Deploying Core Operational Information with Web GIS

National Geospatial Preparedness Summit

December 4, 2017

National Alliance for Public Safety GIS (NAPSG) Foundation

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NAPSG Foundation

Goals and Objectives

Overview of the standardized framework for Core Operational Information relevant across all hazards. Through this training you will:

- Learn technical workflows and best practices
- Gain access to a catalog of open data for use in creating geospatial decision support tools
- Develop a web GIS application that applies the standardized framework

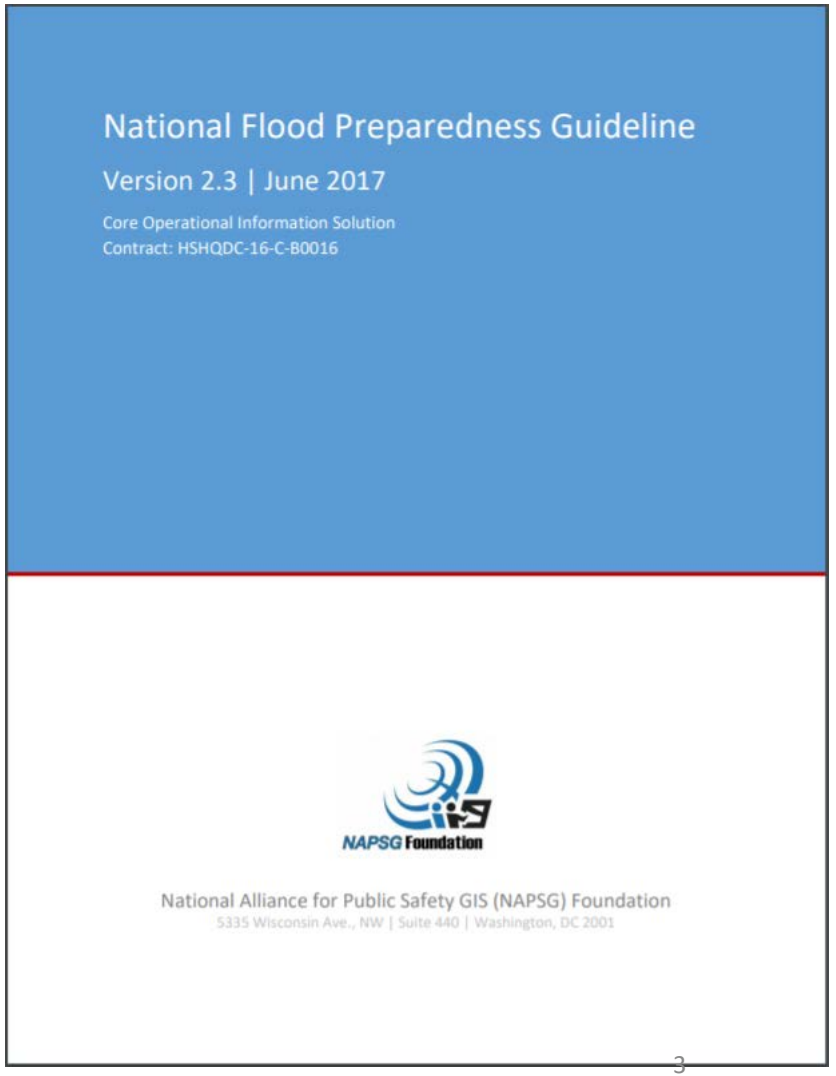
**** While flood related examples are cited throughout the guideline and this session, the framework applies across all hazards ****

Background

- Core Operation Information evolved following work with first responders across the country to develop the National Flood Preparedness Guideline.

- Series of workshops funded through DHS Science & Technology directorate to help the public safety community prepare for, respond to, and recover from flood disasters.

- 2 Regional pilots projects served to validate and refine the Guideline.



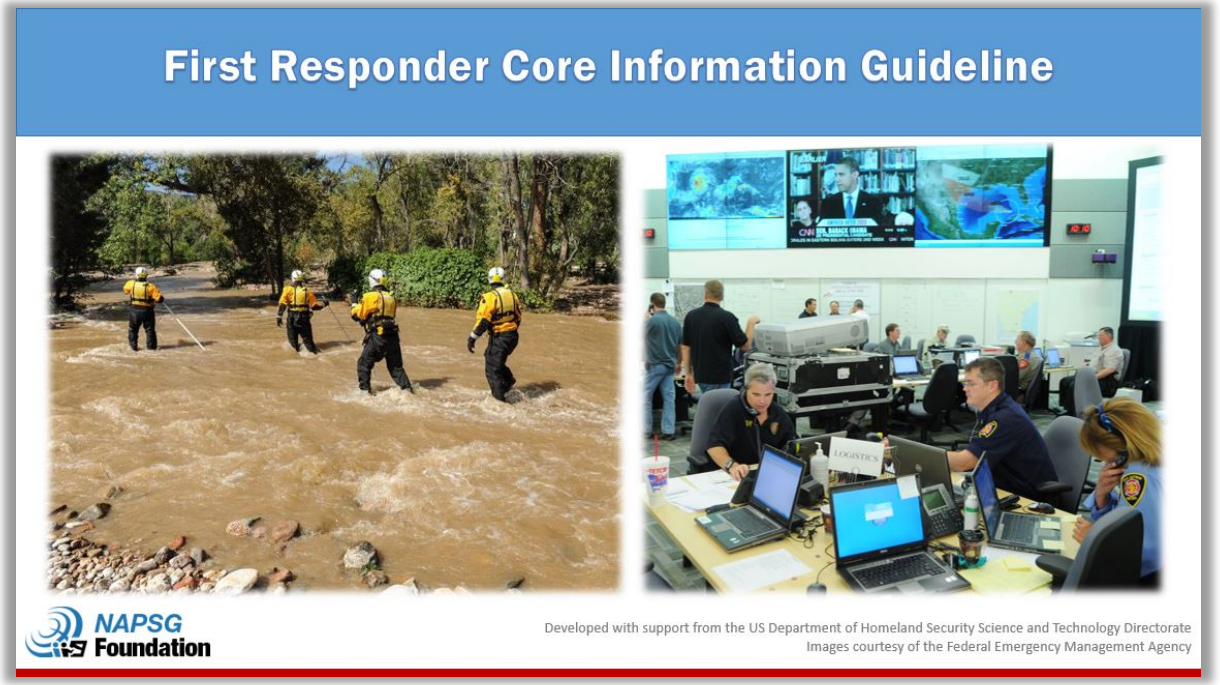
Produced with support from the US Department of Homeland Security Science and Technology Directorate, agreement number HSHQDC-16-C-B0016.

Flood Preparedness Pilot Outcomes

- Guideline Addressed:
  - First Responders: Key challenges often faced by flood-prone communities
    - Improved Alerting and Warning
    - Resource Management and Coordination
    - Common Reference Grid for Operations
    - Faster Information Delivery to Decision Makers
    - Increased Trust and Confidence in Data
    - Information Management and Overload
  - GIS / IT Supports Staff: Priority Information Needs from Preparedness to Recovery
    - Key workflows and information needs of first responders
    - Common data needs and sources

Flood Preparedness Pilot Outcomes

1. **First Responder Core Information Guideline**
   - Interactive guideline to provide first responders and decision makers with a standardized framework for Core Operational Information, regardless of hazard.
   - Aligns the key decision points with essential elements of information and supporting data requirements for supporting effective decision making in disasters.
   - By design, this guideline supports flexible, scalable, and practical implementation.



https://arcg.is/u8Kji

Flood Preparedness Pilot Outcomes

2. GIS Technical Implementation Guidance

- A companion to the First Responder Core Information Guideline for Flood Events

- Describes more technical workflows and best practices for supporting operators and decision makers through all phases of a disaster.

Flood Preparedness Pilot Outcomes

3. Core Operational Information

What are the Core Information Needs of Decision Makers from Readiness – Recovery

- A standardize framework of core operational information
- Supports both planning and operations across hazards and agencies.
- Is flexible and technology agnostic

	Preparedness (0)	Readiness (1)	Response (2)	Recovery (3)
	"Blue Skies"	**72-Hour Forecast - Operational Period I**	**Operational Period I – Life-saving Complete**	**Damage Assessment – Lifeline / Community Restoration**
Core Info Need (Hazard)	Where is flooding potential the greatest?	Where can we expect the most precipitation?	Where did we receive the most precipitation?	Are there any future forecasted events?
Geospatial Information	National Flood Hazard Layer (FEMA)	72-Hour Precipitation Forecast (NOAA NDFD), Weather watches and warnings (NWS)	Stream gauges (USGS, local), Rain Gauges	Short-term and long-term watches and warnings (NWS)
Core Info Need (Impacts)	Where are the most vulnerable communities? Lifelines?	Which rivers and are most likely to be impacted?	Where are the areas of greatest concern for life safety?	Where are the communities and lifelines that need the most support?
Geospatial Information	Social Vulnerability Index (CDC), Lifelines (HIFLD Open Data)	National Water Model (OWP), Short-term and long-term watches and warnings (NWS), Local rain and river gauges.	Geo-enabled 911/311 systems, crowdsourcing, first responders, remote sensing	Information collected in Response Phase + preliminary damage assessment
Core Info Need (Resources)	What are our trigger points or thresholds for action?	Will we have the resources we need?	What resources do we have / need to mobilize for life safety?	What resources do we have / need to mobilize for recovery?
Geospatial Information	Historic events and working with local hydrologists to determine thresholds	Resource Inventory	Mutual aid system(s), National Shelter System	Mutual aid system(s)

Hazard Data Shown is for Flood Example

Exercise 1:

Fill in data sources for your local jurisdiction

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Geospatial Information				


GIS Technical Implementation Guidance
Technical guidance for GIS staff to implement the First Responder Core Information Guideline.

Group Discussion: Enhance Solutions using Core Operational Information

1. Review Core Operational Information Framework
   - What information did you add to your sheet?
   - …
   - …

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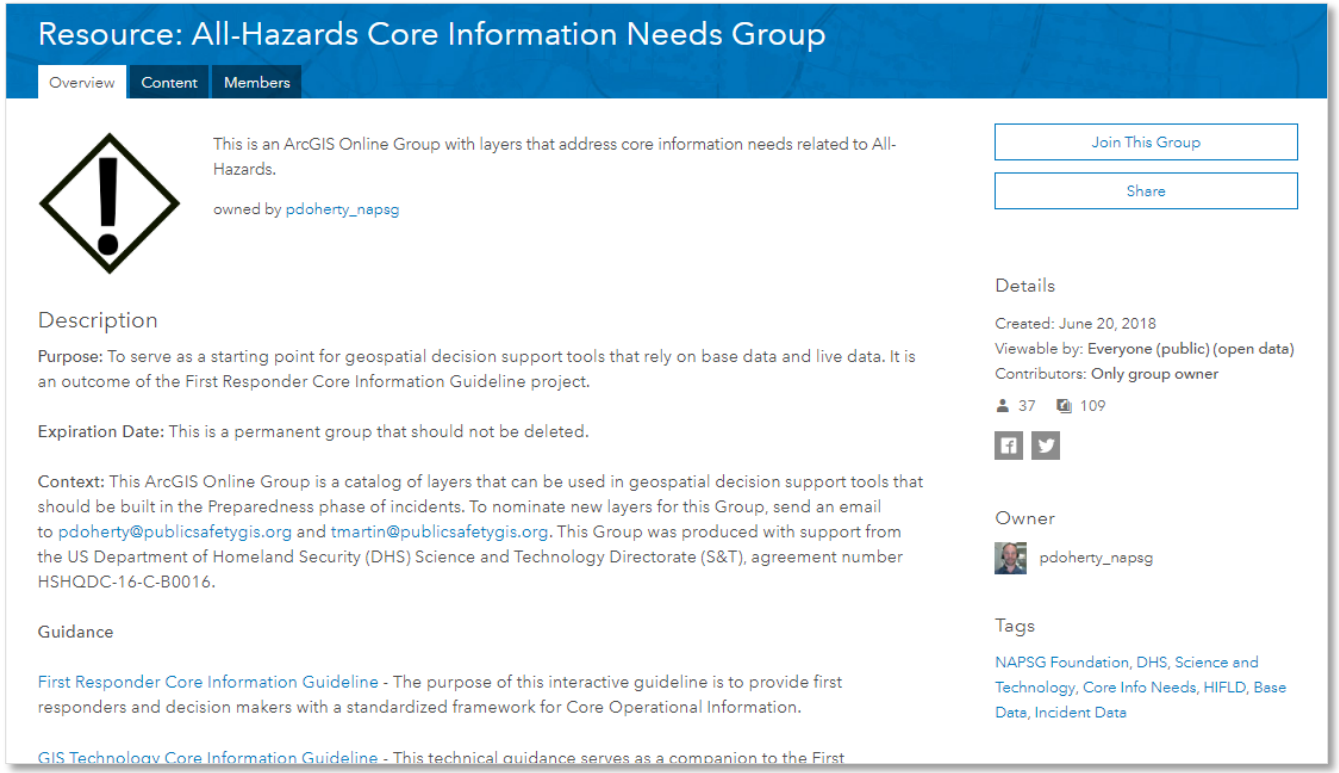
Geospatial Information				

Group Discussion: Enhance Solutions using Core Operational Information

2. Review the AGOL Group
   - Are there any resources you were not aware of?
   - Are there any that are missing?
   - …
   - …



ArcGIS Online Group

Exercise: Enhance Solutions using Core Operational Information

1. Enhance an Esri Solution
   - How would you use the Core Operational Framework to enhance the Situational Awareness Viewer? Dashboard? Other Solutions?

   Hint: Recall we added the curated group to the Add Button