



# ArcGIS for Emergency Management

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# Agenda

- Introduction
- Solution Offering
- What's Next?
- Your Feedback





# A common experience....

## 2004

### Florida EOC GIS Data, Functions and Business Process Related to 2004 Hurricane Season

The majority of GIS activity ESRI was involved in followed a "process all request - at all cost" workflow. This is typical during disaster or unplanned event. Over time the EOC GIS staff and participating volunteers were able to identify the most frequently requested requests and maps requested by the Emergency Command Function teams (ECFT's). Requests and map products were delivered via a weekly stream of information collected from each of the 15 ECFT's. The data stream was managed using the following table:

1. Status-Metric by County:
  - a) Shelter occupancy counts
    - 3 out of 10 shelters open with 126 occupants
  - b) Emergency Status
    - By percent, illustrate maps created to depict non-evacuated, newly evacuated, and majority not-recovered
  - c) School district closings
  - d) Special needs - status, requirements
  - e) Disaster designations by county
  - f) Number of homes damaged
  - g) Number of businesses damaged
  - h) Other
2. Dynamic point location information:
  - a) Mobile shelter locations
  - b) Water and gas distribution and availability
  - c) National Guard Resources
    - Gas stations
    - Damage assessment
  - d) Qualitative statistics
3. Static point location information

### State EOC GIS during Hurricane Frances

5th, 2004 from Christian who got a call from Chris

g. GIS Manager of the State of Florida CDC GIS, Dave Mack, who had called me and said that the GIS team was not able to respond to the needs of the

luded a "process all request - at all cost" workflow operational report is and maps were made by the one function teams. Most of the requests were, information from each of the 15 ECFT's. The data

was Group 5 out of 10 shelters open with 126

eg. Map to indicate red yellow or green indicating recovery, and still majority of county affected

requirements

by county

- How requests were handled
- How requests data that changes
- 1. Home kitchens
- 2. Water & gas
- 3. National Guard Resources
- Generation
- Damage assessment
- 4. Conference rooms
- How requests that come change
- 1. Water tank meters
- 2. Shelters & their status
- Other data
- Background

## 2005

Final Draft, 8/18/2005

### Introduction

This report outlines the business process of Emergency GIS during the hurricane season. It provides information and data that is used to create maps and reports for the emergency response.

### Problem

The problem was that the GIS team was not able to respond to the needs of the ECFT's. This was due to a lack of resources and a lack of coordination between the GIS team and the ECFT's. The GIS team was not able to provide the information that the ECFT's needed in a timely manner.

### Solution

The solution was to create a "process all request - at all cost" workflow. This workflow was designed to ensure that all requests were processed and that the GIS team was able to provide the information that the ECFT's needed in a timely manner.

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## Hurricane Sandy



## Southeast Tornadoes

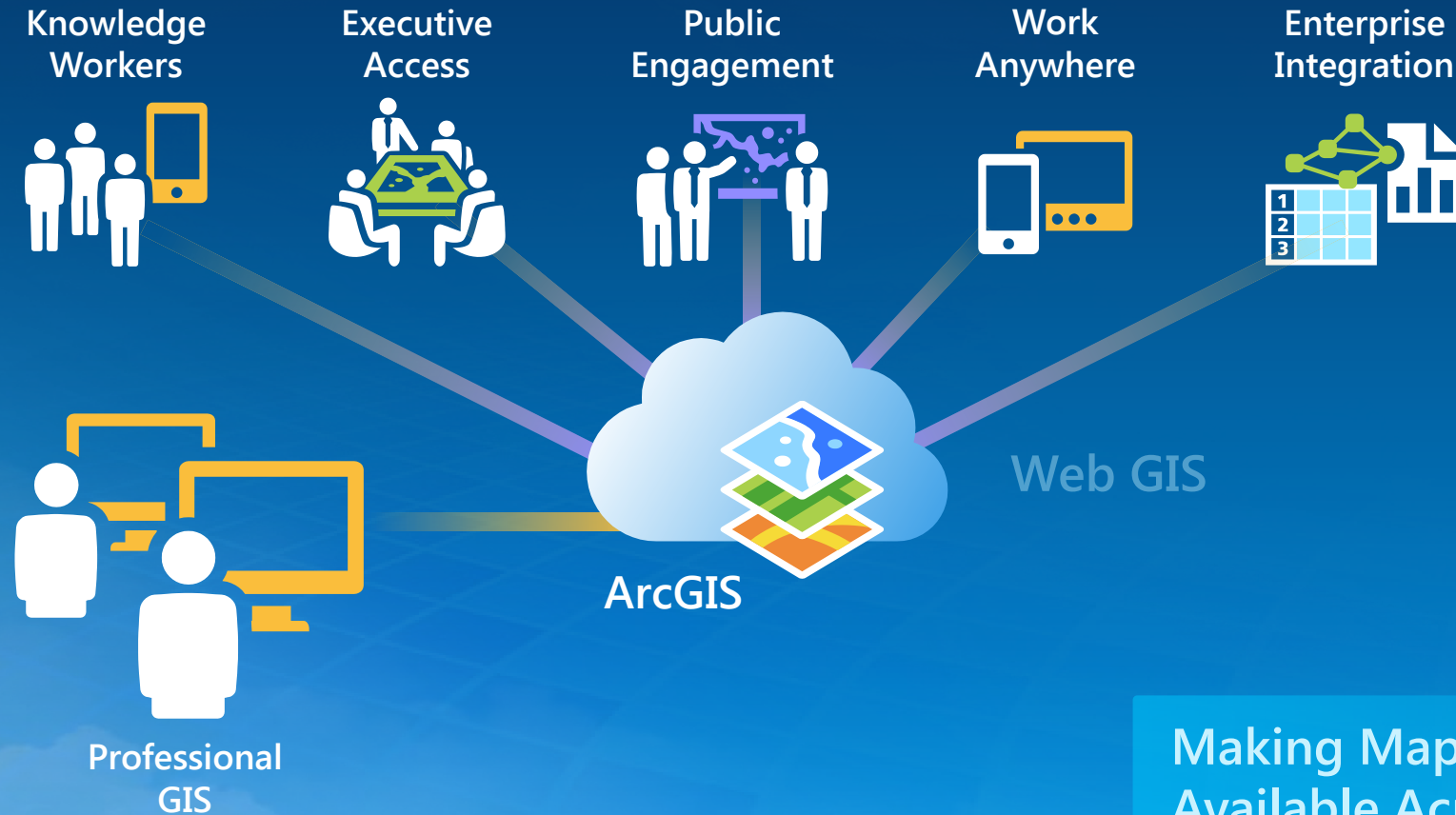


## Colorado Floods



- Standard Set of Base Maps
- Hard Copy Map Production
- Mobile Damage Assessment
- Common Operational Picture
- Public Access/Communication Apps

# ArcGIS as a Platform



Making Mapping and GIS  
Available Across Your Organization

*Transforming the Role of GIS*

# EXTENDING THE PLATFORM WITH SOLUTIONS

*Ready to use workflows and apps that make implementation easier and sustainable.*



ArcGIS for Emergency Management



**Our Mission**

**To help you....**

## Preparedness

- Special Event Planning
- Flood Response Plans
- Floodplain Inquiry
- Emergency Assistance
- Evacuation Zones
- My Hazard Info
- Data Aggregation Tools



## Recovery

- Damage Assessment
- Citizen Service Request



## Response

- Citizen Service Request
- Emergency Management Maps
- Public Information Map
- Local Impact Map
- Road Closures
- Damage Assessment
- CAMEO Tools
- Incident Briefing
- Health and Safety Reports
- Damage Assessment Dashboard



## GIS/IT

- ArcGIS Online Model Organization
- Briefing Book
- Service Catalog
- Data Aggregation Tools
- Parcels
- Addresses
- Crowd Sourcing



# ArcGIS for Emergency Management



# Demos





The Community

It's not just about the technology

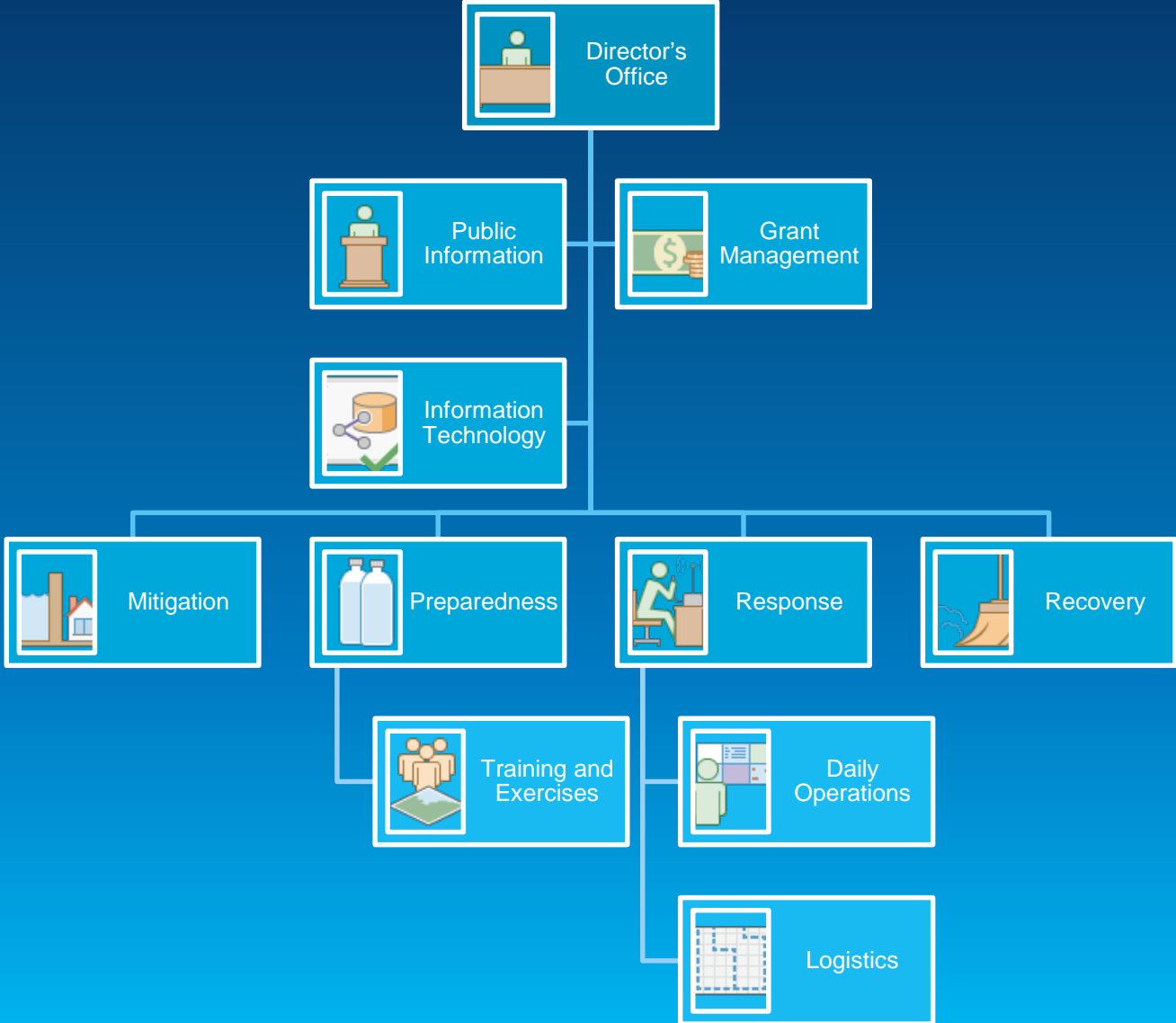
# What's Coming in Emergency Management

- **Situational Awareness**
  - Series of maps & apps
- **Hazard Mitigation**
  - Series of maps & apps to support Assessing Risk, Vulnerability, and Mitigation Planning scenarios
- **Pre-Incident Planning**
  - Redesign to incorporate off-line/online updates on site
  - Updates/enhancements to support Emergency Management & Law Enforcement
- **Special Event Planning**
  - Redesign to support online workflows before, during, after event
  - Incorporate Pre-Incident layers
  - Updates/enhancements to support Emergency Management & Law Enforcement
- **Pre-Staging Parcel data**
  - Tools in Pro to help local emergency managers prepare for impending events



# Emergency Management Platform Offering

# Typical Emergency Management Organizational Chart



# Emergency Management Workflows

Daily Situational Awareness Briefing

Change Awareness, Notification and potential impacts

## Daily Operations (blue sky)

Incident assessment and understanding

IA/PA Status

Return to normalcy

## Recovery

Joint Damage Assessment

Debris Removal

Brief on agency activities

## Director's Office

Activity Awareness

Threats Identify repeat offenders

Hazards

## Mitigation

Track and fund projects

Projects to reduce risk

Media

## Public Information

Public

Develop and maintain plans

## Preparedness

Risk Assessment

Maintain Situational Awareness

Coordinate operations

Evacuation

Field Data Collection

Sheltering

Reentry

## Response

Initial Damage Assessment

CIKR Restoration

Preliminary Damage Assessment

Project tracking

## Grants

Awards

Grant management

Access

Activation

## IT

Governance

Synthetic Exercises / Training

## Training & Exercises

Exercise AAR Development

## Standard Platform Deployment:

### Technology:

- ArcGIS Online Subscription
- ArcGIS Desktop
- Credits

### Services:

- ArcGIS Online Launch Kit for Emergency Management

## Advanced Platform Deployment:

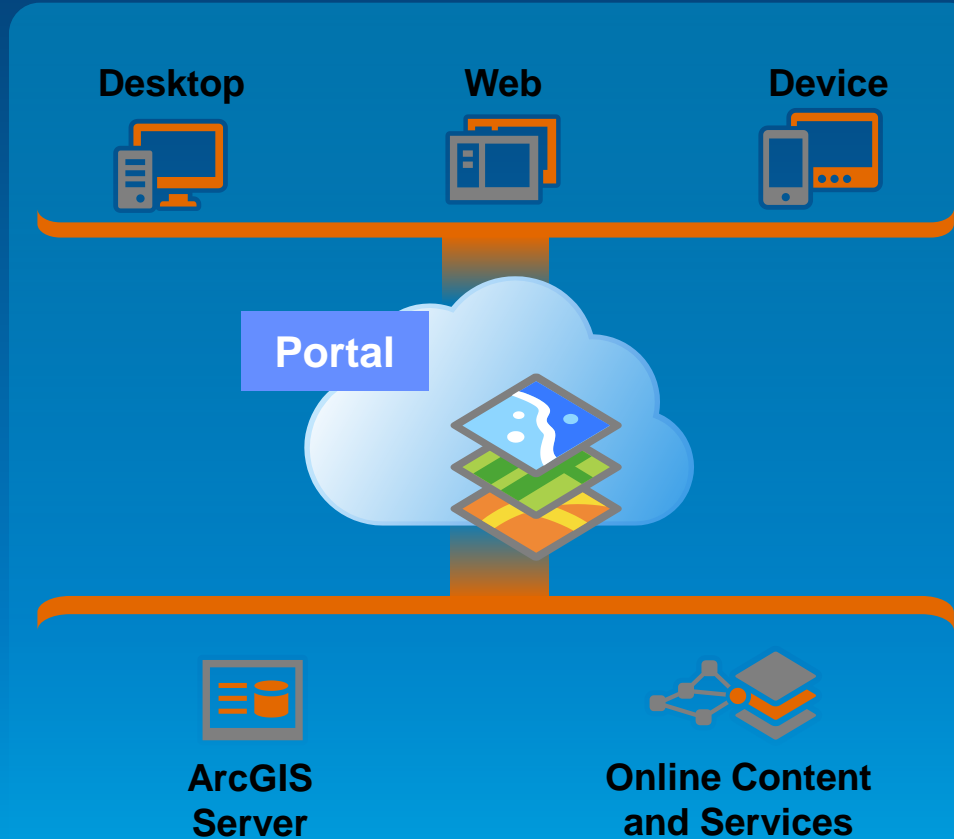
### Technology:

- Portal for ArcGIS
- ArcGIS for Server
- Extensions for Server
- ArcGIS Online Subscription
- ArcGIS Desktop
- Credits

### Services:

- ArcGIS Online Launch Kit for Emergency Management
- Portal for ArcGIS Jumpstart Kit
- ArcGIS for Server Jumpstart Kit
- Enterprise GIS Health Check
- Managed Services
- Data Review Workshop
- Ongoing – EEAP Support

## Emergency Management Platform Offering- Standard Platform Offering



## Launch Kit for Emergency Management:

What you get:

1. **AGOL Organization Configuration**– Install and configure components of Esri’s commercial off-the-shelf software to enable the platform.
2. **Foundational Emergency Management Info Product Configuration** – Configure and share priority information products and apps for Emergency Management stakeholders and the public. This includes advice on how to maintain products over time.
  - Overview of Hazards Briefing Book
  - Special Events Plan
  - Watch Officer Dashboard
  - Situational Awareness Briefing
  - Situational Awareness Presentation
  - Incident Map
  - Initial Damage Assessment
  - Public Information Map
3. **Technology Transfer**– Review value of information products and recommend next steps for additional information products.
  - Building story maps to support briefings and for public engagement
  - ArcGIS Platform functionality primer for GIS analysts

# Emergency Management Offering – IOC

## Mitigation:

Information Product(s):

- Overview of Hazards Briefing Book

Technology:

- Story Map Journal

Services:

- Configure web maps and Story Map Journal

## Preparedness:

Information Product(s):

- Special Events Planning Map
- Special Events Operations Dashboard

Technology:

- Web map
- Operations Dashboard

Services:

- Operationalize planning information and configure

## Daily Operations (blue sky):

Information Product(s):

- Watch Officer Dashboard
- Situational Awareness Briefing
- Situational Awareness Presentation

Technology:

- Operations Dashboard
- Story Map Journal
- Web map presentation mode

Services:

- Configure information products

- ArcGIS Desktop
- Operations Dashboard
- Esri Maps for Office

### Desktop



- Story Map Journal
- Public Information Map

### Web



- Collector for ArcGIS
- Explorer for ArcGIS

### Device



## Portal



### ArcGIS Server



### Online Content and Services

## Response:

Information Product(s):

- Incident Map
- Initial Damage Assessment Web Map (for Collector)
- Initial Damage Assessment Operations Dashboard

Technology:

- Collector
- Operations Dashboard

Services:

- Configure information products

## Public Information:

Information Product(s):

- Public Information Map

Technology:

- Public Information Map

Services:

- Building story maps to support briefings and for public engagement





# Esri Disaster Response Program

# Esri Disaster Response Program

[www.esri.com/disaster](http://www.esri.com/disaster)



- **Global response**
- **Corporate citizenship**
- **Support affected organizations**

DRP provides  
[www.esri.com/disaster](http://www.esri.com/disaster)



- Software, data, maps
- Expertise/Remote support
  - Premium tech support
- On-site help

The screenshot shows the Esri Disaster Response Program website. At the top, there is a navigation bar with the Esri logo and links for Industries, Products, Support & Services, About, and Community. Below this is a green banner with the text "Esri Disaster Response Program" and a sub-menu with "Main" and "GIS for Emergency Management". The main content area is titled "Help when you need it most" and includes a paragraph about Esri's 24x7 support. Below this is a section titled "Request assistance and monitor the following event types:" with four image-based categories: Hurricanes & Cyclones, Wildfires, Flooding, and Severe Weather. The bottom section is divided into "Recent Incidents" (listing events like Napa Earthquake, Ebola Outbreak, etc.) and "GIS Resources" (with links to explore the program in ArcGIS Online). On the right side, there is a "Tweets" section showing three tweets from @EsriDRP, including one about a wildfire in California and another about a rainstorm in the north-central US.

# Standard sites / products (aka “dial tone services”)

[disasterresponse.maps.arcgis.com](https://disasterresponse.maps.arcgis.com)

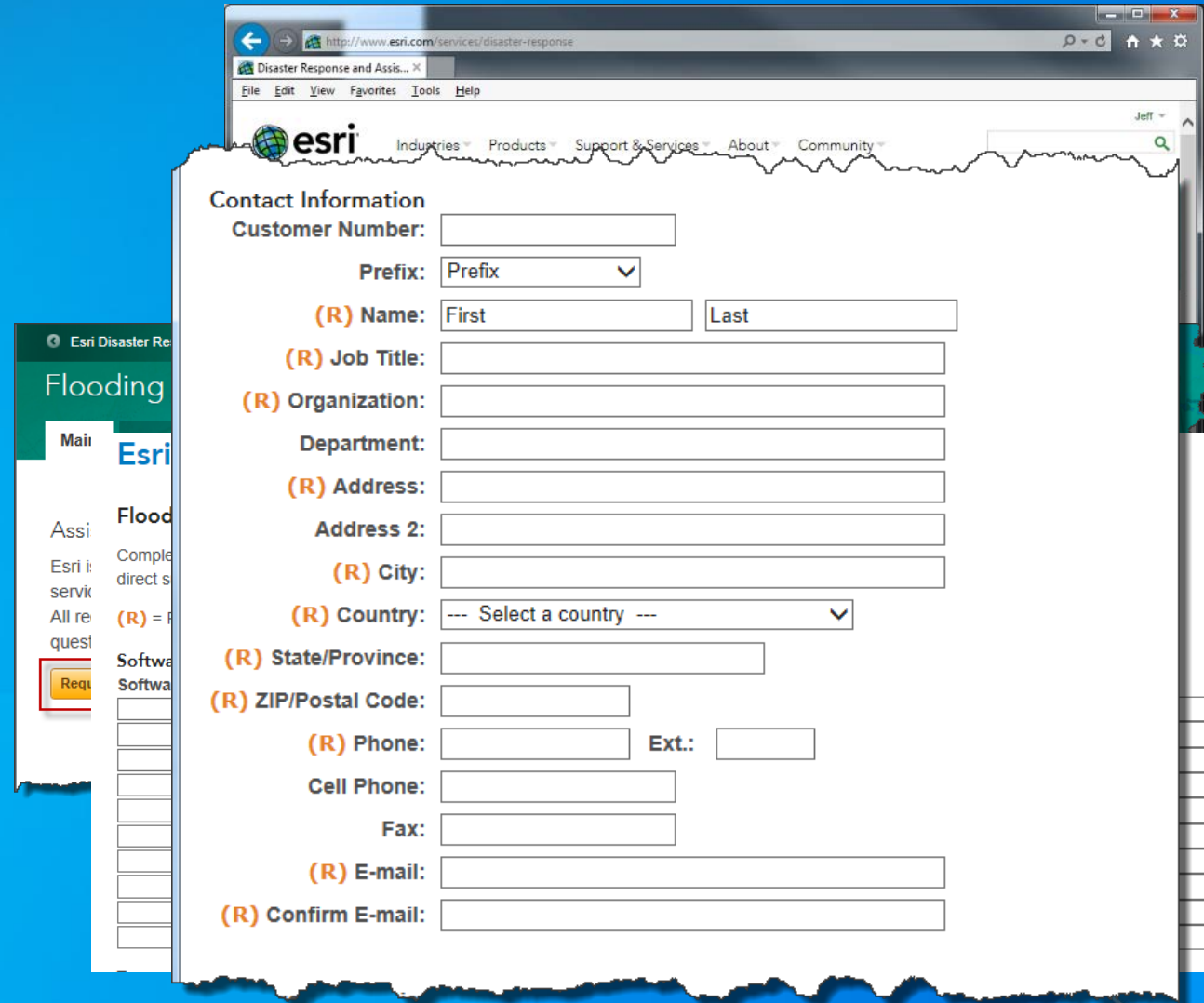


- ArcGIS Online for organization account
- Live feeds
- Apps
  - Public information maps
  - Impact summary maps
  - Example web maps
- Open data

A screenshot of the Esri Disaster Response website homepage. The page features a navigation bar with links for HOME, GALLERY, MAP, SCENE, and GROUPS, along with a search bar and a "Sign In" button. The main content area includes a large hero image of emergency responders in front of a military aircraft, with four smaller map thumbnails below it: "Severe Weather Public Information Map", "Wildfire Public Information Map", "US Flooding Public Information Map", and "Earthquake Public Information Map". Below the maps is a section titled "Help when you need it most" with a paragraph of text. Further down is a section titled "Explore our content" with five icons representing "Public Information Maps", "Examples", "Web Map Templates", "Documents", and "Data (Live Feeds)". At the bottom, there are two buttons: "Request Assistance" and "Open Data", followed by social media icons for Esri Disaster Response and the text "ArcGIS for Emergency Management | Emergency Management Industry Page".

# How to make a request?

- Pick your Disaster Type
- Click the “Request Assistance Form”
- Fill out the form
  - Contact details
  - Request
    - Software
    - Data
    - Technical support and project services



## Top ten information products

1. **Public Information Map**
2. **Impact Summary Map**
3. **Story Map Tour**
4. **Pre & Post Event Imagery**
5. **Mobile Data Collection**
6. **Planning Maps**
7. **Situational Awareness**
8. **Information Sharing**
9. **Briefing Presentation**
10. **Story Map Journal**

# Thank You



<http://solutions.arcgis.com/emergency-management>



<https://www.linkedin.com/groups?home=&gid=6724973>



@ArcGISforEM



<http://esri.github.com>

**Thank you...**

- **Please fill out the session survey:**

**Offering ID: 1745**

**Online – [www.esri.com/ucsessionsurveys](http://www.esri.com/ucsessionsurveys)**

**Paper – pick up and put in drop box**

**UC App**





Understanding our world.