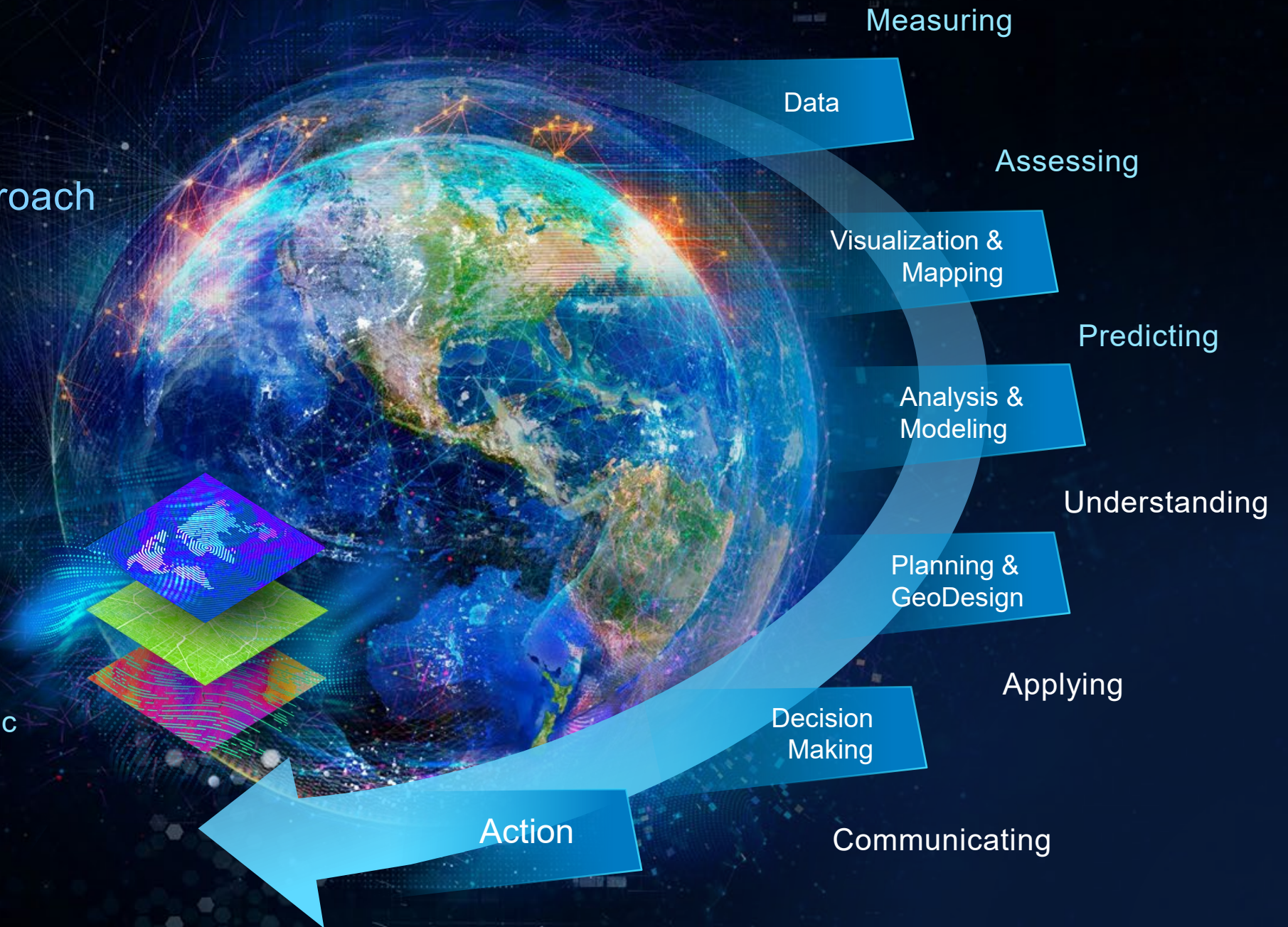


GIS

Enables The
Geographic Approach

Providing a Process
and Framework . . .

. . . For Applying Geographic
Knowledge Widely

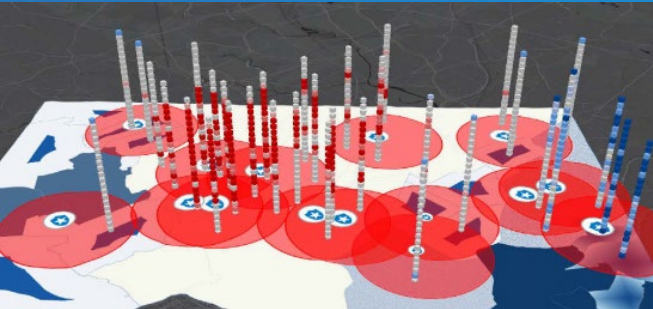
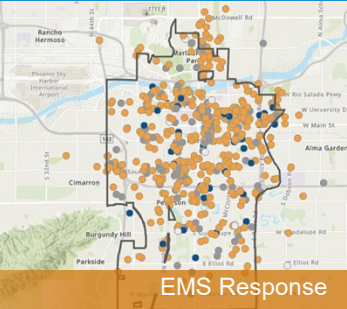
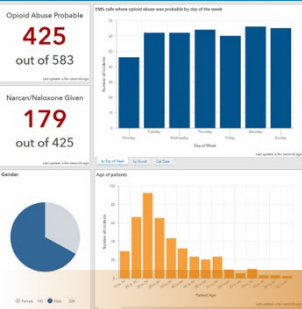
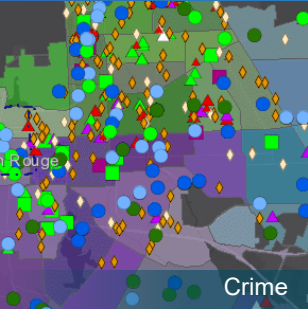


Importance of the Geographic Approach in Responding to Emergencies and Disasters

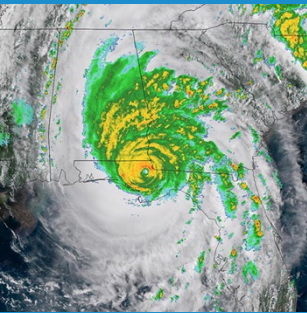
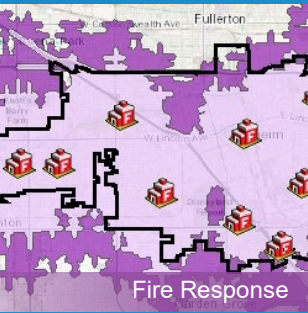
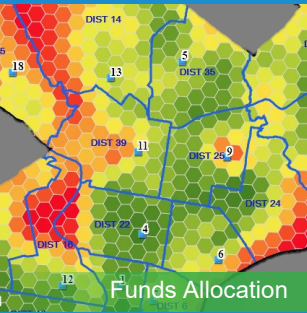
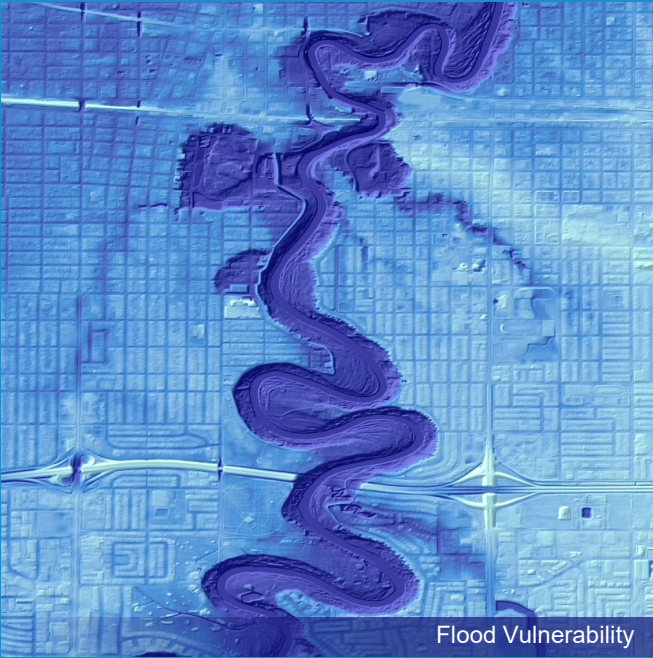


GIS | Public Safety & Disaster Response

Public Safety

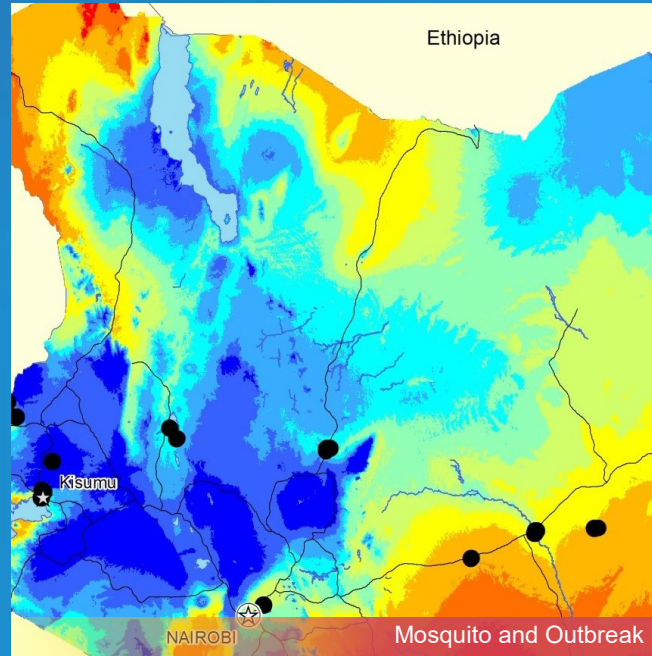
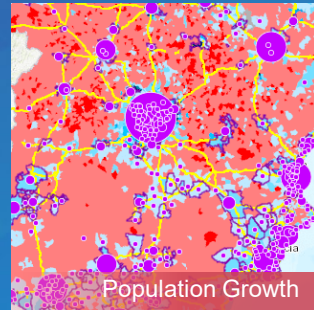


Disaster Response

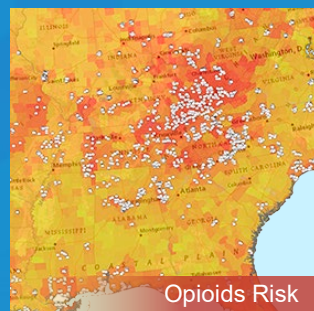
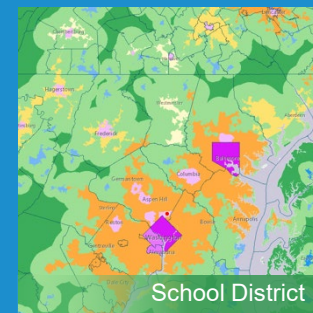


GIS | Demographics, Public Health, Education

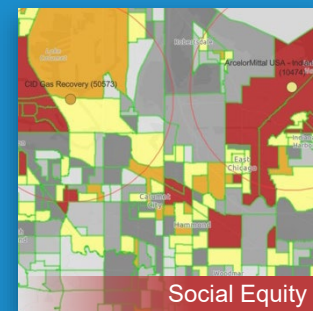
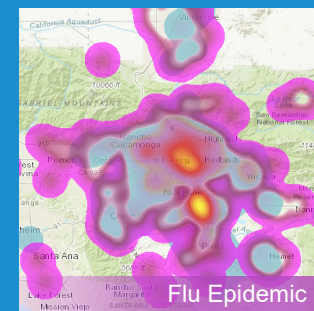
Demographics



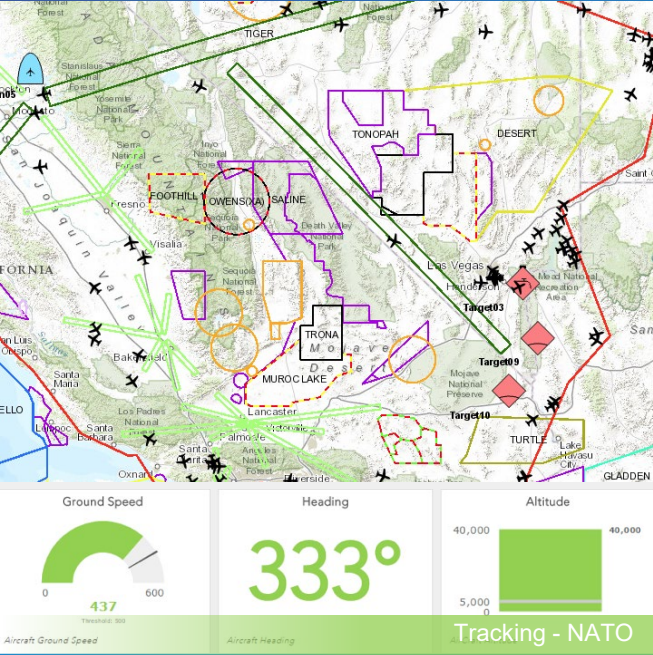
Education



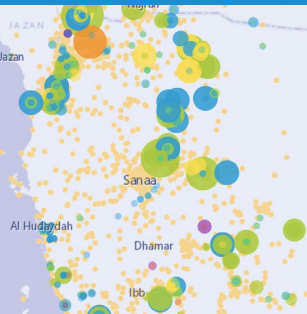
Public Health



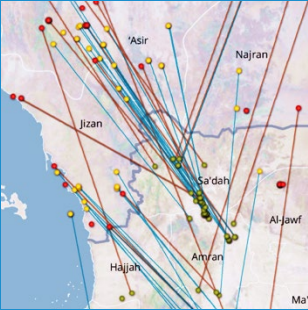
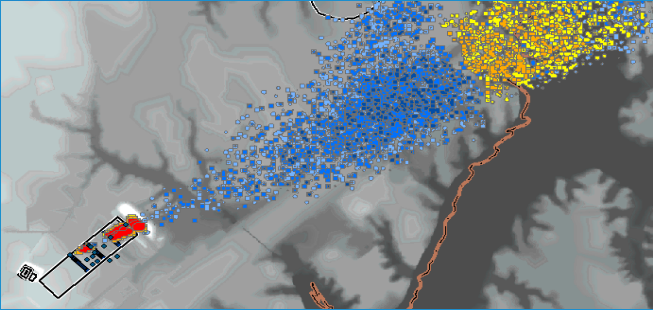
GIS | Civil Protection, Peacekeeping, & Humanitarian Response



Peacekeeping



Civil Protection



Humanitarian Assistance

GIS | a complete and integrated system

Solutions for the most common operational challenges



**Maintain
Situational
Awareness**



**Conduct
Damage
Assessment**

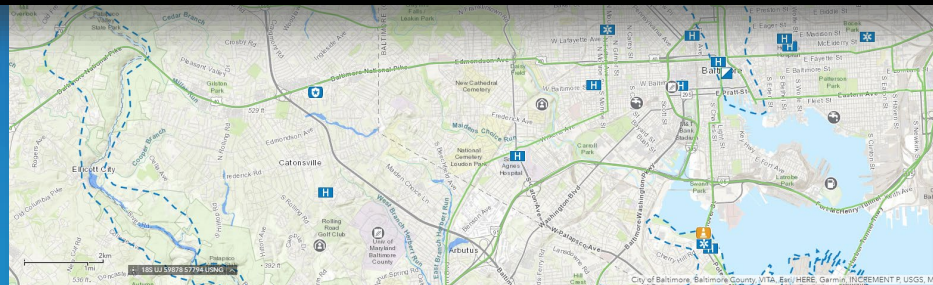
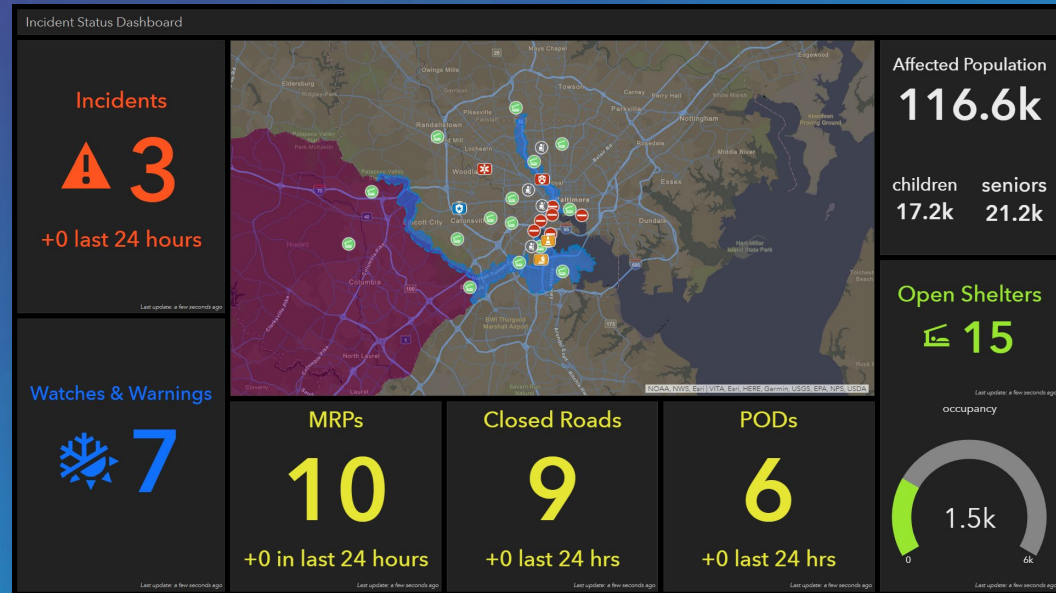


**Manage
Public
Information**

Maintain Situational Awareness

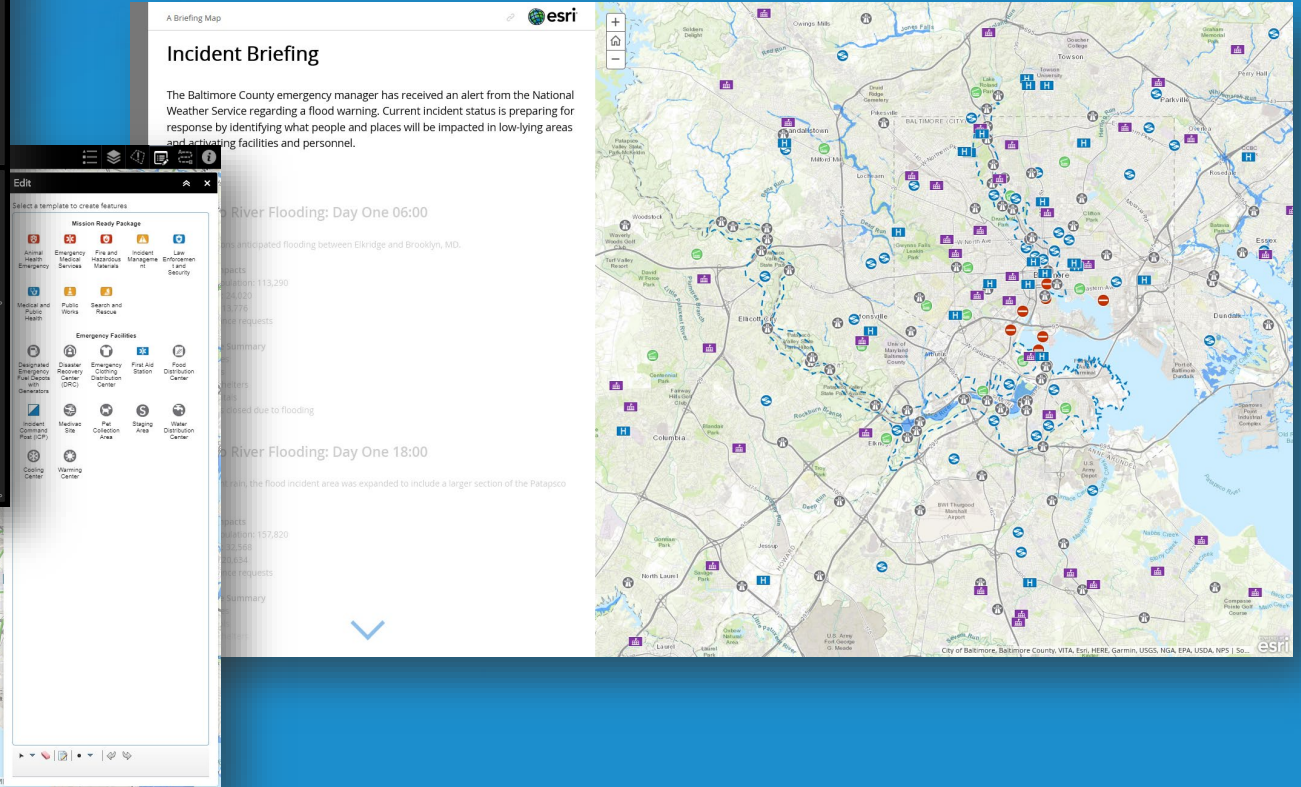
Monitor changing conditions. Put plans into action. Brief responding team in real-time.

Operations Dashboard



Operations Management

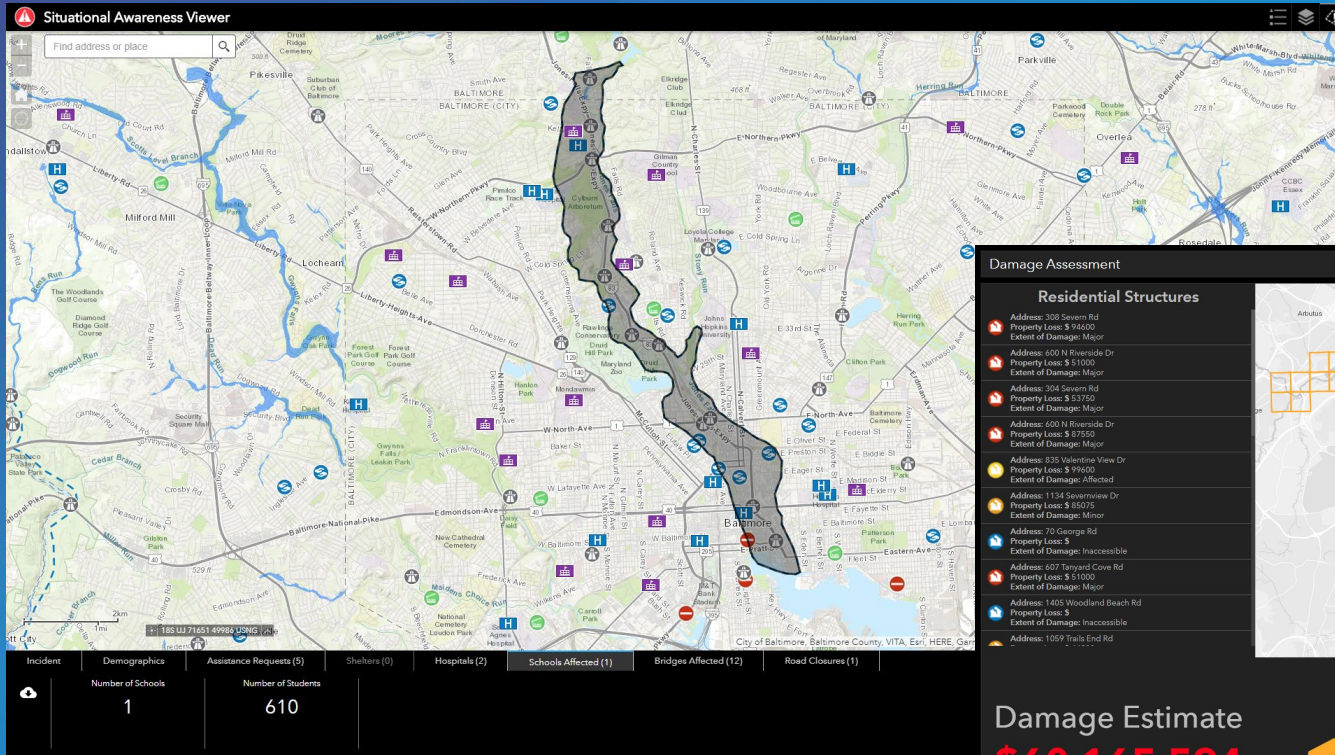
Operational Briefings



Anticipate your next move and make more informed decisions that can save lives and property.

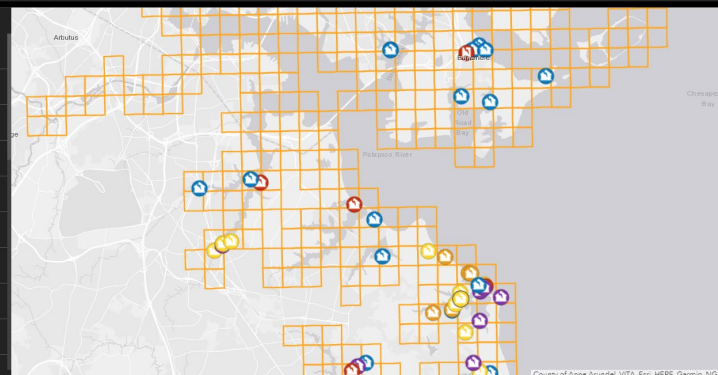
Conduct Damage Assessment

Understand potential impact. Conduct damage assessments. Monitor reporting thresholds for your disaster declaration.



Damage Assessment Collection & Reporting

- ### Damage Assessment
- #### Residential Structures
- Address: 308 Severn Rd
Property Loss: \$ 94600
Extent of Damage: Major
 - Address: 600 N Riverside Dr
Property Loss: \$ 51000
Extent of Damage: Major
 - Address: 304 Severn Rd
Property Loss: \$ 53750
Extent of Damage: Major
 - Address: 600 N Riverside Dr
Property Loss: \$ 37550
Extent of Damage: Major
 - Address: 835 Valentine View Dr
Property Loss: \$ 99600
Extent of Damage: Affected
 - Address: 1134 Severnview Dr
Property Loss: \$ 15075
Extent of Damage: Minor
 - Address: 70 George Rd
Property Loss: \$
Extent of Damage: Inaccessible
 - Address: 607 Tanyard Cove Rd
Property Loss: \$ 51000
Extent of Damage: Major
 - Address: 1405 Woodland Beach Rd
Property Loss: \$
Extent of Damage: Inaccessible
 - Address: 1059 Trails End Rd
Property Loss: \$
Extent of Damage: Inaccessible



Residential Buildings

Incident Number
What is the Incident Number?

Incident Name
What is the Incident Name?

Inspection Date Time
Date/Time of when the inspection occurred
April 30, 2018 12:29

Location
39°55'N 105°7'W ± 1289.33 m

USNG Coordinate
USNG Coordinate

Site ID
What is the Site ID?



Impact Analysis

With lives at risk and disaster recovery funds on the line, time is critical.

Manage Public Information

Disseminate critical information that raises awareness and drives action.

Earthquake Public Information Map

Find address or place

Imagery with Labels

Map description and metadata:

- Earthquake Public Information Map**
- This map displays continuously updated data from the USGS [Earthquakes](#) and [Shakemaps](#).
- It also features feeds from geo-tagged social media data from Twitter, YouTube, Instagram, and Webcams.travel. See the "Layers" tab to turn these layers on and off.
- For GIS and mapping support, contact the [Esri Disaster Response Program](#).
- esri Disaster Response
- Last modified 2/6/23, 8:21 AM
- 442,539 views.
- [More information](#)
- Bookmarks

Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community | ©201...

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GIS | supports efficient & holistic response to disasters



Why is Standardizing Names, Maps, and Data in the Emergency Response Important?

When it comes to emergency aid, having standardized information can make all the difference. Without it, response efforts can become disjointed and inefficient, leading to potentially disastrous outcomes e.g., duplication of efforts, gaps in coverage, and even conflicts between responders



Challenges in Emergency Aid without Standardized Information (1/3)

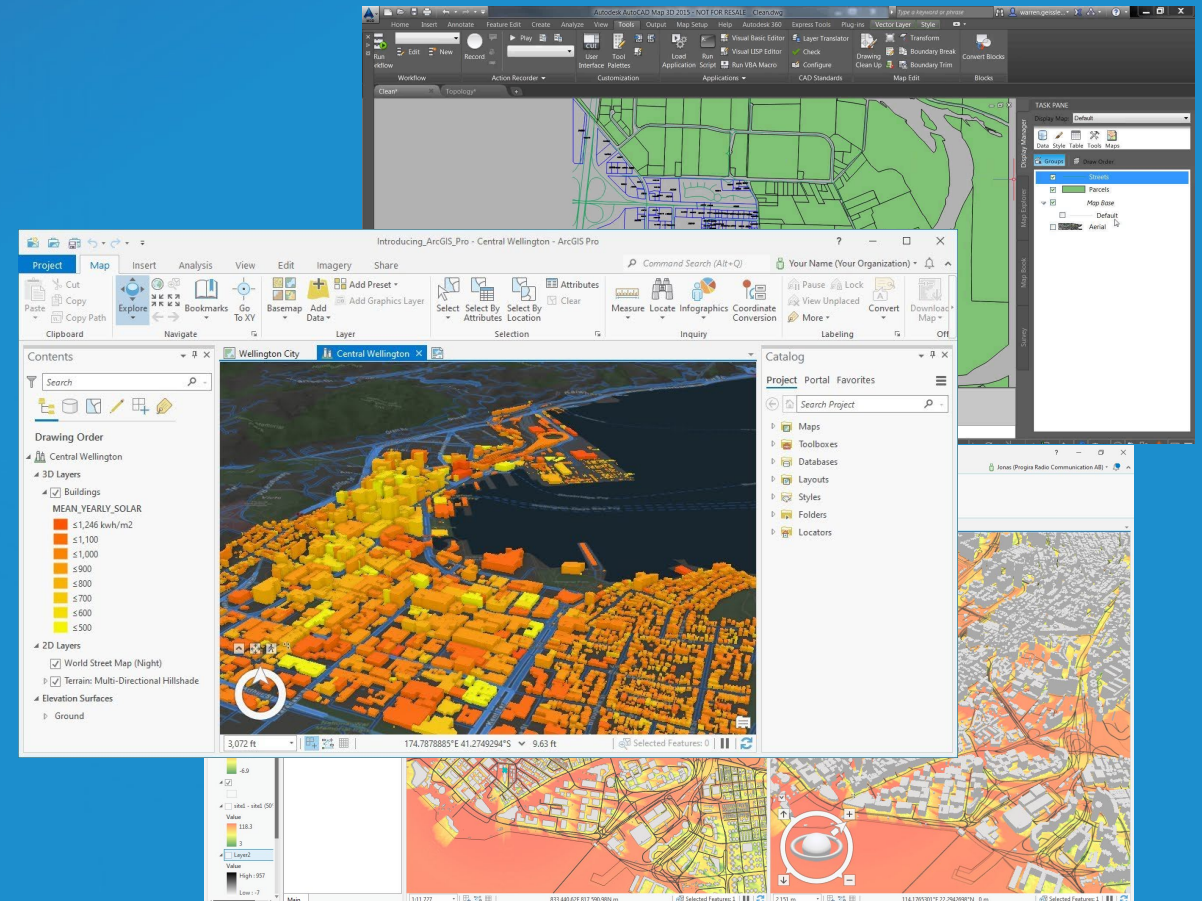
- Inconsistent geographical names can make it difficult for authorities to locate places on maps or GPS devices

While the 2010 Haiti earthquake, aid agencies and organizations rushed to provide assistance to those affected. However, the lack of standardized geographic names in Haiti made it difficult to coordinate aid efforts and deliver supplies to the right locations



Challenges in Emergency Aid without Standardized Information (3/3)

- Coordination challenges among aid organizations
 - GIS data can be stored in a variety of file formats, and if different organizations or agencies use different formats, it can be challenging to share data between them
 - GIS data is often organized using specific naming conventions, such as the use of standardized abbreviations or codes for different features. This can be challenging to communicate effectively about specific features or locations. For example, one organization may refer to a road as "Rd," while another uses "Road." This can lead to confusion and miscommunication, particularly in fast-paced emergency response situations.



Data Challenges



Data Challenges

- **Data Siloes**

- Across government – in many departments/ministries

- **Data Availability**

- Open data that is operational
- Authoritative sub-national boundaries
- Authoritative sub-national place names and gazetteers (geographic names)

- the Low and Middle Income Countries (LMIC)

1. Operational data resides with IGOs and NGOs – not with local authorities
2. Limited capacity of National Disaster Management Agencies (NDMA) to use geospatial information for a modern response

Data Needed for All Phases of the DRR lifecycle



- Current
- Authoritative
- Open/Accessible
- Metadata

Data Preparedness

Food and Agriculture Organization (FAO) of the United Nations



Food and Agriculture Organization
of the United Nations

| Data in Emergencies Hub



DIEM-Monitoring

DIEM-Impact

Map gallery

Resources

Data access

Where we work

Communication and outreach

FAQ

Contact us



Join us

Log in

🔍 Enter a keyword or keywords, such as "Liberia" or "Sierra Leone ques..."

The Food and Agriculture Organization of the United Nations (FAO) established the **Data in Emergencies (DIEM)** Hub in June 2021 to provide a regularly updated and highly accessible picture of food insecurity in fragile environments and to inform FAO's evidence-based programming.

DIEM – Data in Emergencies Hub
<https://data-in-emergencies.fao.org>

Humanitarian GIS Hub

Esri Humanitarian Solutions Team



Humanitarian GIS Hub



Need to know what GIS can do for your organisation?

Click here to explore how others have used ArcGIS to support their humanitarian operations. Resources here include Story Maps, blogs and other case studies on best practice.

GET INSPIRED



Want to learn how to solve your GIS challenges?

Click here to find GIS solutions and guidance for your specific use case. Resources include easily deployable and reconfigurable templates, learning tracks and how-to documents.

BUILD YOUR CAPACITY



Looking for GIS services to support a specific operation?

Click here to discover geospatial services implemented by partners to support on-going operations. This section includes information on Esri's Disaster Response Programme.

SUPPORT YOUR RESPONSE

<https://explore-humanitarian.hub.arcgis.com/>

Call to Action



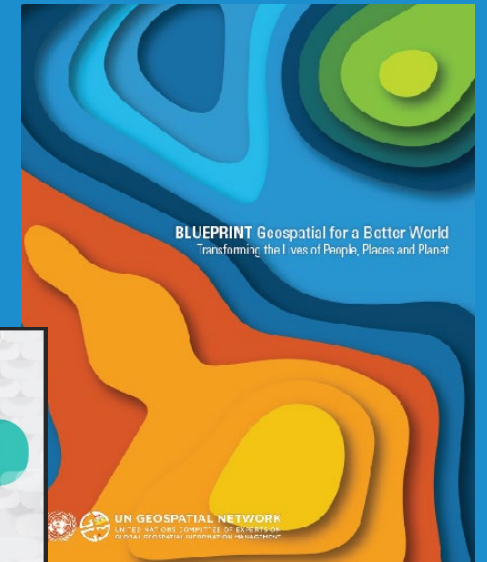
The Global Community needs to...

- Member States: Establish a **Geospatial Data Strategy**

...including authoritative data for **geographic names** that are open and available for operational use during emergencies and disasters

- International Community: Foster the **capacity of NDMAs to use geospatial data effectively**

UN Geospatial
Data Strategy



UN ESCWA
Data Strategy

Recommendations for Promoting Standardization in Emergency Aid

Adoption of standardized naming conventions

- Encourage the use of globally recognized naming conventions
- Advocate for the integration of local knowledge and language in standardized names
- Development and sharing of accurate, up-to-date maps, This will require:
 - Having an up-to-date maps and introduce the state-of-the-art technologies that facilitates data updates
 - Encourage data sharing approach among different organization by defining sharing polices and data standards
 - Promote the idea of Open-Data portals



esri

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to Make a Difference*

Advancing GIS & The Geographic Approach

Engineering and Science Focused

Growing, Strong and Impactful

*Promoting Geographic Thinking
... at a Global Scale*