Examination of gaps in service for the American Red Cross's "After the Fire Program" in North Carolina

EM 497 EM Seminar Class Combined Research Project

ECSU Department of Aviation & Emergency Management

Abstract

Every 1.8 days a fire takes a life in North Carolina. In the larger picture of disaster responses, a normal residential fire is considered an emergency, an every day event. To the people that live in the home it is a dire disaster as they have lost property, shelter, and in some cases life. First responders do an outstanding job of taking care of these people/families with putting out the fire and tending to their immediate injuries, but that is where their help and expertise ends. It is at this point that American Red Cross (ARC) offers support with their "After the Fire" program. The ARC will send help, to the scene if needed, and arrange for the needs of the victims such as shelter, food, clothing, etc. Though not normally thought of as an emergency need, it is a vital part of the family recovery process to help them back to a state of normalcy after their life changing event. It is known that the ARC is not made aware of all fire victims and has gaps in their services in North Carolina. This project will compare county fire data that has been acquired from local 911 services to ARC fire response data. These different sets of data were mapped and analyzed to look for gaps in service area by the ARC. With the gaps identified later research can be conducted to determine why the gaps are present and how to eliminate the gaps.

Fig. 1, The American Red Cross helps fire victims with services such as temporary housing, food, medications, clothing etc. to help the victims get back on their feet. In many communities this help is unknown causing gaps in services.

Purpose

The American Red Cross (ARC) does a great job of reaching out to help others in the time of need but it has been realized by their staff that they have areas they underserve. ECSU EM student were asked to help the ARC identify and map these areas as well as to later help determine plans to increase services in these areas. This project provides ECSU EM students to experiences in advanced data set and GIS mapping as well as helps them critically think about how to improve services.
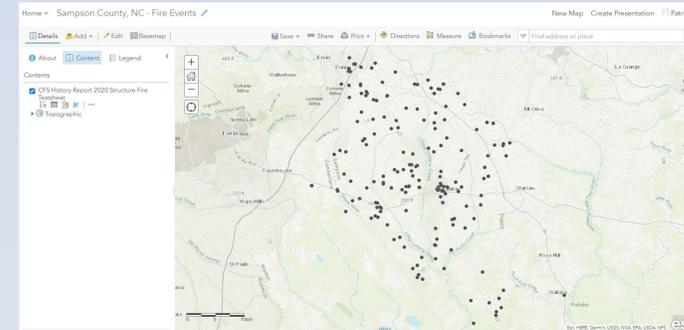

Fig. 3. This map shows the fire calls in Sampson county NC that were over 30 minutes long and consisted of multiple unit responses. By mapping these fire calls it sets up the original map to provide an overlay of ARC responses to look for gaps in service.

Fig. 2. ECSU Students such as Angel Johnson pictured here have signed up to help the Red Cross as student learning projects for the experience and the ability to help serve their community.

Methods

This collaborative class research project using College Undergraduate Research Experience (CURE) practices, uses fire response data in various forms from area 911 centers and ARC response data to determine gaps in service areas. Students were each assigned individual counties from which they took 911 data in different forms and translated them into one readable document. The students then mapped out the fire call data with GPS systems. They then did the same with ARC data for that county. When the two maps are merged patterns of service and gaps can be visualized. Through map comparisons the students' next task will be to examine why service was not provided. Was it not needed, was ARC not called, if so why, etc. Once all of this information is collected and analyzed a clearer path forward can be realized by the ARC in moving the After the fire program forward.

Preliminary Findings

This iteration of the project is still underway through the end of SP 21 semester. It is being run as a pilot program by the EM seminar class to help the ARC determine gaps in services but also being used to determine real world skill experience in GIS mapping for future EM students.

Preliminary findings are that this is a great exercise in critical thinking for the students as the different data from 911 centers were in unusable formats and all different. The students have had to work out how to create the data in usable formats for GIS mapping. It has also proven to be very useful to them to be able to utilize the ARC GIS mapping program for experience with a real world system.

The project did develop a workable algo rhythm to be able to sort out major fires to ones that would not require an ARC response by looking at the on scene time and number of responding units to the call.

With this pilot program it is envisioned that the current students will lay out a path for other EM classes to continue the work while increasing their real world abilities with data, mapping and relating to gaps in services and overlooked groups.

Fig. 4. ECSU has been working jointly with the ARC since Hurricane Dorian when ECSU students were allowed to sign up with the ARC disaster response division to help provide food in Ocracoke Island after the storm

References

ARC (2018). Red Cross responds to nearly 60% more home fires in first days of 2018 than in 2017. Retrieved from https://www.redcross.org/about-us/news-and-events/press-release/Red-Cross-Responds-to-Nearly-60-More-Home-Fires-in-First-Days-of-2018-Than-in-2017.

ARC (2021). <aping vulnerabilities Retrieved from https://www.redcross.org/about-us/our-work/international-services/mapping-vulnerable-communities.html

Contact Information & Acknowledgements