

Geo-Enable Search & Rescue in Disasters



June 26th, 2019

National Alliance for Public Safety GIS (NAPSG) Foundation

napsfoundation.org | [@napsfoundation](https://twitter.com/napsfoundation)

Today's Objectives

- Learn who to contact in order to gain access to the existing field apps hosted by FEMA Urban Search & Rescue (USAR) and the International Association of Fire Chiefs (IAFC).
- Understand how to use basic field data collection tools (Survey123 configured with the SAR and First Responder Survey template).
- Understand how to quickly analyze and report against live field data for situational awareness.
- Begin to develop your own geospatial game-plan and access additional resources.

Why Use Geospatial Tools?

- Real-time situational awareness & collaboration

“I can see where other search & rescue teams have already searched and what is needed in the field”

- Enhanced data collection and reporting capabilities

“I can see where teams are (or have been), and what they observed – share data with agencies”

- Improved search strategy & tactics

“I can see what areas have been covered and what remains to be searched”

- Geospatial Coordination

“I can reach out to the SAR Geospatial Working Group to find access to the layers I need”

Agenda

1300 Introduction

1310 What is the SAR and First Responder Toolkit?

1320 Hands-on: SAR and First Responder Survey

1335 Who do I contact for access to Field Data Collection Tools?

- FEMA USAR – Lance Gilmore lance.gilmore@fema.dhs.gov
- State and Local SAR – Jeff Dulin jdulin@iafc.org
- Deploy your own – Jared Doke jdoke@publicsafetygis.org

1350 Geospatial Game-plan for 2019 Hurricane Season & What's Next?

About NAPSG Foundation

Our Vision

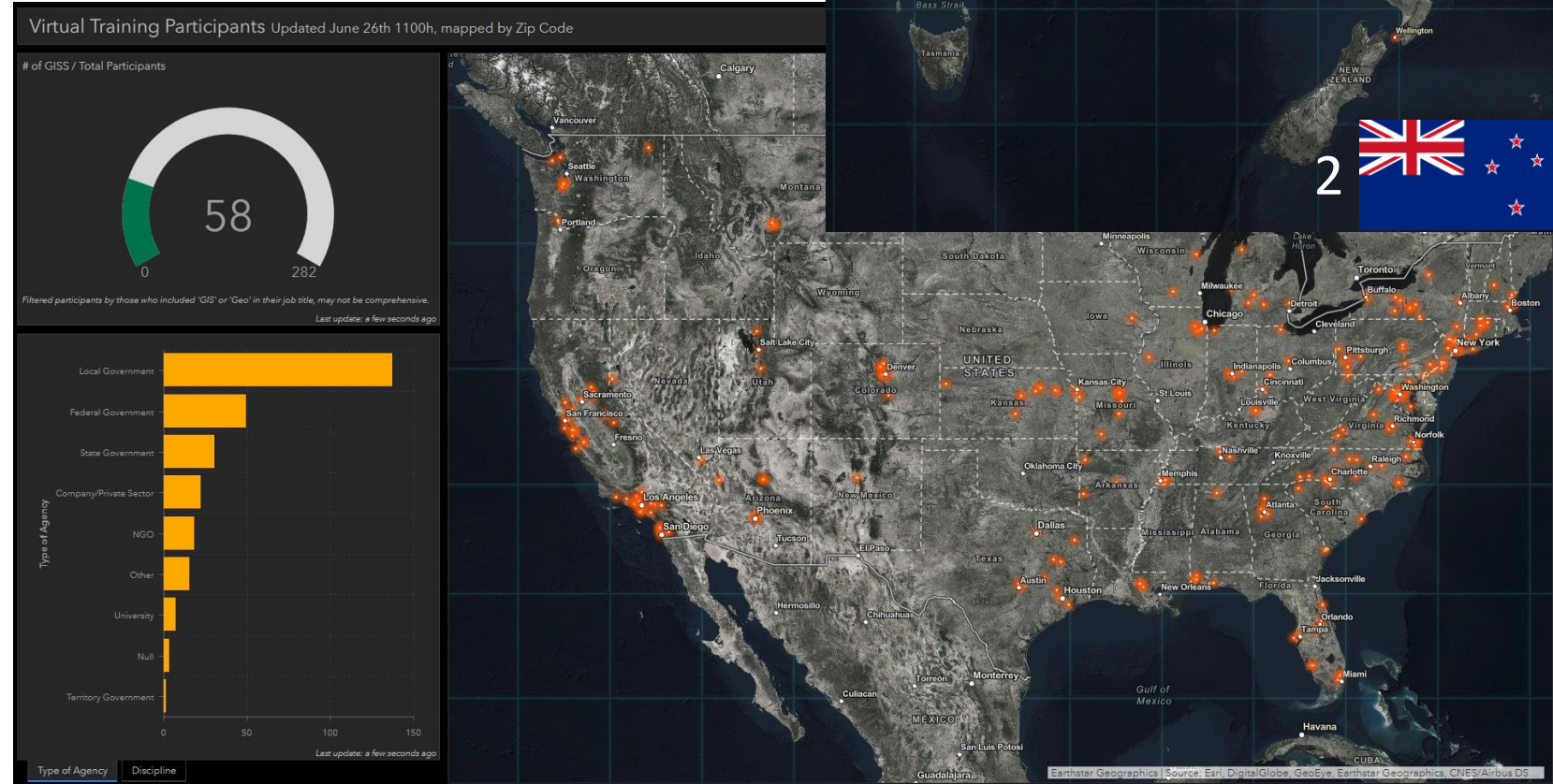
A Nation of emergency responders and leaders equipped with the knowledge and skills in applying technology and data to change the outcome for survivors.

- 501(c)(3) Non-profit organization established in 2005
- +20,000 member network: Public Safety leaders, first responders, and GIS practitioners
- Board of Directors comprised of public safety & emergency management industry leaders



Local Focus – National Reach

- 20,000+ member network
- 12 primary national & international associations
- All disciplines
- All levels of government
- Private sector

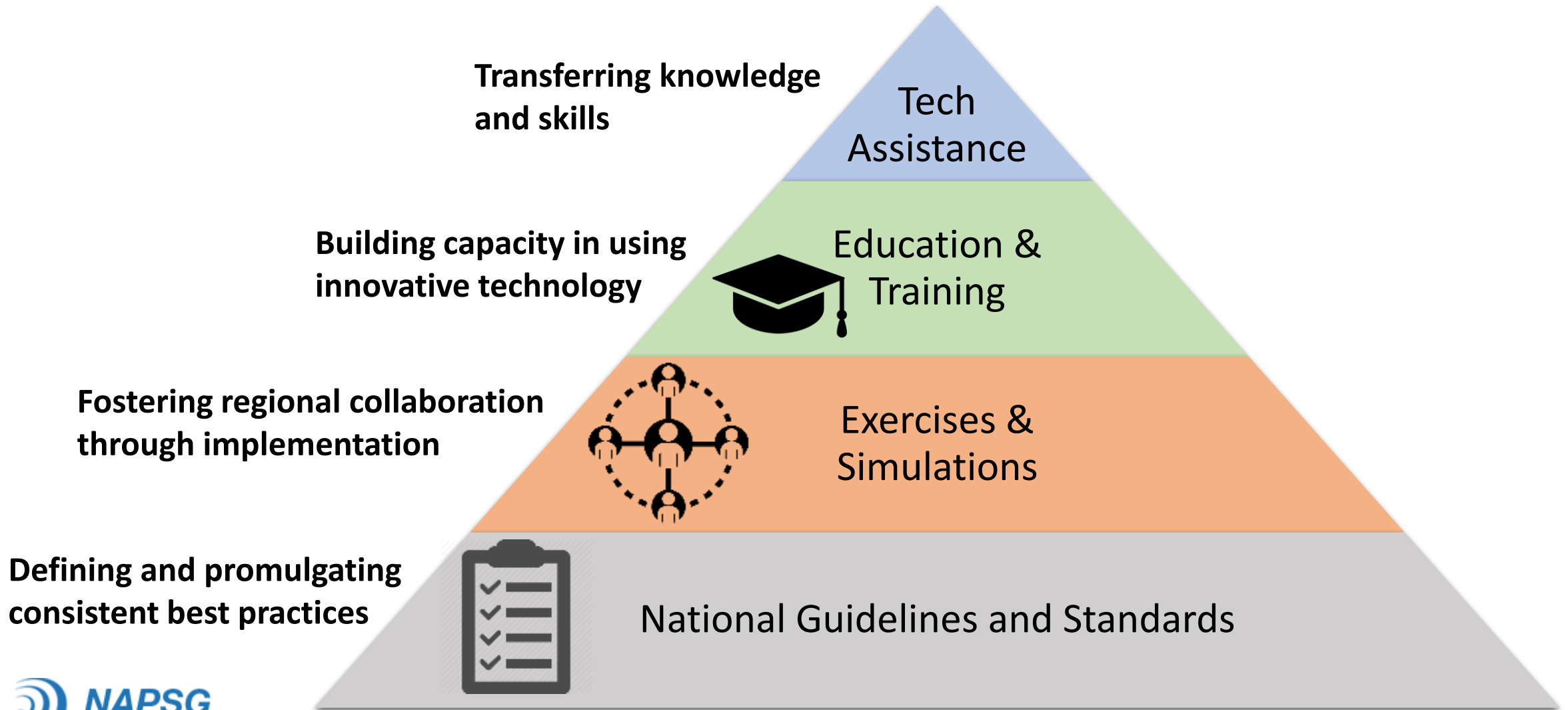


From Preparedness through Response and into Recovery


First Responders, Operators, and Decision Makers have access to and know how to use the **right actionable information at the right time**



How Do We Do It



Resource Library

HOME ABOUT US WORK WITH US **RESOURCES** EVENTS NEWS

RESOURCES


Welcome to NAPSG's Resource Library. Here you can access all of the key resources that NAPSG makes available to the community at no cost, to support you and your agency in advancing the use of location-enabled decision support tools.

The Resource Library is organized by resource category. Simply click on the Category of interest and begin exploring available resources. You can also search for resources by entering-in a keyword into the search box in the upper right hand side.


SEARCH RESOURCES

All Categories ▾


SEARCH




Best Practices and Standards




Education and Training




Event Proceedings and Materials




Qualifications and Credentialing




Guidelines and Templates



Symbol Library



US National Grid Resources



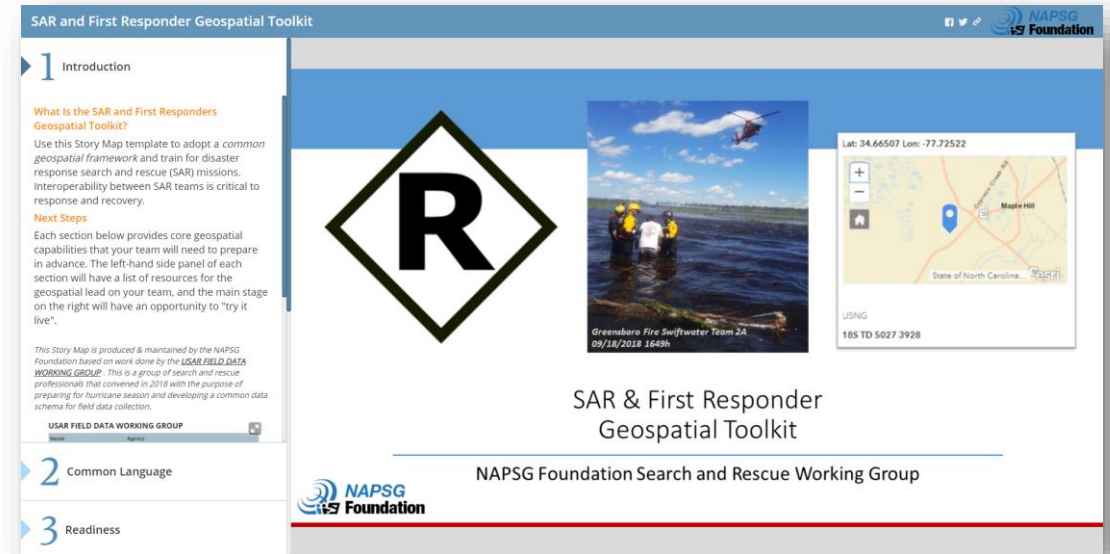
Safe & Resilient Toolkit

SAR & First Responders Geospatial Toolkit

SAR & First Responders Geospatial Toolkit

Story Map Website with:

1. Resources by capability
2. Links to training videos
3. Points of contact
 - FEMA Urban Search and Rescue
 - International Association of Fire Chiefs
 - NSARC Geospatial Working Group*
4. Sandbox for testing geospatial tools –
NOT FOR REAL-WORLD RESPONSE



<https://arcg.is/00L58f>

Hands-on Exercise

1 Open Camera

2 *Point At Code →

3 Open in Survey123
(or install the app)

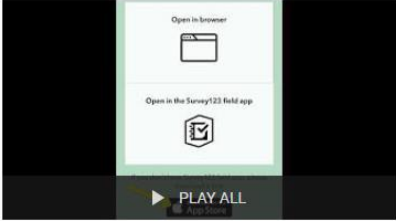
**some phones require a QR app or to hold down the home button while scanning with camera*



Version 6 - Sandbox
c69bf75ac2c34a23be34511f4bb6083c

A screenshot of the Survey123 app interface on a mobile device. The status bar at the top shows 'Safari', signal strength, time '10:02', and battery '99%'. The app header is green with a close button (X), title 'v6 SAR and First Responder Field Data Collection Form', and navigation icons. The main content area has a light gray background with instructions: 'Survey instructions, tips, and sharable QR code. Click arrow to left to open.' followed by 'Event Details: ★ Open to complete event details and "Set as favorite answers" (using instructions above) to pre-populate future forms. Be sure to reset favorite answers at the beginning of each search operation.' Below this is a 'Location ★' section with a map showing a red pin and coordinates '11S MT 8119 6723 ± 5 m'. A text input field for 'USNG' contains '11S MT 8119 6723'. A green bar at the bottom contains a white checkmark icon.


Training Playlist





SAR and First Responder Survey


11 videos • 409 views • Last updated on Jun 4, 2019


⋮ ✂ ⋮

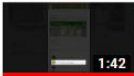
 **NAPSG Foundation** SUBSCRIBED 🔔


1  **1 Scan the QR Code to Install Survey123**
NAPSG Foundation 0:20


2  **2 Scan the QR Code to Download the Form**
NAPSG Foundation 0:32


3  **3 Survey123 Set Entry As Favorite**
NAPSG Foundation 0:35


4  **4 Survey123 Location**
NAPSG Foundation 1:29

5  **5 Survey123 Filling Out The Form**
NAPSG Foundation 1:42

6  **6 Survey123 Attaching a Photo**
NAPSG Foundation 0:39

7  **7 Survey123 Send Survey Now (Online)**
NAPSG Foundation 0:36

8  **8 Survey123 Send Later (Offline)**
NAPSG Foundation 1:42

9  **9 Survey123 Edit Existing Surveys**
NAPSG Foundation 0:49

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1350 Geospatial Game-plan for 2019 Hurricane Season & What's Next?

FEMA Urban Search and Rescue

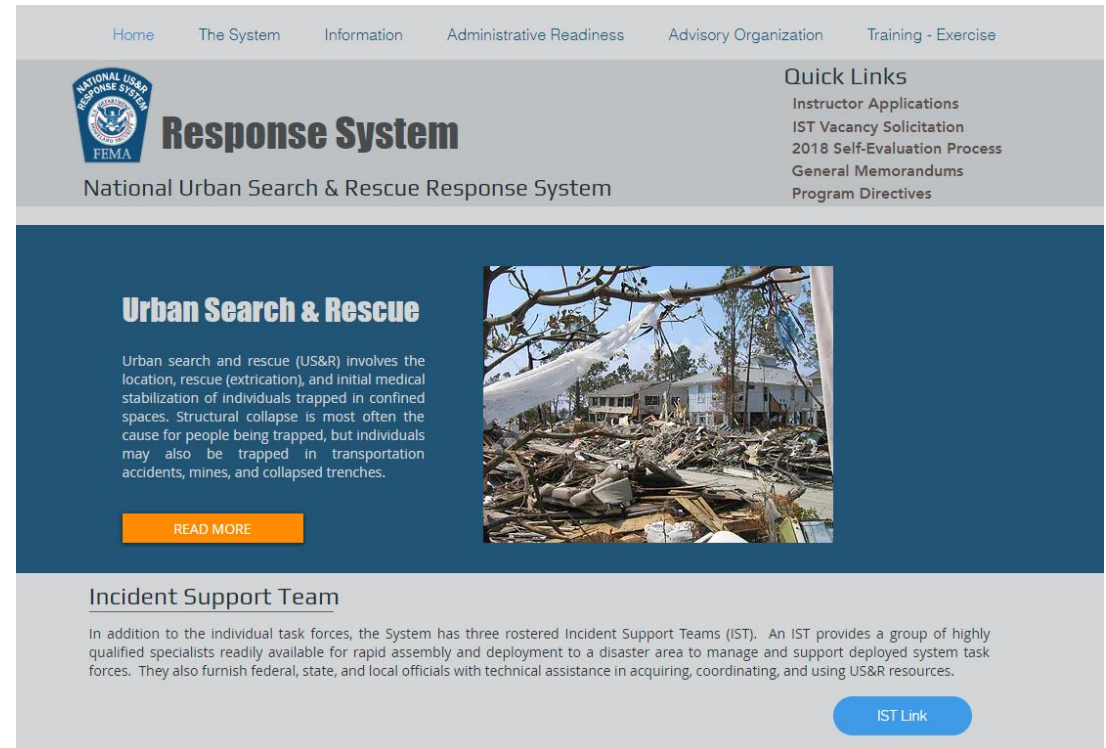
Lance Gilmore

Emergency Management Specialist, FEMA Urban Search and Rescue

lance.gilmore@fema.dhs.gov

FEMA Urban Search and Rescue

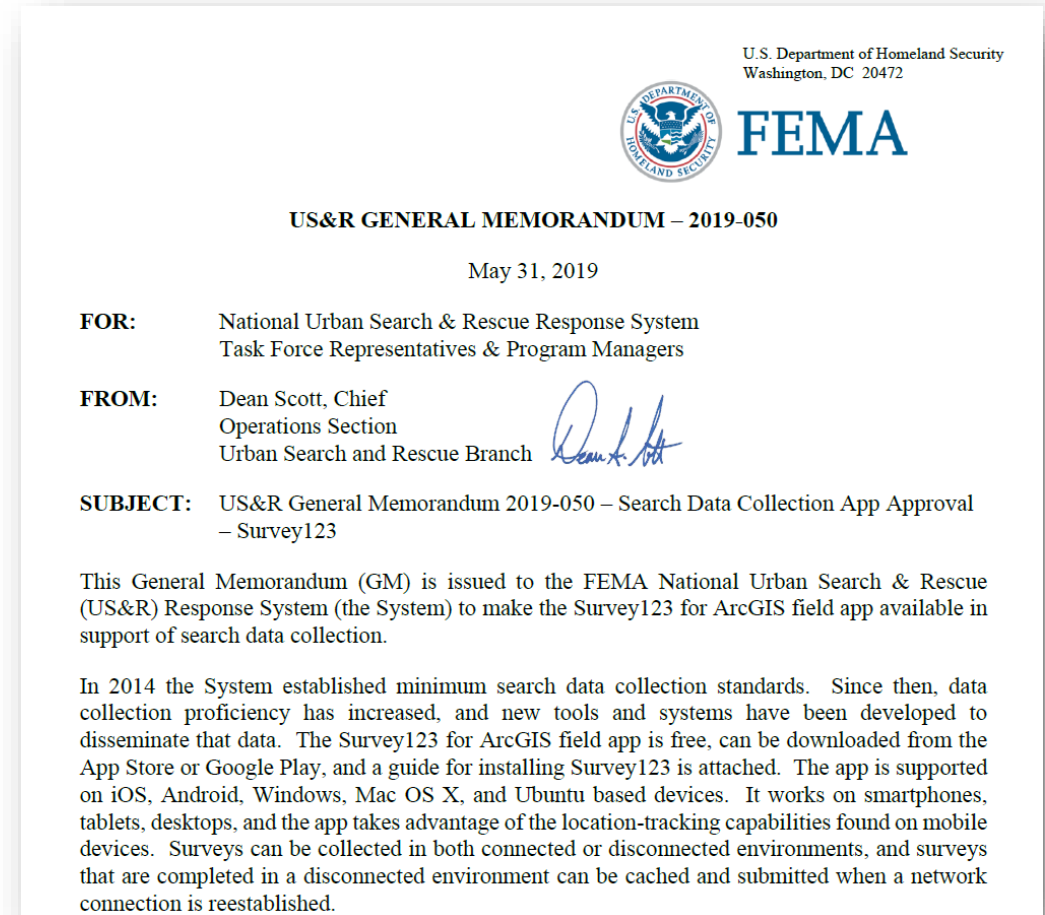
- How / when do they mobilize?
- Who are they?
- What do they do?
- How many teams are there?



<https://www.responsesystem.org/>

FEMA Urban Search and Rescue

- General Memo 2019-050
- GovDelivery List
- Geospatial Game-plan
 - Who to contact?
lance.gilmore@fema.dhs.gov
 - How to access?
 1. Read memo,
 2. Sign-in with your team username
(1 for TIS and 1 for Ops)



State & Local Search and Rescue



Jeff Dulin

Strategic Adviser IAFC & Technology Council Liaison

jdulin@iafc.org

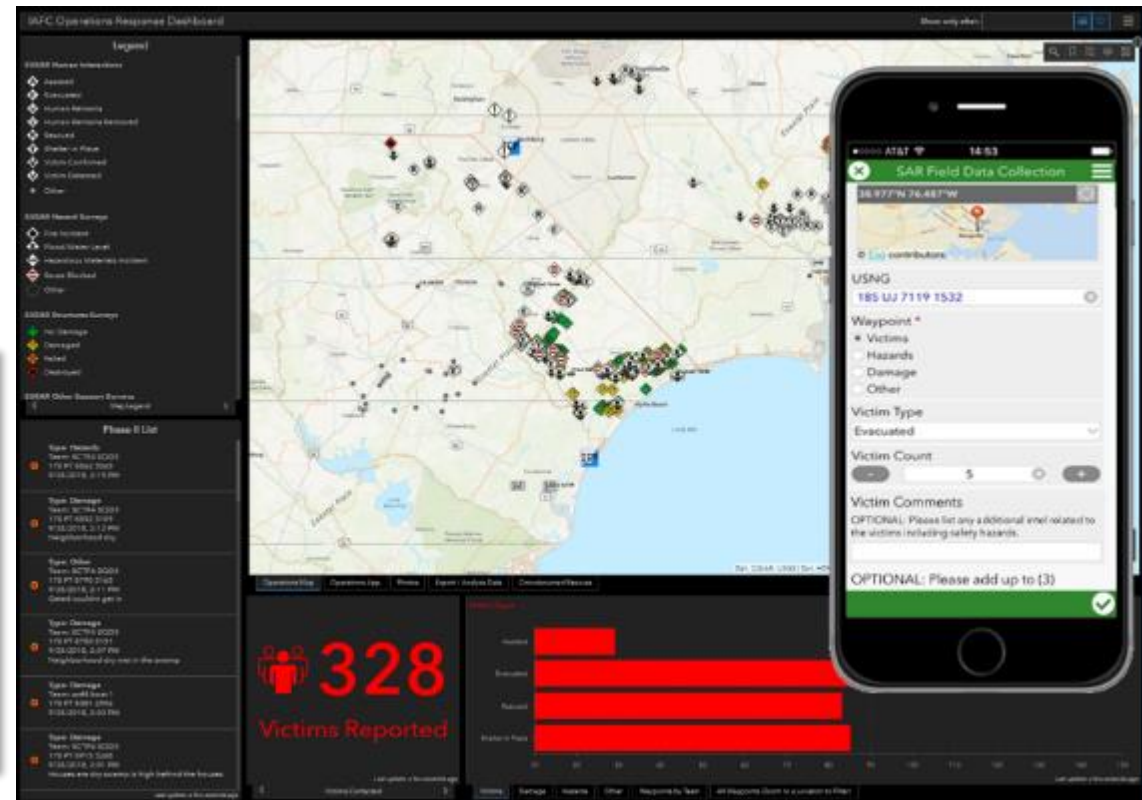
International Association of Fire Chiefs

- Who is the IAFC?
- What is “SUSAR”?
- How did you support SAR Teams in 2018?
- What are you doing to support SAR Teams in 2019?
- Who do we contact? jdulin@iafc.org



2018 Disaster Response Support

- In partnership with the IAFC, deployed the suite of SAR decision support and analysis toolkit
 - **Hurricane Michael**
 - 126 SAR Teams from 11 states
 - 51,532 Field Forms Submitted by 400+ Users
 - **Hurricane Florence**
 - 60 SAR Teams from 11 States
 - 2,600 Field Forms Submitted by 340+ Users



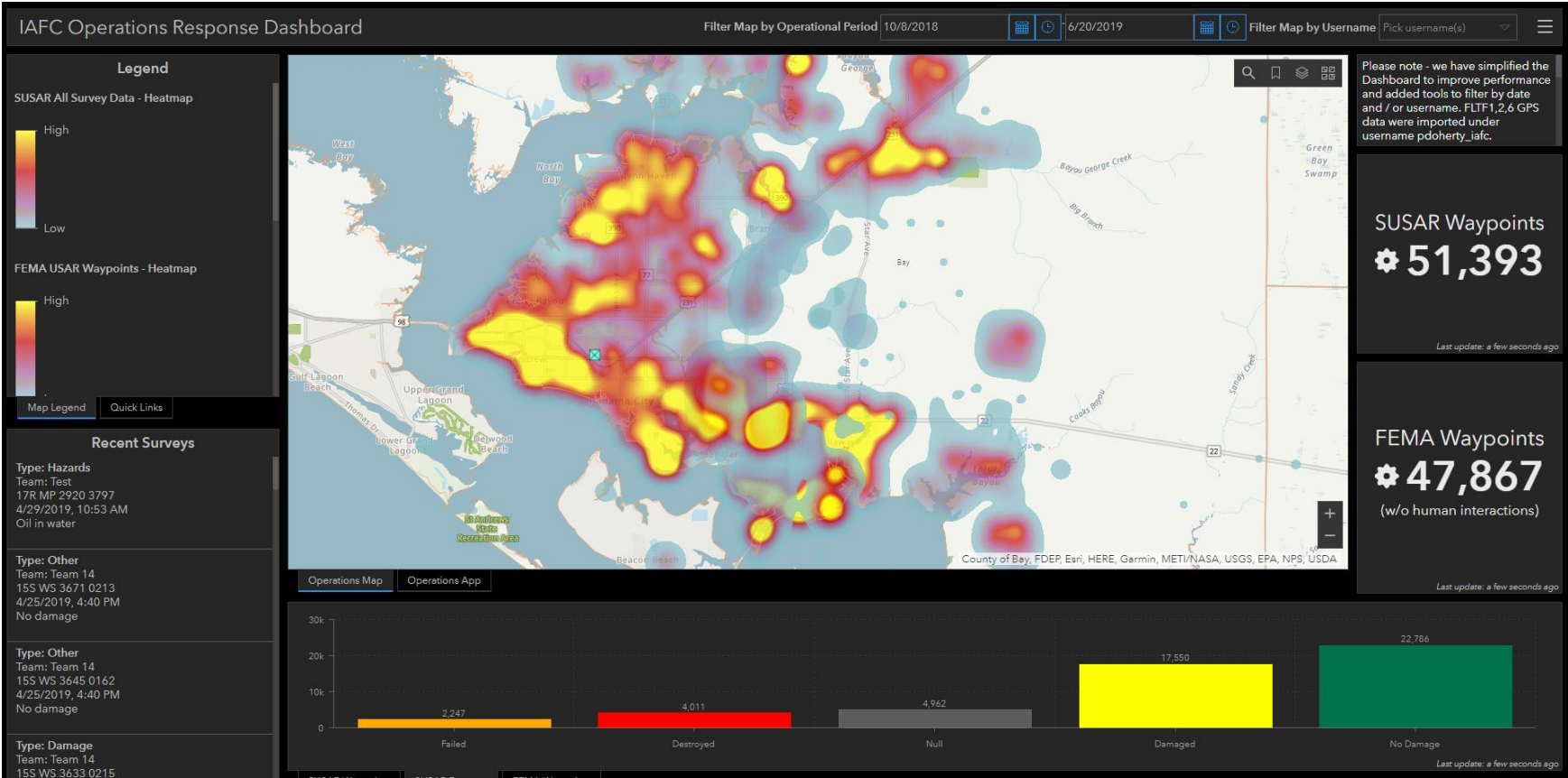
State SAR Teams

- **Scenario 1** – you don't know what ArcGIS Online is or your GIS staff don't have usernames or time to support you? You can purchase ArcGIS Online usernames from IAFC work within the IAFC ArcGIS Online organization.
- **Scenario 2** – you have ArcGIS Online usernames, but you want to be interoperable with other teams for a common operational picture for large disasters (e.g. earthquakes, hurricane). IAFC can invite your existing usernames into an ArcGIS Online Group for you to access their SAR Survey and general Dashboard.

In both cases, you can use the Survey for training and missions on demand. Your GIS Staff can access the data to bring into their own maps and apps.

2019 Participating Agencies

What States are planning on using this approach in 2019?



Deployment Tips & Considerations



Jared Doke

NAPSG Foundation SAR Working Group

MO-TF1 Tech Info Specialist

jdoke@publicsafetygis.org

SAR and First Responder Deployment Kit

- Why would you want to deploy the kit yourself?
 - GIS Training
 - Local incidents
 - Required to use an alternative platform, but want to stay consistent with data model
- We still recommend coordination with the SAR Geospatial Working Group
- NOT ideal for large scale incidents with collaborating agencies → See FEMA and IAFC above for hosting options

Devices

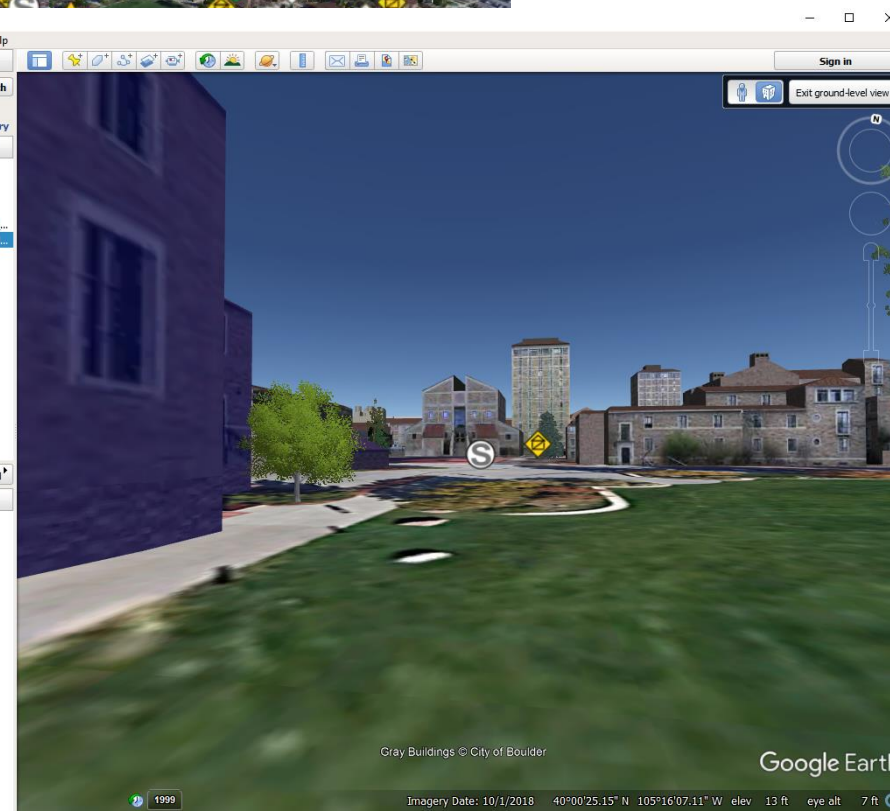
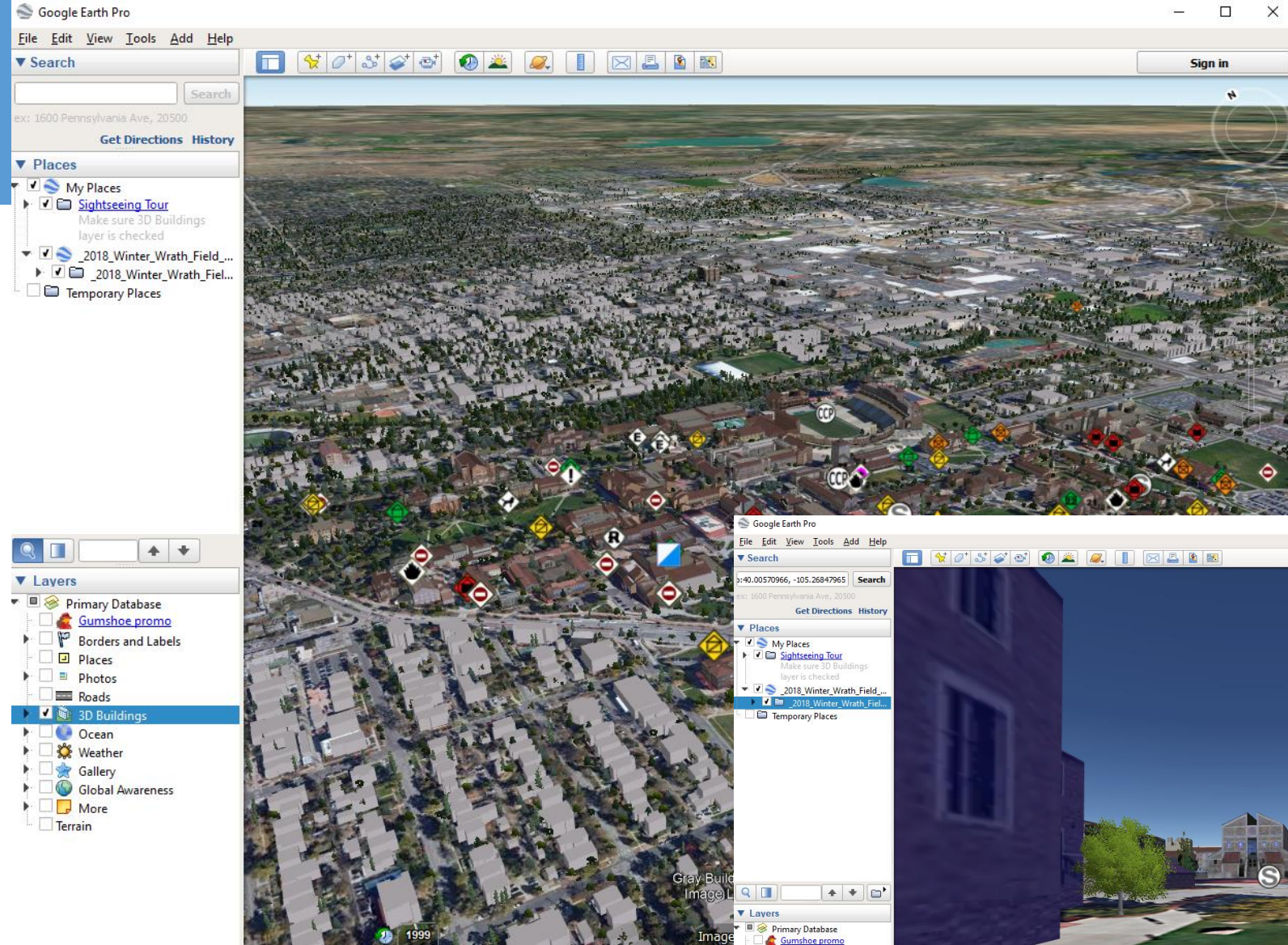
- Operating System: Works across all operating systems
- Size: Tablet vs. Mobile Phone
- Battery Life
- Ruggedize
- Screen brightness
- Connectivity
 - Apps work offline but...
 - Turn on airplane mode when cell connection is weak
 - Must send points from Outbox (see video)

Interoperability

- Works with other ArcGIS Field Apps and web mapping applications
 - Collector for ArcGIS (Allows for editing, easier offline deployment, requires some training to use)
 - Explorer for ArcGIS (Allows for simple viewing, easier to train, requires help for offline deployment)
 - QuickCapture for ArcGIS (*testing*)
 - Tracker for ArcGIS (*testing*)
- Preliminary Damage Assessment
- Community Lifelines
- Integrate via REST (dynamically) with other platforms
- Import Compatible with IronSights
 - Similar schema
 - GPS → Append to feature layer
 - Labor intensive, but possible

Export via
.csv, .xls,
.shp, .gdb
and EVEN
KML!

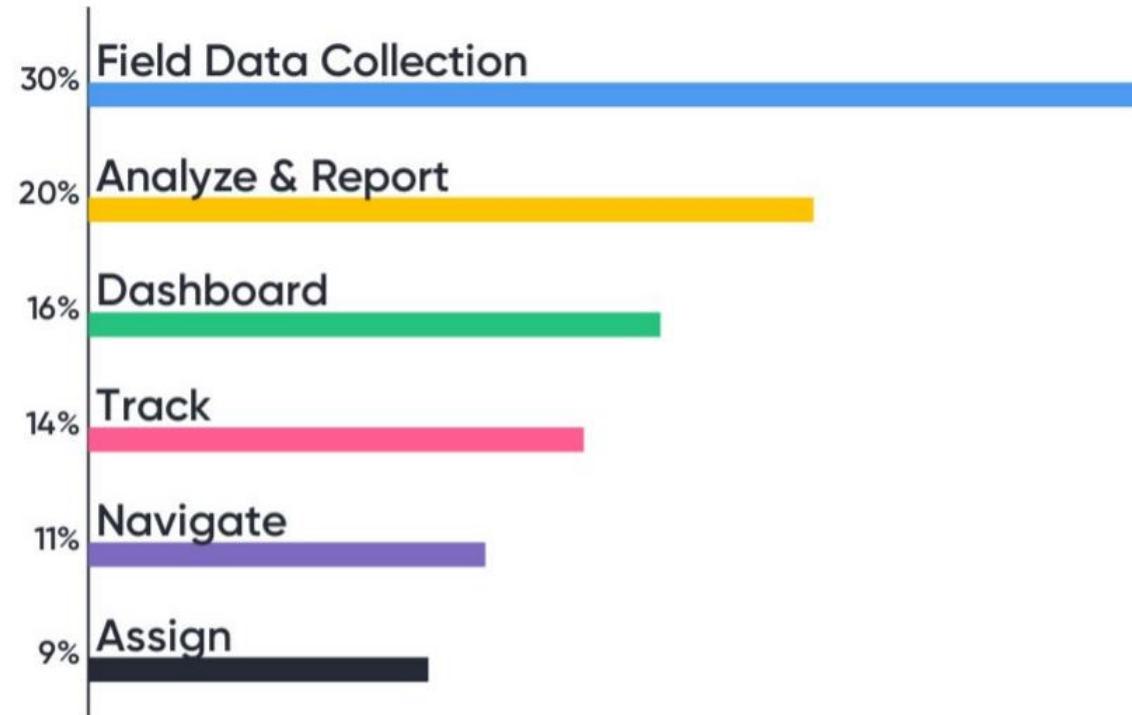
* Not a dynamic /
live connection



Quick Poll

Prioritize Training Needs (If you had \$100..)

Mentimeter



82

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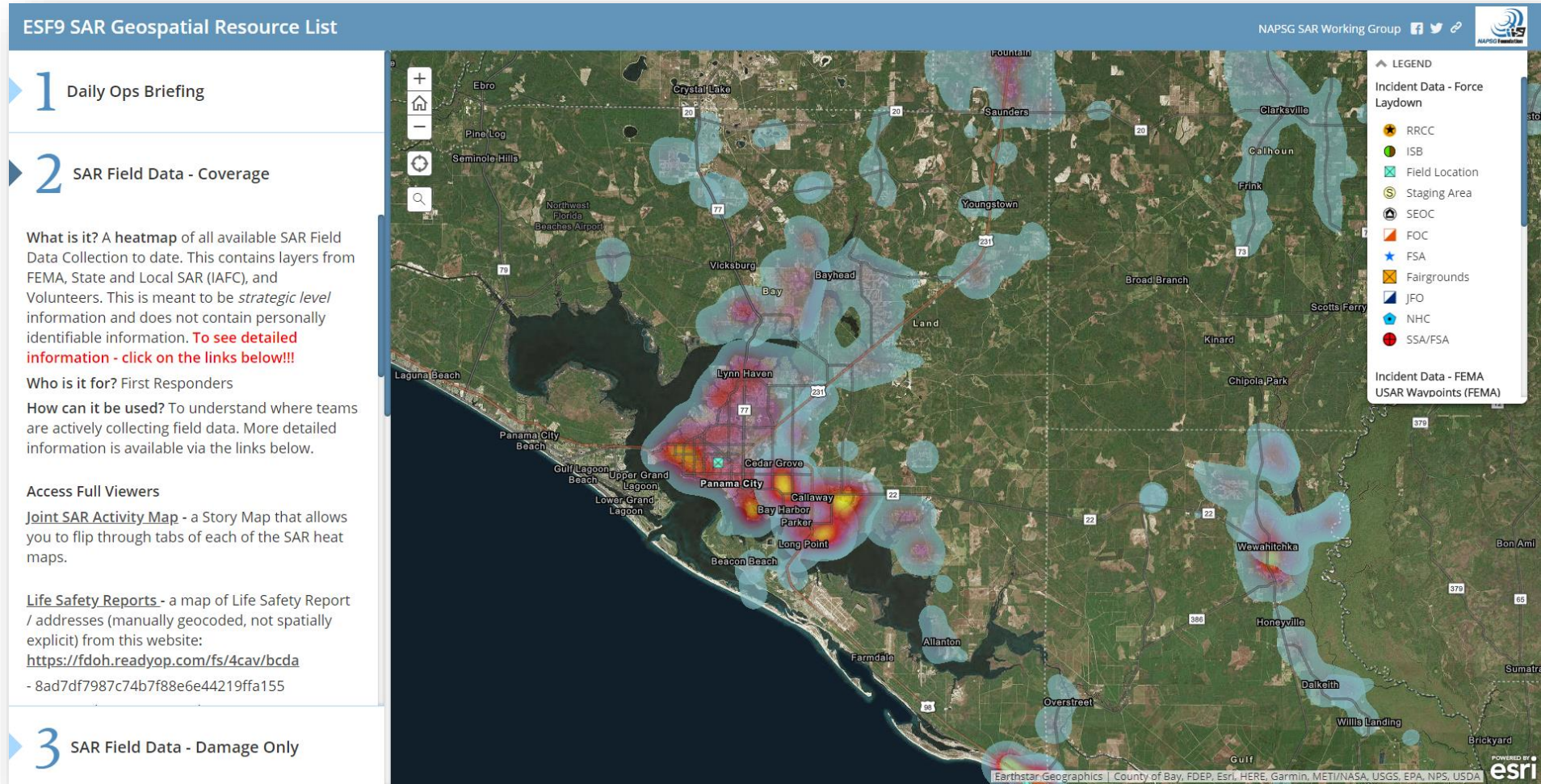
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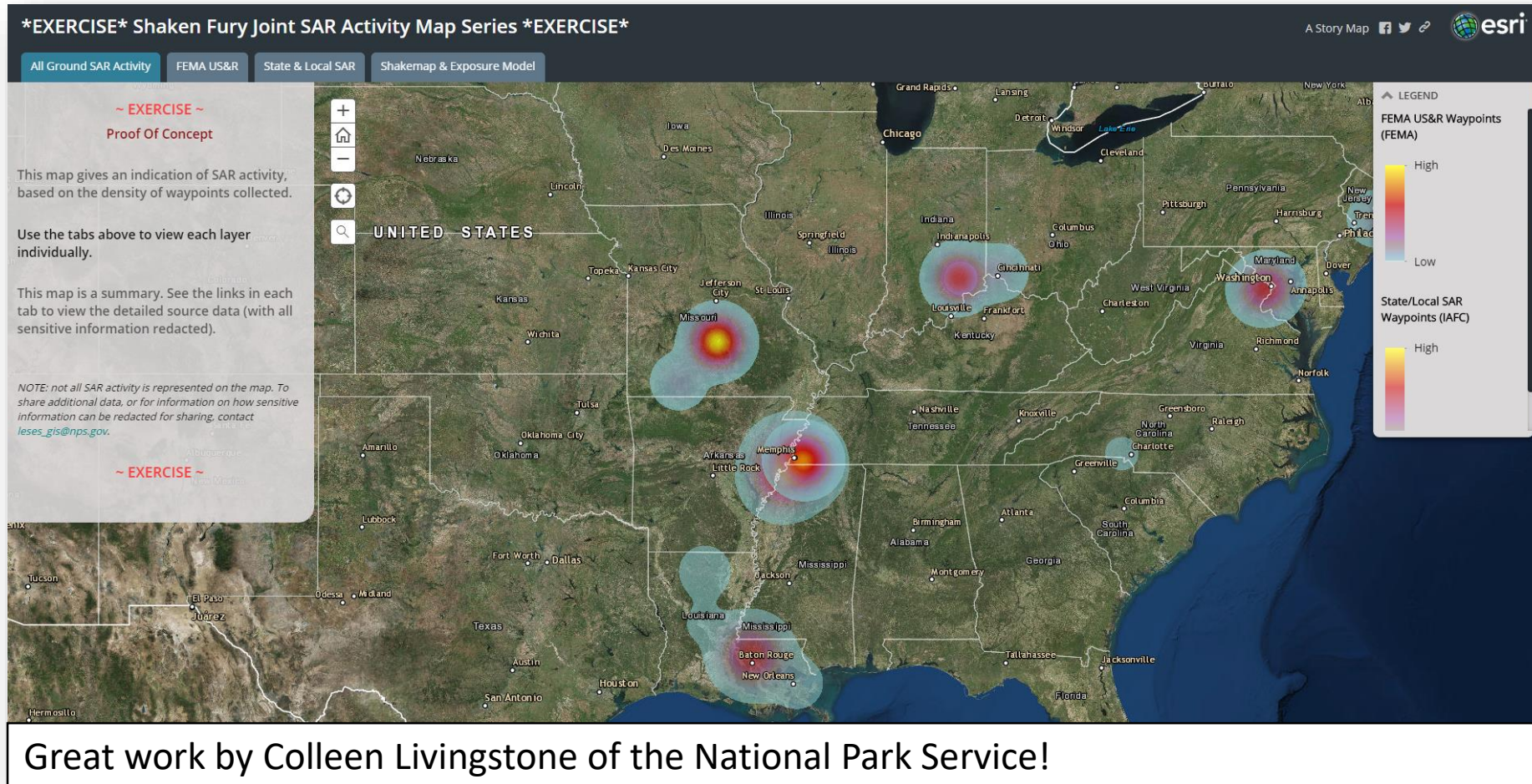
1350 Geospatial Game-plan for 2019 Hurricane Season & What's Next?

Geospatial Game-plan for 2019 & What's Next?

2018 Joint SAR Activity Map



2019 Shaken Fury Proof of Concept (NPS / DOI)



<https://arcgis.com/01OzCH>

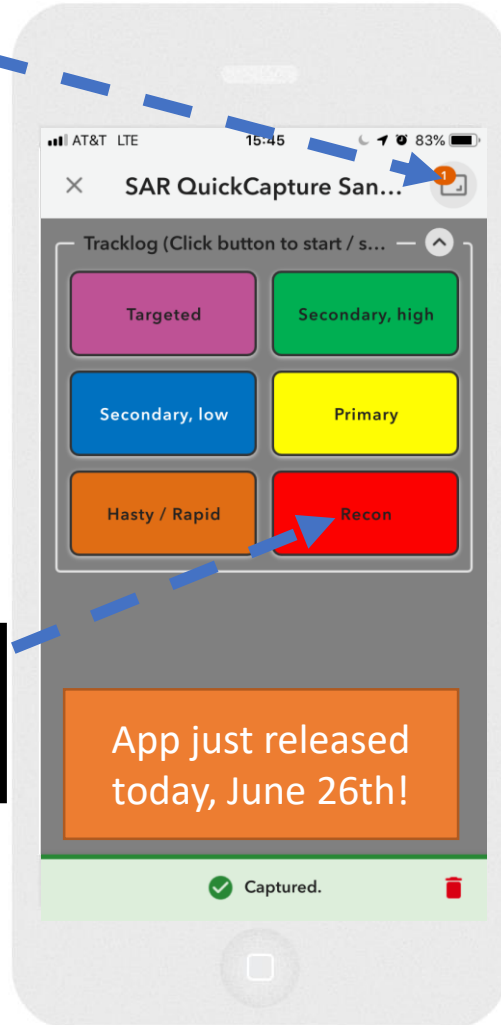
2019 Geospatial Coordination Calls

- Hosted by the *SAR Geospatial Working Group
- Monthly calls for updates
- Daily call during Hurricane deployment
 - FEMA US&R
 - NPS/DOI
 - USCG
 - SUSAR
 - Supporting NGOs (e.g., NAPSG, IAFC, Humanity Road, etc.)
 - Emergency Management Agencies

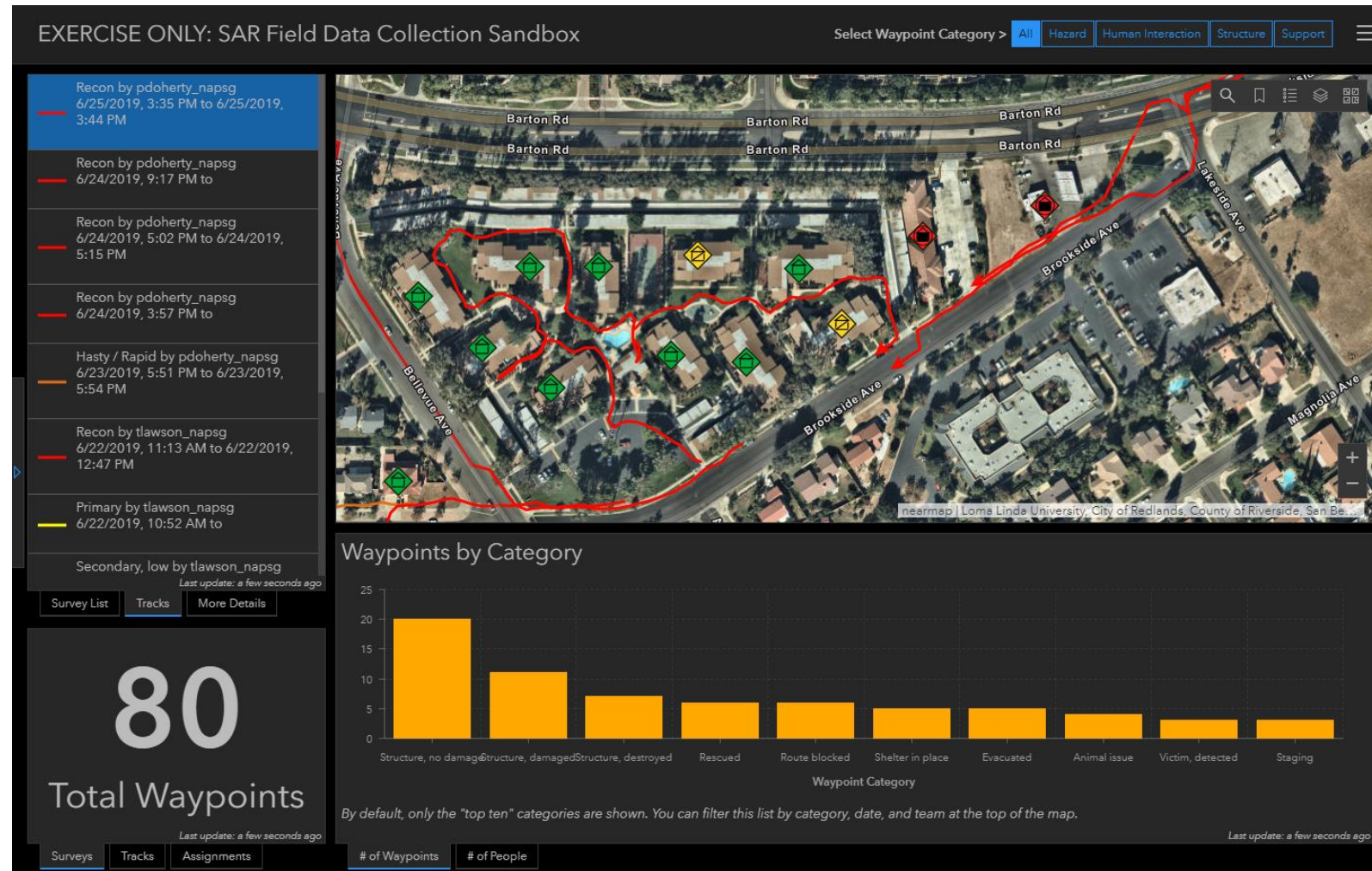
**Under consideration for affiliation with the NSARC*

R&D: QuickCapture vs. Tracker for ArcGIS

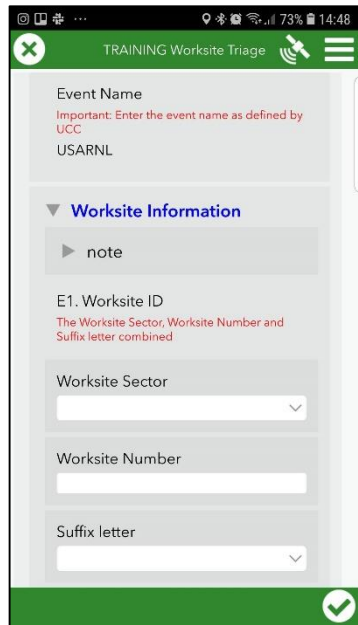
Auto-send or
manual



Tap to start /
tap to stop
recording tracks



Collection systems



TRAINING Worksite Triage

Event Name
Important: Enter the event name as defined by UCC
USARNL

▼ Worksite Information

note

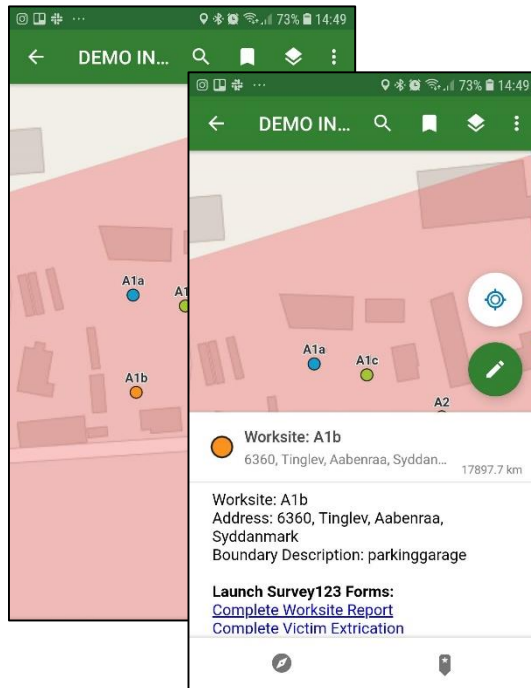
E1. Worksite ID
The Worksite Sector, Worksite Number and Suffix letter combined

Worksite Sector
[Dropdown]

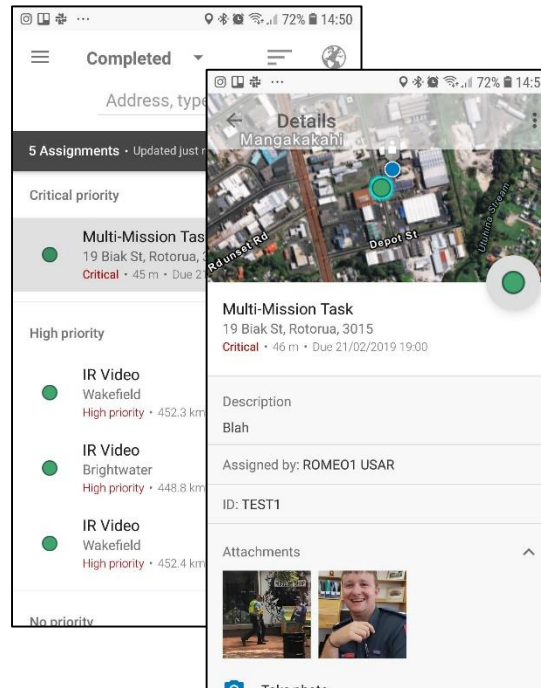
Worksite Number
[Text Field]

Suffix letter
[Dropdown]

Survey 123



Explorer



Workforce

Key Learnings

1. Use integrated data where ever possible. Only collect data once
2. Prepopulate as much as possible
3. Use of Explorer and Workforce to assign and task teams
4. Links to Survey123 from Explorer and Workforce
5. Clever system, easy UI
6. Tested on wide range of field users
7. Possible to integrate data from other systems, but requires effort.

R&D: Integration with UAS



Pigeon Fire – Nelson (NZL)



Key Learnings

1. RPAS (Drone) tasking and outputs
2. Display key outputs for IMT
3. BAU operations
4. RPAS Tasking and logging
5. Rapid Damage Assessment (RDA)
6. Using Survey 123 and Explorer
7. Integrated with C2 and IMT systems
8. Outputs to Firefighters on the ground and to Command Elements



R&D: Estimate of Coverage

Can we calculate the percentage of buildings that have been “searched” within an assignment area, on the fly?



Using “[Arcade](#)” scripting to estimate search coverage, thanks Ed Cook!

R&D: Android Team Awareness Kit (ATAK)

- Wide Area Search Plugin (WASP)
- Command & Control Platform
- Currently only Android & Windows
- Not clear how it would be supported and integrated with existing systems
- More work to do!




What's Next?

- NSARC Geospatial Working Group
- Training Opportunities with TEEX?
- INSARAG exchange?
- InSPIRE November 12th – 14th – Galveston, Texas
- 2019 SUSAR Conference November 19th – 21st – Wichita, KS



What's Next?




[f](#)[t](#)[v](#)


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EVENTS

IN-PERSON EVENTS

Date	Location	Event	Registration
August 21-22, 2019	State of Kentucky EOC, Frankfort, KY	National Mutual Aid Technology Exercise (NMATE)	By invitation only
November 12-14, 2019	Texas A&M University at Galveston	 InSPIRE Innovation Summit for Preparedness & Resilience	Opening in July

VIRTUAL EVENTS



Date	Location	Event	Registration
June 26, 2019	Virtual	Geo-Enable Search & Rescue in Disasters	Register Today
July 31, 2019	Virtual	Aligning and Standardizing Response Map Products to Community Lifelines	Register Today!
August 29, 2019	Virtual	Get Smart on Information Sharing Standards for Crisis Management	Register Today!

WHAT SHOULD I EXPECT?

Each workshop is run by a team of state & local public safety & GIS practitioners from each region - through our Regional Leadership Teams. The training sessions offer new insight on how to operationalize geospatial technology to enhance daily operations. Each workshop features presentations on best practices in each region, moderated discussions on challenges, new ideas for information sharing, and networking time to build relationships with your regional community.

Topics include how GIS is used to collect accurate preplan data, analyze risk and assess deployment capability, and access real-time information for incident management. Other benefits of attending include opportunities to:

- Meet and see how public safety professionals are using GIS.
- Contribute to emerging GIS guidelines and model practices.

<https://www.napsgfoundation.org/events/>

Interested in Geospatial Coordination for SAR?

Scan the QR code to open the survey on your device. [Click to download](#)



<https://arcg.is/1m88Tj>



Thank you!

Paul Doherty

pdoherty@publicsafetygis.org

Jared Doke

jdoke@publicsafetygis.org

Scan the QR code to open the survey
on your device. [Click to download](#)



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