NAVIGATING THE

Unlocking the Power of GIS for the Local Fire Service









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Navigating the Flames: Unlocking the Power of GIS for the Local Fire Service





Objective

Explore how and why Charlottesville Fire Dept. created a GIS neighborhood risk assessment







Charlottesville Fire Department





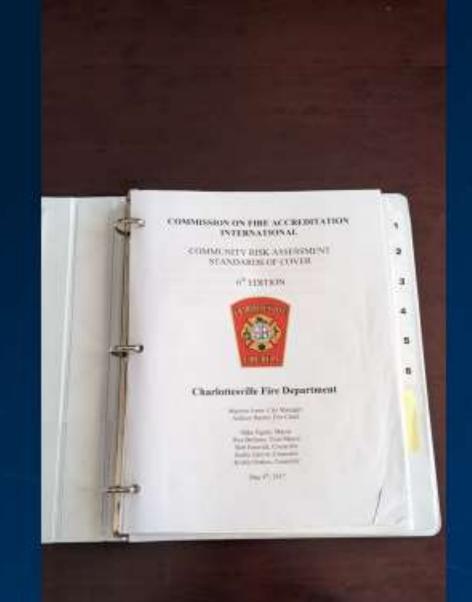






Community Risk Assessment

- Demographic profile
- Weather patterns
- Transportation
- Special hazards
- Built environment







The right people for the



Joe Powers, Former CFD Deputy Chief of Community Risk Reduction



→ Doug Caldwell, GIS volunteer





It All Started with a Story Map...



THE DEPARTMENT

The Charlottesville Fire Department provides fire and other emergency services to residents and visitors to the City of Charlottesville and the University of Virginia. The department also provides contractual fire and emergency services support to the County of Albemarle.

Daily, the Charlottesville fire department operates out of 3 city fire stations staffing a combination of 4 fire engines, two aerial devices, two ALS transport ambulances, a fire marshal, and a chief officer in a command vehicle. CFD staff suppression apparatus with a minimum of three, medics with two. Both the battalion chief and CRR captains ride as single resources.







Nuts and Bolts of CFD's Neighborhood Risk Assessment Hub Site

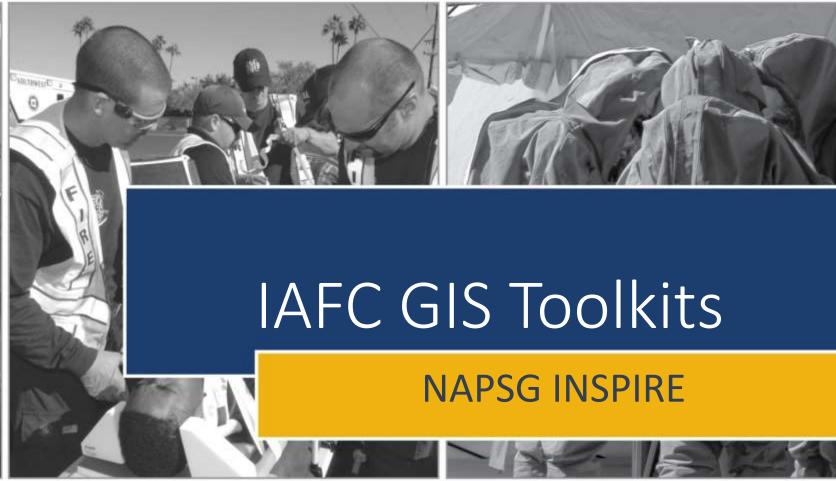












Two Examples

Wildfire Evacuation Planning

Volunteer Firefighter Recruitment & Retention

Wildfire Problem

- Wildfire threats to communities continue to grow.
- Communities are moving closer and into the WUI.
- As such, more people are needing to be evacuated in shorter periods of time, more frequently as the fires are

growing larger and more common.

 Rural communities often lack access to innovative technologies.

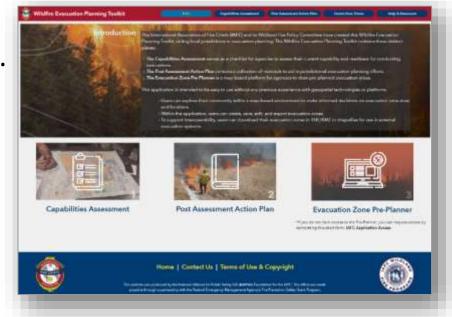


Evacuation Planning Toolkit Vision

An interactive web-based Wildfire Evacuation Planning
Toolkit (targeted to rural departments with limited resources) to aid local jurisdictions in evacuation planning.
The Evacuation Planning Toolkit allows users to:

- 1) Assess their current capabilities
 - (Wildfire Evacuation Capability Assessment)
- 1) View evacuation resources and create a postassessment action plan
 - (Post Assessment Action Plan)
- 2) Explore their community within a map-based application to create evacuation zones

(Evacuation Zone Pre-Planning Application)











Wildfire Evacuation Capability Assessment

- The Wildfire Evacuation Capability Assessment serves as a checklist for agencies to assess their current capability and readiness for conducting evacuations.
 - Online (Survey123) & PDF download walks an agency through the Planning, Organizing, Equipping, Training, and Exercising (POETE) process as it pertains to evacuation planning.
 - Developed by the stakeholder group, with input from the broader IAFC Wildfire community, to determine items to be included in the capability assessment.











experience.arcgis.com/experience/056e3765adce45479643f39432d73763/



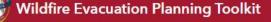












Capabilities Assessment

Post Assessment Action Plan

Create Evac Zones

Help & Resources

Introduction

The International Association of Fire Chiefs (IAFC) and its Wildland Fire Policy Committee have created this Wildfire Evacuation Planning Toolkit, aiding local jurisdictions in evacuation planning. The Wildfire Evacuation Planning Toolkit contains three distinct pieces:

- The Capabilities Assessment serves as a checklist for agencies to assess their current capability and readiness for conducting evacuations.
- The Post Assessment Action Plan contains a collection of materials to aid in jurisdictional evacuation planning efforts.
- The Evacuation Zone Pre-Planner is a map-based platform for agencies to draw pre-planned evacuation areas.

This application is intended to be easy to use without any previous experience with geospatial technologies or platforms.

- · Users can explore their community within a map-based environment to make informed decisions on evacuation zone sizes and locations.
- Within the application, users can create, save, edit, and export evacuation zones.
- To support interoperability, users can download their evacuation zones in KML/KMZ or shapefiles for use in external evacuation systems.



Capabilities Assessment



Post Assessment Action Plan



Evacuation Zone Pre-Planner

*If you do not have access to the Pre-Planner, you can request access by completing this short form: IAFC Application Access.



Wildfire Evacuation Capability Assessment

The MPC Wildland program creates the Waltine Evapuation Capability Assessment to serve as a checkful for your agency to assess its current capability and residence for conducting evapuations during a waltine. This checkful may take time to work through and is not intended to be af-encomposting but rather a starting point for the evapuation-planning process.

			tián

Name:				

Emplishment

Address:

Phone Number:

Risk Assessment

All communities have some least of risk when it comes to widths. It is neumbors upon the sensice basics to objectively evaluate that risk to properly prepare their responders and the community they

1.	Have you conducted a	risk saar	sament for	your	cummumity:	within	the pas
	E content 9						

Yes V

No 🗌

2. Have you identified at rull populations within your community?

Yan

 Have you identified critical infracture within your resconce see that may have intended execusion times?

/es 🗸

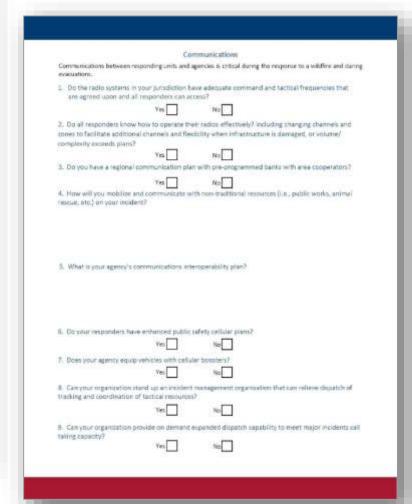
 Has your jurisdiction located critical infrastructure aligned to the community Malines construct for you risk assessments?

Yes

No 🗸

Capabilities Assessment

urino	ou begin this process, it is imperative that you have all the right partners at the table. Every liction is different in its approach to evacuations, however, the following list of gossible partners let be considered:
:::	Neighboring fire jurisdictions Law enforcement (local stope, county) Emergency management Gend management agencies (NPS, BLM, BLA, USFS, State, etc.) Bareau of Rechamation Tribal Partners
	Traditional Planning/coning/code enforcement Water departments/injurition districts Water department of Associations Community Water Protection Plan (CVMP Partmens) Interested/evented observe - community advicates Utilities





Download as PDF



experience.arcgis.com/experience/056e3765adce45479643f39432d73763/















Wildfire Evacuation Planning Toolkit

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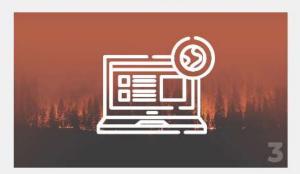
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Capabilities Assessment



Post Assessment Action Plan



Evacuation Zone Pre-Planner

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experience.arcqis.com/experience/056e3765adce45479643f39432d73763/paqe/Post-Assessment-Action-Plan/







Capabilities Assessment

Post Assessment Action Plan

Create Evac Zones

Help & Resources

This page contains a list of links to resources specifically designed to help an agency address gaps identified during the Wildfire Evacuation Capability Assessment. Use these resources to help your agency navigate the complicated wildfire evacuation pre-planning process. If you have any resources you think could be helpful, complete this short survey to add them to the collection: Wildfire Evacuation Resource Submission

To help fill gaps addressed in the Wildfire Evacuation Capability Assessment, relevant wildfire evacuation planning resources are provided.

Risk Assessment



Wildfire Risk to Communities Viewer (Webapp) Wildland-Urban Interface Chief's Guide 2nd Edition (Risk Assessment) Homeland Infrastructure Foundation-Level Data (HIFLD)

Relationships



Wildland-Urban Interface Chief's Guide 2nd Edition (Relationships)

Jurisdictional Responsibility/Agreements





Capabilities Assessment

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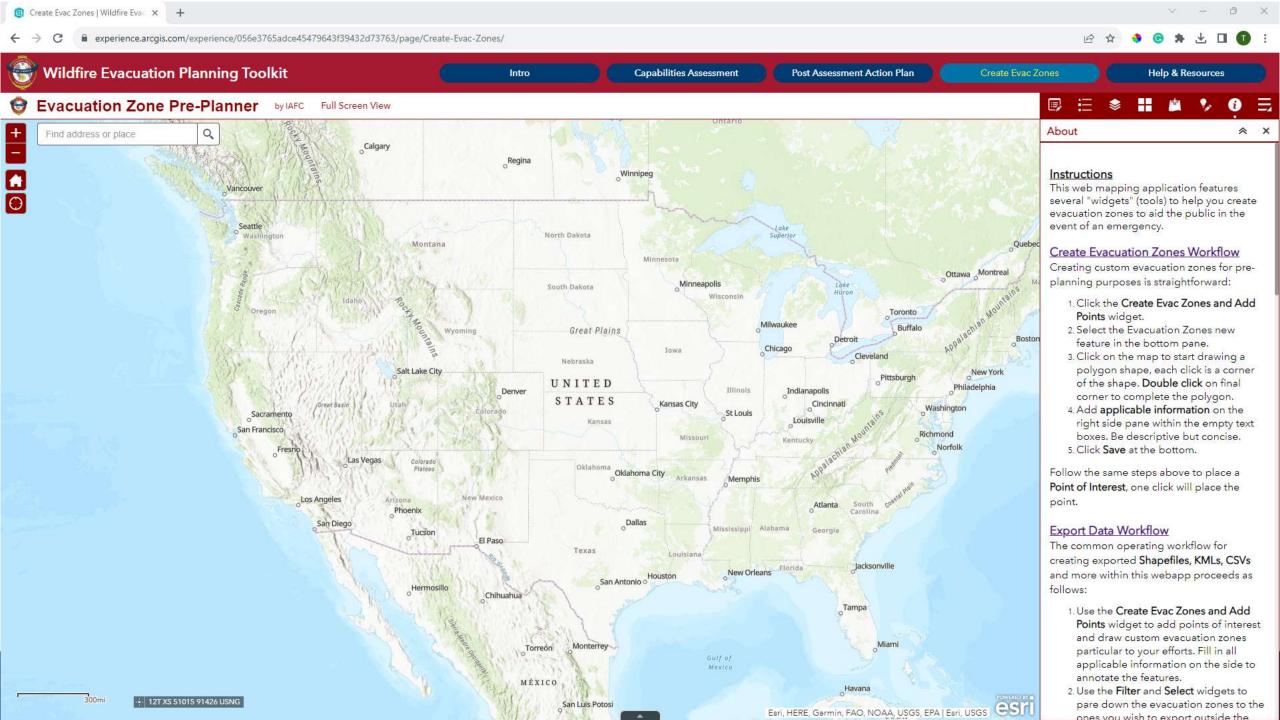
Capabilities Assessment

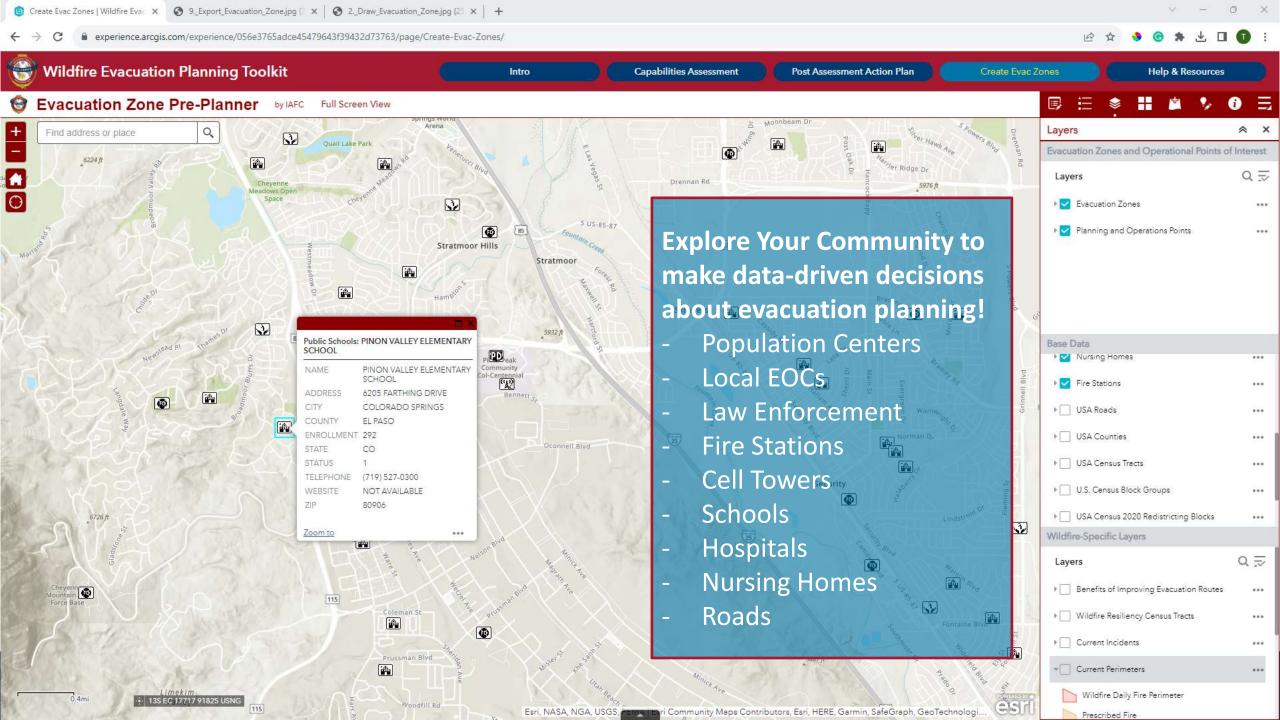


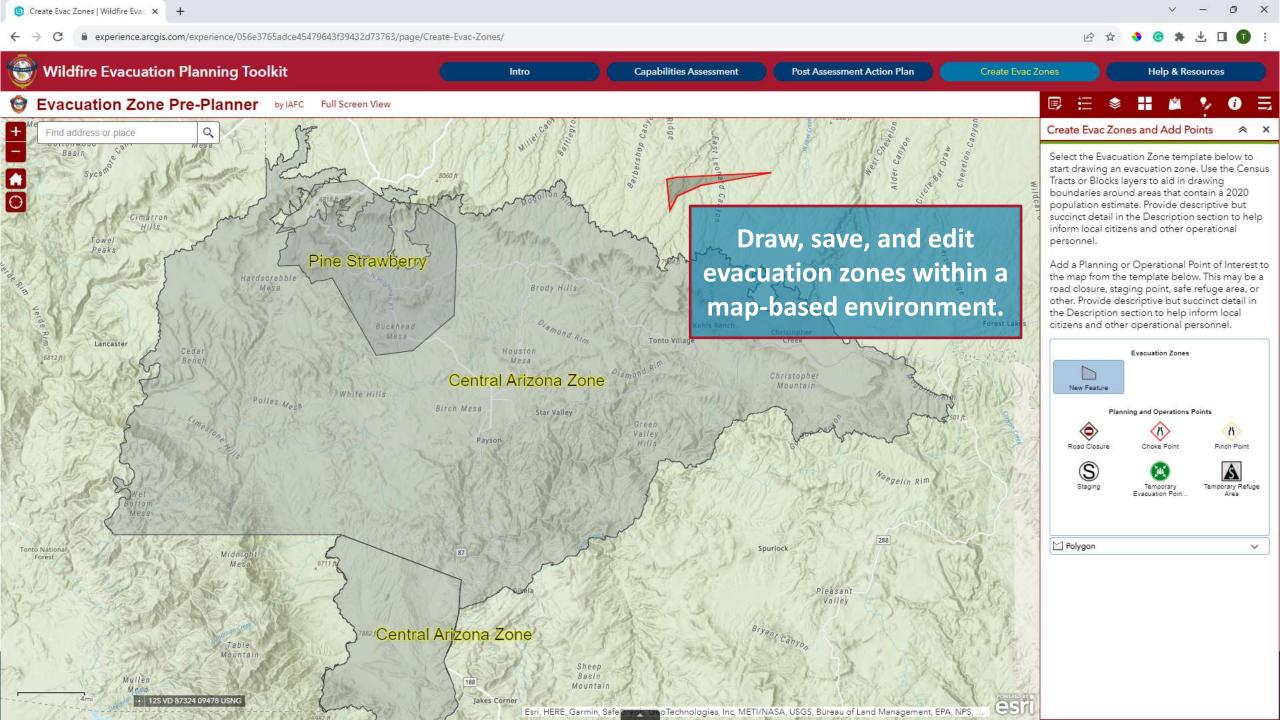
Post Assessment Action Plan

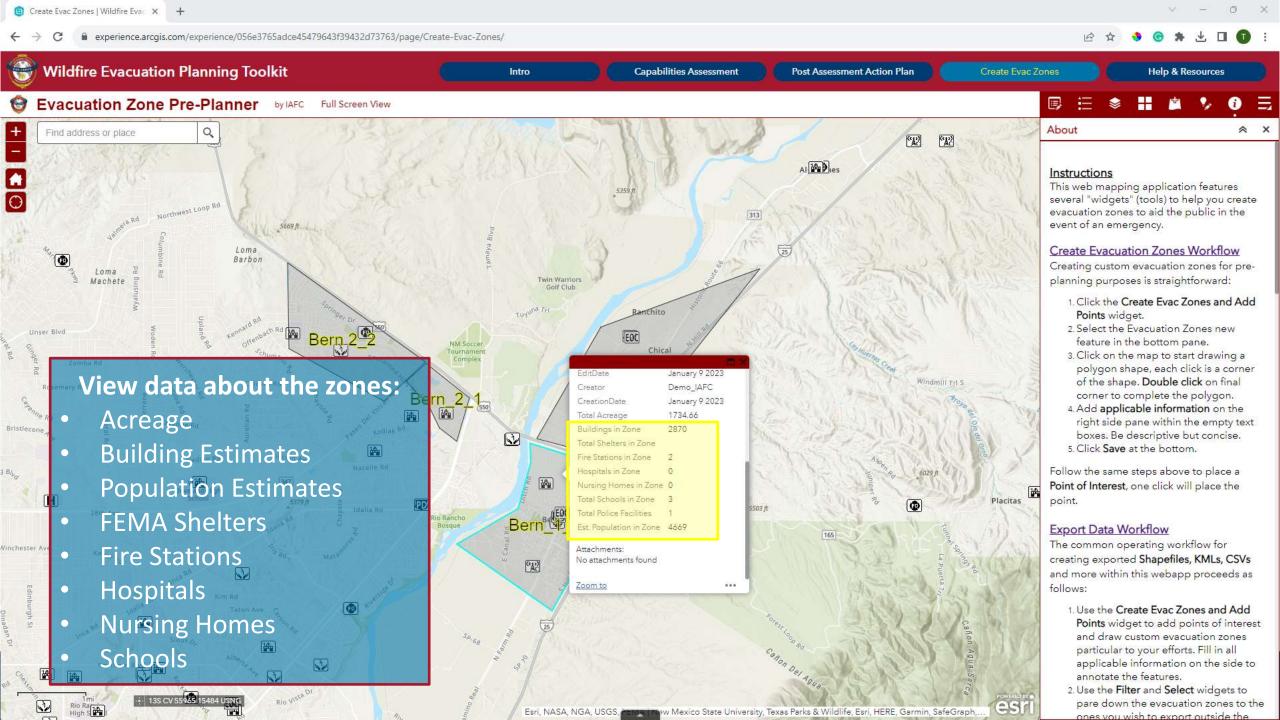


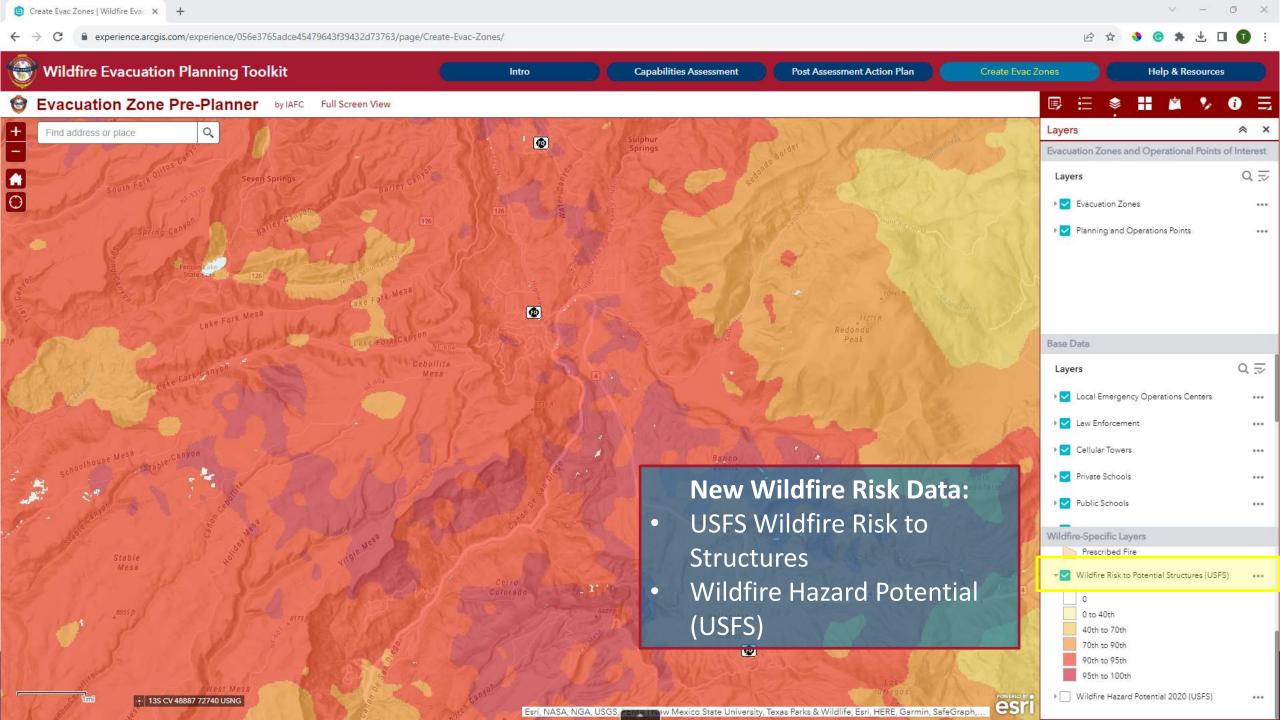
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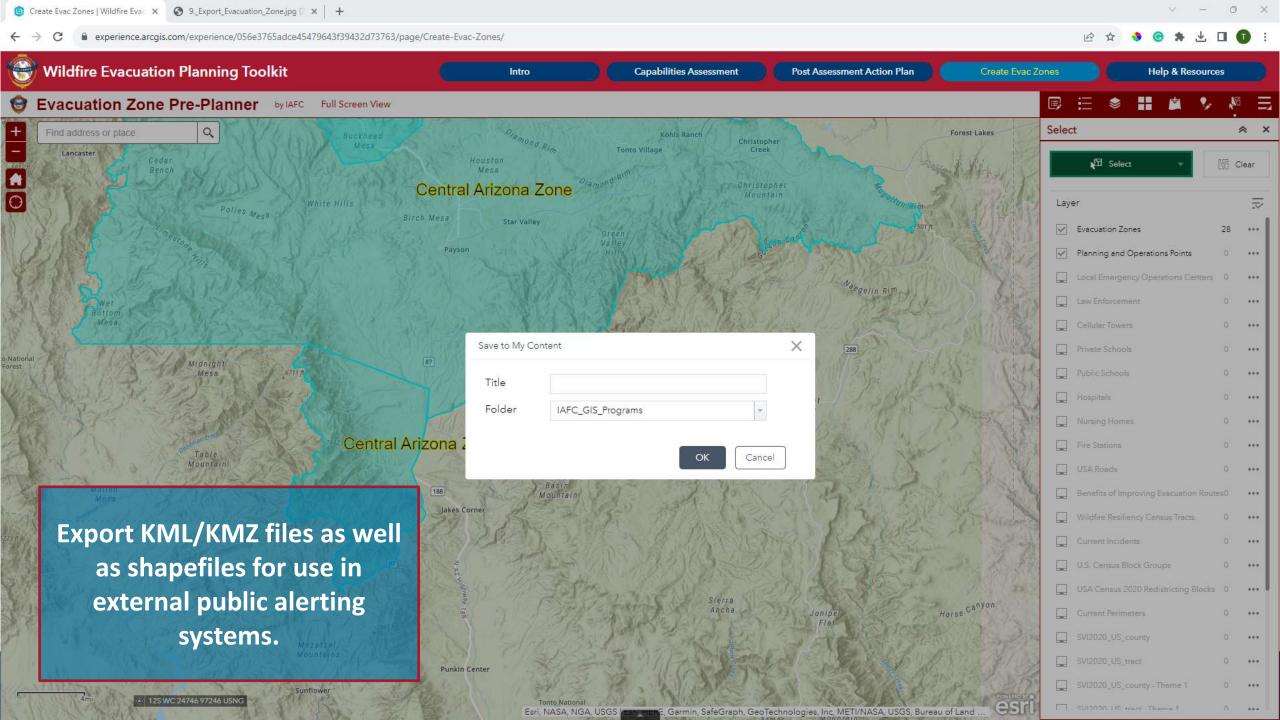


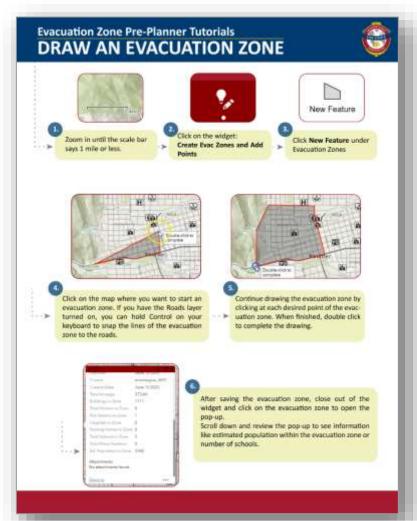














- ✓ Draw an Evacuation Zone Guide
- ✓ View Information (Data) Guide
- ✓ Add Information (Data) Guide
- Copy Features Guide
- ✓ Edit Evacuation Zone Guide
- ✓ Export Evacuation Zone Guide
- ✓ Cut One Evacuation Zone into Two Guide
- ✓ Combine Two
 Evacuation Zones into
 One Guide
- ✓ Reshape Evacuation Guide



One-Pager Help Guides

Volunteer Firefighter Recruitment & Retention

- More and more CFDs are losing firefighters and they are not being replaced.
- The pool for candidates is changing.
- We have not provided tools to identify those changes and how to find the new candidates.



North Carolina Volunteer Firefighter Recruitment & Retention 2023 SAFER Grant Survey Results

Select a Region All Regions Select a County All Counties Select a Department All Departments Select a Date No date selected

Total Survey Submissions

516

Number of Departments with Survey Submissions

99

Select a <u>Region</u> to see number of submissions

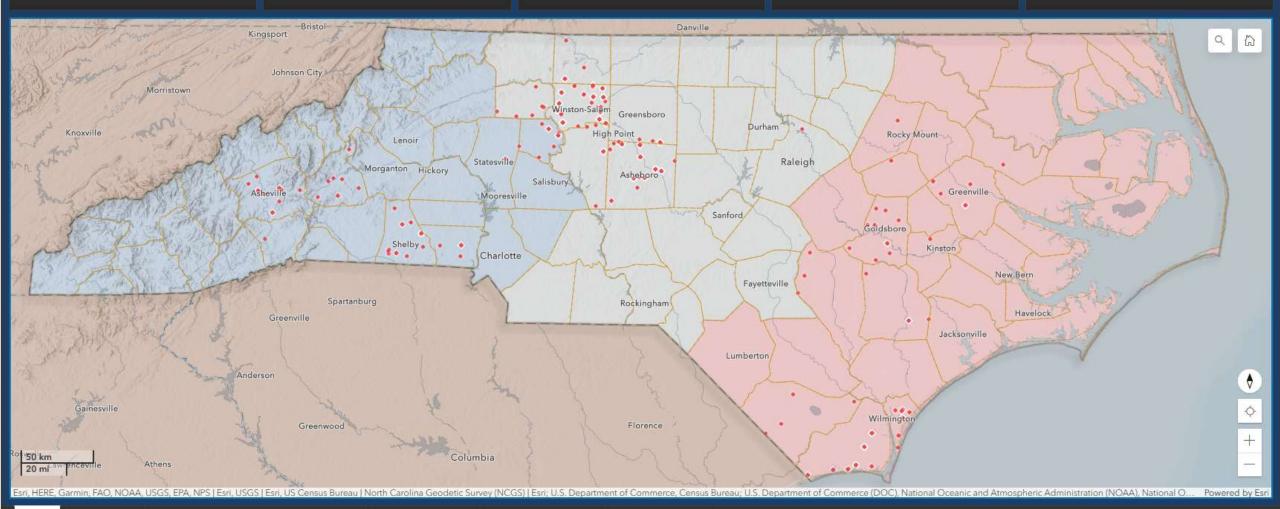
Selection required on one or more elements

Select a **County** to see number of submissions

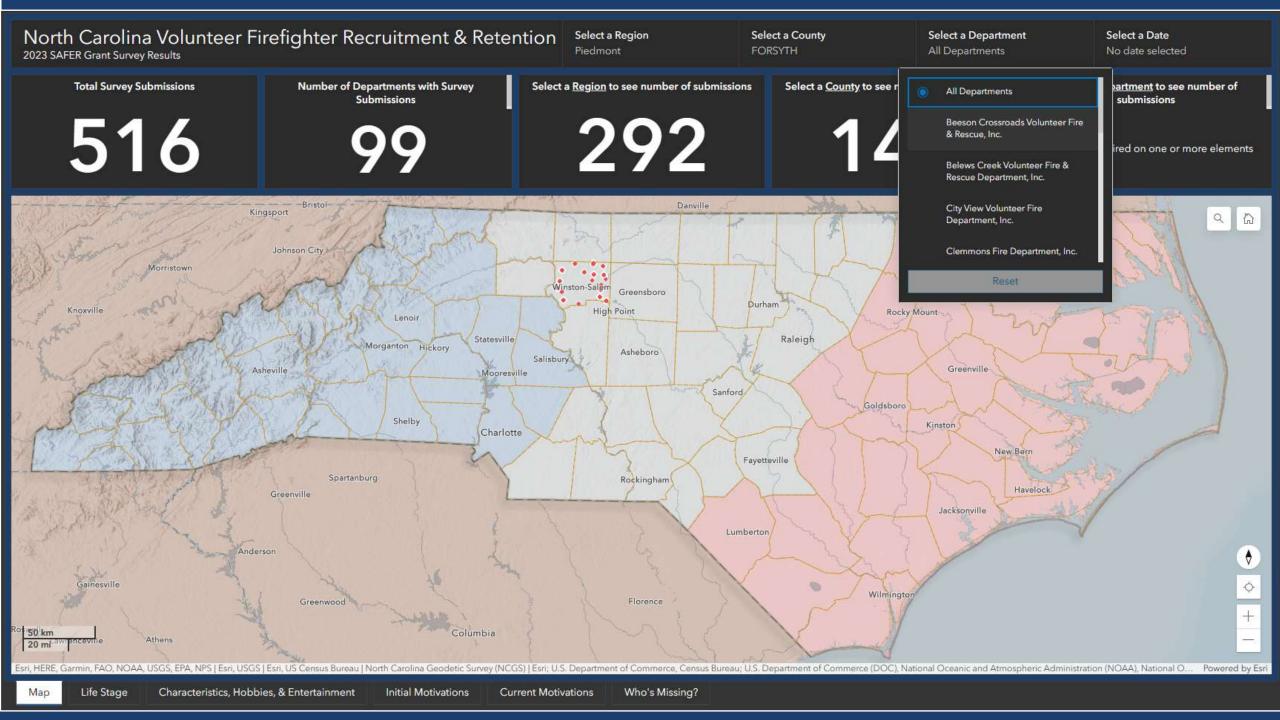
Selection required on one or more elements

Select a <u>Department</u> to see number of submissions

Selection required on one or more elements



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Life Stage

2023 SAFER Grant Survey Results

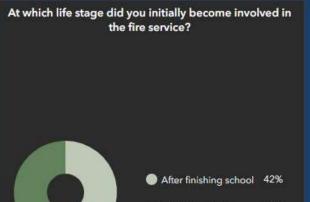
Select a Region All Regions

Select a County All Counties

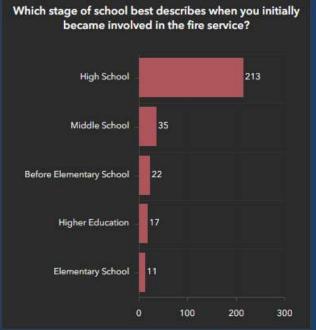
Select a Department All Departments

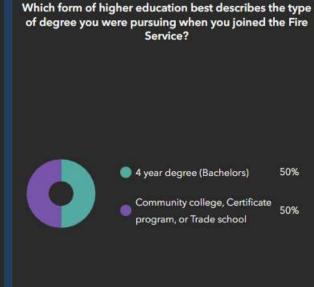
When you intially joined the fire service, did you join a department serving your residence or a department serving another districts?





While in school



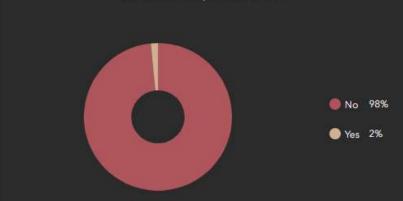


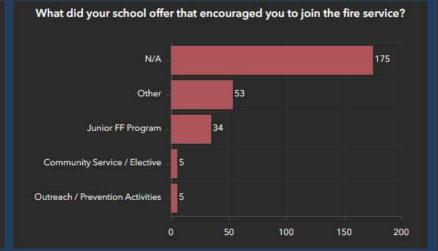
Were you encouraged to join the fire service by a school counselor?



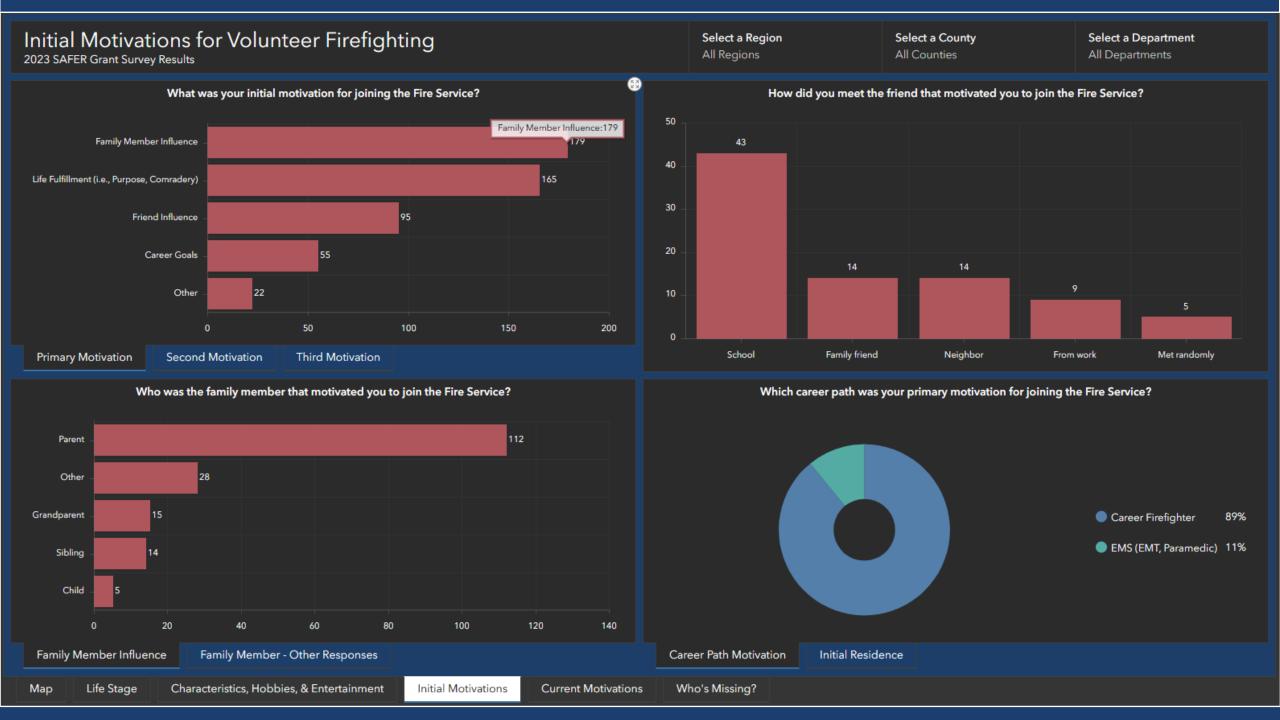


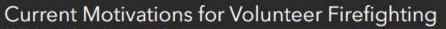
58%





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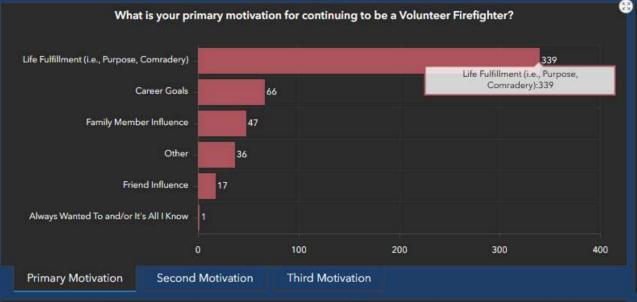




2023 SAFER Grant Survey Results

Life Stage

Map



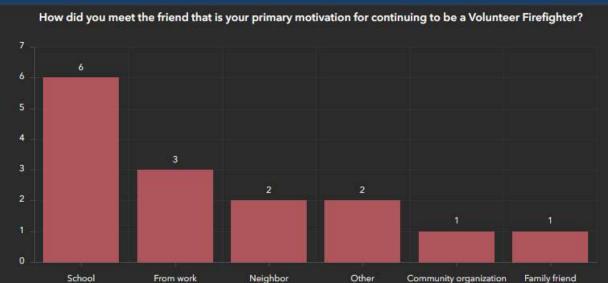




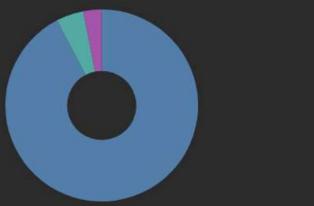
Select a Region All Regions

Select a County All Counties

Select a Department All Departments



Which career path was your primary motivation for continuing to be a Volunteer Firefighter?



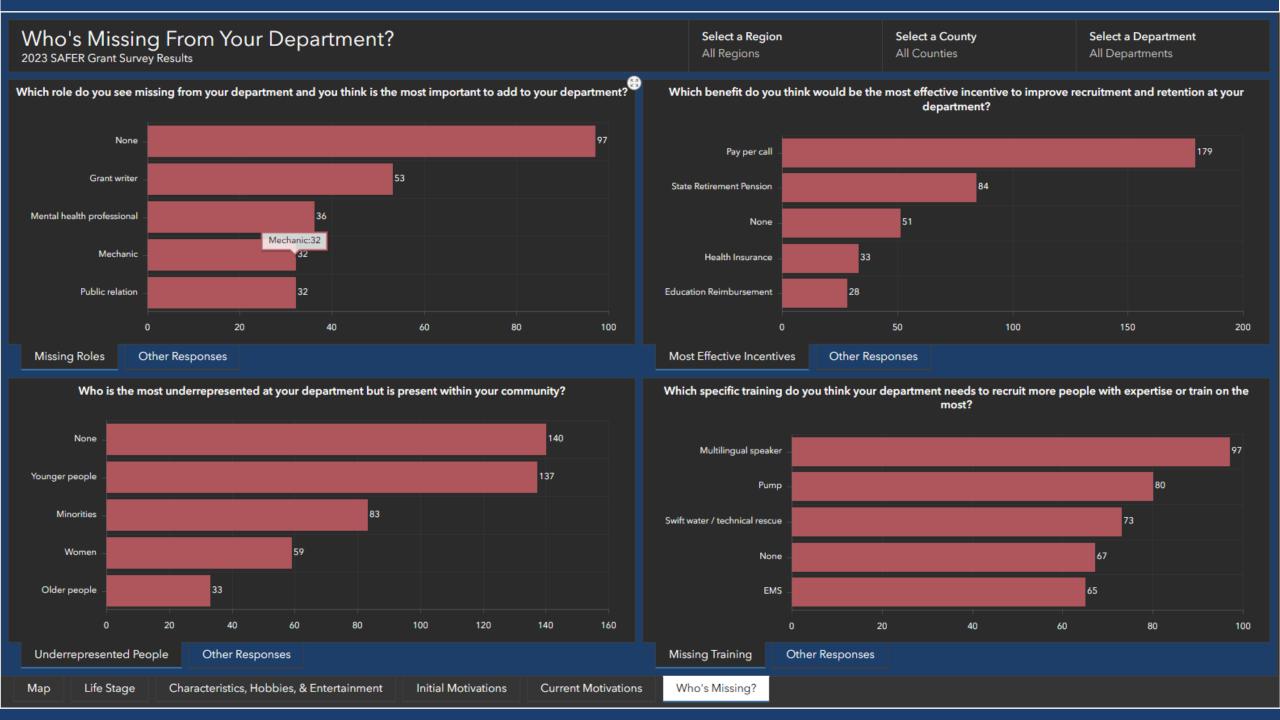
Career Firefighter 92%

5%

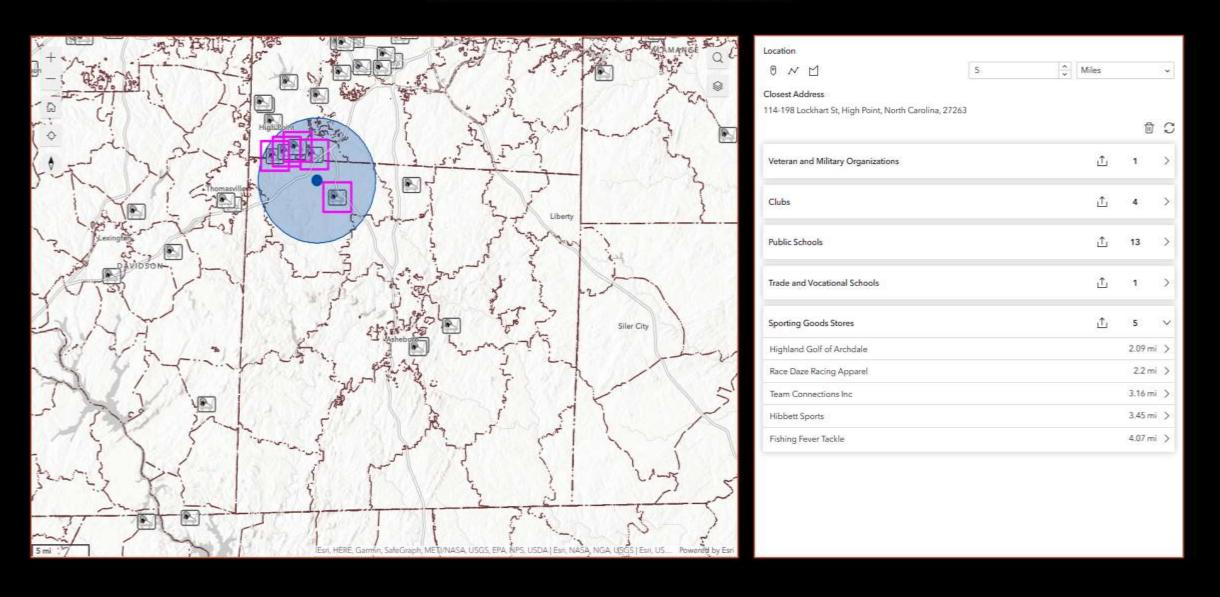
3%

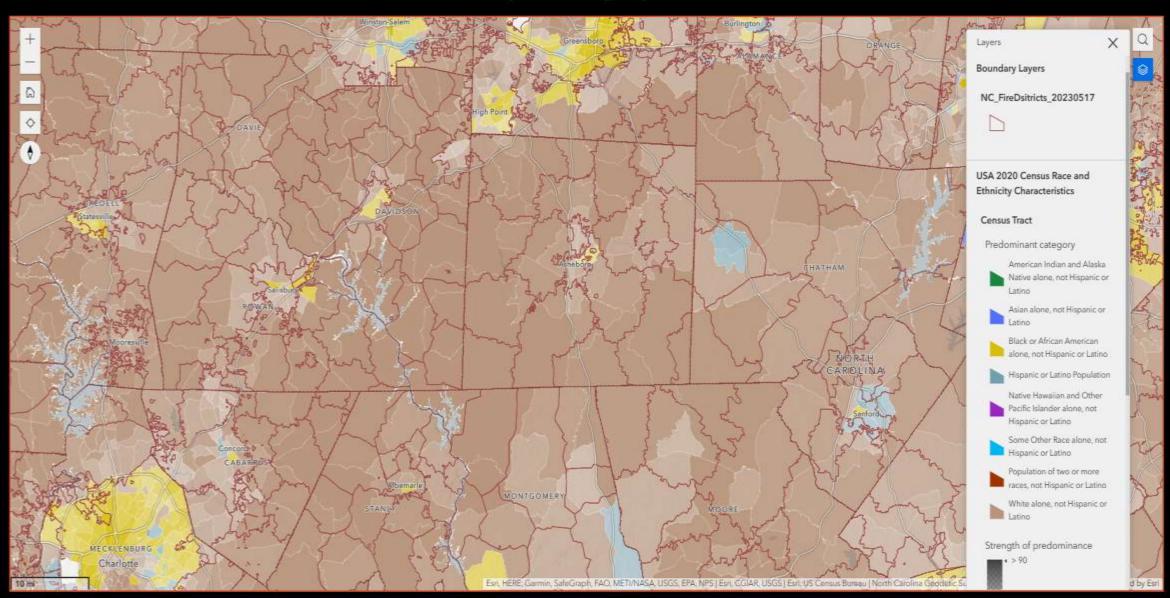
EMS

Other



View 3: Recruitment Locations





** NC SAFER Recruitment Success Stories	Select A Location Type ALL	Time of Day	Day of The Week	
Gyms O Day Time, Week Day Success: I showed up				
Hunting Stores Night Time, Weekend				
Camp Grounds O Day Time, Holiday				
Success: Used Smokey the bear Schools O Day Time, Week Day				
Success: Had hot dogs				
Camp Grounds				
What Would You Do Different Next Time?				(83)
Gyms Advice to improve next time: Work out with the guys				
Hunting Stores				
Advice to improve next time: Give away Hunting lisences				
Camp Grounds				
Advice to improve next time: Get a cooling vest				
Schools				
Advice to improve next time: Make homemade Chilli				
Camp Grounds				
Advice to improve next time: Go with bear spray				
Schools				
Advice to improve next time: Take Candy for the kids				
Gyms				

Questions?



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