

# SARCOOP



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Search and Rescue Common Operating Platform

# About NAPSG Foundation



- National Association for Public Safety GIS
- 501(c)(3) non-profit organization established in 2005
- +20,000 members: public safety officials, operators, and GIS staff
  - Mostly in the US, but spans the globe
- All training, tools, best practices and other resources provided at no cost to US public safety agencies

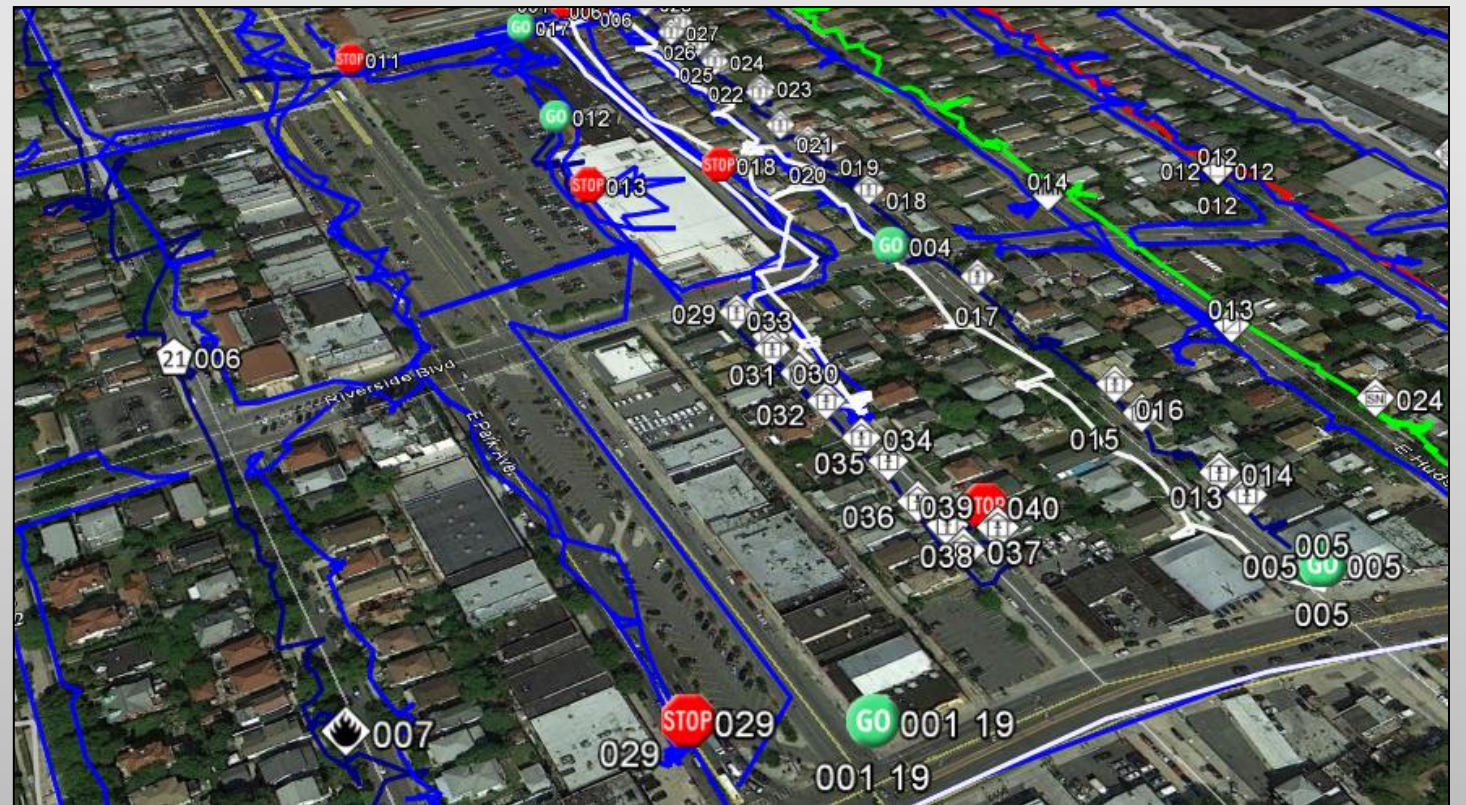


# Search and Rescue is an inherently spatial problem



# Evolution of GIS in USAR Operation

- 2013 GPS Use and File
- Conversion Protocol (Iron Sights)

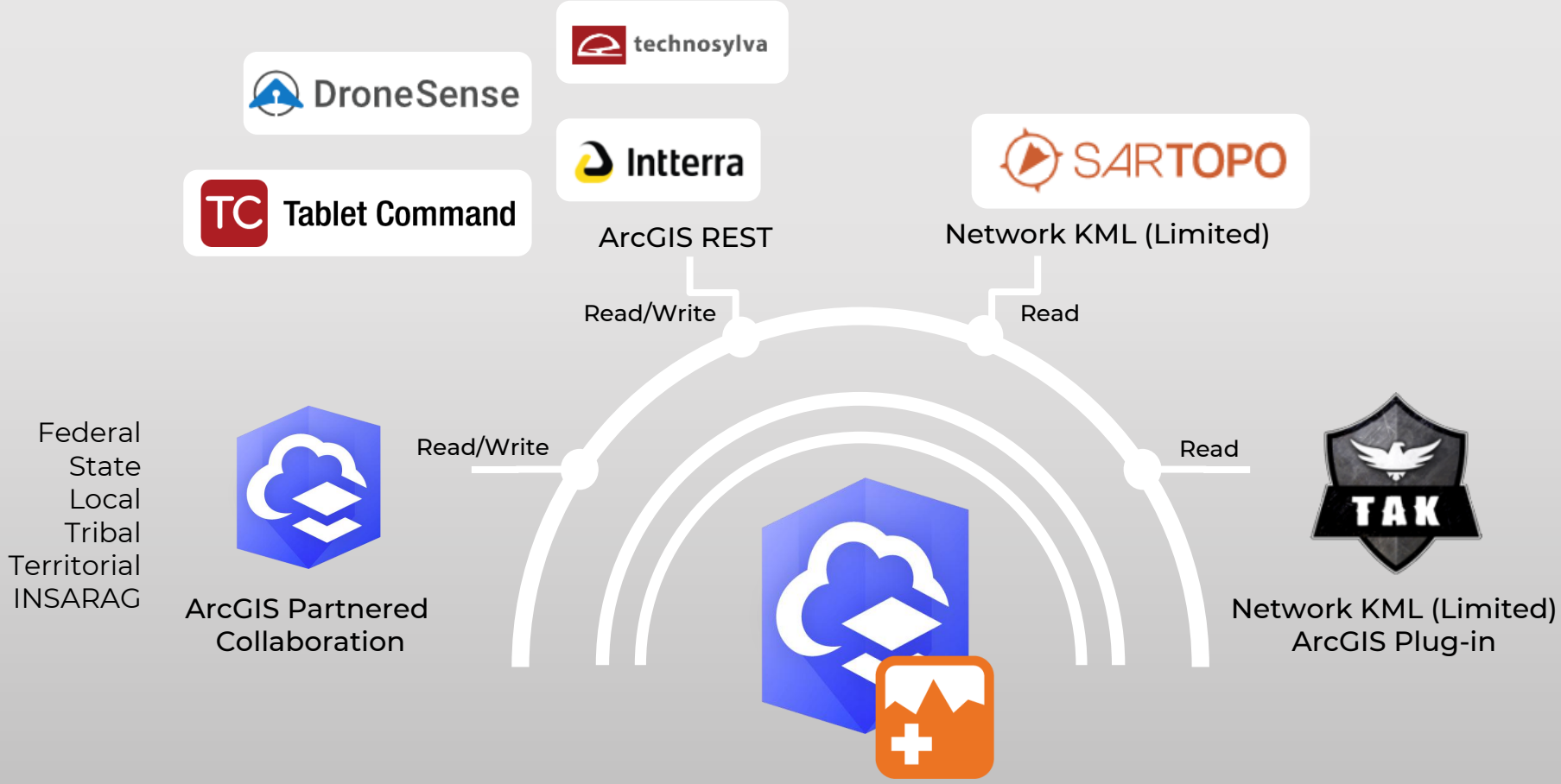




# Search and Rescue Common Operating Platform



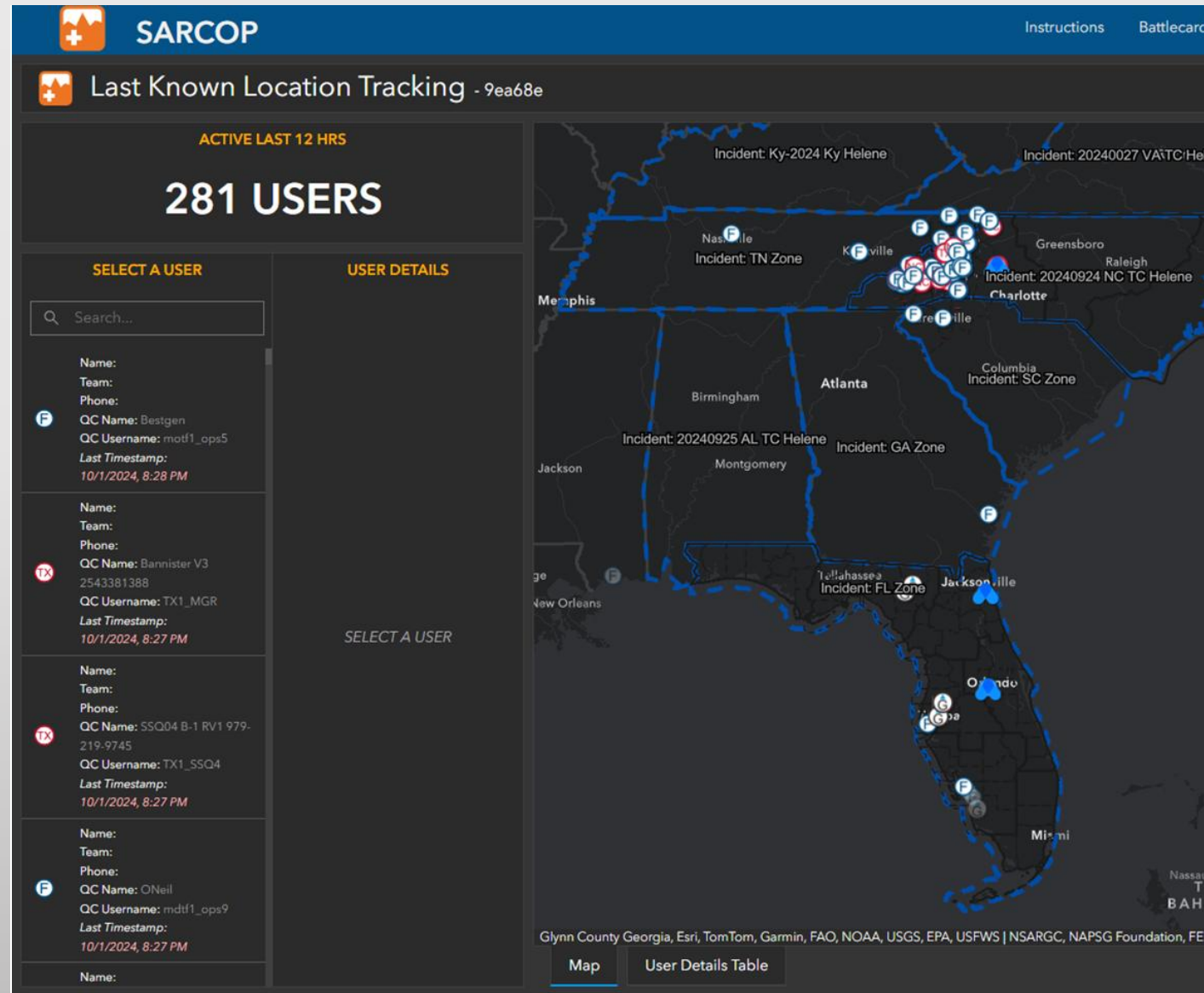
# SARCOP Interoperability



# Provides Situational Awareness

Where are the incoming resources and what's their status?

- Team Fact Sheet
- Where are our personnel?
  - Last-known-location (LKL) tracking
- How have we progressed towards incident objectives?
  - Dashboard metrics, reporting



# The Three Big Questions

- Where do we start the search?
- Where have we searched?
- Where do we search next?



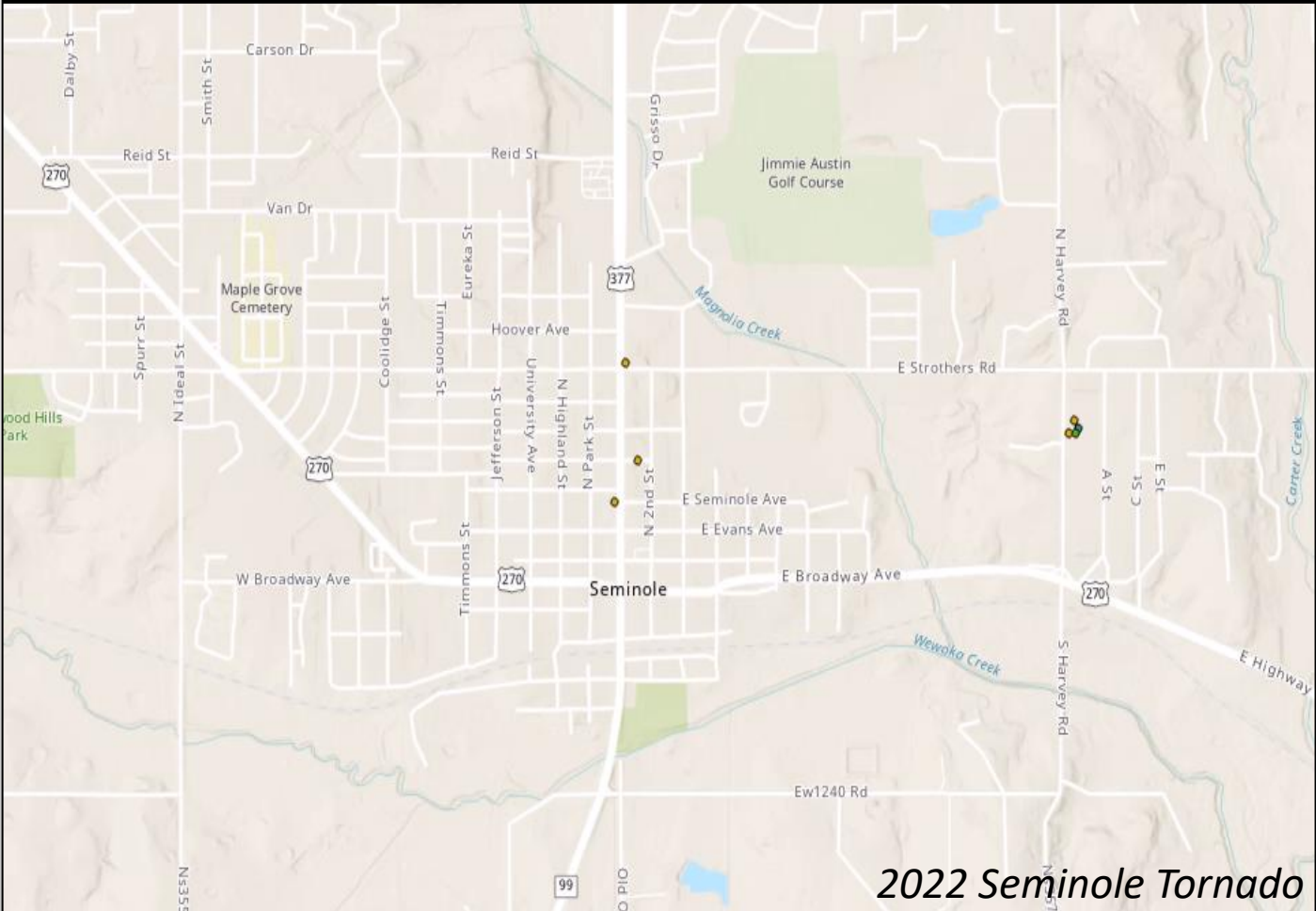
# Operational Efficiency Through SARCOP

Before SARCOP



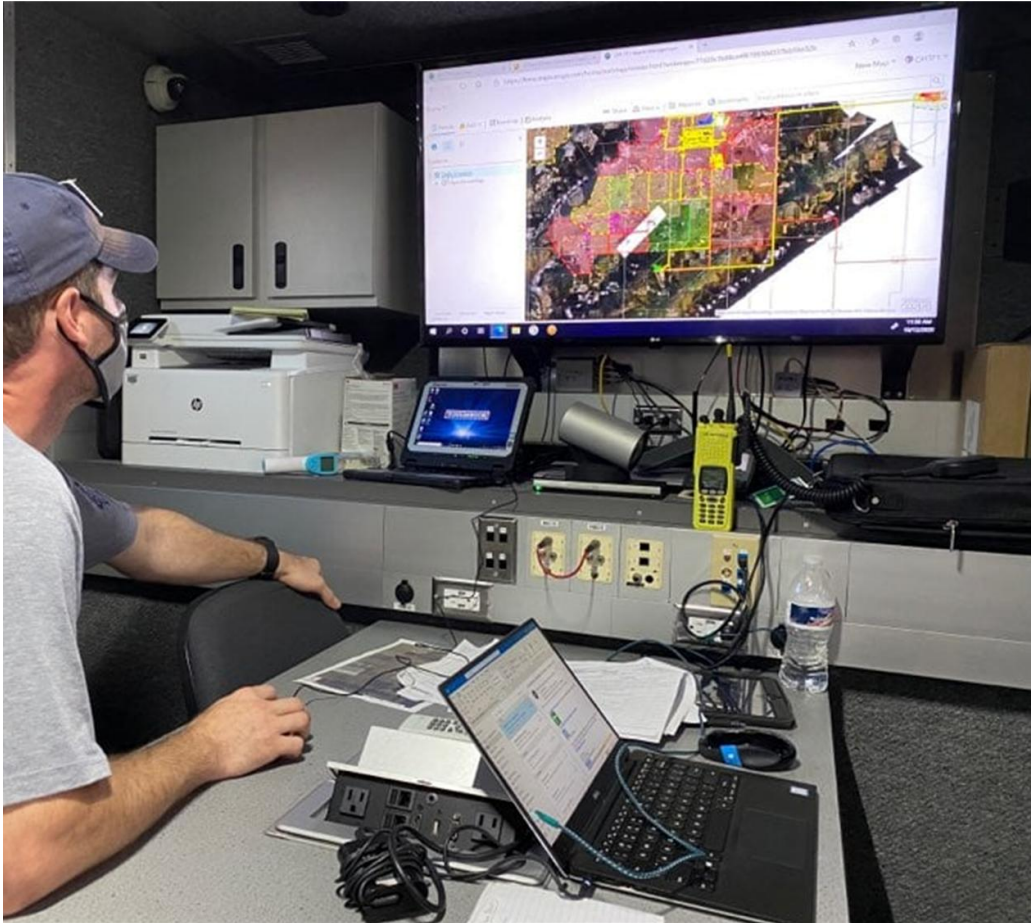
2018 Hurricane Michael

SARCOP – Optimized Segments



2022 Seminole Tornado

# Benefits of the Common Operating Platform



Where is the area of greatest impact?

- (Incident area)

Where are we responsible for search and rescue?

- (Branches and Divisions)

Where is my team assigned to?

- (Segments and Grids)

Where are areas that have/have not already been covered?

- (Waypoints and Tracklogs)

What needs to be followed up on?

- (Follow-up icons)

# Responsesystem.org

Home The System **Information** Incident Advisory Organization (AO) Training/Exercise

**Response System**  
National Urban Search & Rescue Response System

**Quick Links**

- Calendar
- 2025 Self-Evaluation
- Master IB/GM/PD Lists
- Post-Mission Medical
- Medical Screening Review
- Task Force RSO Login Info
- Solicitations
- Deputy ISTL Solicitation

### Urban Search & Rescue

Urban search and rescue (US&R) involves the location, rescue (extrication), and initial medical stabilization of individuals trapped in confined spaces. Structural collapse is most often the cause for people being trapped, but individuals may also be trapped in transportation accidents, mines, and collapsed trenches.

[READ MORE](#)

### Incident Support Team

In addition to the individual task forces, the System has qualified specialists readily available for rapid assembly forces. They also furnish federal, state, and local officials

IST Trav

Home The System Information Incident Advisory Organization (AO) Training/Exercise

**Response System**  
National Urban Search & Rescue Response System

**Quick Links**

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### General System Wide Information

- System Calendar (Password Protected)
- System Contact Information (Password)
- SAR Common Operating Platform (SARCOP)**
- System Definitions
- System Doctrine
- System Forms
- System Meeting Notes & Agendas
- Incident Support Team (Redirect)

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Solicitations  
Privacy Policy

## Search & Rescue Common Operating Platform (SARCOP)

The following references should be used for field data collection as well as current SARCOP documentation

### REAL WORLD ONLY!

[SAR Common Operating Platform](#)

\*Requires your FEMA or SUSAR ArcGIS Online username and password to login. If you need assistance, please contact [fema-usrgis@fema.dhs.gov](mailto:fema-usrgis@fema.dhs.gov) or your SUSAR ArcGIS Online administrator.

### TRAINING ONLY!

[Training Sandbox](#)





Please contact [jdoke@publicsafetygis.org](mailto:jdoke@publicsafetygis.org) if you run into any issues or have questions about the NAPSG Foundation Training Website or materials.

[SARCOP Training and Documentation](#)





# SARCOP

The screenshot shows the SARCOP SANDBOX v10 web application. The browser address bar displays the URL: https://experience.arcgis.com/experience/f77f3ad561f1416fab03c6ae1cf52117. The application header is red and contains the following navigation items: SARCOP SANDBOX v10, Instructions (highlighted), Battlecard, Intel Manager, Tactical, Strategic, More, and Help. Below the header, a grey box contains the text: "Get started with the Search and Rescue Common Operating Platform (SARCOP®) by clicking on the tabs above or cards below based on the type of work you are doing right now." The main content area is divided into two sections: "Instructions" and "Additional Resources".

## Instructions

Battlecard	Intel Manager	Tactical Dashboard	Strategic Dashboard
			
Collect intel in the field with ArcGIS QuickCapture. The Battlecard will provide a QR Code for getting started with mobile devices.	Plan your search operation by creating search segments and working with basic mapping tools for managing intel.	Monitor real-time field operations, search progression, and identify waypoints that require follow-up for tactical level decision making.	Gain real-time situational awareness and provide up to date situation reports for strategic level decision making.

## Additional Resources

Field Exercise Form	Training Slides and Videos	Team Fact Sheet	Join the Community
			
Fill out this form and let us know if you are planning a field exercise, we may be able to help "customize" the Sandbox for the	This is a folder on ResponseSystem.org where you can find more training resources.	Plans Team fills out this form one time per incident to provide deployment contact information for your team. Then update it each day with your status. You will receive a review	Fill out this form to register your interest in the National SAR Geospatial Coordination Group. We meet once per month and daily

# SARCOP Battlecard



## Battlecard

Collect intel in the field with mobile applications. This "Battlecard" will provide a QR Code for getting started with mobile devices. Click [here](#) to download a printable version of the instructions below.

### Instructions

1. Install ArcGIS QuickCapture and Field Maps on your mobile device (from app store) in advance of the steps below.
2. Once installed, sign-in to each app with your Task Force credentials (e.g., motf1\_ops).
3. **Scan the QR Code (or click on the link)** to open up the QuickCapture Project. You can also click "Continue without signing in" to access this public project if you do not have a username.
4. Proceed to the **"Additional Apps and Forms"** section of the QuickCapture project to access the correct Field Maps projects. See this [video](#) or [Field Reference Guide](#) for additional details.
5. Tech Info Specialist - Here is "Device Workflow" Job-Aid you can use to prep and maintain your device cache.



QuickCapture Sandbox - b82746

[QuickCapture - b82746](#)



Sandbox Online Field Map - 0c49b2

[Online Field Map - 0c49b2](#)



Sandbox Offline Field Map - 7bc39f

[Offline Field Map - 7bc39f](#)

# SARCOP Intel Manager

**SARCOP® SANDBOX v10**    Instructions    Battlecard    Intel Manager    Tactical    Strategic    More

**Intel Manager**    SELECT INCIDENT →    - All -    Reset Map

**I want to...**

- Show symbols on the map  
**Legend**
- Create or edit a waypoint, logistics point, or segment  
**Field Edit**
- Create or edit an incident area, branch, or division; undo deletions  
**Admin Tools**
- View just my team's data  
**Filter**
- Turn layers on / off  
**Layer List**
- Change map background  
**Basemap**
- Print a map / PDF  
**Print**
- Watch training videos  
**Videos**

To see additional tools, click on the far right toolbar "more widgets" icon ...

**New Editing Tips**

Find address or place

17RNK9280454423 USNG

Selected features: 0

The interface displays a map of West Palm Beach, Florida, with major roads like Okeechobee Rd and US Highway 1 highlighted in yellow. Landmarks such as Alexander W. Dreyfoos School of the Arts and Palm Beach Atlantic University are visible. The map includes a search bar, a toolbar with navigation and editing icons, and a sidebar with various tool categories. The top navigation bar includes tabs for Instructions, Battlecard, Intel Manager (selected), Tactical, Strategic, and More. The bottom status bar shows coordinates and a scale of 1,000 feet.

# Tactical and Strategic Dashboard

The dashboard is divided into several functional areas:

- Tactical Dashboard (Exercise Only cd071f):**
  - Waypoint List:** Filter by Incident Name and/or Team Name. Includes search bar and list of waypoints with details like "Victim, confirmed by FL-TF1, pdoherty\_napsg" and "Structure - Major by FL-TF1, pdoherty\_napsg".
  - Map:** Shows a geographic area with various markers and labels like "Division: Manatee" and "Division: Sarasota".
- Sandbox Strategic Dashboard (Exercise Only 662d6a):**
  - Incidents List:** A scrollable list of incidents including "MABAS Division 1 State Deployment Drill", "Swiftwater Training", "Training Incident Area", "20230506 NJ-TF1 FSE", "20230524 IST COMEX", "Whiting Woods Incident", "COTF-1 ART 2023", and "2022 Hurricane Ian SAMPLE DATA".
  - Summary Cards:**
    - Waypoints:** 7,650 total, +0 Today.
    - Confirmed Interactions:** 26 total, +0 Today.
    - Damage Obs:** 5.1k total, +0 Today.
  - Map:** Shows a different geographic area with a large yellow incident area and various markers.

# Field Observers Mobile Apps



## QuickCapture v10 Field Reference Guide

### 1. Project User Input

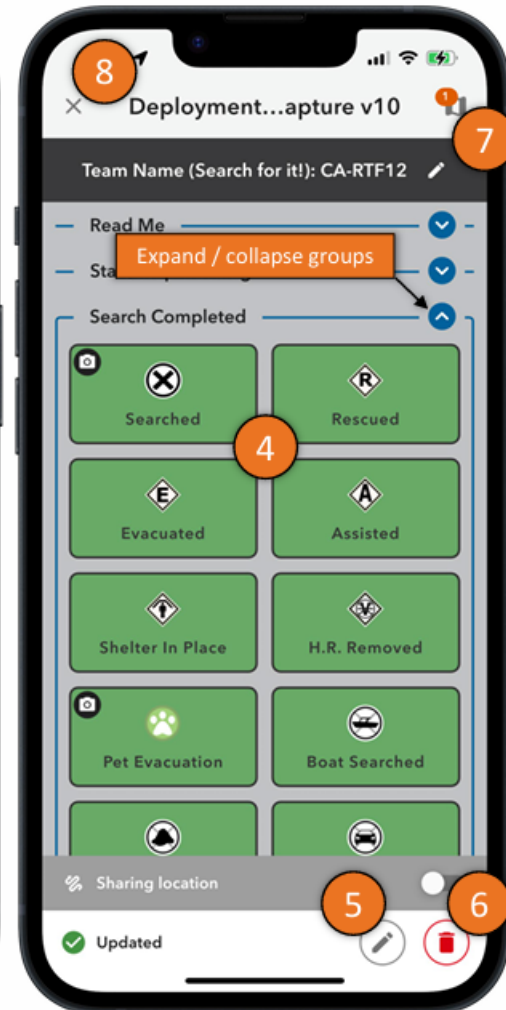
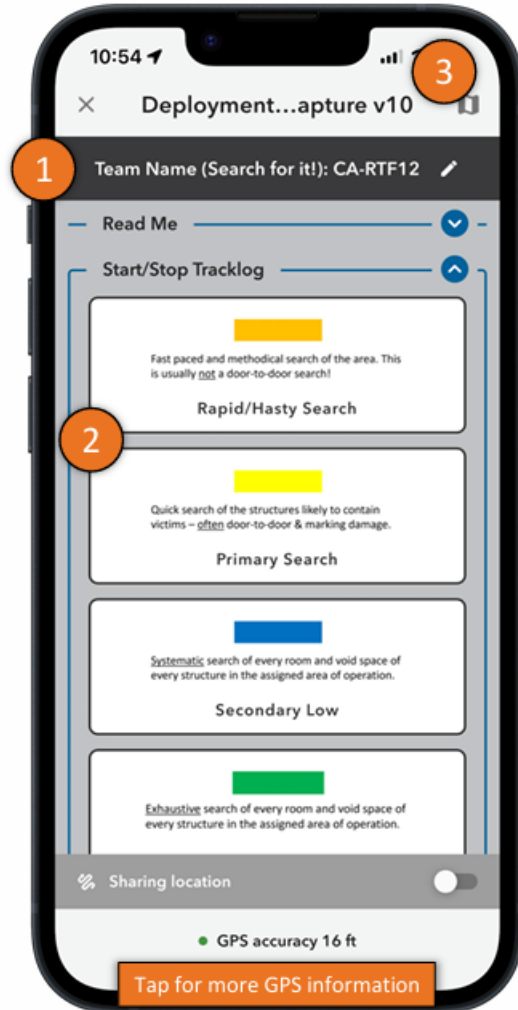
- Begin by answering the 'Project User Input' questions. Use the information provided in the 'Hint' section to guide your answers.

### 2. Create Tracks

- Click a track category to start creating your tracklog. This will save your progress on the device. While recording, the button will blink and display a recording icon.
- When you finish your mission (e.g., completing a segment or at the end of the day), click the same button again to stop and save the tracklog.

### 3. Open Map/ Status

- Click here to view the project map. On a tablet, the map opens automatically.
- If you see a '#', it indicates the number of pending entries. This number will remain visible while offline and will clear once you reconnect and send your data.



### 4. Create a Waypoint

- Click a waypoint type to collect.
  - **Photo:** You may be prompted to take an optional or required photo.
  - **Button User Input:** Depending on the point type, you may be asked an additional optional or required question.
- Click **DONE** when finished.

### 5. Edit Point Location

- To edit a point's location (e.g., poor GPS accuracy or distant observation), click the pencil icon and drag the pin to the correct spot (e.g., A-side of structure for damage assessment).

### 6. Delete Data

- To delete a point, click the trash can icon and start over. If you missed the chance to edit or delete it, you can make changes later in Field Maps or Intel Manager

### 7. Submit Records

- The orange number shows how many records are stored on your device. Click it to view waypoints on a map and manually send records when online. Submit all records before closing the project.

### 8. Close Project

- Click the 'x' when finished collecting data or to adjust settings, open a new project, etc. If online, this will send pending data. If offline, reopen the project when back online to send data.



# Symbology



## SARCOP v10 Data Dictionary





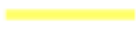







Search or Human Interactions that will be <b>Complete / No Follow-Up Needed</b> by default		
	Searched Per ROE	A search of any type completed on a structure, vehicle, debris pile, or other site according to the rules of engagement with no victims or human remains found during US&R operations.
	Boat Searched	A search completed of a boat or other water-based vessel.
	Debris Searched	A search completed of a debris or rubble pile.
	Vehicle Searched	A search completed of any ground-based vehicle.
	Rescued	Technical rescue that required moving survivor(s) to a safe location utilizing skillsets such as rope, structural collapse, swiftwater rescue, or other technical means.
	Evacuated	Safe relocation of survivor(s) to a CCP or out of harm's way.
	Assisted	Materials assistance provided to survivor(s).
	Shelter in Place	Survivor(s) choosing to remain at their current location during US&R operations.
	Human Remains Removed	Human remains—partial or complete—that have been removed / collected from their location.
	Animal Evacuation	Evacuation or rescue of livestock, pets, or companion animals.

Search or Human Interactions that will <b>Need Follow Up</b> by default		
	Victim Detected	Potential survivor detected by technical (e.g. K9, listening device, etc.) or non-technical (e.g. intelligence) means.
	Victim Confirmed	Survivor—by definitive visual, audible, physical confirmation—requiring rescue.
	Human Remains Detected	Potential human remains—partial or complete—detected by technical (e.g., K9) or non-technical (e.g., intelligence) means.
	Human Remains Confirmed	Human remains—partial or complete—confirmed by visual or anthropological means.
	Targeted Search	Specific search location of any search type based on the needs of the AHJ (e.g., reported missing persons, 911 calls, etc.).
	Missing Person Initial Planning Point	Specified starting location for the search of a missing person based on the point at which the missing person was last seen or known to be.

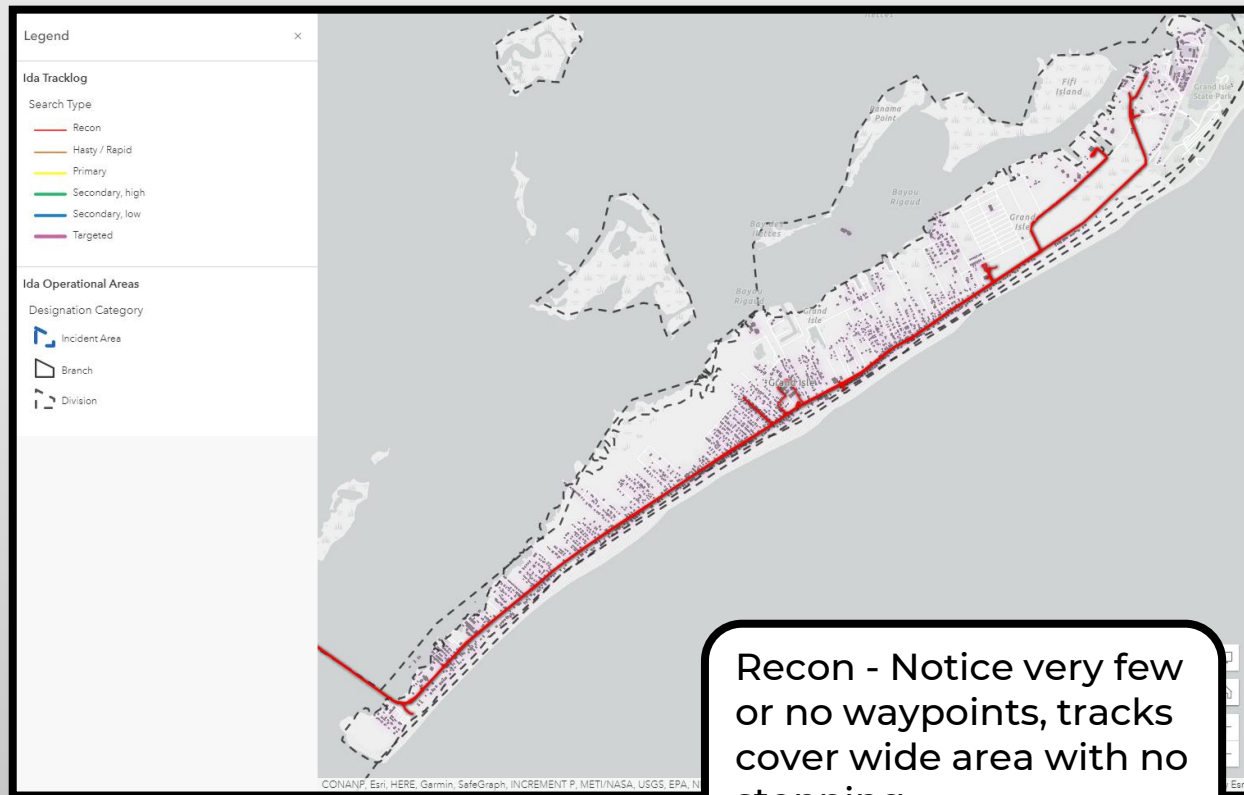
Damage Observations*		
	Unaffected	No visible or reported damage.
	Affected	Damage to the structure is mostly <u>cosmetic</u> .
	Minor	Repairable <u>non-structural</u> damage.
	Major	Structural damage or other significant damage that <u>requires extensive repairs</u> .
	Destroyed	The structure is a <u>total loss</u> .
	Unknown	The status of the structure is unknown.

\*Additional damage observation guidance can be found here: [flood damage](#), [non-flood damage](#), [PDA Pocket Guide](#).

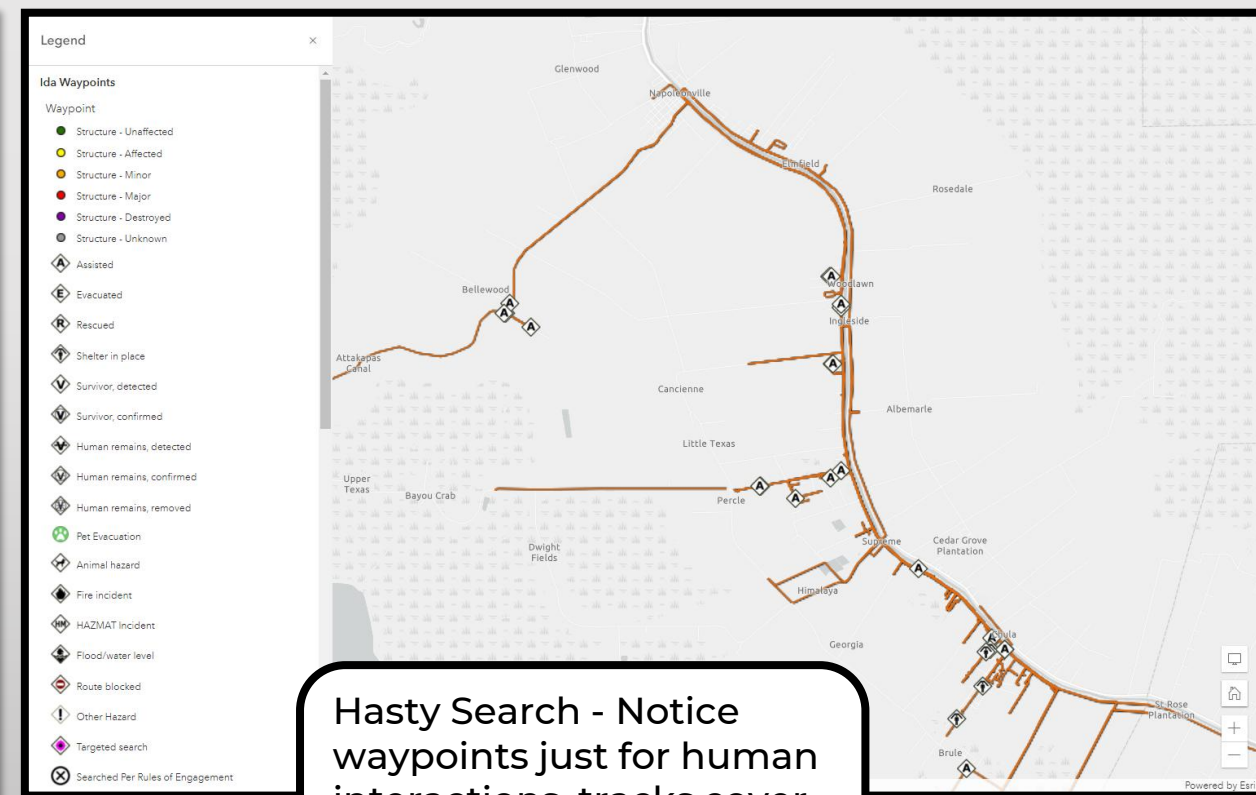
# Search Definitions (Search Tracklog Colors)

Tracklog Mission Types		
	Ground Recon	Preliminary survey of the area by ground—determines “How Big, How Bad” and clarifies initial priorities.
	Aerial Recon	Preliminary survey of the area by air—determines “How Big, How Bad” and clarifies initial priorities.
	Water Recon	Preliminary survey of the area by water—determines “How Big, How Bad” and clarifies initial priorities.
	Hasty/Rapid Search	Fast-paced but methodical search of the area—can include surface rescues of opportunity and brief human interactions.
	Primary Search	Quick search of the structures or areas of interest likely to contain victims.
	Secondary Low Coverage Search	<u>Systematic</u> search of every room, path of travel, and void space of a structure or area of operation— <b>NOT</b> the “second time” a search has been conducted.
	Secondary High Coverage Search	<u>Exhaustive</u> search of every room, path of travel, and void space of a structure or area of operation—includes complete de-layering and removal of collapsed debris to ensure thoroughness.
	Targeted Search	Search of a specified location such as shelters, high-occupancy buildings, critical infrastructure facilities, areas of last refuge, locations with at-risk persons (e.g., elderly, special needs), or locations with reported missing persons.
	Canine Search Team Live Find	Search of a structure or area using Live Find Detection canines (LFD K9).
	Canine Search Team Human Remains Detection	Search of a structure or area using Human Remains Detection canines (HRD K9).
	Damage Observation	Mission to document the severity of damage to structures or areas.
	Other	Mission that falls outside of established search types or definitions above.

# Recon Search vs Hasty Search

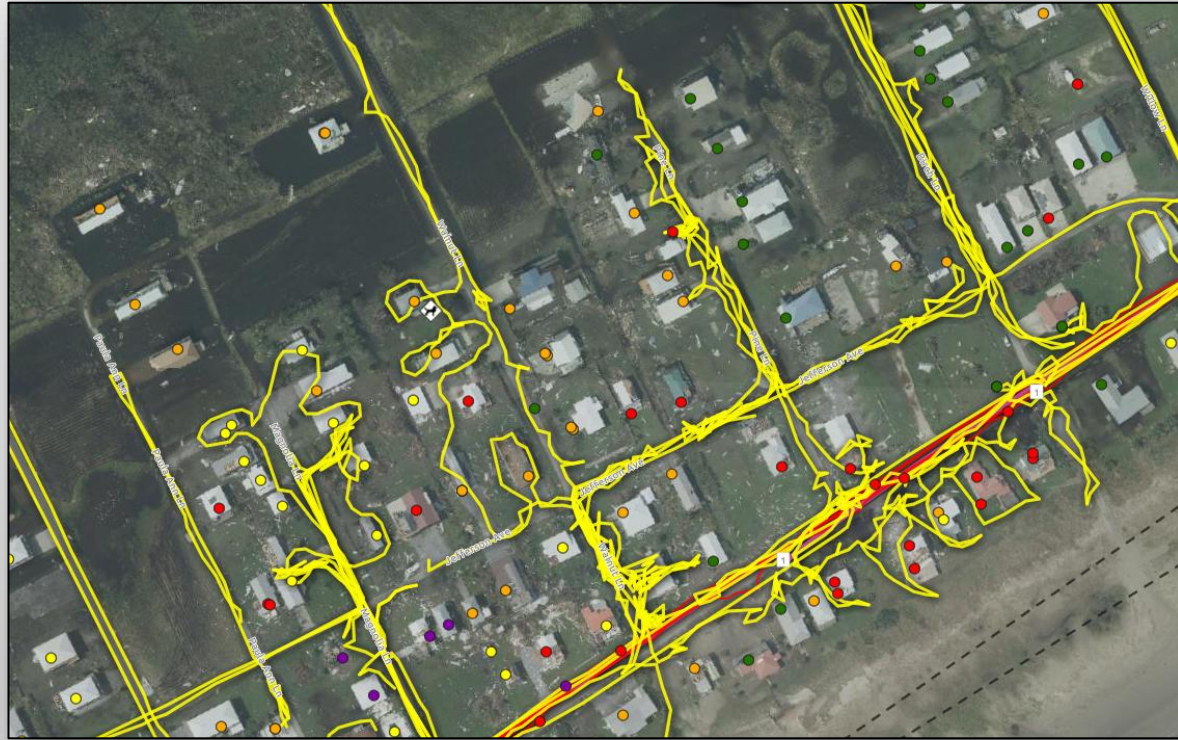


Recon - Notice very few or no waypoints, tracks cover wide area with no stopping.



Hasty Search - Notice waypoints just for human interactions, tracks cover wide area, stopping only for rescues and assists.

# Primary and Secondary Search

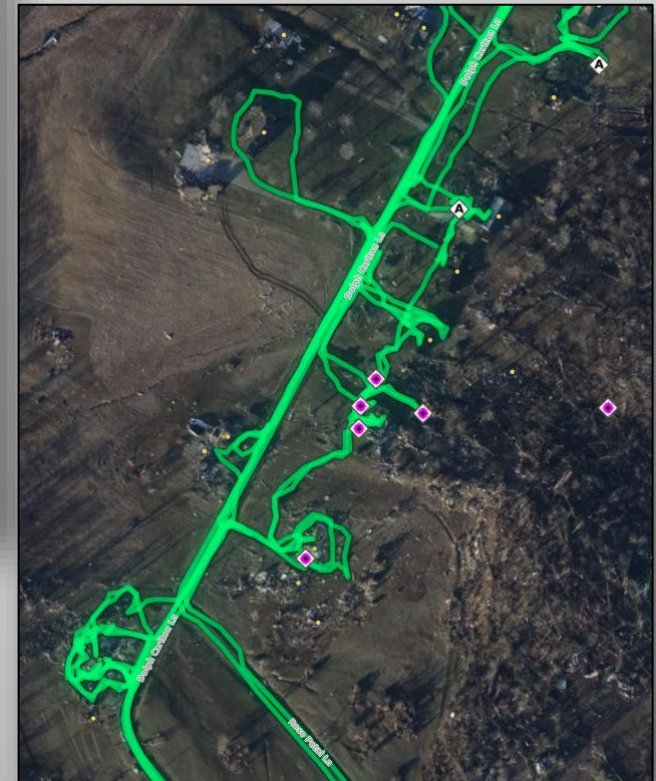


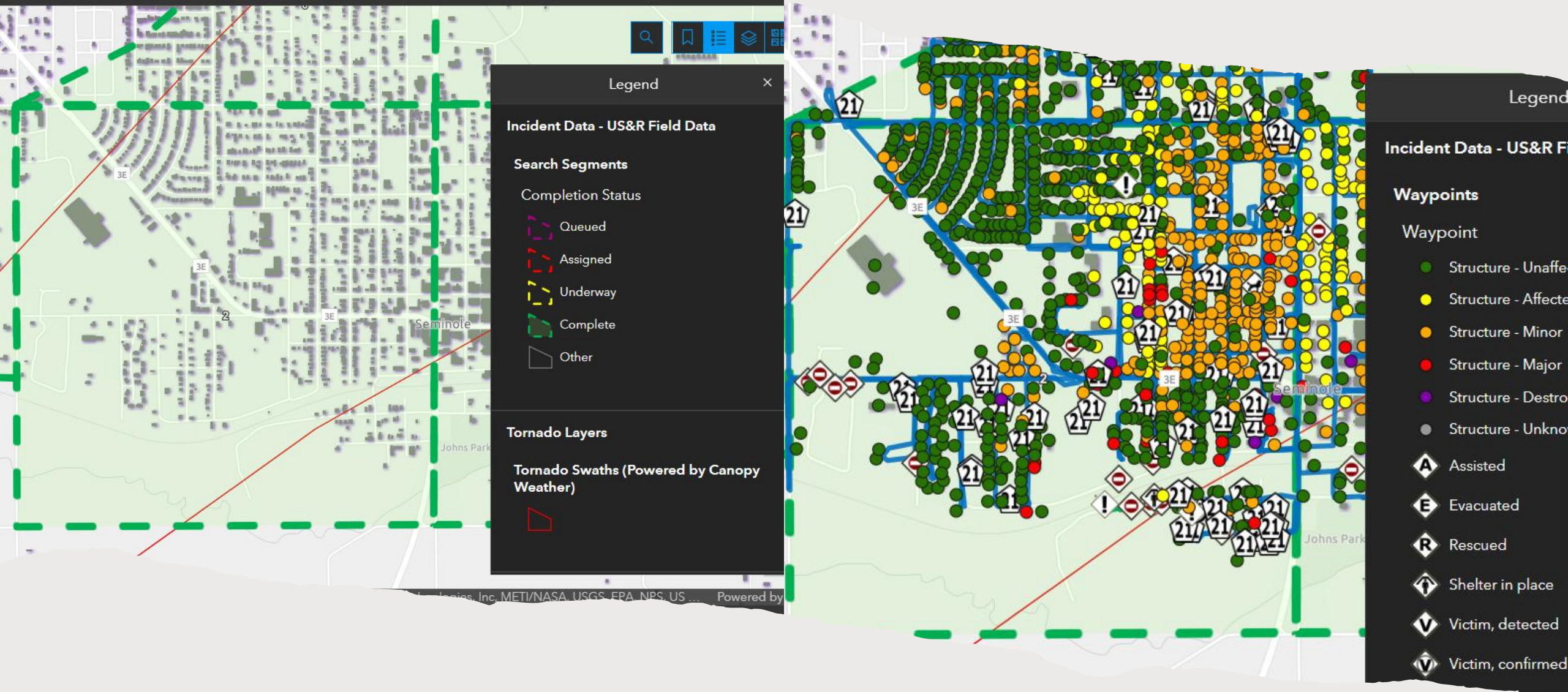
Primary

Secondary Low Coverage

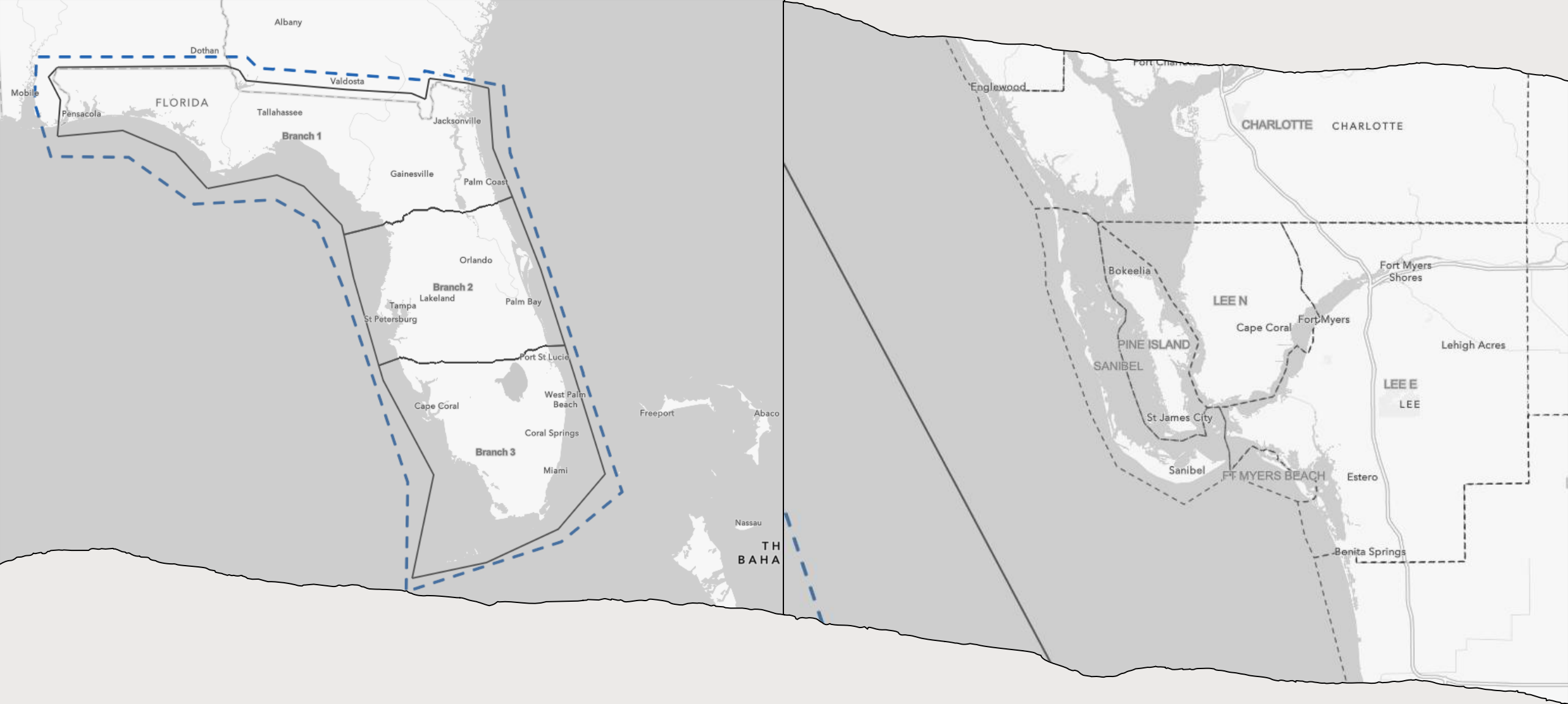


Secondary High Coverage



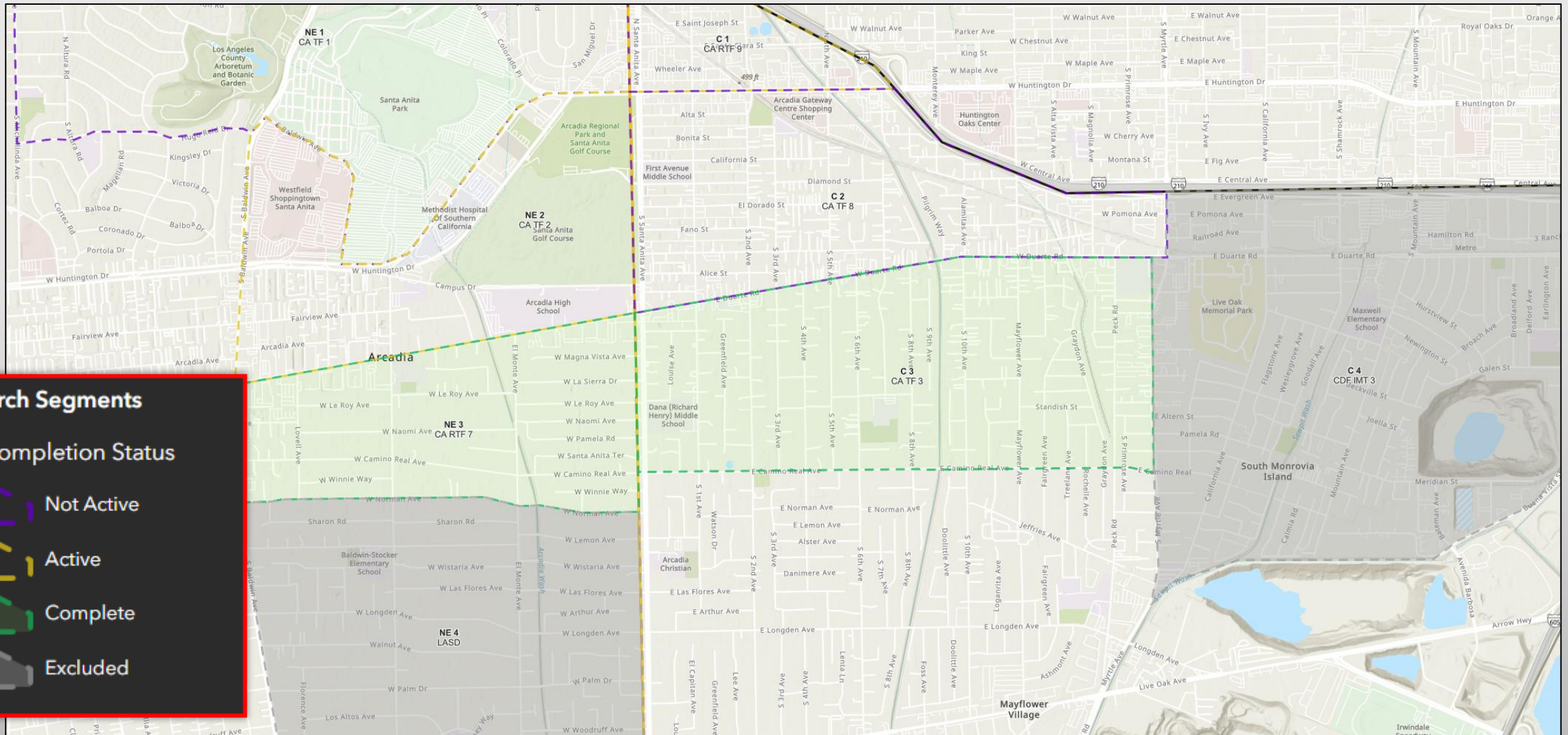


# Wide Area Search using SARCOP







Where Do We Start The Search?

# Operational Area Hierarchy - Segments



## Search Segments

### Completion Status

-  Not Active
-  Active
-  Complete
-  Excluded

# Search Segment Analysis

The map displays three search segments in Monrovia, California. Segment C1 (CA TF 9) is a yellow line along Colorado Blvd. Segment C2 (CA TF 8) is a purple dashed line along Huntington Dr. Segment C3 (CA TF 3) is a large green shaded area bounded by Santa Anita Ave, E Duarte Rd, S 10th Ave, and S 8th Ave. The map also shows major roads like I-210 and I-605, and landmarks like the Universal Funeral Chapel and Turner & Stevens Live Oak Mortuary.

**Search Segment: C 3**

Zoom to

### Summary

Status: **Complete**  
Mission Type: **Primary**  
Team: **CA TF 3**  
Squad ID:

### General Information

Work Area Description	
Special Instructions	
Team Comments / Debrief	

### Segment Metrics

Number of Structures	2,766
Acres	711.7
Structures / Acre	3.89
Length of Roads (Miles)	19.70

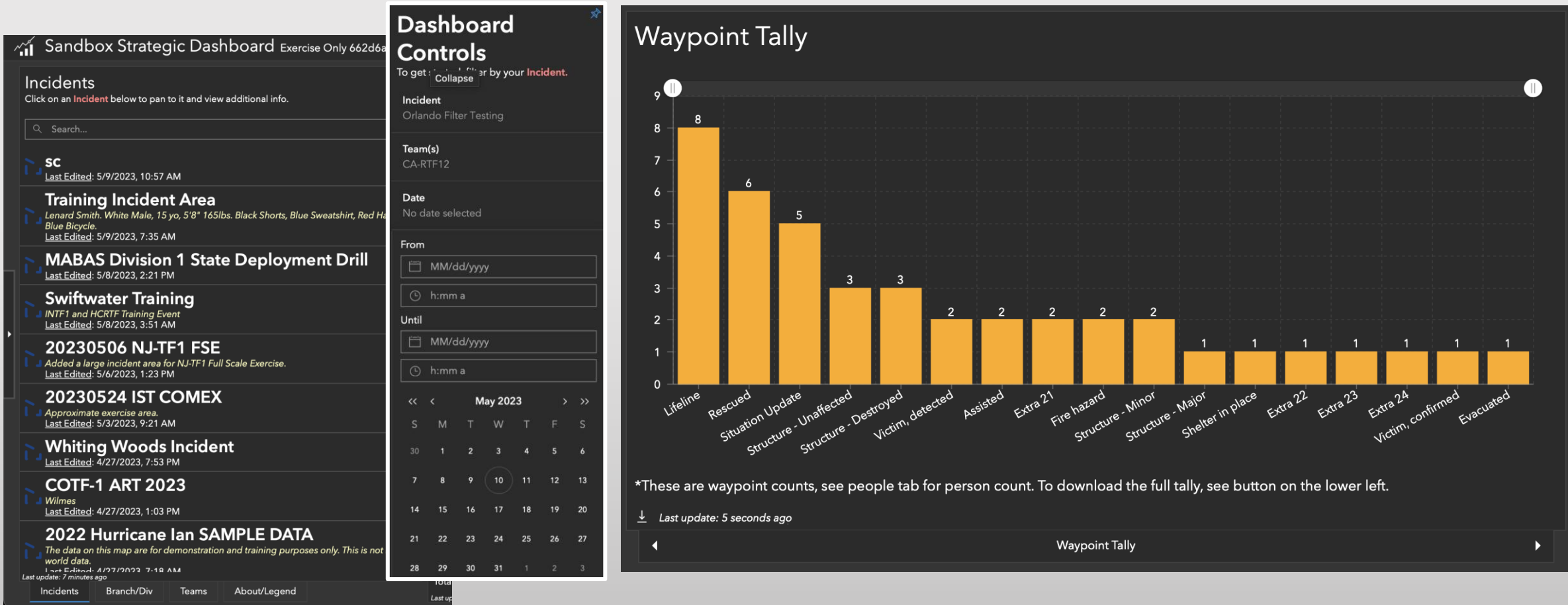
### Search Effort Calculations

These are manual entries and calculations from the Search Segment form

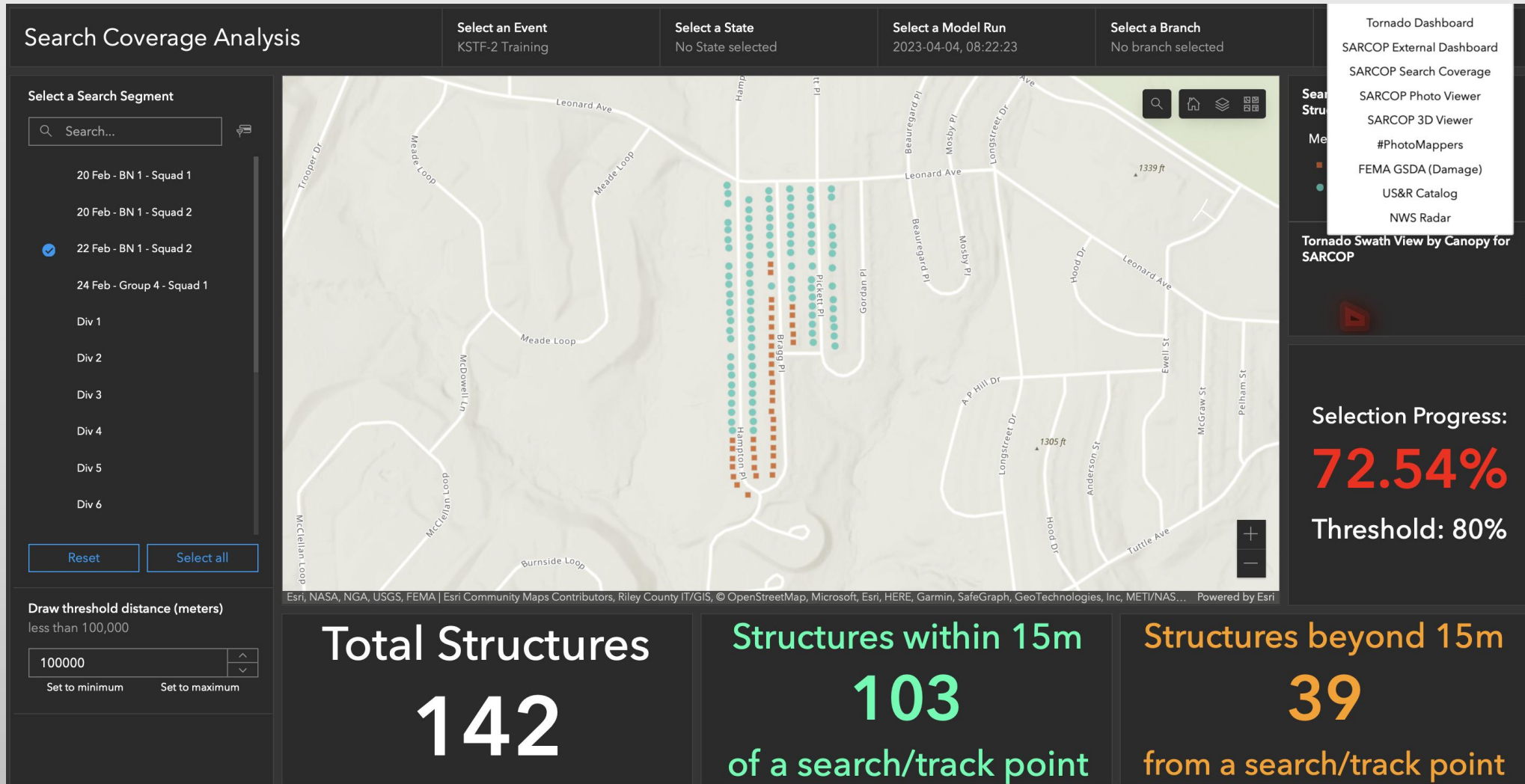
Number of Squads	
Structures Per Squad-Hour	
Estimated Road Miles per Squad-Hour	
Estimated Search Hours	

Number of Squads  
Manual entry - How many squads will be assigned to this segment?

# Generate Tally with Strategic Dashboard



# Search Coverage Dashboard



# Cooperators (External) Dashboard

**Incident Search and Rescue Dashboard**  
For Cooperators / Stakeholders - 16b615

**Team Status**  
Updated via Team Fact Sheet (Survey123) by Plans Team Managers, as outlined in the IAP/OAP.

Search...

**MO-Florissant\_Valley\_FPD (Local)**  
(Type 3)  
May 7, 2025 at 4:36 PM  
661 Saint Ferdinand St, Florissant, Missouri, 63031  
Status: Demobilization

**VA-TF1 (other)**  
(Type 4)  
May 6, 2025 at 8:46 PM  
143 Durham Street, Tauranga, Bay of Plenty, 3110  
Status: Activated

**Other ok-tf2(State)**  
(Type 3)  
May 2, 2025 at 12:42 AM  
2956-3022 S 13th St, Duncan, Oklahoma, 73533  
Status: Activated

**Human interactions are redacted!**

This dashboard is configured for Emergency Managers and stakeholders not involved in SAR operations.

The interface may be adjusted to mission needs, but the purpose is to ensure that external stakeholders see a filtered view of the data (e.g., status of operations, damage observations).

Map | Damage Observations | Division Status

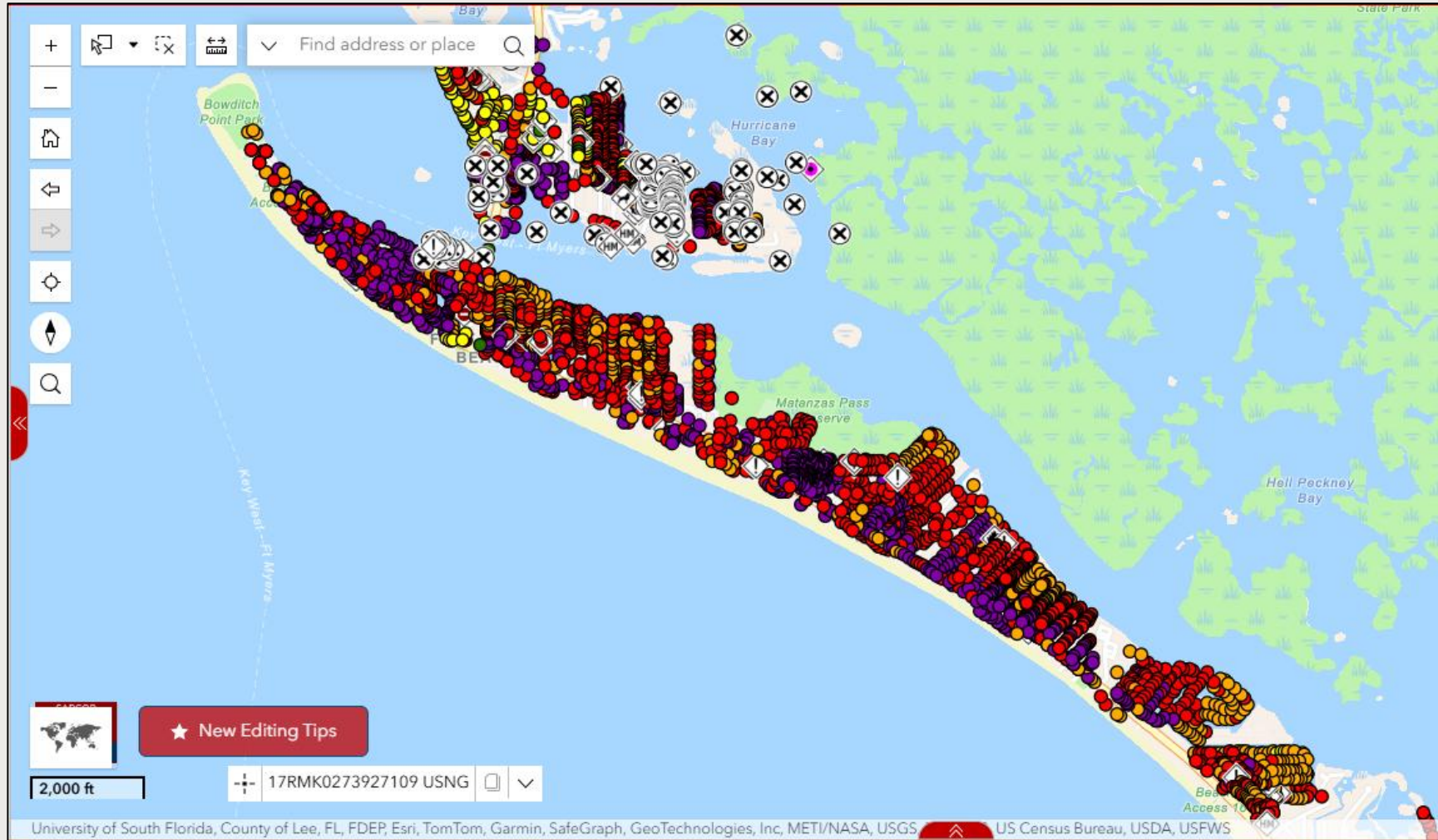
# Hardcopy Maps are Still Important

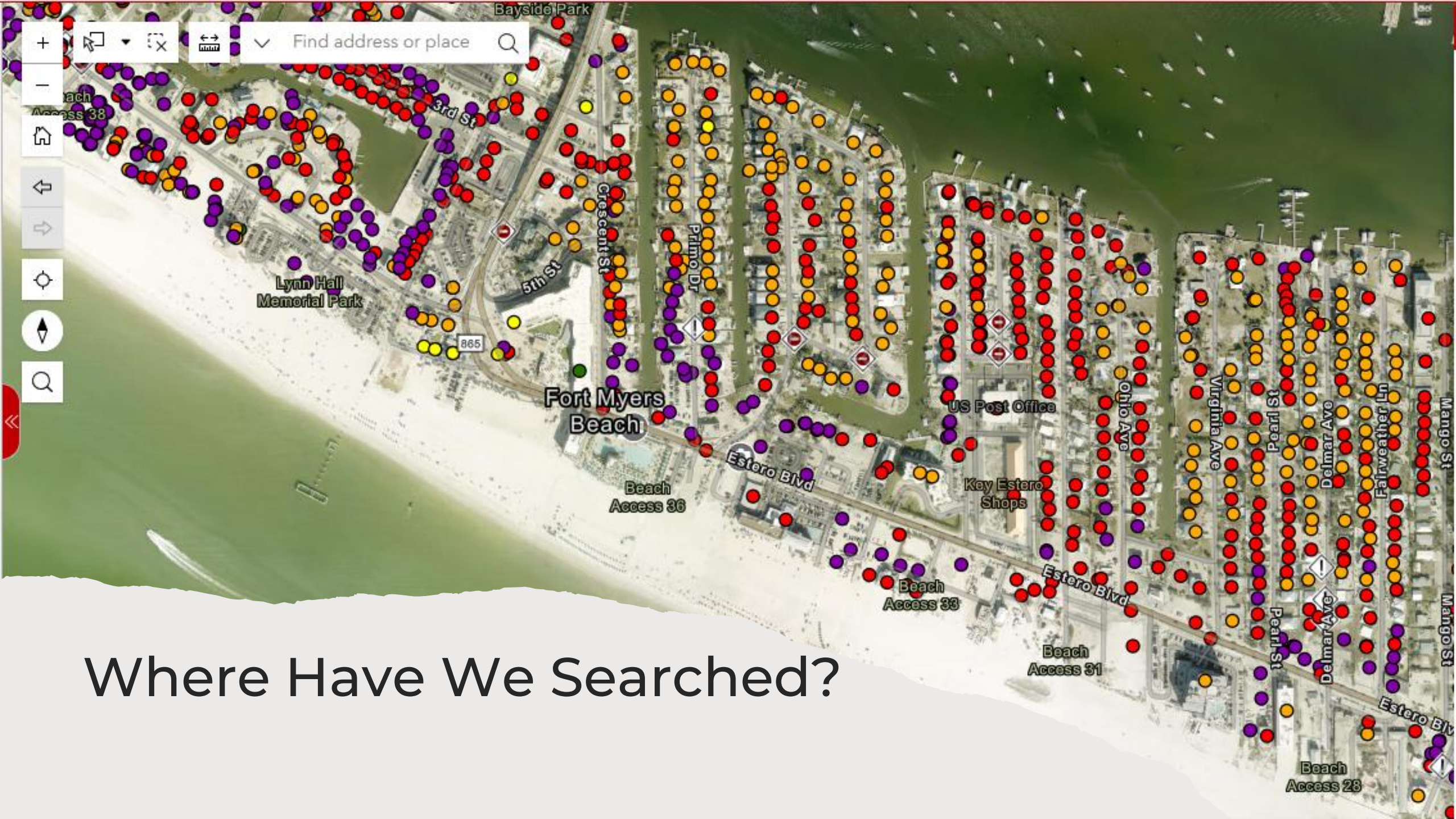
You will refer to them more than the SARCOP during real-time operations

The data on your hardcopy maps must match the SARCOP

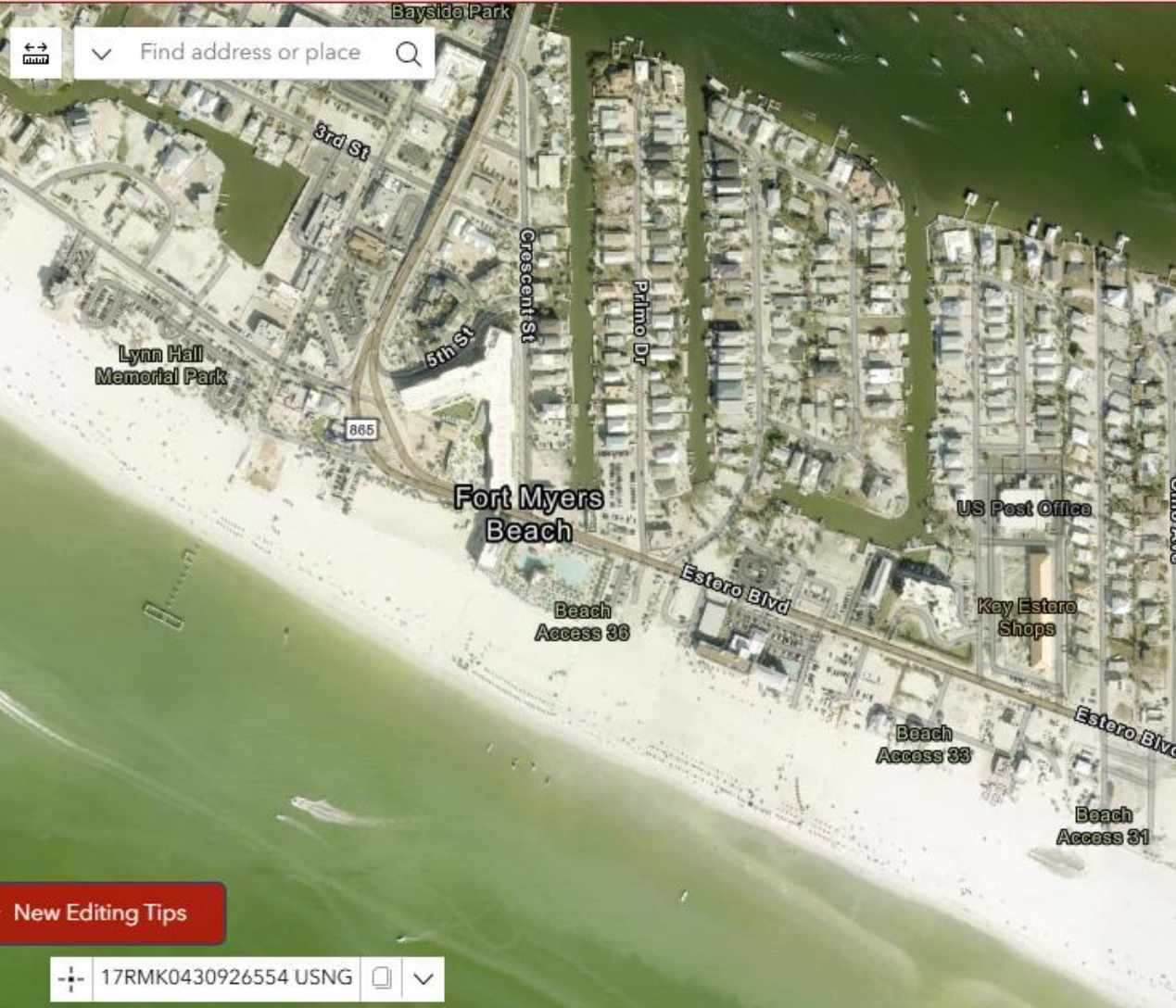


# Where Have We Searched & Where Do We Search Next





Where Have We Searched?



Where Do We Search Next?



Where Do We Search Next?

# SARCOP Training

## Search & Rescue Common Operating Platform (SARCOP)

The following references should be used for field data collection as well as current SARCOP documentation

### REAL WORLD ONLY!

SAR Common Operating Platform

\*Requires your FEMA or SUSAR ArcGIS Online username and password to login. If you need assistance, please contact [incidenthelp@responsesystem.org](mailto:incidenthelp@responsesystem.org) (FOR FEMA), [nsargc@publicsafetygis.org](mailto:nsargc@publicsafetygis.org) (FOR STATE AND LOCAL PARTNERS), or your SUSAR ArcGIS Online administrator. For any North Carolina help, please contact Chris Susi at [christopher.susi@ncdps.gov](mailto:christopher.susi@ncdps.gov).

### TRAINING ONLY!

Training Sandbox

Please contact [jdoke@publicsafetygis.org](mailto:jdoke@publicsafetygis.org) if you run into any issues or have questions about the NAPSG Foundation Training Website or materials.

### COOPERATOR DASHBOARD

Cooperator Dashboard

Requires username and password and access to the External SARCOP Group. Contains filtered views of data from Urban Search and Rescue (US&R) Teams during active response.

SARCOP Training and Documentation

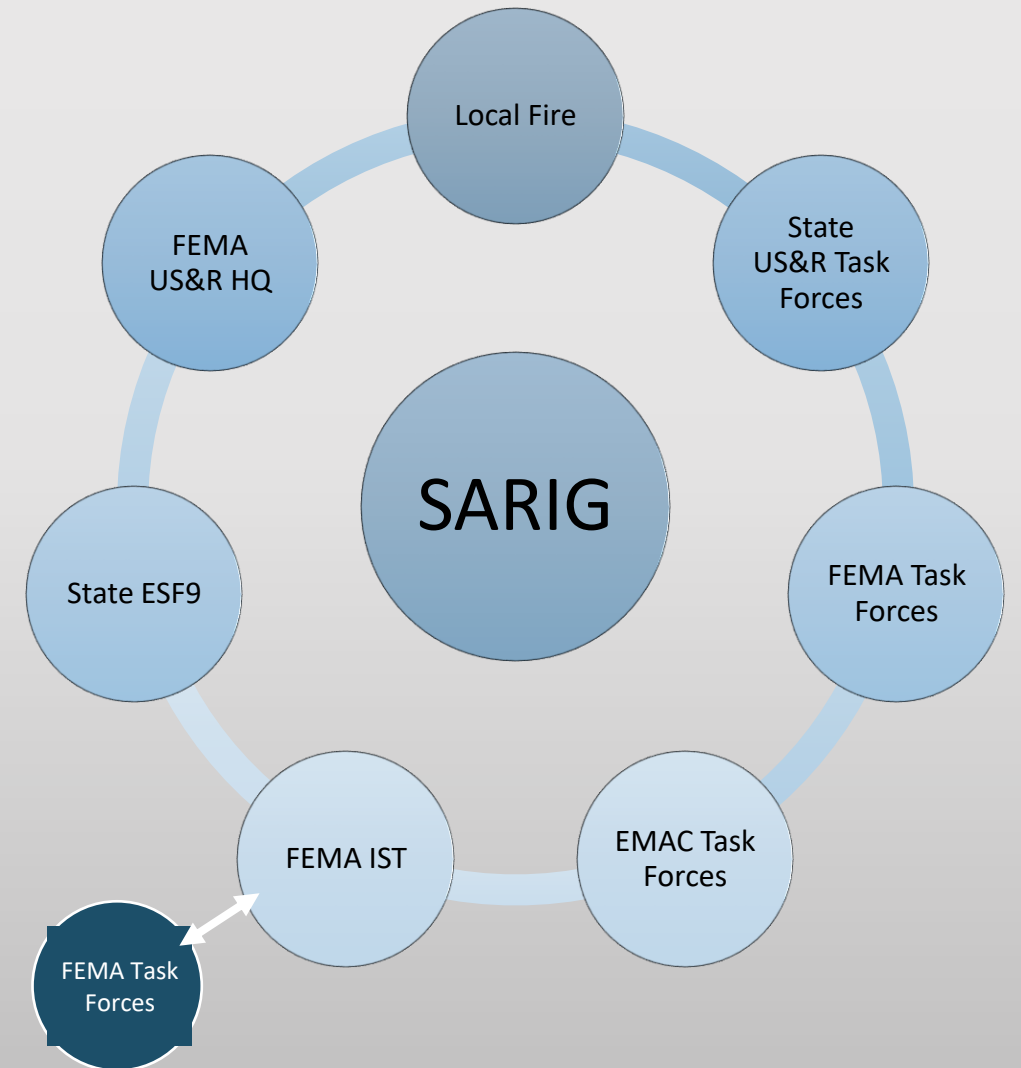
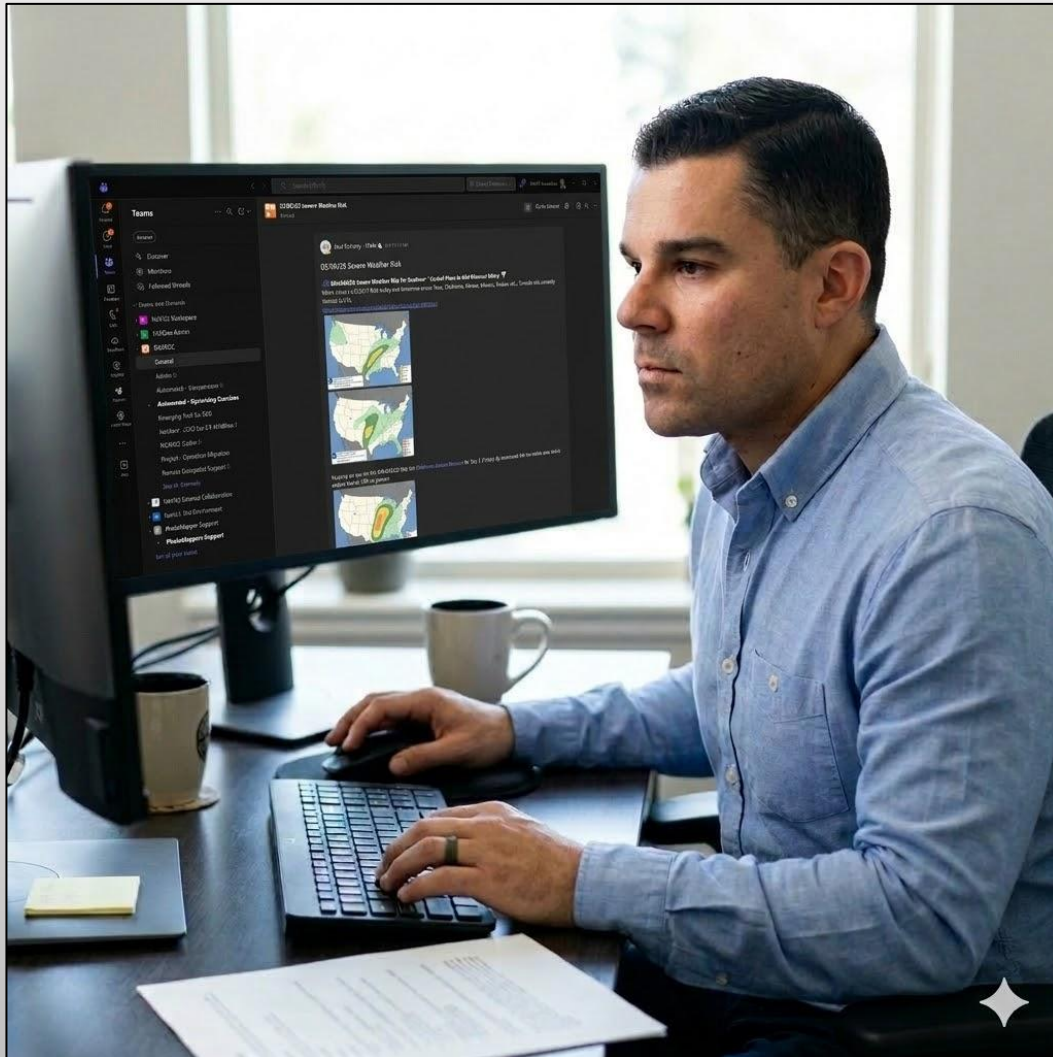
SARCOP Training Videos

# NAPSIG Support Operations

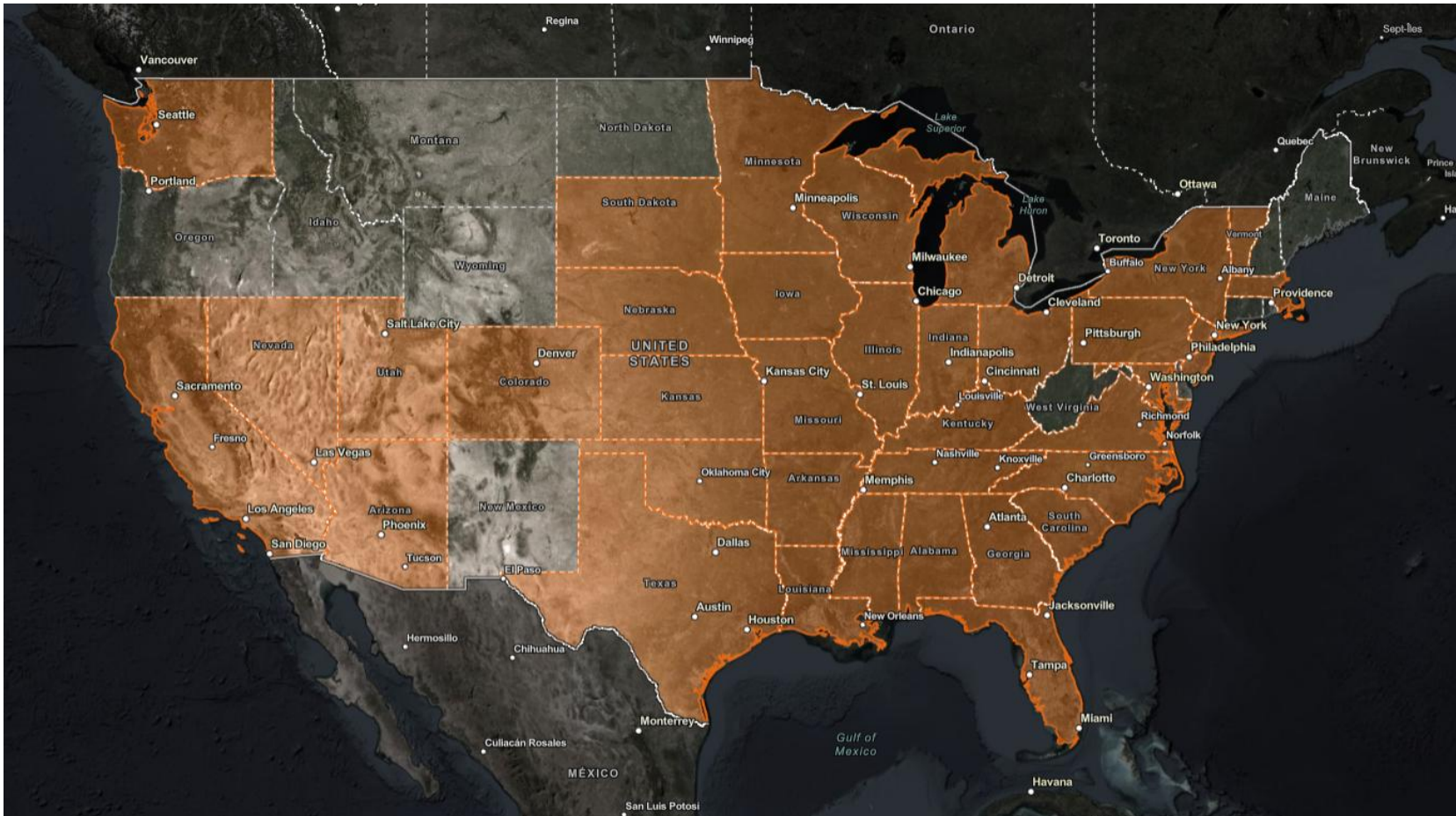
- Technical Support
  - Device Troubleshooting
  - LKL Issues and tracklog spikes
  - Customizing web maps and adding post event imagery
- Coordination
  - Attend Coordination Calls
  - Ensure teams have access to SARCOP
  - Account Creation and Password Resets
- Data QA/QC/Analysis/Intel
  - Process RFIs
  - Monitor data coming into the system
  - PII Monitoring
  - Support search planning and search segment generation
  - Exposure Analysis
  - Search Coverage Analysis



# NAPSIG Response



# State USAR Using SARCOP


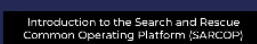
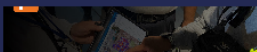

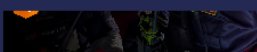





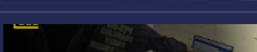


# SARCOP Video Training

Previous Next

## SARCOP Training Playlist

This is a playlist for the SAR Common Operating Platform training videos.

-  SARCOP 101 Webinar 54:41 >
-  1.1 Introduction to SARCOP 06:12 >
-  1.2 What's New with SARCOP in 2023 08:10 >
-  2.2.1 Introduction to QuickCapture 04:36 >
-  2.2.2 QuickCapture: Collect Waypoints 05:00 >
-  2.2.3 QuickCapture Settings 05:40 >
-  2.4.1 Intro to Field Maps 05:04 >
-  2.4.2 Field Maps Filtering and Editing 04:51 >
-  2.4.3 Field Maps Offline Areas 04:05 >
-  2.4.4 Field Maps Settings Overview 02:41 >
-  3.2.1 Introduction to Dashboards 04:35 >

Scan QR Code



# Any Questions?



State of Florida Urban Search and Rescue  
Incident Support Team