August 2022

EMS System Assessment
Jefferson County, Alabama

Prepared by:

FITCH & ASSOCIATES, LLC
2901 Williamsburg Terrace #G ▪ Platte City ▪ Missouri ▪ 64079
816.431.2600 ▪ www.fitchassoc.com

CONSULTANT REPORT

Jefferson County, Alabama
EMS System Assessment

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EXECUTIVE SUMMARY

In mid-2021, the Jefferson County Commission engaged Fitch & Associates, LLC (*FITCH*) to assess the County's emergency medical services (EMS) resources and develop future options for a performing, sustainable EMS system. The City of Birmingham was invited but chose not to participate in the study. All analyses were completed based on data excluding Birmingham's EMS activity.

FITCH consultants were on site in Jefferson County in November 2021 and during that time they observed a non-functioning EMS system that puts the safety and welfare of Jefferson County residents and visitors at risk. Throughout the next several months, *FITCH* and Jefferson County representatives continued to meet virtually to discuss findings and options for results-based solutions.

FITCH spent a substantial amount of time prior to the second site visit working to collect, process, and validate data for EMS responses in Jefferson County. Due to a fragmented and fractured system, it was difficult to understand the number of EMS dispatches occurring in the County.

FITCH recognized very early in this consultancy that there is a need to ensure that emergency services are available to all residents of Jefferson County, no matter the geographic or socio-economic demographics of the area. It is important to note that there are hints of disparity that exist in the provision of EMS in the County.

The critical findings that should be addressed immediately are as follows.

CRITICAL FINDINGS

Delayed or No Ambulance Response

In large portions of the County, ambulances do not or are not regularly available to respond quickly to 911 emergency medical calls. This occurs in municipal areas that do not fund their own or a contracted ambulance company, and the entire unincorporated, non-municipal area. In the unincorporated area, the County does not provide ambulance service that is required to respond to 911 emergency calls.

During a site visit, *FITCH* consultants personally observed a 911 call where the dispatcher could not find an available ambulance. The dispatcher then told the caller that no one was coming to help. This occurrence is not rare. Various fire department personnel told *FITCH* consultants that ambulances are frequently delayed several hours or may not show at all. The same story was shared by various municipal leaders regarding the lack of ambulances and how rarely, if at all, they might respond to their areas to provide life-saving medical care to sick or injured patients.

These delays, often several hours or a complete absence of an ambulance response, requires firefighters to remain on scene with a sick or injured patient for the duration. The result is that the fire unit is out of service for an extended period, which can impact the availability of fire units to respond to fire-related

incidents. Many firefighters report that this occurs daily. Additionally, first responders are regularly making decisions regarding patient treatment based on the extended arrival time or availability of ambulances. Sadly, people are suffering due to Jefferson County's uncoordinated EMS system.

The City of Birmingham and many of the municipal areas do have reasonable ambulance response times. However, even when traversing the County on interstate and other roadways, there is no guarantee that emergency ambulance services will be available.

Chaotic 911 Call System

Throughout out the County, there are 14 emergency 911 dispatch centers that are not connected or coordinated. *FITCH's* research indicates that Jefferson County is the only county in the State of Alabama to have more than two dispatch centers. During the site visit, *FITCH* consultants tested the 911 system with two people standing next to each other, calling 911 on their cell phones. Each person was routed to a different 911 center thus adding to the chaos within the 911 call system. They observed that sick or injured callers were often routed through multiple 911 centers before connecting to one for their specific geographic location. This continuous transferring leads to significant delays in patient care and can be life-threatening.

Currently, there is no requirement that the dispatch centers have interoperability, which would allow the system to readily connect and exchange information. Interoperability is critical to manage any type of significant or multi-casualty event. An uncoordinated 911 system will default to chaos. In October 2013, the State of Alabama published the Statewide Communication Interoperability Plan[1] which outlines the need and outlines how 911 interoperability is crucial to survivability in an emergency.

Very few of the 14 dispatch centers provide over the phone, protocol-driven emergency medical instructions, such as CPR, while help is on the way — many provide none. Medical pre-arrival instructions to callers are considered a minimum standard of care in the United States. Jefferson County fails in this regard. *FITCH* also heard that many dispatch centers decided to no longer offer instructions due to the long wait times for ambulances to arrive.

EMS Not Recognized As Essential Public Safety Service

EMS in Jefferson County is not legislatively recognized as an essential public safety service and there is no designated countywide funding. The County has never adopted legislative responsibility for ensuring emergency medical response is guaranteed. Likewise, fire agencies are not funded to provide 911 EMS response and patient transport; they were never intended to support the EMS system.

FITCH believes that the lack of this essential designation underpins many of the issues identified during our consultancy. It is imperative that quick legislative action be taken to ensure that EMS becomes

[1] https://firstnet.alabama.gov/wp-content/uploads/2018/10/AlabamaSCIPApproved.pdf, accessed June 2022.

recognized as an essential public service and funding is authorized to provide the necessary life-saving services.

As of January 17, 2022, a bill was introduced in the Legislature (SB183, 216490-1) by Senator Waggoner to designate EMS an essential service.[2]

No Single Entity Is Accountable

There is no single entity that is responsible to coordinate and provide accountability for the overall system that includes 911 dispatch, first response, and ambulance transport. As coordinated entities, Jefferson County emergency medical services fail to meet the accepted benchmarks for an EMS system. Those benchmarks cover the following areas:

- 911 Communications
- Medical First Response
- Medical Transportation
- Medical Accountability
- Customer/Community Accountability
- Prevention and Community Education
- Ensuring Optimal System Value
- Organizational Structure & Leadership

From the viewpoint of performance metrics, there is no EMS system in Jefferson County. A single entity that would set standards and provide accountability would provide a significant benefit for Jefferson County residents and visitors. Currently, EMS is provided when and where an agency or group chooses to do so with no entity or individual designated to ensure coverage is maintained. Creation of a singular entity to oversee the provision of EMS is required to ensure that everyone who needs the services will receive them. This can be accomplished through the formation of the Jefferson County Public Safety Department. The newly formed department will have the ability to provide oversight for all facets of emergency services in Jefferson County.

[2] http://alisondb.legislature.state.al.us/ALISON/SearchableInstruments/2022RS/PrintFiles/SB183-int.pdf, accessed July 2022.

METHODOLOGY

FITCH spent a significant amount of time attempting to collect data using multiple systems and methods to analyze call volume and data. Data counts were provided from the 911 computer-aided dispatch (CAD) systems from several, but not all of the 14 dispatch centers, along with information from some of the many EMS and fire agencies servicing Jefferson County. Throughout the project, it has been difficult to validate data initially provided through the Information Data Request (IDR). *FITCH* consultants completed numerous iterations of the Data Report because data continued to become available throughout the consultancy. Additionally, because the Birmingham Fire Department did not participate, there are gaps in analysis of total data counts due to the inability to utilize Birmingham's data to provide a full county-wide picture of EMS call volume.

Data files were obtained from Jefferson County 911, Regional Paramedic Services (RMS), and Shoals Ambulance Service, for the period of January 1, 2018, through December 31, 2021. Jefferson County included a partial 2022 data set, but it was not utilized as none of the other agencies provided data for this period. The data utilized for this report focuses specifically on call volume analysis as unit data was not available. Each event is treated as an individual call for service without consideration of the number of units responding.

Audits of the data files were first conducted to reduce duplication of events and to identify anomalies in the base data that would impact analysis. Select records were excluded if there were values that reflected negative time calculations or were exceedingly long in the processing and assignment of the event. It should be noted that no data values were changed or modified in the cleanup process. Some spelling and abbreviation differences were adjusted in the names of towns and jurisdictions, only where it was obvious and necessary to provide the most accurate counts aggregated by geographic region. Tables where these values were excluded are noted in the table descriptions in the attached Data Report. After eliminating duplicates and incidents that fell outside the subject service areas, we selected a date range for analysis.

The client provided data from several agencies in a variety of formats and with differing naming conventions for the data elements. Some datasets contained geographic coordinates, some only provided only addresses. In addition, there was no attempt by the client to identify or eliminate duplicate responses to the same incident by multiple agencies.

Datasets that contained geographic coordinates were modified to latitude/longitude format. Datasets that did not contain coordinates were geocoded using an online service known as HERE.[3] HERE was developed by HERE Technologies and supports Geographic Information System (GIS) developers with a rich array of GIS features that can be integrated into web or desktop applications. Since this geocoding process is not 100% reliable, addresses that could not be reliably geocoded were dropped from the datasets. Overall, error rates / rejections based on geocoding were less than 0.5%.

[3] https://developer.here.com/, accessed July 2022.

Once the datasets were geocoded, we created a merge process to produce a consolidated set of data elements and (to the best of our ability) eliminate duplicate calls. Since we could not be sure that the coordinates and times provided by the various CAD systems and processes would be a reliable determinant of "same location, same time", we established a filter rule that marked any call occurring within 50 meters and within 30 minutes of another incident as a potential duplicate. When we identified incidents that were potential duplicates, we selected the incident record that contained the most amount of data as the official incident record (typically, more time fields had been completed). We tried several filter settings including shorter time windows and different distances, but settled on "within 50 meters, within 30 minutes."

While we were working on this process, additional datasets came to light and the merge process was repeated to incorporate them on an equal basis. Records for incidents falling outside the County or within the City of Birmingham were eliminated from the data using the shapefiles for the County and City boundaries. Once an official dataset was established and agreed on, we did our analysis steps and provided the output for consideration in the final report.

FITCH evaluated response time performance for each Jefferson County EMS entity at travel times of 10-minute, 15-minute, 20-minute, 30-minute, and 60-minute intervals. Once response time performance was determined, analysis was performed to strategically match supply with demand and ensure the appropriate number of locations are utilized for ambulance deployment, to meet a prescribed response objective. The primary objective is to ensure that geographical deployment and demand are staffed appropriately with the correct level of resources.

Modeling is produced showing the current resources deployed, personnel staffing levels and an optimized number of resources to cover historical volumes.

CURRENT SYSTEM DESCRIPTION

MEDICAL FIRST RESPONSE & TRANSPORT PROVIDERS

The current EMS system is at best, broken, although there are a few areas within the County that receive relatively timely and appropriate EMS coverage. It is important to note that the City of Birmingham Fire Department did not participate in this study, even after repeated attempts to have them join.

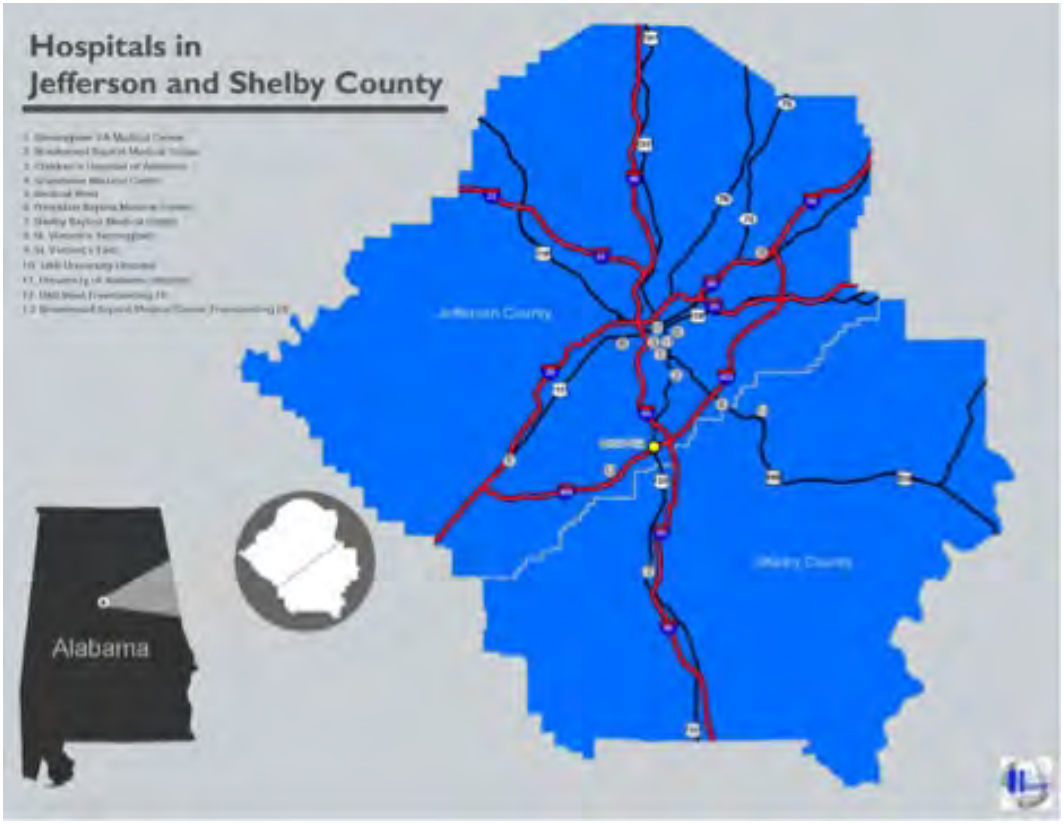
It was reported by Jefferson County representatives that on any given day there should be a total of 42 staffed ambulances ready to respond to emergencies within the County, excluding those utilized by Birmingham. Ambulance coverage and service are comprised of the following:

- Four for-profit EMS agencies – Shoals, Regional Paramedic Services (RPS), Advantage Ambulance, and NorthStar
- Two adjacent county services – Blount EMS and Shelby County
- 12 Fire Departments within Jefferson County (excluding Birmingham) as follows:

Center Point Fire District	Mountain Brook Fire Department
Concord Fire District	Palmerdale Fire District
Forestdale Fire District	Rocky Ridge Fire District
Hoover Fire Department	Trussville Fire & Rescue Service
Irondale Fire Department	Vestavia Hills Fire Department
McAdory Area Fire District	Warrior Fire Department

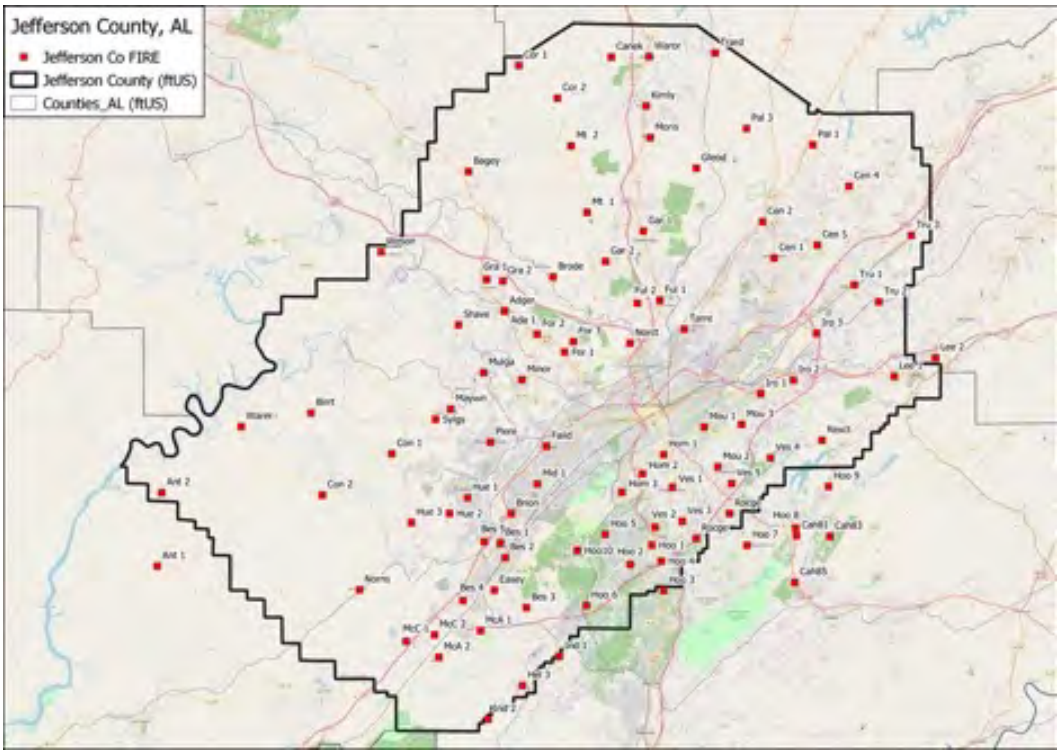
The EMS system is supported by 12 hospitals offering varying levels of service throughout the County as shown in Figure 1 below. The largest hospital and health system is University of Alabama, with their flagship hospital located in the City of Birmingham.

Figure 1. Hospitals in Jefferson County



There are 116 fire stations affiliated with 44 fire departments spread throughout the County as noted in Figure 2 below. Again, the City of Birmingham and its Fire Department are not included in this study.

Figure 2. Fire Stations in Jefferson County



Four for-profit companies provide ambulance transport services in Jefferson County: Shoals Ambulance, Regional Paramedic Services (RPS), Advantage Ambulance, and NorthStar Ambulance.

- Shoals Ambulance attempts to provide four ambulances daily to the areas for which they provide coverage. Shoals provides emergency 911 response and non-emergency interfacility transport (IFT) for many of the area hospitals. Shoals also provides contractual 911 service to the city of Bessemer.
- Regional Paramedic Service (RPS) has been a long-time provider of 911 emergency service in Jefferson County. RPS is not contracted to provide service to any specific location or territory within Jefferson County and they provide service when and where they can. As fire departments began to provide 911 service, RPS has decreased the number of available units for Jefferson County. RPS attempts to have five units committed to Jefferson County for 911 emergency response daily. They do make attempts to provide additional resources with as many as 10 units per day if staffing allows. RPS provides non-emergency interfacility transport to most of the hospitals within Jefferson County. RPS has primary response to a significant amount of territory within Jefferson County as they were the primary provider for so long. All calls for RPS 911 response are routed through their dispatch center, which has the right to accept or decline any 911 emergency call. Additionally, RPS has areas of the County where they chose not to respond.
- Advantage Ambulance has a satellite location in Trussville, Jefferson County that provides two ambulances. These ambulances primarily provide basic life support services in a limited 911 response to areas within Jefferson County. Primarily Advantage Ambulance conducts non-emergency IFT for many area hospitals.
- NorthStar has a presence in Jefferson County with non-emergency transfers and they currently have one ambulance stationed at McCalla Fire that responds primarily in Tuscaloosa County. They also provide response to Corner Volunteer Fire District under the name of Blount EMS. It is

important to note that the contract for Blount EMS is transitioning to AMR effective September 1, 2022, which may leave the area under protected.

Several events coalesced to bring the system to the brink. The two private ambulance companies began to have staffing and coverage problems, which led the area fire departments to respond to more and more 911 emergency calls. As a result, the for-profit agencies experienced a decline in calls (revenue) and they in turn refocused and realigned to ensure sustainability. The for-profit agencies operate without a contract, without any guaranteed revenue (subsidy) and absent any obligation to provide county-wide service. They were able to focus their efforts in easy-to-serve areas with populations more likely to have insurance.

For multiple years, many of the fire agencies have provided medical first response with a mixed level of service. As the for-profit agencies limited the number of available units and 911 calls increased, the fire agencies chose to begin ambulance transport service. Fire officials stated that they did not intend to break into the EMS business, but rather want to fill the service void for their community.

Area fire officials expressed that expanding ambulance service is an operational and financial burden. Personnel are assigned to an engine and move to an ambulance as needed for response to EMS calls. The agencies are not necessarily funded to maintain readiness for both fire and medical incidents, and most are not staffed to transport patients. The issue is compounded by extremely long wait times on scene waiting for a transport ambulance.

Patient well-being is likely compromised by the long wait times. Fire department personnel report that on numerous occasions, after waiting hours for an ambulance to arrive, they would discontinue care and assist the patient into a private vehicle of a friend of family member for transport to a hospital. This is a subpar standard of care.

SERVICE AREA & COMMUNITY DEMAND

Jefferson County is the most populous county in the state of Alabama. As of the April 2020 census, the population was 674,721 and declined by 1% to 667,820 by the July 2021 census. The County covers 1,112 square miles of a mix of urban and rural area. The county seat is the City of Birmingham. Birmingham's population of 197,575 represents 30% of the total County population. There are 67 cities, towns, and communities within Jefferson County.[4]

Jefferson County is one of eight counties in Alabama with a limited form of home rule government and a type of council-manager form of government. It is governed by a five-member commission that combines the legislative and executive duties for the County. The Commissioners are elected from single member districts and each commissioner represents one of the five districts.

[4] QuickFacts Birmingham City and Jefferson County, Alabama, United States Census Bureau, www.census.gov, accessed July 2022.

Figure 3 below indicates the EMS call volume for four calendar years of 2018 through 2021. Calls decreased by 17% in 2020, which most likely correlates to the COVID-19 pandemic. The response volume rebounded in 2021 with a 2.8% increase over 2020. The attached Data Report offers more in-depth analysis of responses by day, week, time of day, month, and various call types.[5]

Figure 3. Call Volume by Agency and Priority

		Reporting Period			
AGENCY	PRIORITY	2018	2019	2020	2021
Jefferson County	PRIORITY 1	21365	57266	62691	64590
	PRIORITY 2	956	1124	1259	1588
	PRIORITY 3	2746	3473	3293	3971
	SCENEFLT		17	17	23
	STBY		124	316	197
	(blank)	615	296	3655	3930
Total		25682	62301	71236	74303
AVG/DAY		70.4	170.7	194.6	203.6
Total Growth		N/A	142.6%	14.3%	4.3%
RPS-Jefferson	Emergency Transport	31118	30568	31790	26679
	Non-Emergency Transport	12	8	6	32
	Scene Flight	54	42	43	50
	Standby		166	425	265
Total		31184	30784	32264	27026
AVG/DAY		85.4	84.3	88.2	74.0
Total Growth		N/A	-1.3%	4.8%	-16.2%
Shoals EMS	Priority 1 - EMRFR	6208	7566	6492	6791
	Priority 2 - EMER	14	26	13	6
	Priority 3 - IMMED	569	781	425	326
Total		6791	8373	6930	7123
AVG/DAY		18.6	22.9	18.9	19.5
Total Growth		n/a	23.3%	-17.2%	2.8%

Jefferson County in Figure 3 refers to all first response and other EMS agencies operating in the County other than RPS and Shoals.

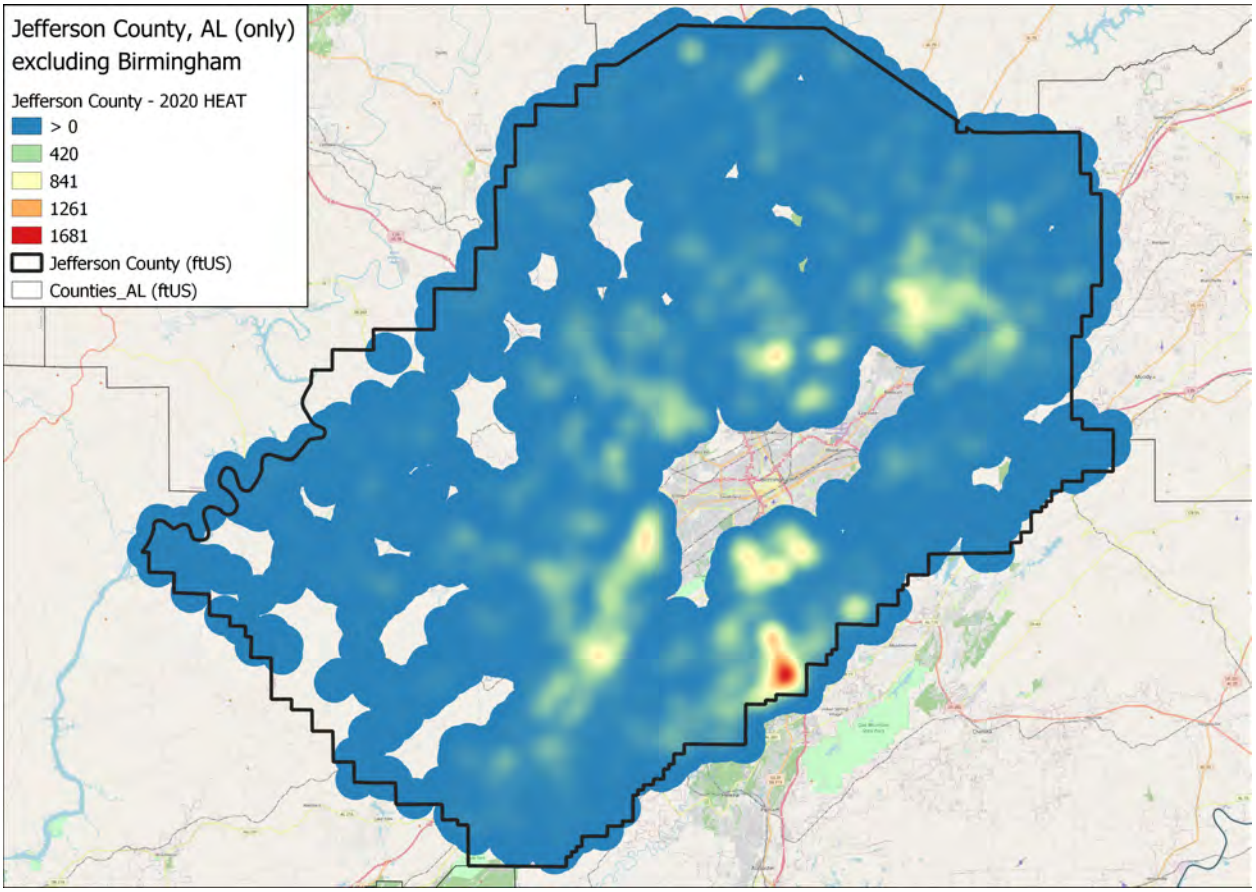
Density Mapping

To evaluate the current density levels for responses, *FITCH* utilized heat mapping to evaluate call activity. To ensure proper unit deployment, an understanding of where the highest level of risks or volumes occur, are required. This model allows for informed decisions to be made on performance levels of response.

Color coding indicates various levels of responses within the County. The areas in red indicate a "hot spot" of greater than 1,681 responses in that year. Blue areas are predominately rural and indicate a mostly rural response of greater than one call and less than 1,681 calls in that year. Areas absent of color received no calls or requests for service in that year. Figure 4 below presents the Heat Map.

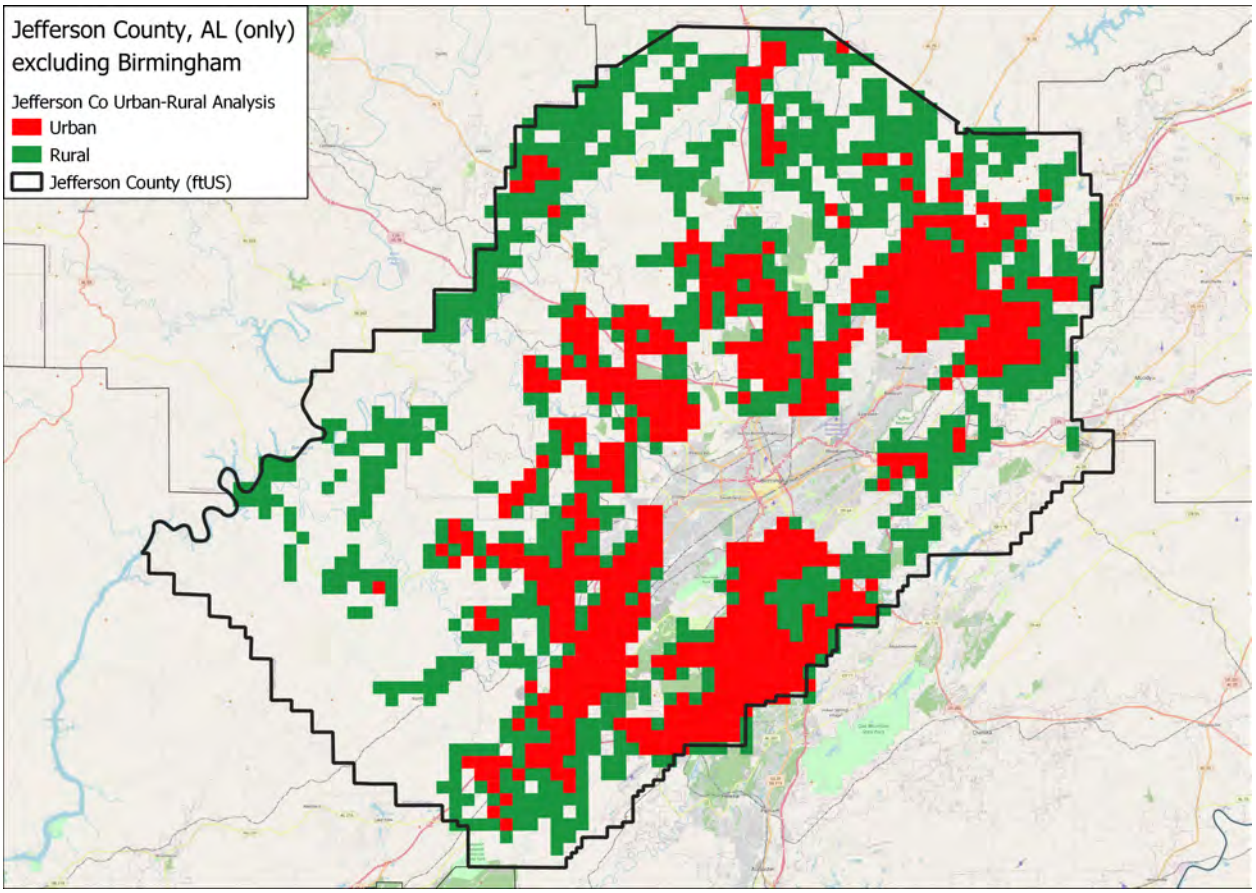
[5] EMS response data was collected from the three main sources: Jefferson County 911, Shoals Ambulance, and RPS.

Figure 4. Urban/ Rural Map Heat Map



To evaluate Urban/Rural density levels for response zones, *FITCH* utilized a commensurate risk mapping to evaluate call activity. This model allows for informed decisions to be made on performance levels of response. Areas designated with a commensurate risk mapping as urban response density (in red) represent two calls per month within the one-kilometer cell and greater than or equal to four calls per month in the eight adjoining cells. Rural designated areas are coded in green and represent 25 calls within the one-kilometer cell and one call greater or equal to per month total in the eight adjoining cells. Where there is no color, these areas do not meet either of the above criteria and would be considered wilderness response density zones. Figure 5 below presents the commensurate mapping results.

Figure 5. Commensurate Mapping



911 DISPATCH CENTERS

The County website describes the County Communications Center/District as follows:

> *The Jefferson County 9-1-1 Emergency Communications District is the largest fully consolidated 9-1-1 Center in Alabama. We utilize sixty-six (66) full-time and twelve (12) part-time positions to staff the center 24/7. We serve all unincorporated areas and most of the cities and towns within Jefferson County. This includes the Jefferson County Sheriff's Office, twenty (20) incorporated cities and towns, and seventeen (17) additional fire districts and volunteer fire departments. Our 9-1-1 Center processes over 200,000 9-1-1 calls for service per year and an additional 250,000 administrative calls.*[6]

In addition to the County Dispatch Center, there are 13 other dispatch centers scattered throughout and serving various agencies. There is no interoperability or connection between the centers. *FITCH's* research indicates that Jefferson County is the only county in the State to have more than two dispatch

[6] https://jeffcoal911.org/about-us/, accessed July 2022.

centers. To “consolidate” is to combine a number of things into a single more effective or coherent whole. In essence, the County dispatch center is not consolidated, as this is evident since all 14 dispatch centers receive state 911 funding.

During the site visit, *FITCH* consultants tested the 911 system with two people standing next to each other, calling 911 on their cell phones. Each person was routed to a different 911 center thus adding to the chaos within the 911 call system. It is evident that there is no requirement that the dispatch centers have interoperability, which would allow the system to readily connect and exchange information for 911 callers who need emergency help.

During the site visit it was noted that very few dispatch centers provide over the phone protocol-driven emergency medical instructions, such as CPR, while help is on the way, while many others provide no instructions at all. Jefferson County fails in this regard. Although, some may perform quality assurance (QA) within their dispatch centers it is limited at best. All the dispatch centers should find common ground to ensure they are all performing baseline QA for all 911 calls as well as collect, process, and share parameters and metrics with each other to ensure that all individuals who call 911 receive the same opportunity for help. *FITCH* also learned that many dispatch centers have decided to no longer offer instructions due to the long wait times for ambulances to arrive and/or the financial outlay to maintain Emergency Medical Dispatch (EMD) certifications.

In October 2013, the State of Alabama published the Statewide Communication Interoperability Plan which outlines how 911 interoperability is crucial to survivability in an emergency.[7] Alabama, like many other states, provides funding for 911 and the provision of 911 services to Jefferson County.

The EMS system is hampered by specific issues that occur across the multiple 911 centers.

- There is no visual on available unit locations, which would enable closest unit dispatching.
- No data is reported to a central entity which would allow for identification of efficiencies, overall strategic planning, or determining basic system performance.
- Callers are bounced between several 911 communications centers until they get to the right center for dispatch, all of which means delays in the dispatch of fire and/or ambulance resources.
- There are redundant costs to maintain multiple infrastructures, software systems, and personnel. There is no opportunity to achieve economies of scale.
- Few of the centers have personnel that are Emergency Medical Dispatch certified and can provide lifesaving, medical instructions while callers are waiting for responders.
- Several of the dispatch centers give dispatchers functions in addition to and distinct from call-taking and dispatching.

A regional, consolidated communications center that receives all 911 EMS calls first, would eliminate duplication and associated expense by pooling dispatch operations for EMS providers (fire and

[7] https://firstnet.alabama.gov/wp-content/uploads/2018/10/AlabamaSCIPApproved.pdf, accessed July 2022.

ambulance). This would facilitate the intent of National Fire Protection Administration (NFPA) 1221 to have a single center with a "hot" back-up center in a separate geographic location. The relevant sections of NFPA 1221 are noted below.[8]

- 4.1.6* Each jurisdiction shall maintain an alternate communications center that meets the criteria in 4.1.6.1 and 4.1.6.2.
- 4.1.6.1 The alternate communications center shall be capable, when staffed, of performing the emergency functions performed at the primary communications center.
- 4.1.6.2* The alternate communications center shall be separated geographically from the primary communications center at a distance that ensures the survivability of the alternate center.
- 4.1.6.3 Each jurisdiction shall develop a formal plan to maintain and operate the alternate communications center.

Jefferson County must move forward to create a fully functional and operational Consolidated 9-1-1 Center where **all** 911 calls are received and processed. A process and workflow can be implemented to transfer the 911 calls to a secondary dispatch center once the call is initially processed and EMD is offered by County 911.

There is state 911 funding available to provide and fund a singular dispatch center for Jefferson County. This would also allow the other dispatch centers to reallocate funding to other emergency service areas if warranted. The consolidation and singular location of all 911 calls is extremely important to ensure that high quality 911 call-taking occurs. Any 911 call within the County would be immediately routed through Jefferson County 911 by phone carriers and would then be distributed to the secondary PSAP (dispatch center). This will limit multiple passes and attempted transfers of phone calls through each dispatch center and create a consistent call-taking process.

[8] NFPA 1221: Standard for the installation, maintenance, and use of emergency services communications systems, 2019 Edition. In *NFPA National Fire Codes Online*. Retrieved from http://codesonline.nfpa.org, accessed July 2022.

RECOMMENDATIONS FOR IMMEDIATE ACTION

EMERGENCY DECLARATION TO CONTRACT FOR AMBULANCE SERVICE

The single most important action that the County can take is to declare a public health and safety emergency. This action would allow the County to immediately contract with an external entity for dedicated ambulance service in the unprotected areas.[9]

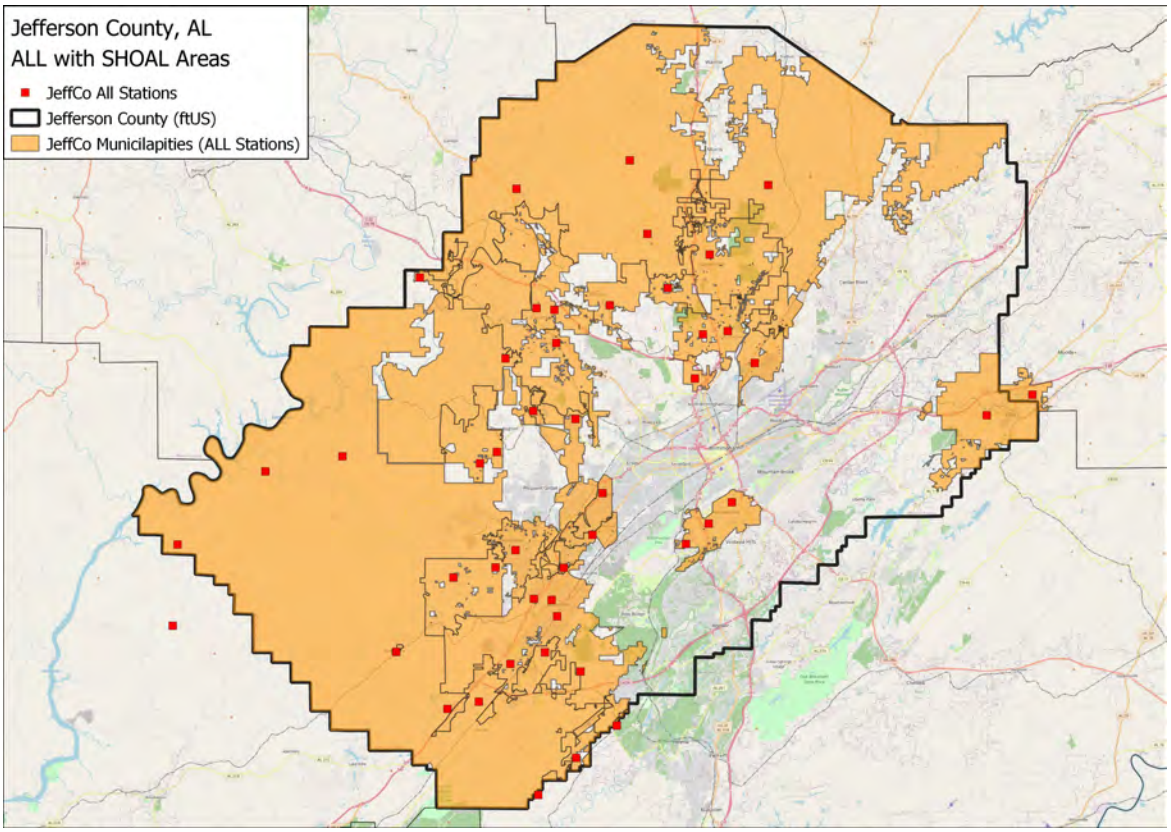
FITCH analyzed current system data as was available, to identify areas with seriously delayed ambulance service. Based on this analysis, *FITCH* developed a temporary stop-gap system. It is recommended that an ambulance contract with an external EMS agency be executed immediately to provide eight EMS units, 24 hours a day, seven days a week. Additionally, the County could contract with that entity to provide a dedicated EMS dispatcher position, 24 hours a day, seven days a week, to ensure that transferring of 911 calls to the external provider is seamless. The dispatch position would be co-located in the Jefferson County Communications Center.

The contracted ambulances could be dispatched anywhere in the County, as needed for primary or secondary back-up to established providers. A system of controls should be to monitor and continuously recommend improvements of the system. The system of controls is discussed in greater detail later in this report.

The shaded area in Figures 4 and 5 are the areas without contracted or dedicated ambulance service. The service is covered by agencies if they are available or from extreme distances. To compound the response issues, EMS and Fire agencies within the County do not operate according to their State Licensure as they do not respond with mutual aid immediately upon request. *FITCH* consultants witnessed an available ambulance less than five minutes from a call, that would not respond. The reason for non-response is to ensure coverage within their hometown. However, licensure requires mutual aid response to adjacent areas. The absence of reliable mutual aid response creates further inefficiencies and life safety issues for residents.

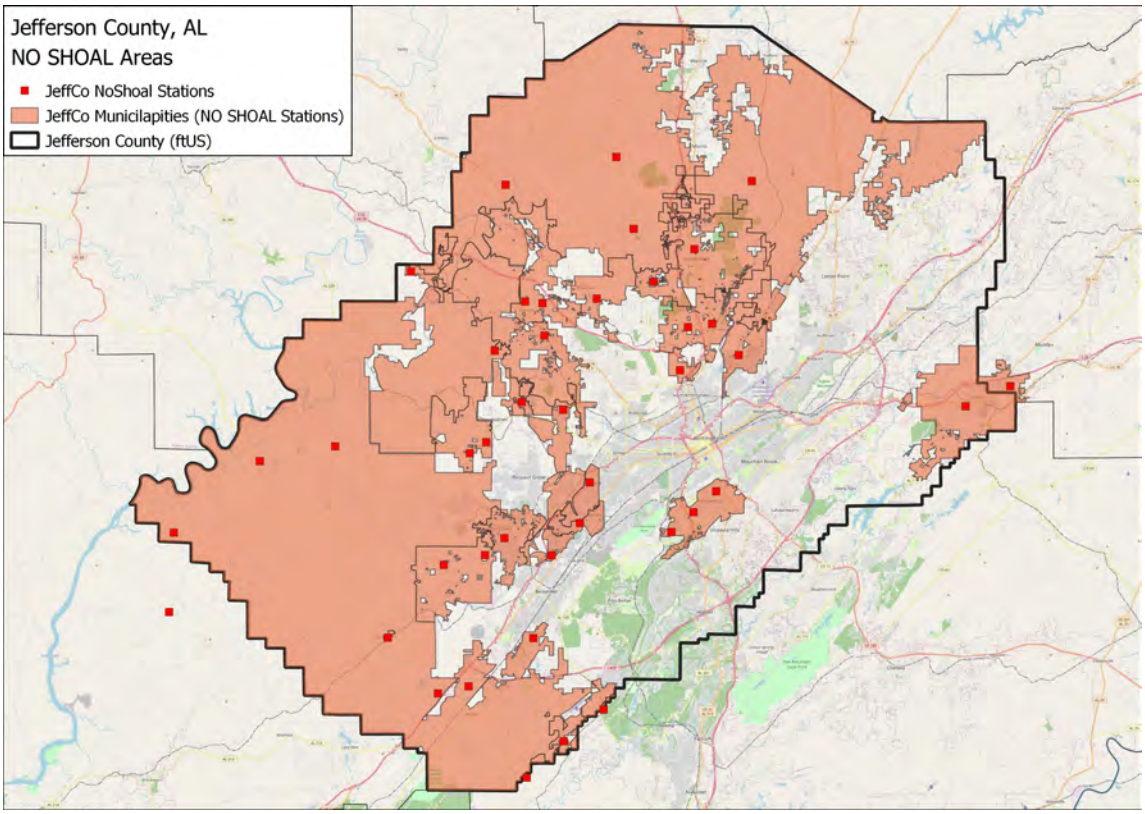
[9] American Rescue Plan Act (ARPA) funds could be used for initiation of an ambulance service contract. The County's legal consultants have deemed this use of ARPA funds as appropriate.

Figure 4. Jefferson County: Shaded Areas with No Dedicated EMS Coverage



The shaded areas in Figure 5 that follows, also indicates areas without contracted or dedicated ambulance service, but assumes the loss of Shoals Ambulance. Shoals Ambulance has been constantly struggling to provide service to the areas they serve in the County. *FITCH* believes it is important to understand the impact to the system if Shoals ended service in Jefferson County.

Figure 5. Jefferson County: Shaded Areas with No Dedicated EMS Coverage (Without Shoals)



For the above figures and using the data received, *FITCH* estimates both the annual response volume and transport volume in Figure 6 below. *FITCH* estimated that 65% of calls result in a transport.

Figure 6. Estimated Annual Responses and Transports

Types	Volumes for Areas Covered	0.65 Transport Rate
No Shoals	32,343	21023
Shoals Inc.	38,115	24775

FITCH then reviewed call density and heat mapping for these areas. In both understanding the volume, challenged response areas, and level of risk. Figures 7 and 8 below shows both the heat map and commensurate risk mapping for both areas to match the above Figures 4 and 5.

Figure 7. Heat Mapping for No Dedicated EMS Coverage

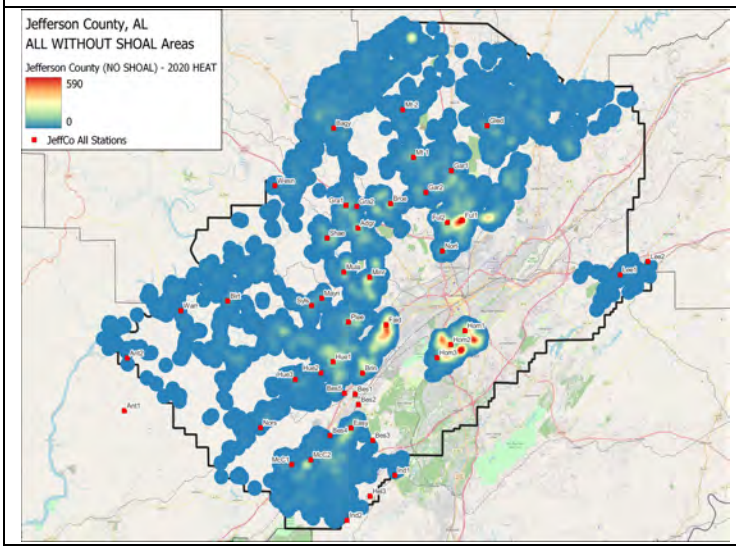
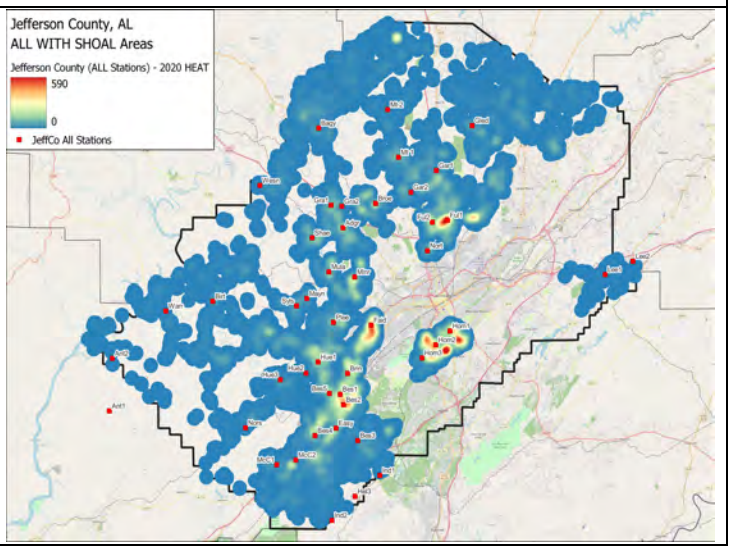
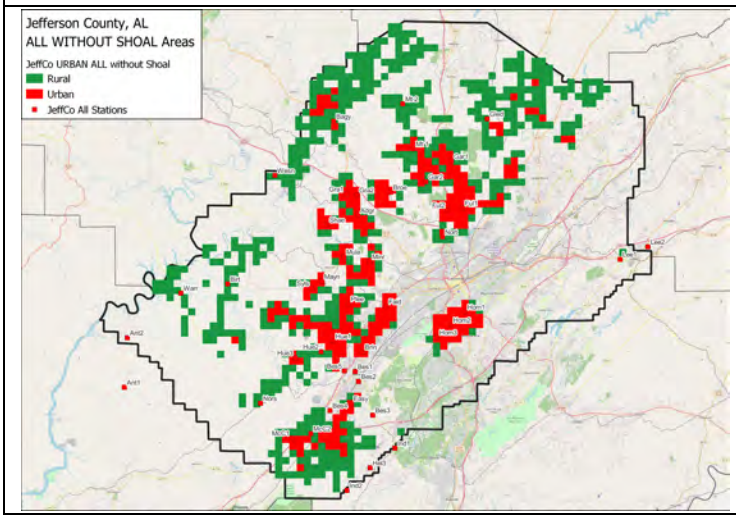
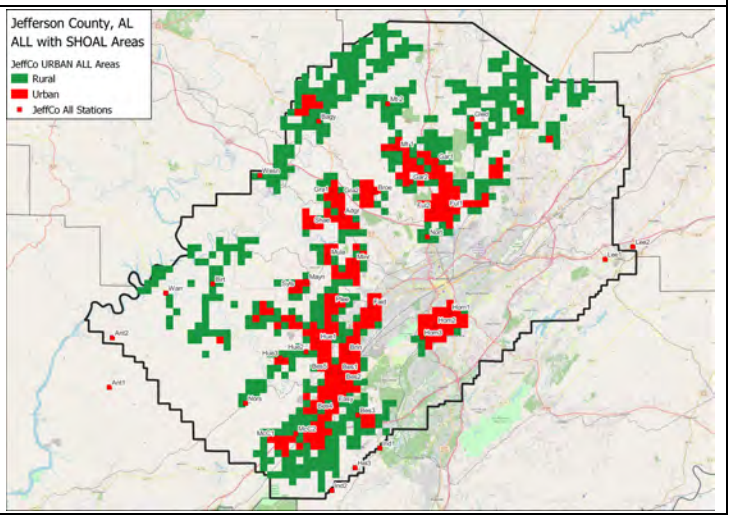
Without Shoals	With Shoals
	

Figure 8. Commensurate Risk Mapping for No Dedicated EMS Coverage

Without Shoals	With Shoals
	

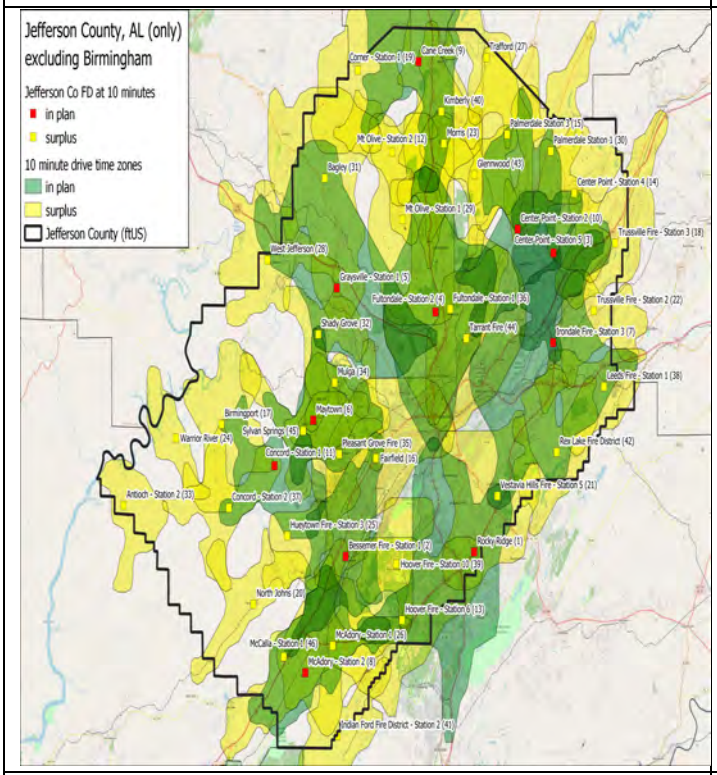
GEOGRAPHIC COVERAGE FOR "NO DEDICATED EMS COVERAGE" AREA

FITCH completed mapping deployment models for Jefferson County for the areas with "No Dedicated EMS Coverage" and that detail is provided in the attached Data report. *FITCH's* goal was to determine how many resources are required to operate in Jefferson County to cover the geography of the mentioned areas in Figures 4 and 5. *FITCH* used proprietary software to understand how many units would be needed to cover the geography in an equitable fashion based on the geographic density.

Figure 9 below shows a side-by-side comparison of a 10-minute response time at the 90th percentile for emergency responses in Jefferson County. On the left, the County's current deployment requires the use of 11 stations to capture 90% of the historical call volume. The chart below the map indicates that 26.58% or 18,952 calls can be captured from the Rocky Ridge station. With the addition of the Bessemer Fire Station 1, an additional 15.62% or 11,149 calls are captured. The goal is to capture 90% of all historical call volume within 10 minutes. In the *FITCH* optimized modeling, our software determines the best locations for unit deployment based on historical data. *FITCH's* model shows that it would capture the same as the County model from post location 3586. In *FITCH's* modeling, 91.01% of the historical call volume is captured from a total of nine locations as opposed to the County's model, which would require 11 locations.

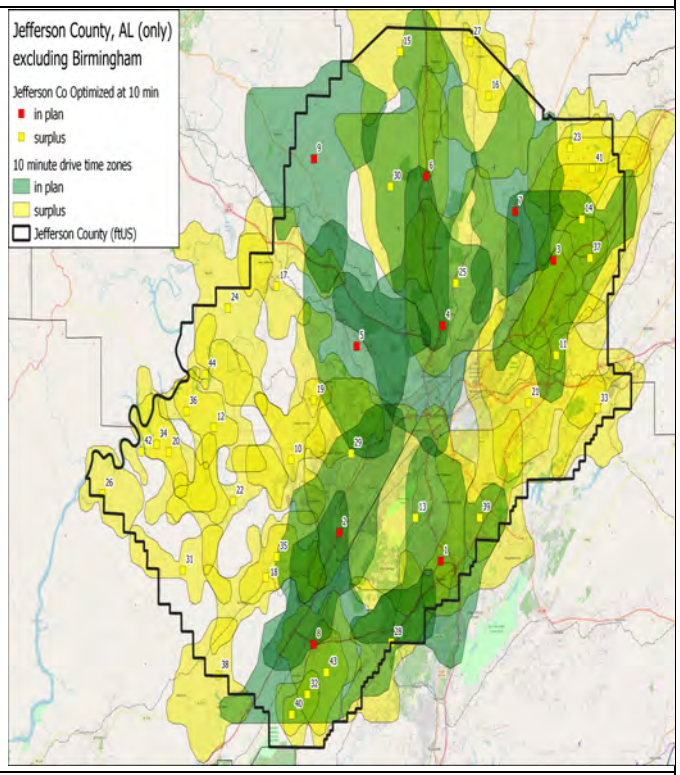
Figure 9. 10 Minute Drive Time Mapping - Current Deployment vs. *FITCH* Optimized Deployment

County Fire Station



Rank	Post Number	DriveTime	Latitude	Longitude	Post Capture	Total Capture	Percent Capture
1	Rocky Ridge	10	33.407767	-86.763536	18952	18952	26.58%
2	Bessemer Fire - Station 1	10	33.405052	-86.960368	11149	30101	42.22%
3	Center Point - Station 5	10	33.654616	-86.63963	9522	39623	55.58%
4	Fultondale - Station 2	10	33.606665	-86.821243	7861	47484	66.61%
5	Graysville - Station 1	10	33.627416	-86.972752	5353	52837	74.12%
6	Maytown	10	33.518271	-87.009532	2492	55329	77.61%
7	Irondale Fire - Station 3	10	33.580221	-86.641089	2304	57633	80.84%
8	McAdory - Station 2	10	33.308892	-87.022763	2162	59795	83.88%
9	Cane Creek	10	33.814615	-86.845842	2060	61855	86.77%
10	Center Point - Station 2	10	33.674733	-86.694583	1968	63823	89.53%
11	Concord - Station 1	10	33.48075	-87.069037	1406	65229	91.50%

FITCH Optimized



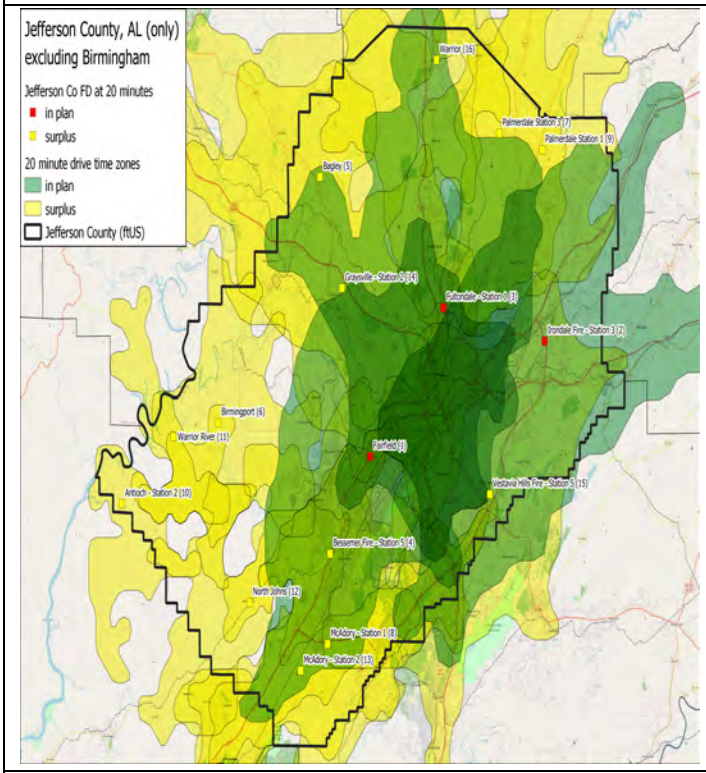
Rank	Post Number	DriveTime	Latitude	Longitude	Post Capture	Total Capture	Perc Capt
1	3586	10	33.399963	-86.806031	18952	18952	26.5
2	1660	10	33.424323	-86.958891	13655	32607	45.7
3	2393	10	33.648431	-86.633362	11607	44214	62.0
4	3793	10	33.595152	-86.801326	9837	54051	75.8
5	1714	10	33.578899	-86.931727	3589	57640	80.8
6	1822	10	33.719311	-86.825764	2586	60226	84.4
7	2609	10	33.689385	-86.690984	1823	62049	87.0
8	3117	10	33.331869	-86.998457	1534	63583	89.1
9	1292	10	33.734556	-86.995369	1300	64883	91.0

Figure 10 below shows a side-by-side comparison of a 20-minute response time at the 90th percentile for emergency responses in Jefferson County. On the left, the County's current deployment requires the use

of three stations to capture 92.14% of the historical call volume. The chart below the map outlines that from the Fairfield – Station location, 56.06% or 39,964 calls can be captured. With the addition of the Irondale – Station 3, an additional 27.85% or 19,856 calls can be captured. In the *FITCH* optimized modeling, our software determines the best locations for unit deployment based on historical data. The *FITCH* model captures 65.40% or 46,635 of the historical call volume from post number 1545 and with three post locations, 91.97% of the call volume is captured.

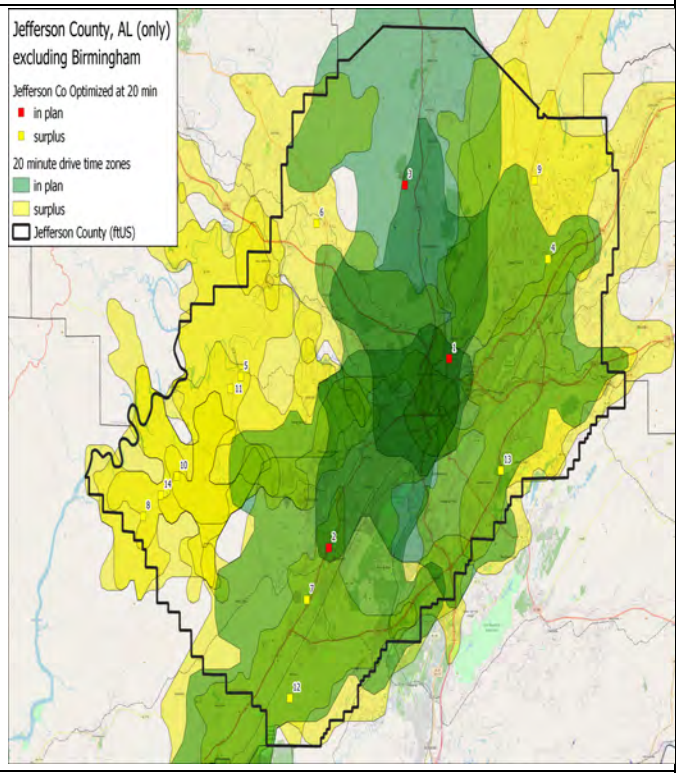
Figure 10. 20 Minute Drive Time Mapping - Current Deployment vs. *FITCH* Optimized Deployment

County Fire Station



Rank	Post Number	DriveTime	Latitude	Longitude	Post Capture	Total Capture	Percent Capture
1	Fairfield	20	33.486427	-86.913564	39964	39964	56.06%
2	Irondale Fire - Station 3	20	33.580221	-86.641089	19856	59820	83.91%
3	Fultondale - Station 1	20	33.609062	-86.79864	5865	65685	92.14%

FITCH Optimized

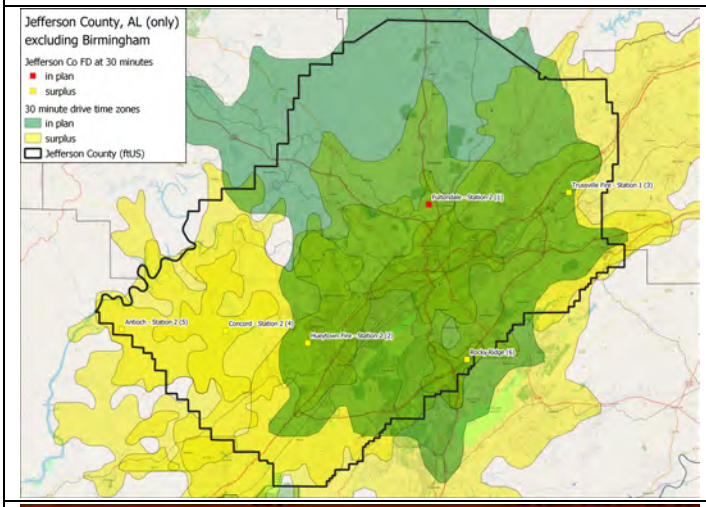


Rank	Post Number	DriveTime	Latitude	Longitude	Post Capture	Total Capture	Percen Captur
1	1545	20	33.566599	-86.785204	46625	46625	65.40%
2	1057	20	33.410857	-86.969934	14311	60936	85.48%
3	2469	20	33.711243	-86.851683	4625	65561	91.97%

Figure 11 below shows a side-by-side comparison of a 30-minute response time at the 90th percentile for emergency responses in Jefferson County. On the left, the County's current deployment requires the use of one station to capture 94.75% of the historical call volume. The chart below the map outlines that from the Fultondale – Station 2 location, 94.75% or 67,548 calls can be captured. With the addition of the Hueytown Fire – Station 2, an additional 3.66% or 2,607 calls can be captured. In the *FITCH* optimized modeling, our software determines the best locations for unit deployment based on historical data. The *FITCH* model captures 96.48% or 68,783 of the historical call volume from post number 3793 and with five post locations, 100% of the call volume is captured.

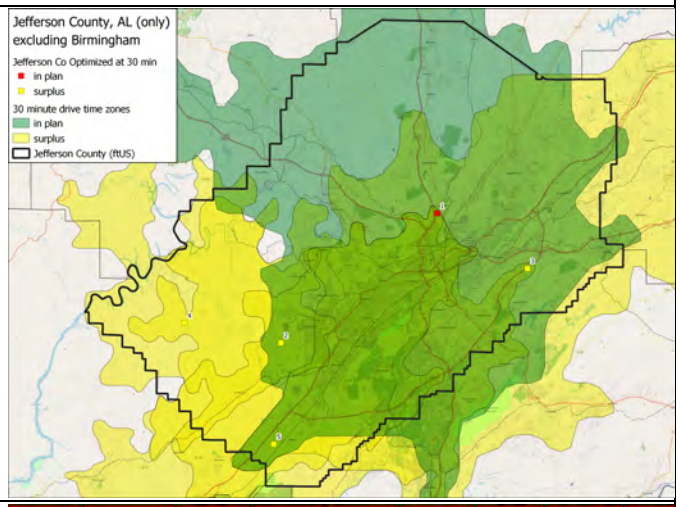
Figure 11. 30 Minute drive time mapping - Current deployment verse FITCH Optimized deployment

County Fire Station



Rank	Post Number	Drive Time	Latitude	Longitude	Class	Post Capture	Total Capture	Percent Capture
1	Fultondale - Station 2	30	33.60667	-86.8212	U	67548	67548	94.75%
2	Hueytown Fire - Station 2	30	33.43013	-87.0113	X	2607	70155	98.41%
3	Trussville Fire - Station 1	30	33.62077	-86.6027	X	906	71061	99.68%
4	Concord - Station 2	30	33.44609	-87.139	X	204	71265	99.97%
5	Antioch - Station 2	30	33.44845	-87.3004	X	16	71281	99.99%

FITCH Optimized



Rank	Post Number	Drive Time	Latitude	Longitude	Class	Post Capture	Total Capture	Perce Captu
1	3793	30	33.59515	-86.8013	U	68783	68783	96.48
2	1526	30	33.43033	-87.0416	X	1820	70603	99.04
3	2799	30	33.52358	-86.6634	X	497	71100	99.73
4	3260	30	33.45626	-87.1891	X	160	71260	99.96
5	4217	30	33.30063	-87.0533	X	29	71289	100.0

Fitch then utilized a hybrid model to determine the baseline number of units needed to cover the "No Dedicated EMS Coverage". In creating the hybrid model, FITCH determined a baseline number of units needed to cover the geography of the "No Dedicated EMS Coverage Areas". Fitch separated the two models looking at coverage with and without Bessemer (Shoals) and created both a 10-minute urban with a 20-minute rural, and a 10-minute urban with a 30-minute rural. Models are reflective below in staffing to demand.

STAFFING TO DEMAND ANALYSIS

To service 911 emergency volume, geographic coverage plus normalized hourly demand provides the total number of staffed ambulances required per hour. The figures that follow indicate staffing to demand both with and without Shoals coverage. The figures read left to right, Sunday to Saturday, reviewing each hour's average demand and then normalized for the estimated time on task for the areas mentioned in Figures 4 and 5 that have "No Dedicated EMS Coverage". Volume was determined using the most recent 52 weeks. The light blue area indicates how many units are required, per the marginal resources required to capture the prescribed geographic response time. The bar lines indicate the average hourly demand and change colors demanding whether the staffing line (red line) is above or below the dark blue geographic plus the average demand line. If the staffing line is above the dark blue line and there is "space" between the lines that indicates there is capacity within the system. If the staffing line falls below the geographic plus demand line (dark blue), this indicates that there are not enough resources during that hour and the bar lines will change colors.

The Figures 12 and 13 reflect coverage including Shoals. *FITCH* estimates two response time models for the "No Dedicated EMS Coverage" which are:

- 10-minute urban drive time and a 20 rural response time (10/20 with Shoals Model)
- 10-minute urban drive time and a 30 rural response time (10/30 with Shoals Model)

The 10/20 with Shoals model would require seven (7) geographic units, which would require 92,486 annual unit hours to cover the geographic demand. The 10/30 with Shoals model would require six (6) geographic units, which would require 83,750 annual unit hours to cover the geographic demand. The 10/20 with Shoals would require 8,736 more annual unit hours than the 10/30 with Shoals response model.

Figure 12. Demand vs. Staffing 10/20 Response Times with Shoals

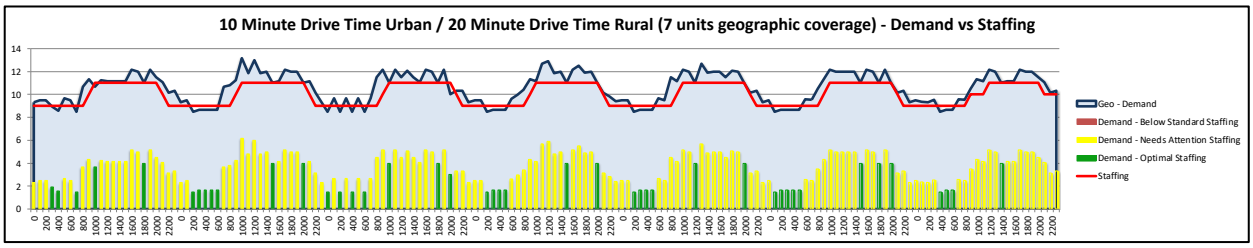
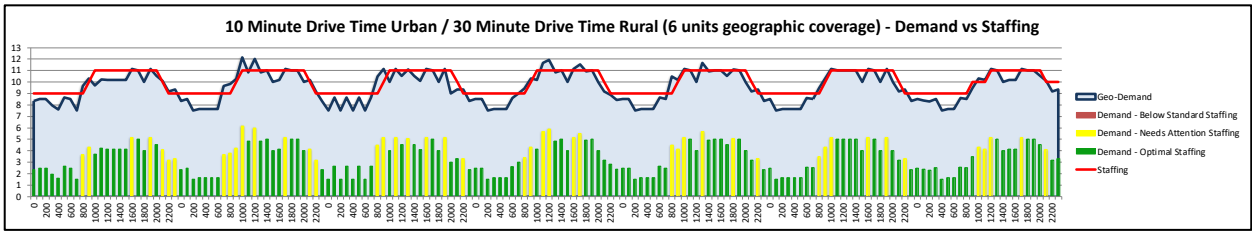


Figure 13. Demand vs. Staffing 10/30 Response Times with Shoals



The Figures 14 and 15 reflect coverage without Shoals. *FITCH* estimates two response time models that the "No Dedicated EMS Coverage" which are:

- 10-minute urban drive time and a 20 rural response time (10/20 without Shoals Model)
- 10-minute urban drive time and a 30 rural response time (10/30 without Shoals Model)

The 10/20 without Shoals model would require six (6) geographic units, which would require 79,158 annual unit hours to cover the geographic demand. The 10/30 without Shoals model would require five (5) geographic units, which would require 70,422 annual unit hours to cover the geographic demand. The 10/20 without Shoals would require 8,736 more annual unit hours than the 10/30 without Shoals response model.

Figure 14. Demand vs. Staffing 10/20 Response Times without Shoals

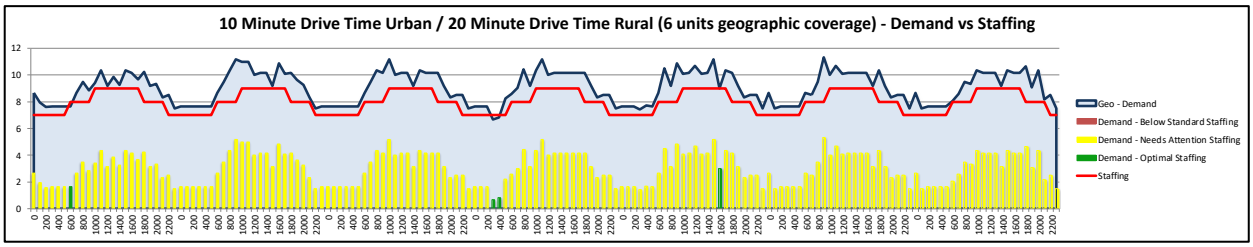
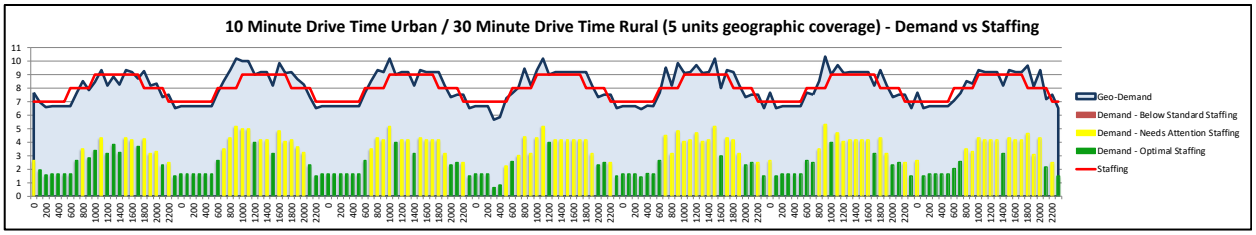


Figure 15. Demand vs. Staffing 10/30 Response Times without Shoals



Ultimately, the County will need to determine what they can afford to ensure an equitable response and a baseline level of service for all residents.

To understand the costing for these models, *FITCH* obtained data, through our information data request to determine the overall value of the EMS system. *FITCH* received billing data from providers, which determined the estimated average revenue per transport to be $348.15. *FITCH* then estimated, using a range of values for the cost to provide EMS service, by vehicle type, per hour. For an Advanced Life Support (ALS) Unit, *FITCH* estimated a range of $135 to $155 and for a Basic Life Support (BLS) Unit, $105 to $135 per hour. These ranges consider the current market pressures and increased Consumer Price Index (CPI) increases. Also, included are the costs for dispatching and oversight.

In Figure 16, *FITCH* estimates the cost to the County for each model.

Figure 16. Estimated Cost of Response Models

Range	No Shoals 10 Min Urban / 30 Min Rural 8 24/7 Units 2 BLS & 6 ALS	W/Shoals 10 Min Urban / 20 Min Rural 9.5 24/7 Units 2 BLS & 7.5 ALS
Low Range	$ 1,866,050	$ 2,333,760
High Range	$ 3,442,850	$ 4,173,360

ESTABLISH JEFFERSON COUNTY 911 AS PRIMARY PSAP

It is essential for development of the *system* that Jefferson County 911 be designated as the primary Public Safety Access Point (PSAP) that receives all 911 emergency medical calls and is set up to provide immediate auto transfer of 911 calls to the appropriate municipal or other response entity. Primary PSAP dispatchers would be Emergency Medical Dispatch (EMD) certified to provide care instructions to

callers prior to arrival of first responders and ambulances. Municipal dispatch centers would no longer need to train dispatchers for EMD certification, as that responsibility would be handled by Jefferson County 911.

Designating Jefferson County 911 as the primary PSAP would establish interoperability among and between all dispatch centers within the County. This is essential to manage any kind of major event, disaster, or multi-casualty incident. The primary PSAP can coordinate information flow to and from the current dispatch centers and communicate with other counties and State Emergency Management, should additional resources be needed.

An important benefit of establishing Jefferson County as the primary PSAP, is the collection of EMS operational data. The data would provide the means to understand the current system finances, plan for future funding, and provide recommendations to ensure an ambulance responds to any emergency and that no resident of Jefferson County is left without an ambulance. Systemwide data is not currently available from all dispatch centers on a timely basis.

Through the primary PSAP, calls can be triaged for patient acuity to allow fire departments and ambulance services to handle resources in a more meaningful manner, thereby sending the right resource to match the patient's needs. The primary PSAP can link to a nurse triage line and/or community paramedicine services. These services are beneficial to the public and hospitals often fund them as a service to their patients.

ESTABLISH COUNTY COORDINATING ENTITY

Many high-functioning EMS systems in the United States and across the world have one entity that provides coordination and oversight. Jefferson County EMS would benefit significantly from a designated entity that would initially be charged with managing the coordination of ambulance response throughout the County. This entity could work with existing providers to establish performance metrics and formalize mutual aid agreements countywide. Progress reports would be made to the County Commission and the public to provide transparency and measure effectiveness.

The Jefferson County Commission could determine that the excessive number of 911 PSAPs, operating independently and without strong coordination among first responders,[10] is detrimental to the timely receipt, dispatch, and provision of emergency public safety services. An assessment of PSAPs currently operating in the County is needed. With the assessment in hand, the County can modify the list of PSAPs eligible for funding pursuant to Alabama Code Title 11, Subtitle 3, Chapter 98.

The Jefferson County Commission should make a determination that its fractured, multi-provider EMS system lacks coordination and is not effectively or efficiently providing benefit to residents or visitors.

[10] Ala. Code § 11-98-1 (a)(12).

Needed modifications to the system can be made pursuant to Alabama Code Title 11, Subtitle 3, Chapter 87.

To facilitate the above actions, the County should establish a Public Safety Department (PSD) whose mission is to achieve the following objectives:

- Work with existing public safety entities to develop specific recommendations for governance, funding, oversight, and operations of PSAPs, fire protection services, and EMS with the objective of enhancing coordination and cooperation between these service providers.
- Enhance service public safety services delivery by working with existing providers.
- Be involved in direct service delivery only to the extent necessary, as determined by the PSD and the Jefferson County Commission.
- Be responsible for the County's emergency management and animal services functions.
- Manage all funding and if an agency receives County funding, they should sign an operating agreement to operate in a manner that the County expects.
- Ensure all EMS agencies are operating as per their license to include mutual aid responses.

FUNDING AND GOVERNANCE OPTIONS

The County has access to the American Rescue Plan Act (ARPA) funds to stand up an ambulance service and accomplish several other efforts towards establishing a *system*. *FITCH* estimates that the current funds will cover the initiatives for a least two years. The County would need to fund continuing efforts beyond the first two years. A more efficient system can be achieved through analyses of the entire system's operational data.

To cover costs moving forward, the County can look to ARPA funding for years 2022 and 2023. Following 2023, the County should review current legislation and evaluate the need to create additional legislation for the provision of including funding mechanisms for Emergency Medical Services.

To address these issues and develop a sustainable system for the future, *FITCH* is recommending that a phased approach be implemented, beginning immediately. This will improve needed EMS services, while driving for the long-term solution that is sustainable, patient centric and measured, driven by meaningful data. There is no EMS system in place today. The goal is to create an environment where the foundation of an EMS system is developed.

Each phase may have multiple tasks/actionable items to be completed, each guided by the principle of building a sustainable and measurable system.

Phase 1: Contract with an external EMS agency for additional ambulances to cover gaps in service and provide oversight for system response.
Phase 2: Purchase both ambulances and fire first response resources.
Phase 3: Consistently provide education programs for EMTs and Paramedics to begin developing a feeder system of providers into EMS.

Phase 4: Ensure all 911 calls for Jefferson County are directed to one Communications Center. If multiple centers continue to exist, then the one center should be designated as principal and can distribute calls to secondary centers.
Phase 5: Evaluate Phase 1-4 efforts and design future models that will ensure consistent and measurable services across the county.

Phases 1 and 2 are the initial, critical steps to improve service and should be considered immediately. Phase 3 will help create a sustainable workforce. Phase 4 is a potential project that is needed should ARPA funding remain available.

Phase 1: Contract with an external EMS agency for additional ambulances to cover existing gaps in service and provide oversight for system response

To cover gaps in the current service delivery model, *FITCH* has designed a temporary system that would begin to cover gaps in service. *FITCH* recommends that the County contract with an external EMS agency and initially purchase coverage consisting of eight ambulances 24/7, 365 days a year. The County should also contract for a dispatcher(s) 24/7, 365 days a year to be placed in the Jefferson County 911 center to ensure the contracted units are dispatched appropriately. These units will be used anywhere in the County as needed for primary response or as secondary back-up to currently established EMS providers. The County will need to enact the oversight entity to ensure the contracted EMS agency is performing accordingly and to monitor and continuously improve the system.

To cover the costs moving forward, *FITCH* suggests the County use available ARPA funding for calendar years 2022 and 2023. For the subsequent years, *FITCH* recommends reviewing current legislation and evaluating the need to create additional legislation for the provision of Emergency Medical Services. Additionally, there is a need for legislation to support the creation of a fee schedule to support future costs.

Phase 2: Purchase ambulances and fire first response resources

To assist current departments with vehicle purchases and needed replacements, *FITCH* recommends the County use ARPA funding. The goal is to replace the current ambulances in rural communities that do not have a municipal funding source. Funding could also be used to replace medical first response, quick response resources, such SUV's or pick-up trucks, instead of replacing full fire engines that are more than seven years old or have more than 250,000 miles. Since currently all assets are not managed as a singular system, *FITCH* recommends that any resource purchased using ARPA funds, would adhere to the following:

- A Global Positioning System (GPS) system will always be active, and at a minimum, will be tracked at Jefferson County 911 Communication Center.
- The County would own 51% of the asset and the agency will be required to maintain appropriately.
- When staffed, the unit can be dispatched, as per the EMS license, anywhere in the County, as requested.

Phase 3: Consistently provide education programs for EMTs and Paramedics to develop a new opportunities for EMS workforce development

Workforce development and training is a top priority. *FITCH*'s recent experience indicates that APRA funds can be eligible for these purposes. These are turnkey classes, and all instruction should be provided by an accredited program. Alabama currently uses their State University junior college system. Built into the estimated costs are potential University fees (instructor/management/classroom space/supplies, student books, materials, uniforms, certification testing and lab and technology fees). All students are paid to attend class. This enhances the recruitment opportunity and offers the occasion for non-traditional students access to a career. Additionally, it allows students to focus on training verses working full time to support their families while trying to attend class in a part-time setting. This permits training to be done "academy style", 5 days a week, 8 to 9 hours a day, resulting in EMT's or Paramedics obtaining certification and entering the workforce faster, while maintaining the quality of education.

Currently, the University of Alabama EMT class is four months long and by shifting to an academy style class, the class is shortened to 3.6 weeks. Likewise, the University of Alabama Paramedic class is 16 months - under academy style class, this time is shortened to 26.5 weeks (6.5 months). Costs for recruitment, advertising, or background checks, etc., are not included.

Workforce development Program: EMT classes
Three (3) EMT classes per year for four (4) years totaling 15 EMT classes, with 20 students per class.

Workforce development: Paramedic classes
One (1) Paramedic class per year for three (3) years with 20 students per class. Would need to considered offsetting by one-year start to avoid pulling too many existing EMT's from current resources.

Phase 4: Ensure all 911 calls for Jefferson County are received in one Communications Center

FITCH is recommending that the County look to consolidate all 14 of its communications centers into one regional emergency communications center. Jefferson County is the one county in the state with an overabundance of dispatch centers. The state provides funding for each communications center and as such, if consolidated, those funds could cover most, if not all the costs for this service.

The current challenges with multiple centers include but not limit too:

- Lack of visualization of where available units are located to ensure the closest most appropriate unit is dispatched.
- Lack of consistent data reporting for measuring system performance or to conduct strategic planning.
- 911 callers are routinely transferred between 911 communications centers until they are finally at the correct center for their area.

- Multiple infrastructures and software systems tend to increase costs, both capital and annual maintenance.

FITCH estimates that a study would be needed to ensure a correct build. Furthermore, the County has been looking at facilities to house a consolidated Communications Center. *FITCH* understands the numbers that Jefferson County 911 team is estimating, and *FITCH* believes at a minimum 25% of that build would be related to EMS. Of note, *FITCH* has not independently verified the total build cost and is using estimated numbers provided by the County.

Phase 5: Evaluate Phase 1-4 efforts and design future models that will ensure consistent and measurable service across the County

Once the initial phases have been established, Jefferson County will need to evaluate the overall results and develop legacy opportunities for further system improvement. A potential single focus would be to support areas that are not covered by municipal services, while folding in current resources. This would result in an improvement of performance metrics. This model, as presented will provide needed resources to residents immediately.

PATHWAY FORWARD

Although there are several options for Jefferson County to consider, *FITCH* urgently recommends the formation of a Public Safety Department to provide strategic and organizational oversight for the provision of all emergency services. The narrative below outlines a selection of options for the County to consider in a scalable and implementable format.

OPTION ZERO – SUPPORT STATUS QUO

In this Option, EMS agencies would continue operating as they do today. It is understood that some jurisdictions can provide more support and mutual aid than others and that some agencies may be struggling. Further, it is expected that some EMS agencies will continue to pick and choose which areas they respond to and whether they provide mutual aid to other areas within the County. Based on these issues alone, there are EMS agencies that may cease operations, thereby leaving additional territory without dedicated EMS coverage.

Under this option, response efforts will still be disorganized and non-uniform across the County's communities. Residents and visitors would not receive needed or deserved emergency medical care.

Actions that the County can take to further support the status quo are outlined below.

- Establish dispatch agreements between each agency receiving County dispatch services and enforce mutual aid no matter the geographic or socio-economic footprint.
- Require as part of the dispatch agreement that any staffed EMS unit will mark-up or communicate their status with the Jefferson County 911 Center.
- Change dispatch policy to dispatch a staffed ambulance upon immediate request for service, thereby eliminating delays while waiting for the primary (fire) agency to respond. Dispatch services should simultaneously dispatch the primary agency and a staffed ambulance.
- Explore the feasibility of purchasing and implementing Automatic Vehicle Locaters (AVL) for all EMS resources so units can be tracked and deployed based on the Dispatch agreement. Agreement and cooperation of all transporting EMS agencies would need to be achieved.

The estimated cost for Option Zero is the cost of providing AVL for all resources. The cost estimate is between $650,000 and $750,000 and would require installation of software in the County 911 Center.

OPTION ONE — PURCHASE AMBULANCE COVERAGE FROM EXTERNAL EMS AGENCY & IMPLEMENT PUBLIC SAFETY DEPARTMENT

Ambulance Contract

FITCH designed a temporary system that would begin to cover identified gaps in ambulance services where currently, there is either no contracted or designated service that can provide timely and measurable response. The immediate recommendation is for the County to enter into a contract with an

external EMS agency to provide ambulance coverage with eight units 24 hours a day, seven days a week. The County would contract for six (6) Advanced Life Support (ALS) ambulances and two (2) Basic Life Support (BLS) ambulances. *FITCH* estimates the cost the range between $1.8 and $3.4 million annually. The estimated cost is the difference from the provider being able to bill for service and the cost to provide the service.

As part of Option One, the County would contract with the outside agency to provide a dedicated EMS dispatcher position, 24 hours a day, seven days a week. The dispatch position would be co-located in the Jefferson County Communications Center. The contracted ambulances will be dispatched anywhere in the County, as needed for primary or secondary back-up to established providers. The contracted agency will be responsible to monitor and continuously improve the system. The County will need to designate a position (employee or contractor) to provide contract oversight to ensure the contracted EMS agency is performing per the specifications of an agreement. In addition, the County can position ambulances in areas in the County that are identified as needing additional resources based on call density analysis.

Public Safety Department

As part of this Option, County would immediately implement a County supported and funded Public Safety Department that provides an EMS model for the rural, economically challenged, and unincorporated areas. This entity will directly link each arm of emergency services: EMS, Fire, Dispatch, and Law Enforcement, to form a unified approach.

This approach has been implemented in several areas in Alabama and throughout the United States with significant success. Three specific Alabama counties implemented variations of a county Public Safety Department that provides oversight for emergency medical ambulance services. Each had different approaches, but the outcome is beneficial to the EMS systems and ultimately their residents. A brief outline of each of the three approaches follows.

Elmore County, AL

Elmore County relied on Alabama Code ss. 11-87-1 as the authority to form a designated committee for ambulance oversight.[11] The County Commissioners advertised a Request for Proposals for bidders to provide ambulance services according to the County's specifications. The County awarded the most recent contract to Haynes Ambulance. All EMS calls to the County's primary PSAP are routed to Haynes Ambulance for triage and ambulance dispatch. Elmore County implemented this system in May 2022.

[11] Section 11-87-1 of the Code of Alabama authorizes the governing body of any county or municipality to "create and establish, maintain and operate ambulance service within the county, or within the municipality, to promote the health, welfare, and safety of the residents . . . "

Macon County, AL

In 2019, the Macon County Commission sought relief from the State legislature to secure sustained funding for the County's "emergency ambulance crisis."[12] The Alabama legislature found that "an immediate crisis exists," and allowed the county to implement a half-cent sales tax to be used solely for ambulance services in Macon County. The funding was approved for an initial three-year period and is currently on track for extension for another three years.

FITCH believes that, like Macon County, an immediate crisis exists in Jefferson County regarding the gaps in countywide ambulance services — immediate action on several fronts is needed.

Mobile County, AL

The Mobile County Emergency Medical Services System Rescue Squad was founded in 1992 as a volunteer-driven service. It has evolved to a career service with 100+ paid personnel. The County established a Board of Directors that must have at least three and no more than 10 members to provide organizational oversight.

The Squad's purpose is relevant to Jefferson County as it recognizes the same issues that currently exist in Jefferson County. The stated purpose is as follows:

> To promote the health, welfare, and safety of residents living in rural and economically distressed communities within Mobile County, including certain geographic areas that exist within boundaries where emergency medical services are not available within acceptable standards, and whereas the lack of acceptable standards endangers the well-being of citizens who live there.[13]

FITCH recommends that Jefferson County consider implementing the following positions and salaries for the initiation of the Jefferson County Public Safety Department. The positions below will provide a structure that will allow for accountability while ensuring all facets of forming, implementing, and operationalizing the Public Safety Department are accomplished. These positions are modeled after previously implemented public safety departments in both Tennessee and Florida. Annual first year total compensation for the positions listed below is $454,950 including fringe benefits.

Figure 18. Public Safety Department Expected Salary and Positions

Job Title	Base Salary	35% fringe	Total Compensation
Public Safety Director	$96,000	$33,600.00	$129,600
Technical Manager – Fire	$69,000	$24,150.00	$93,150

[12] Director's Report, Macon County Emergency Management Agency, Frank H. Lee, Director, June 10, 2019, Macon County Commission Agenda and reports, July 8, 2019. Authority based on Alabama Code 45-44-247 (1975) and Act 20190337, ss 1.
[13] Mobile County Emergency Medical Services System Rescue Squad, Inc. (Mobile County E.M.S.), Revised 09/20/2021, summary document, www.mobilecountyal.gov, accessed, June 2022.

Job Title	Base Salary	35% fringe	Total Compensation
Technical Manager – EMS	$69,000	$24,150.00	$93,150
Data Analyst	$59,000	$20,650.00	$79,650
Administrative Assistant/Support Staff	$44,000	$15,400.00	$59,400

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Additional expenses that could be incurred for the implementation of the Public Safety Department would include three emergency response SUV type vehicles to include associated emergency response equipment. The included equipment should reflect that of basic medical equipment including an AED, various safety equipment, and other items to be determined by the Director. The cost per vehicle would be estimated at $65,000 per vehicle for a total of $195,000.

The Public Safety Director or their designee should also be granted positions on any of the relevant boards that are currently in place in Jefferson County. Those include but are not limited to the 911 Board and the Emergency Management Association Board. The purpose of having representation is to ensure continuity and consistency throughout the emergency services organizations.

This Option also includes further actions by the County as follows:

- Establish with the newly formed Public Safety Department, targeted response time goals for EMS, review monthly and report quarterly.
- Allocate funding to ensure longevity of the EMS system.
- Form an EMS Advisory Board to begin strategic planning for one-, five-, and 10-years for EMS sustainability.
- Fund a County Medical Director who is available to coordinate and provide clinical oversight for all transporting EMS agencies. This action would ensure consistent clinical care and quality assurance controls are in place.
- Purchase and implement an Automatic Vehicle Locations System (AVL) for all response units in the system to enable GPS for closest unit dispatch.
- The Public Safety Department should report to a separate board set up by the County, with a Public Safety Director. The Director would report to the County Manager and County Commission.

OPTION TWO — CENTRALIZED PURCHASES FOR SYSTEM IMPROVEMENT

In this Option, the County would identify funds to further support the system as follows:

- Develop group purchase contracts available to all agencies for items such as fuel, medical supplies/equipment, fleet purchases, and maintenance, etc.

[14] https://govsalaries.com/

- Purchase and implement a single Electronic Patient Care Reporting (EPCR) software system for all transporting EMS agencies, at no cost to the agencies. The System Medical Director would gather clinical data for coordinated review with individual EMS agency Medical Directors.
- Develop a dedicated EMS revenue stream that provides support to agencies for large purchases and other system wide improvements. The County would manage the fund and seek recommendations from the Public Safety Department, which may incentivize agencies to be active participants in the Committee.
- Add more transport capable ambulances to what is noted in Option One. The goal of the County operated transport capable ambulances is to ensure a minimum geographic coverage to meet 90% of historical demand.

The Public Safety Department would develop and publish a strategic plan for the EMS system. The plan is to address system finances, operational solutions when/if agencies dissolve, opportunities for alternative transport and destination, formation of County supported EMS education, community paramedicine, and system quality assurance. Furthermore, the plan should be updated at least annually to reflect changes in reimbursement policies and the overall status of EMS agencies and the system.

This Option offers a solid opportunity for improvements with a minimal amount of disruption. EMS agencies with substantial local support can thrive while all agencies can seek savings through group purchasing contracts. The Option also allows a *systems* approach to evolve with higher levels of coordination. At some point, agencies may understand that they are more likely to survive by working together to provide coordinated emergency services in support of community well-being.

The estimated cost of Option Two is $1,500,00 each year for the first two years.

OPTION THREE — A SINGLE PROVIDER SYSTEM

Over time, a single provider system may evolve out of necessity. Without financial subsidy Jefferson County may experience EMS agencies going out of business or further curtailing operations due to financial instability. Continuing changes in insurance and Medicare/Medicaid transport reimbursements *and* operational policies may well force market changes and the demise of local EMS agencies. Local economies are relatively strong today, but an economic downturn could change the ability of communities within Jefferson County to support EMS.

A single provider system provides the opportunity for efficiencies on multiple levels. Staffing to demand in a larger system can provide more efficient geographic, as well as temporal coverage. Services can be contracted to a private or not-for-profit entity or provided by the County. In all cases, the Public Safety Department would provide robust system oversight and set system wide standards of care.

As is evident, there is concern for the EMS system within Jefferson County. There is likelihood that a natural progression will occur where either one or more of the for-profit EMS agencies continue to retreat from providing service to areas within the County or Fire Departments are not able to meet the

demand for service without a funding source. As this natural progression occurs, this option will become a likely option that will require implementation. This will need to be continually evaluated and monitored in real-time as the removal of just a few EMS units will dramatically change the already lacking EMS coverage to the County.

The estimated cost for Option Three: Variable and would require an analysis.

EMS EDUCATION CONCERNS

During the site visit *FITCH* consultants heard there is a significant concern with the current state of EMS education, regionally. There were several common themes that were conveyed during the site visit. Those themes included:

- Extremely low National Registry of Emergency Medical Technician (NREMT) testing pass rates
- Lack of correlation between NREMT testing and Alabama treatment protocols
- Limited options for variety of EMS educational institutes
- Expense and time requirement of the Paramedic programs is comparable to Nursing programs

These challenges to EMS education appear to be a deterrent for the recruitment of new EMS providers. Additionally, the challenges create a void in the natural progression of advancement of EMS providers from basic to advanced level certification. With any challenge there is opportunity, and there is opportunity for the County and proposed Public Safety Department to investigate the creation of a county-based EMS educational institute that can readily meet the needs of the system. There is an opportunity for the County to evaluate what levels of certification and education are truly needed to help sustain the already challenged EMS system.

EMS Education system redesign costs: $800,000 annually

CONCLUSION

Jefferson County is in a unique situation as it relates to EMS coverage, yet it can be forward-thinking in the creation and revitalization of EMS for the residents and visitors of Jefferson County. It is imperative that equitable EMS services be provided to all areas within Jefferson County no matter the geographic or socio-economic footprint. Ensuring that there is a common goal of the safe, fair, and equitable provision of EMS should be the primary focus. This is obtained by implementing the recommendations included in this report and ensuring that industry best-practices are utilized when making decisions for the provision and sustainability of EMS in Jefferson County. The days of not having available EMS units to respond or choosing not to respond must end quickly. The need to have all EMS agencies follow the regulations and provide mutual aid when called upon, free of charge or fee, is also important.

Jefferson County is positioned to not only change the EMS system within the county, but also provide a pathway forward to ensure legislation is enacted for EMS.

ATTACHMENT A

Data Report

FITCH
& ASSOCIATES

Jefferson County, Alabama

Data Analysis

Prepared by:

FITCH & ASSOCIATES, LLC
2901 Williamsburg Terrace #G ▪ Platte City ▪ Missouri ▪ 64079
816.431.2600 ▪ www.fitchassoc.com

Jefferson County, Alabama
Draft Data Analysis

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METHODOLOGY

Data files were obtained from Jefferson County, RPS – Jefferson County and Shoals Ambulance Service spanning the period of January 1, 2018, through December 31, 2021. Jefferson County included a partial 2022 data set, but it was not utilized as none of the other agencies provided data for this period.

This report focuses specifically on call volume analysis as unit data was not available. Each event is treated as an individual call for service without consideration of the number of units responding.

Audits of the data files were first conducted to reduce duplication of events and to identify anomalies in the base data that would impact analysis. Select records were excluded if there were values that reflected negative time calculations or were exceedingly long in the processing and assignment of the event. It should be noted that no data values were changed or modified in the cleanup process. Some spelling and abbreviation differences were adjusted in the names of towns and jurisdiction only where it was obvious and necessary to provide the most accurate counts aggregated by geographic region.

Tables where these values were excluded are noted in the table descriptions.

SNAPSHOT OF 2018-2021

Call Volume

Table 1: Number of Calls Received by Agency by, Priority and Reporting Period

		Reporting Period			
AGENCY	***PRIORITY***	***2018***	***2019***	***2020***	***2021***
Jefferson County	PRIORITY 1	21365	57266	62691	64590
	PRIORITY 2	956	1124	1259	1588
	PRIORITY 3	2746	3473	3293	3971
	SCENEFLT		17	17	23
	STBY		124	316	197
	(blank)	615	296	3655	3930
	Total	25682	62301	71236	74303
	AVG/DAY	70.4	170.7	194.6	203.6
	Total Growth	N/A	142.6%	14.3%	4.3%
RPS-Jefferson	Emergency Transport	31118	30568	31790	26679
	Non-Emergency Transport	12	8	6	32
	Scene Flight	54	42	43	50
	Standby		166	425	265
	Total	31184	30784	32264	27026
	AVG/DAY	85.4	84.3	88.2	74.0
	Total Growth	N/A	-1.3%	4.8%	-16.2%
Shoals EMS	Priority 1 - EMRFR	6208	7566	6492	6791
	Priority 2 - EMER	14	26	13	6
	Priority 3 - IMMED	569	781	425	326
	Total	6791	8373	6930	7123
	AVG/DAY	18.6	22.9	18.9	19.5
	Total Growth	n/a	23.3%	-17.2%	2.8%

Jefferson County is a combined data set from multiple sources. RPS-Jefferson and Shoals Ambulance are subsets of the data contained in the Jefferson County data.

Response Volume and Busy Time

Table 2: Number of Calls, Number of Responses, and Total Busy Time by Agency and Reporting Period

	Reporting Period	Number of Events	Total Event Time (hh:mm:ss)	Avg Resp per Day	Avg Busy Time per Day	Avg Busy Time per Event
Jefferson County	2018	25682		70.4		
	2019	62301		170.7		
	2020	71236		194.6		
	2021	74303		203.6		
RPS - Jefferson	2018	31186	24563:03:57	85.4	67:17:46	0:47:15
	2019	30784	22833:44:13	84.3	62:33:29	0:44:30
	2020	32267	23313:18:01	88.2	63:41:51	0:43:21
	2021	27026	18360:55:40	74.0	50:18:14	0:40:46
Shoals	2018	6791	5789:38:02	18.6	15:51:43	0:51:09
	2019	8373	7902:33:03	22.9	21:39:03	0:56:38
	2020	6930	6659:43:54	18.9	18:11:46	0:57:40
	2021	7123	6736:51:41	19.5	18:27:26	0:56:45

*Data from Jefferson County was incomplete and lacking time stamps for most event status updates.

System Performance

Table 3: 90th Percentile Performance Times by Reporting Period

	PRIORITY	YEAR	ProcTime	Chute	RespTime	Sample Size
Jefferson County	1	2018	N/A	N/A	N/A	21365
		2019	0:02:41	0:02:35	0:21:27	57266
		2020	0:02:48	0:02:23	0:22:33	62691
		2021	0:03:42	0:02:46	0:24:59	64590
	2	2018	N/A	N/A	N/A	956
		2019	0:17:04	0:02:07	0:25:10	1124
		2020	0:17:35	0:02:13	0:24:26	1259
		2021	0:19:40	0:02:16	0:28:16	1588
	3	2018	N/A	N/A	N/A	2746
		2019	0:16:59	0:03:28	0:51:18	3473
		2020	0:30:30	0:03:55	0:58:53	3293
		2021	1:06:14	0:03:39	1:39:03	3971
	Scene Flight	2018	N/A	N/A	N/A	N/A
		2019	0:02:37	0:11:32	0:33:51	17
		2020	0:01:26	0:16:58	0:56:33	17
		2021	0:03:45	0:14:49	0:36:56	23
	Standby	2018	N/A	N/A	N/A	N/A
		2019	0:02:59	0:01:18	0:26:24	124
		2020	0:03:18	0:01:58	0:26:04	316
		2021	0:04:07	0:02:47	0:27:35	197
	PRIORITY	**YEAR**	**ProcTime**	**Chute**	**RespTime**	**Sample Size**
RPS - Jefferson County	Emergency Transport	2018	0:01:49	0:01:56	0:20:58	31118
		2019	0:02:07	0:01:59	0:22:19	30568
		2020	0:02:29	0:01:53	0:23:14	31790
		2021	0:03:24	0:01:58	0:26:31	26679
	Non-Emergency Transport	2018	0:02:45	0:01:11	0:44:34	12
		2019	0:41:23	0:00:54	1:06:29	8
		2020	0:41:14	0:01:43	1:05:15	6
		2021	0:18:37	0:00:57	0:48:29	32
	Scene Flight	2018	0:02:26	0:12:18	0:31:37	54
		2019	0:02:45	0:13:16	0:32:39	42
		2020	0:01:59	0:17:22	1:10:36	43
		2021	0:04:14	0:14:46	0:35:34	50
	Standby	2018	N/A	N/A	N/A	
		2019	0:02:54	0:01:13	0:26:23	166
		2020	0:03:39	0:01:48	0:27:15	425
		2021	0:04:22	0:02:41	0:28:07	265
	PRIORITY	**YEAR**	**ProcTime**	**Chute**	**RespTime**	**Sample Size**
Shoals	Priority 1 - EMRFR	2018	0:02:25	0:03:51	0:19:45	6208
		2019	0:02:12	0:05:38	0:22:17	7566
		2020	0:02:06	0:06:08	0:26:37	6492
		2021	0:02:43	0:06:05	0:25:24	6791
	Priority 2 - EMER	2018	0:17:31	0:03:49	0:36:34	14
		2019	0:09:23	0:06:34	0:39:45	26
		2020	0:11:51	0:04:38	0:35:41	13
		2021	0:42:33	0:11:51	1:00:12	6
	Priority 3 - IMMED	2018	0:34:41	0:05:27	1:03:31	569
		2019	0:40:23	0:06:16	1:08:04	781
		2020	0:47:30	0:05:48	1:24:13	425
		2021	1:28:52	0:05:27	2:09:00	326

Transport

Table 4: Count of Events by Type, Number Arrived and Transported by Count and Percentage

% Arrived: percentage of events where a unit arrived on scene, %Trsp/Arriv: percentage of events a unit was on scene and transported a patient

JEFFERSON COUNTY	2018					2019					2020					2021				
	# Events	# Arrived	# Trsp	% Arrived	Trsp/Arrive	# Events	# Arrived	# TRsp	% Arrived	Trsp/Arrive	# Events	# Arrived	# TRsp	% Arrived	Trsp/Arrive	# Events	# Arrived	# TRsp	% Arrived	Trsp/Arrive
Cardiac and Stroke	2548	103	87	4.0%	84.5%	6032	3061	2242	50.7%	73.2%	6402	2804	2051	43.8%	73.1%	6339	2437	1784	38.4%	73.2%
Respiratory	1929	56	50	2.9%	89.3%	5035	2710	2001	53.8%	73.8%	6176	2997	2227	48.5%	74.3%	6368	2620	1960	41.1%	74.8%
Seizures / Unresponsive	1391	52	44	3.7%	84.6%	4757	2632	1795	55.3%	68.2%	4973	2497	1684	50.2%	67.4%	4981	2189	1520	43.9%	69.4%
Overdose / Poison / Phsych	603	35	27	5.8%	77.1%	3182	2267	1683	71.2%	74.2%	3747	2496	1851	66.6%	74.2%	3681	2342	1787	63.6%	76.3%
Trauma	4010	126	94	28.6%	74.6%	640	2858	2015	446.6%	70.5%	8898	2739	1933	30.8%	70.6%	9185	2287	1661	24.9%	72.6%
MVA	1599	54	27	3.4%	50.0%	4023	1689	832	42.0%	49.3%	4070	1517	759	37.3%	50.0%	4130	1347	660	32.6%	49.0%
OB/GYN	97	1	1	1.0%	100.0%	216	84	72	38.9%	85.7%	220	88	77	40.0%	87.5%	250	95	83	38.0%	87.4%
General Medical	8683	166	139	1.9%	83.7%	22752	11794	6223	51.8%	52.8%	25958	11507	5754	44.3%	50.0%	28024	11234	6707	40.1%	59.7%
Transfers / Non Emergent	4822	0	0	0.0%	n/a	8106	2372	39	29.3%	1.6%	10512	2589	40	24.6%	1.5%	11118	2602	38	23.4%	1.5%

RPS-Jefferson County	2018					2019					2020					2021				
	# Events	# Arrived	# Trsp	% Arrived	Trsp/Arrive	# Events	# Arrived	# TRsp	% Arrived	Trsp/Arrive	# Events	# Arrived	# TRsp	% Arrived	Trsp/Arrive	# Events	# Arrived	# TRsp	% Arrived	Trsp/Arrive
Cardiac and Stroke	5617	4573	3195	81.4%	69.9%	5364	4200	2876	78.3%	68.5%	5247	3936	2668	75.0%	67.8%	4122	3005	2091	72.9%	69.6%
Respiratory	3496	2868	2126	82.0%	74.1%	3295	2657	1909	80.6%	71.8%	3849	3029	2176	78.7%	71.8%	3073	2292	1702	74.6%	74.3%
Seizures / Unresponsive	4713	3814	2662	80.9%	69.8%	4598	3595	2493	78.2%	69.3%	5018	3873	2657	77.2%	68.6%	4021	3008	2211	74.8%	73.5%
Overdose / Poison / Phsych	699	573	403	82.0%	70.3%	628	501	336	79.8%	67.1%	775	605	422	78.1%	69.8%	636	490	372	77.0%	75.9%
Trauma	5286	4043	2755	76.5%	68.1%	5228	3848	2579	73.6%	67.0%	5315	3747	2457	70.5%	65.6%	3909	2602	1806	66.6%	69.4%
MVA	3336	2110	1206	63.2%	57.2%	3188	2016	1139	63.2%	56.5%	2850	1690	923	59.3%	54.6%	2137	1130	675	52.9%	59.7%
OB/GYN	125	108	96	86.4%	88.9%	116	94	81	81.0%	86.2%	99	83	70	83.8%	84.3%	90	76	68	84.4%	89.5%
General Medical	7559	5853	4443	77.4%	75.9%	7921	5740	4313	72.5%	75.1%	8336	5730	4265	68.7%	74.4%	8280	4269	3212	51.6%	75.2%
Transfers / Non Emergent	355	214	148	60.3%	69.2%	446	211	95	47.3%	45.0%	778	311	95	40.0%	30.5%	758	225	95	29.7%	42.2%

SHOALS EMS	2018					2019					2020					2021				
	# Events	# Arrived	# Trsp	% Arrived	Trsp/Arrive	# Events	# Arrived	# TRsp	% Arrived	Trsp/Arrive	# Events	# Arrived	# TRsp	% Arrived	Trsp/Arrive	# Events	# Arrived	# TRsp	% Arrived	Trsp/Arrive
Cardiac and Stroke	737	641	502	87.0%	78.3%	1022	875	677	85.6%	77.4%	729	604	458	82.9%	75.8%	657	556	428	84.6%	77.0%
Respiratory	714	598	448	83.8%	74.9%	876	733	564	83.7%	76.9%	836	665	544	79.5%	81.8%	896	758	547	84.6%	72.2%
Seizures / Unresponsive	1147	974	706	84.9%	72.5%	1418	1196	893	84.3%	74.7%	1186	954	696	80.4%	73.0%	1289	1018	736	79.0%	72.3%
Overdose / Poison / Phsych	291	240	186	82.5%	77.5%	395	334	263	84.6%	78.7%	338	270	216	79.9%	80.0%	271	217	156	80.1%	71.9%
Trauma	827	635	425	76.8%	66.9%	1077	823	601	76.4%	73.0%	841	612	431	72.8%	70.4%	885	629	425	71.1%	67.6%
MVA	528	361	210	68.4%	58.2%	674	474	266	70.3%	56.1%	620	391	232	63.1%	59.3%	624	407	257	65.2%	63.1%
OB/GYN	33	28	24	84.8%	85.7%	34	28	26	82.4%	92.9%	51	45	40	88.2%	88.9%	47	42	39	89.4%	92.9%
General Medical	2288	1698	1294	74.2%	76.2%	2386	1846	1431	77.4%	77.5%	2127	1539	1219	72.4%	79.2%	2206	1495	1139	67.8%	76.2%
Transfers / Non Emergent	226	186	163	82.3%	87.6%	491	425	390	86.6%	91.8%	202	166	134	82.2%	80.7%	248	176	162	71.0%	92.0%

COMMUNITY DEMAND

Table 5: Number of Events by Month and Average per day by Reporting Period

Agency	Metric	Reporting Period	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	Total
Jefferson County	Number of Calls	2018	2294	2020	2086	2071	2260	2245	2149	2228	2054	2073	2026	2176	25682
		2019	5035	4566	4789	4811	5084	5012	5415	5394	5414	5743	5323	5715	62301
		2020	6031	5523	5506	4988	5387	5573	6268	6144	5929	6521	6281	7085	71236
		2021	6490	5443	6370	6396	6223	6117	6530	6981	6314	6253	5482	5679	74303
	Average Number of Calls per Day	2018	74.0	72.1	67.3	69.0	72.9	74.8	69.3	71.9	68.5	66.9	67.5	70.2	70.4
		2019	162.4	163.1	154.5	160.4	164.0	167.1	174.7	174.0	180.5	185.3	177.4	184.4	170.7
		2020	194.5	190.4	177.6	166.3	173.8	185.8	202.2	198.2	197.6	210.4	209.4	228.5	194.6
		2021	209.4	194.4	205.5	213.2	200.7	203.9	210.6	225.2	210.5	201.7	182.7	183.2	203.6
RPS - Jefferson County	Number of Calls	2018	2783	2404	2561	2489	2821	2757	2624	2723	2635	2557	2390	2442	31186
		2019	2473	2444	2468	2560	2735	2603	2612	2641	2583	2638	2423	2604	30784
		2020	2589	2359	2593	2183	2567	2498	2816	2782	2697	2888	2971	3324	32267
		2021	3126	2579	2991	2997	2155	2057	2116	2053	1857	1786	1595	1714	27026
	Average Number of Calls per Day	2018	89.8	85.9	82.6	83.0	91.0	91.9	84.6	87.8	87.8	82.5	79.7	78.8	85.4
		2019	79.8	87.3	79.6	85.3	88.2	86.8	84.3	85.2	86.1	85.1	80.8	84.0	84.3
		2020	83.5	81.3	83.6	72.8	82.8	83.3	90.8	89.7	89.9	93.2	99.0	107.2	88.2
		2021	100.8	92.1	96.5	99.9	69.5	68.6	68.3	66.2	61.9	57.6	53.2	55.3	74.0
SHOALS	Number of Calls	2018	580	512	574	537	590	533	536	577	552	628	573	587	6779
		2019	618	601	599	611	691	648	695	800	816	792	726	768	8365
		2020	785	743	608	482	522	506	586	532	512	560	534	551	6921
		2021	546	503	511	408	418	398	501	727	723	895	705	788	7123
	Average Number of Calls per Day	2018	18.7	18.3	18.5	17.9	19.0	17.8	17.3	18.6	18.4	20.3	19.1	18.9	18.6
		2019	19.9	21.5	19.3	20.4	22.3	21.6	22.4	25.8	27.2	25.5	24.2	24.8	22.9
		2020	25.3	25.6	19.6	16.1	16.8	16.9	18.9	17.2	17.1	18.1	17.8	17.8	18.9
		2021	17.6	18.0	16.5	13.6	13.5	13.3	16.2	23.5	24.1	28.9	23.5	25.4	19.5

Jefferson County showed a reduction of volume of approx. 300/month and Homewood data was incomplete for Nov/Dec of 2021

Figure 1: Average number of Calls per Day by Month and Reporting Period – Jefferson County

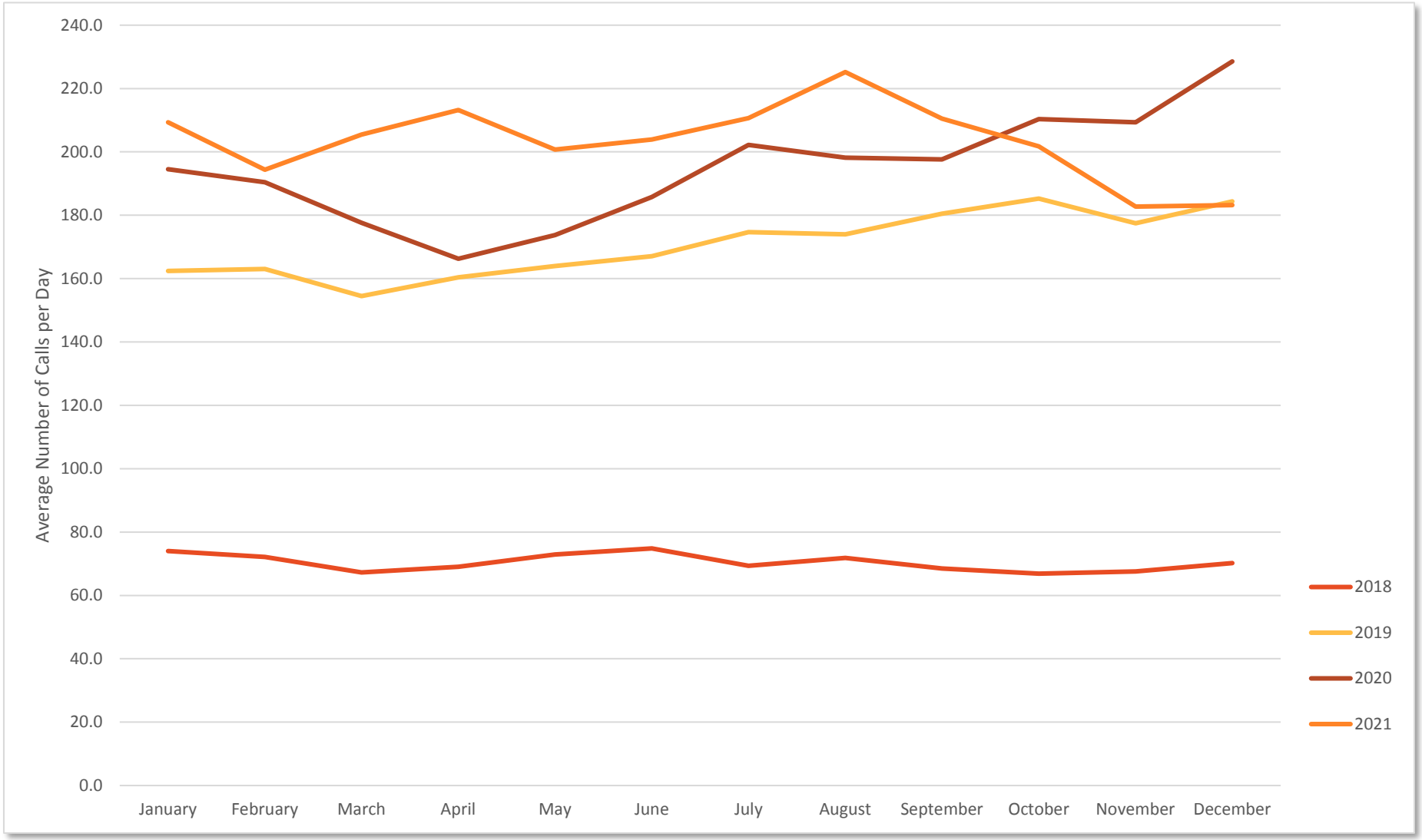

Figure 2: Average number of Calls per Day by Month and Reporting Period – RPS – Jefferson County

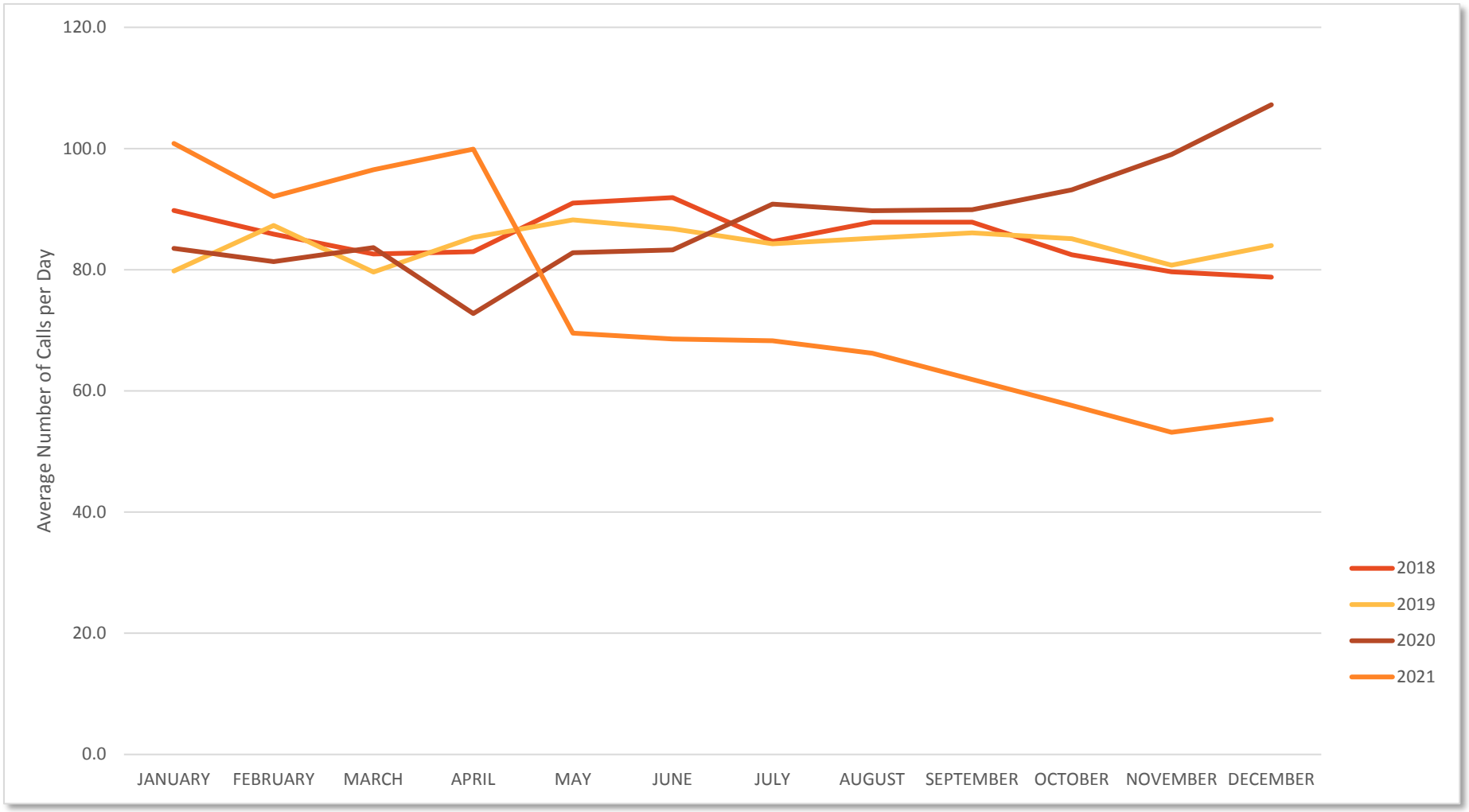

Figure 3: Average number of Calls per Day by Month and Reporting Period – Shoals Ambulance

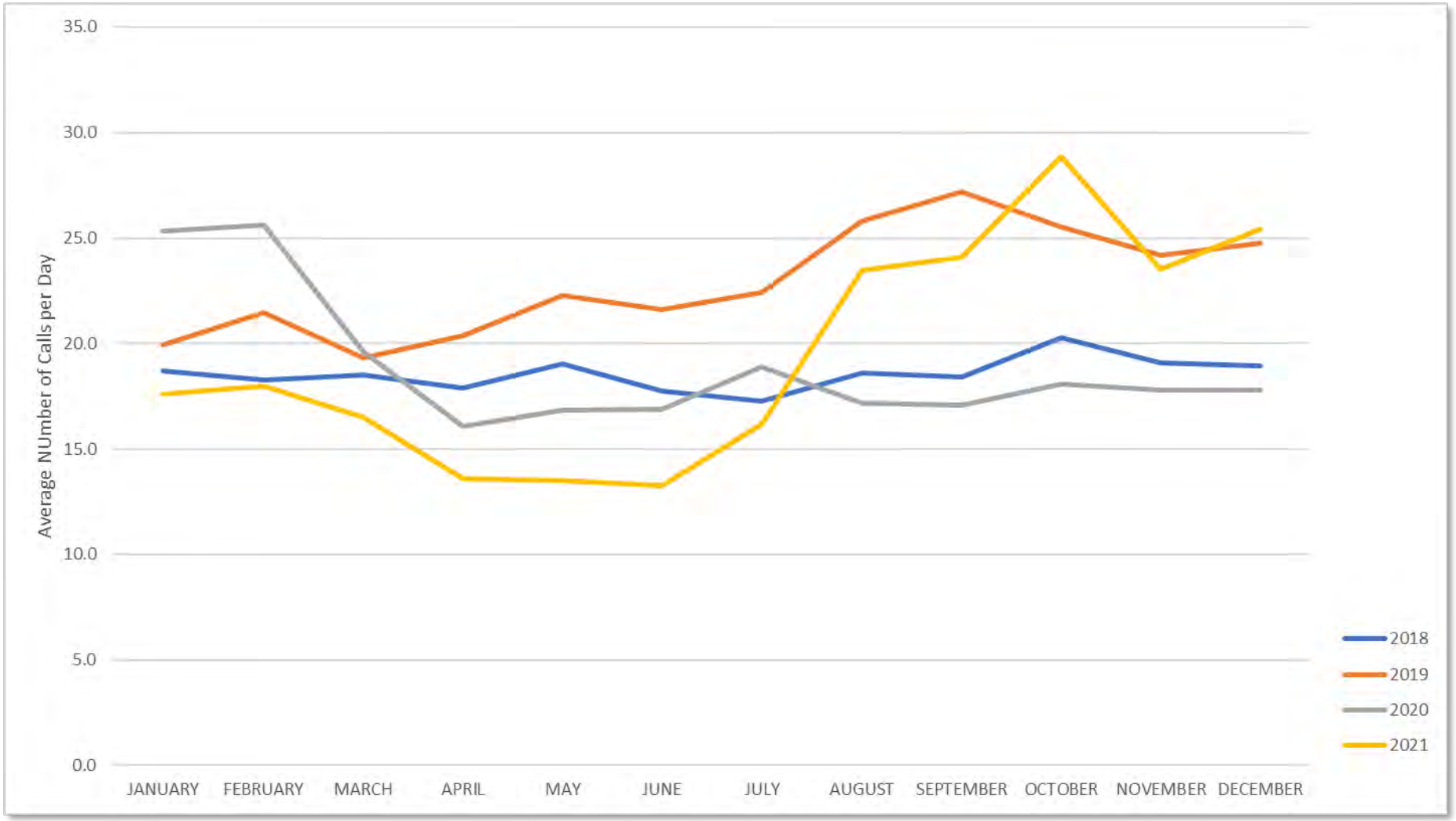

Table 6: Number of Events by Day of Week and Average per Day by Reporting Period

Agency	Metric	Reporting Period	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	Total
Jefferson County	Number of Calls	2018	3512	3787	3781	3796	3691	3634	3481	25682
		2019	8124	9119	9053	9146	9016	9107	8736	62301
		2020	9432	10426	10195	10406	10539	10202	10036	71236
		2021	9974	10748	10516	10733	10836	11016	10455	74278
	Average Number of Calls per Day	2018	67.5	71.5	72.7	73.0	71.0	69.9	66.9	70.4
		2019	156.2	175.4	170.8	175.9	173.4	175.1	168.0	170.7
		2020	181.4	200.5	196.1	196.3	198.8	196.2	193.0	194.6
		2021	191.8	206.7	202.2	206.4	208.4	207.8	201.1	203.5
RPS - Jefferson County	Number of Calls	2018	4077	4692	4488	4458	4416	4744	4311	31186
		2019	3963	4564	4418	4638	4467	4506	4228	30784
		2020	4215	4815	4646	4747	4699	4766	4379	32267
		2021	3537	3956	3802	3872	3923	4156	3780	27026
	Average Number of Calls per Day	2018	78.4	88.5	86.3	85.7	84.9	91.2	82.9	85.4
		2019	76.2	87.8	83.4	89.2	85.9	86.7	81.3	84.3
		2020	81.1	92.6	89.3	89.6	88.7	91.7	84.2	88.2
		2021	68.0	76.1	73.1	74.5	75.4	78.4	72.7	74.0
SHOALS	Number of Calls	2018	832	1029	994	975	960	1042	947	6779
		2019	995	1228	1301	1233	1216	1205	1187	8365
		2020	856	1051	999	1073	1019	1005	918	6921
		2021	895	1013	972	1100	1053	1118	972	7123
	Average Number of Calls per Day	2018	16.0	19.4	19.1	18.8	18.5	20.0	18.2	18.6
		2019	19.1	23.6	24.5	23.7	23.4	23.2	22.8	22.9
		2020	16.5	20.2	19.2	20.2	19.2	19.3	17.7	18.9
		2021	17.2	19.5	18.7	21.2	20.3	21.1	18.7	19.5

*2018 Jeff Co data incomplete resulting in lower than expected volumes

Figure 4: Average number of Calls per Day by Day of Week and Reporting Period – Jefferson County

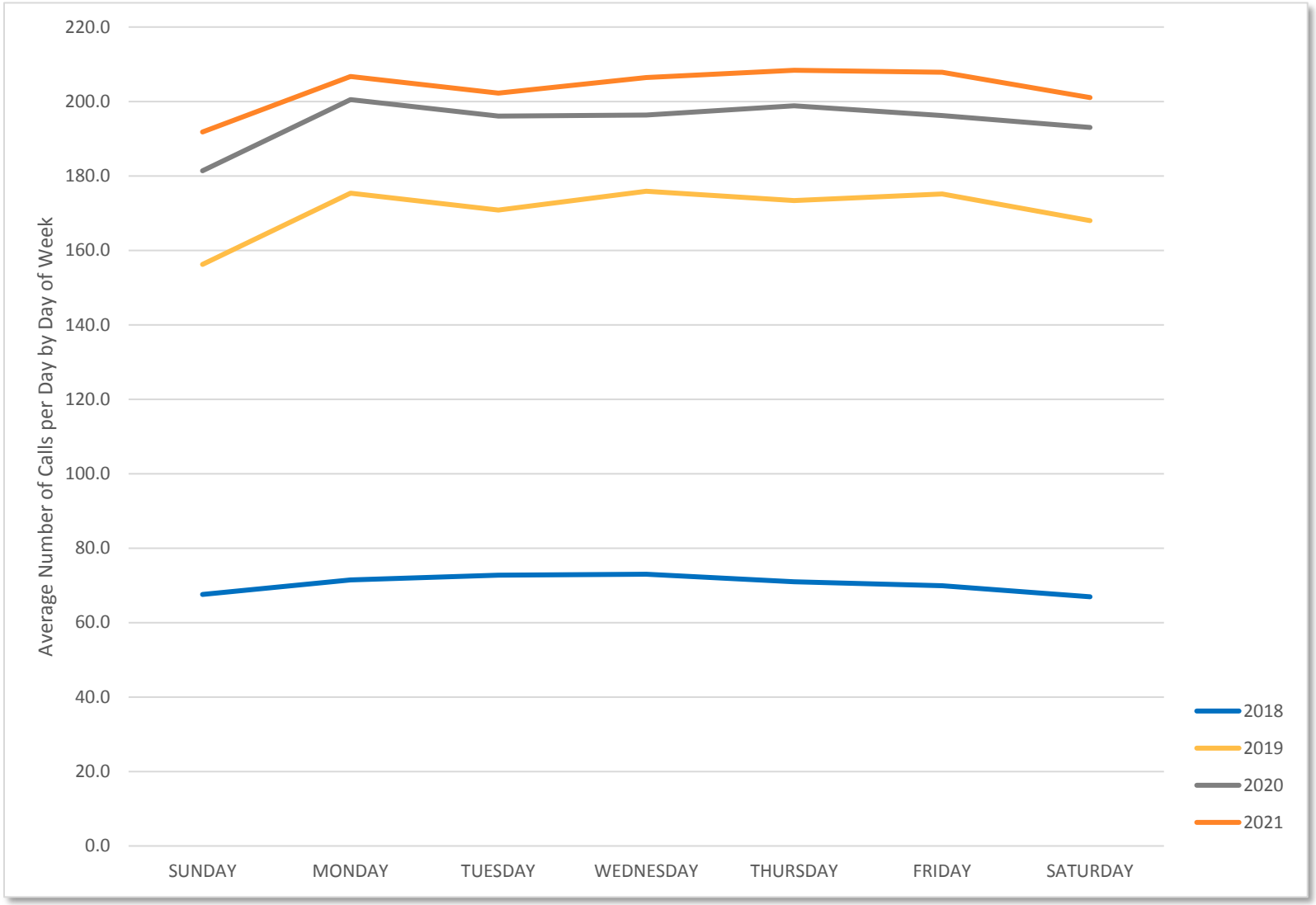

Figure 5: Average number of Calls per Day by Day of Week and Reporting Period – RPS – Jefferson County

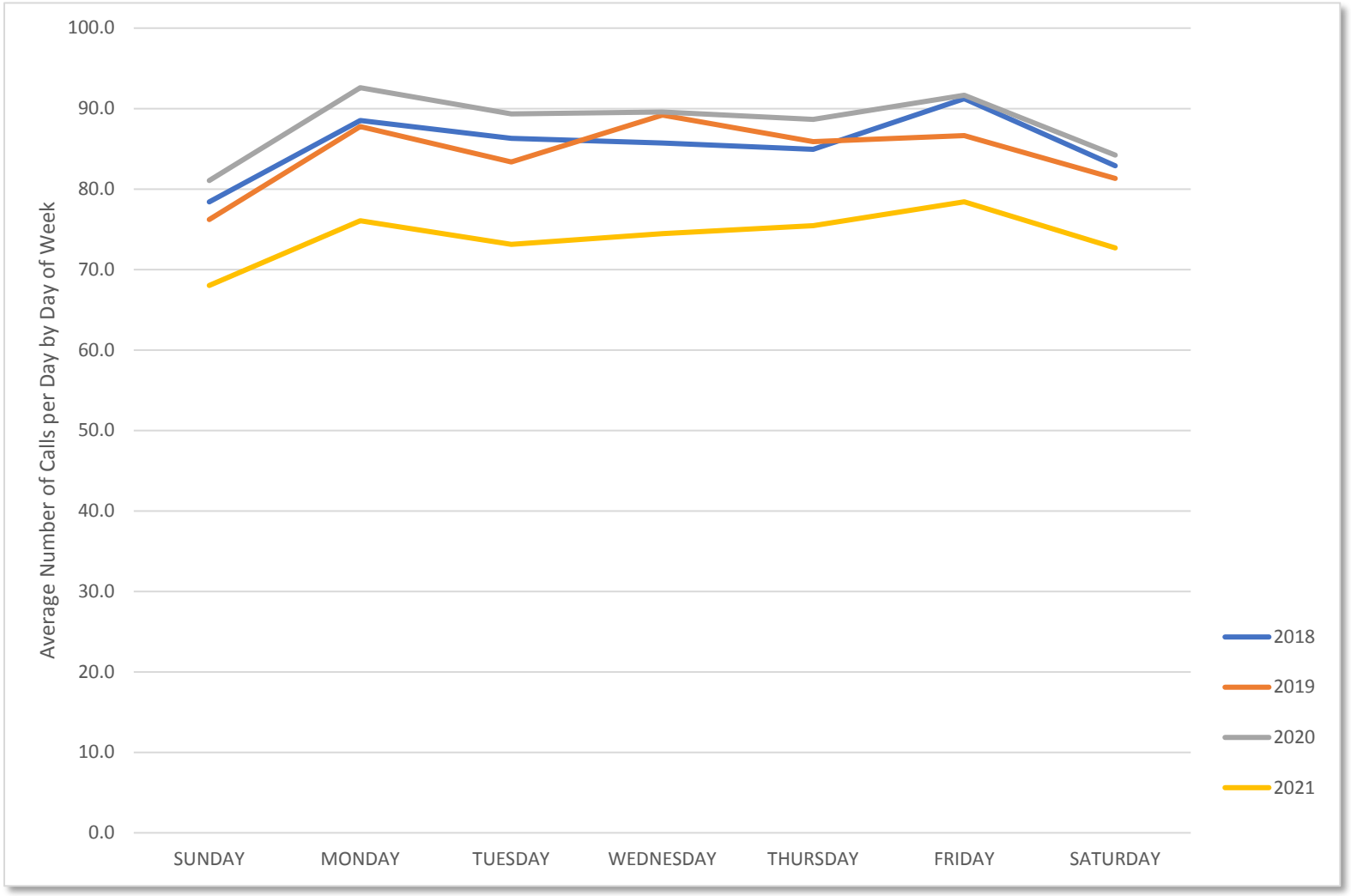

Figure 6: Average number of Calls per Day by Day of Week and Reporting Period – Shoals Ambulance

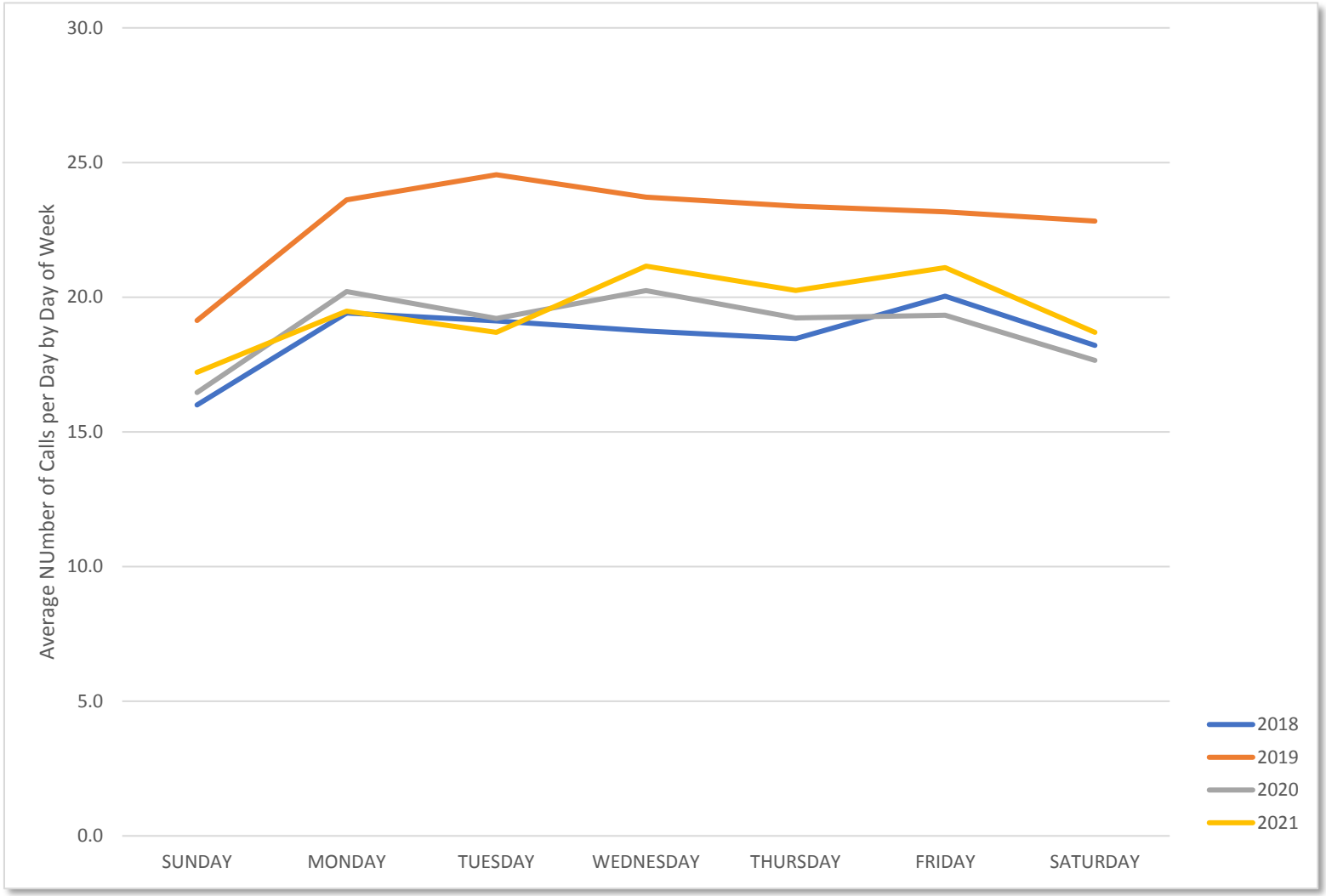

Table 7: Number of Calls and Average Number of Calls per Hour of Day, Reporting Period – Jefferson County

Agency	Metric	Reporting Period	00	01	02	03	04	05	06	07	08	09	10	11
Jefferson County	Number of Calls	2018	661	570	499	432	452	489	669	881	1140	1277	1466	1496
		2019	1521	1330	1241	1073	1118	1235	1581	2182	2707	3191	3587	3652
		2020	1873	1636	1366	1375	1254	1400	1756	2300	2842	3588	3892	4089
		2021	1848	1497	1383	1337	1364	1723	1995	2779	3364	3978	4222	4350
	Average Number of Calls per Day	2018	1.8	1.6	1.4	1.2	1.2	1.3	1.8	2.4	3.1	3.5	4.0	4.1
		2019	4.2	3.6	3.4	2.9	3.1	3.4	4.3	6.0	7.4	8.7	9.8	10.0
		2020	5.1	4.5	3.7	3.8	3.4	3.8	4.8	6.3	7.8	9.8	10.6	11.2
		2021	5.1	4.1	3.8	3.7	3.7	4.7	5.5	7.6	9.2	10.9	11.6	11.9
	Metric	Reporting Period	12	13	14	15	16	17	18	19	20	21	22	23
	Number of Calls	2018	1494	1483	1460	1466	1442	1443	1484	1355	1215	1077	954	777
		2019	3692	3675	3567	3506	3623	3631	3445	3253	2884	2561	2190	1856
		2020	4179	4198	4231	4052	4068	4201	3999	3879	3461	2923	2561	2113
		2021	4220	4347	4348	4426	4404	4262	3992	3794	3351	2968	2337	2014
	Average Number of Calls per Day	2018	4.1	4.1	4.0	4.0	4.0	4.0	4.1	3.7	3.3	3.0	2.6	2.1
		2019	10.1	10.1	9.8	9.6	9.9	9.9	9.4	8.9	7.9	7.0	6.0	5.1
		2020	11.4	11.5	11.6	11.1	11.1	11.5	10.9	10.6	9.5	8.0	7.0	5.8
		2021	11.6	11.9	11.9	12.1	12.1	11.7	10.9	10.4	9.2	8.1	6.4	5.5

Table 8: Number of Calls and Average Number of Calls per Hour of Day, Reporting Period – RPS – Jefferson County

Agency	Metric	Reporting Period	00	01	02	03	04	05	06	07	08	09	10	11
Shoals Ambulance	Number of Calls	2018	176	126	129	108	122	141	161	236	291	362	375	375
		2019	222	183	142	137	156	172	210	274	371	445	452	466
		2020	180	159	129	119	123	146	165	209	283	373	387	464
		2021	180	163	137	154	117	150	140	228	314	420	440	450
	Average Number of Calls per Day	2018	0.5	0.3	0.4	0.3	0.3	0.4	0.4	0.6	0.8	1.0	1.0	1.0
		2019	0.6	0.5	0.4	0.4	0.4	0.5	0.6	0.8	1.0	1.2	1.2	1.3
		2020	0.5	0.4	0.4	0.3	0.3	0.4	0.5	0.6	0.8	1.0	1.1	1.3
		2021	0.5	0.4	0.4	0.4	0.3	0.4	0.4	0.6	0.9	1.2	1.2	1.2
	Metric	Reporting Period	12	13	14	15	16	17	18	19	20	21	22	23
	Number of Calls	2018	402	427	394	373	389	384	338	372	312	283	279	224
		2019	478	487	462	502	453	497	465	427	425	355	319	265
		2020	464	383	369	410	396	393	343	359	306	293	252	216
		2021	394	437	436	426	406	368	343	362	344	270	228	216
	Average Number of Calls per Day	2018	1.1	1.2	1.1	1.0	1.1	1.1	0.9	1.0	0.9	0.8	0.8	0.6
		2019	1.3	1.3	1.3	1.4	1.2	1.4	1.3	1.2	1.2	1.0	0.9	0.7
		2020	1.3	1.0	1.0	1.1	1.1	1.1	0.9	1.0	0.8	0.8	0.7	0.6
		2021	1.1	1.2	1.2	1.2	1.1	1.0	0.9	1.0	0.9	0.7	0.6	0.6

Table 9: Number of Calls and Average Number of Calls per Hour of Day, Reporting Period – Shoals Ambulance

Agency	Metric	Reporting Period	00	01	02	03	04	05	06	07	08	09	10	11
RPS - Jefferson County	Number of Calls	2018	746	606	556	507	529	643	839	1157	1376	1594	1762	1837
		2019	709	613	597	526	547	587	783	1156	1347	1615	1746	1916
		2020	824	757	585	580	529	623	841	1101	1372	1704	1754	1930
		2021	690	552	458	460	474	530	705	954	1171	1396	1580	1645
	Average Number of Calls per Day	2018	2.0	1.7	1.5	1.4	1.4	1.8	2.3	3.2	3.8	4.4	4.8	5.0
		2019	1.9	1.7	1.6	1.4	1.5	1.6	2.1	3.2	3.7	4.4	4.8	5.2
		2020	2.3	2.1	1.6	1.6	1.4	1.7	2.3	3.0	3.7	4.7	4.8	5.3
		2021	1.9	1.5	1.3	1.3	1.3	1.5	1.9	2.6	3.2	3.8	4.3	4.5
	Metric	Reporting Period	12	13	14	15	16	17	18	19	20	21	22	23
	Number of Calls	2018	1907	1954	1877	1798	1784	1769	1744	1579	1424	1273	1054	871
		2019	1862	1922	1855	1834	1808	1742	1541	1508	1355	1252	1086	877
		2020	1965	1966	1929	1810	1860	1897	1768	1645	1509	1278	1130	910
		2021	1611	1624	1646	1654	1615	1617	1447	1331	1191	1117	862	696
	Average Number of Calls per Day	2018	5.2	5.4	5.1	4.9	4.9	4.8	4.8	4.3	3.9	3.5	2.9	2.4
		2019	5.1	5.3	5.1	5.0	5.0	4.8	4.2	4.1	3.7	3.4	3.0	2.4
		2020	5.4	5.4	5.3	4.9	5.1	5.2	4.8	4.5	4.1	3.5	3.1	2.5
		2021	4.4	4.4	4.5	4.5	4.4	4.4	4.0	3.6	3.3	3.1	2.4	1.9

Figure 7: Number of Calls and Average Number of Calls per Hour of Day, Reporting Period – Jefferson County

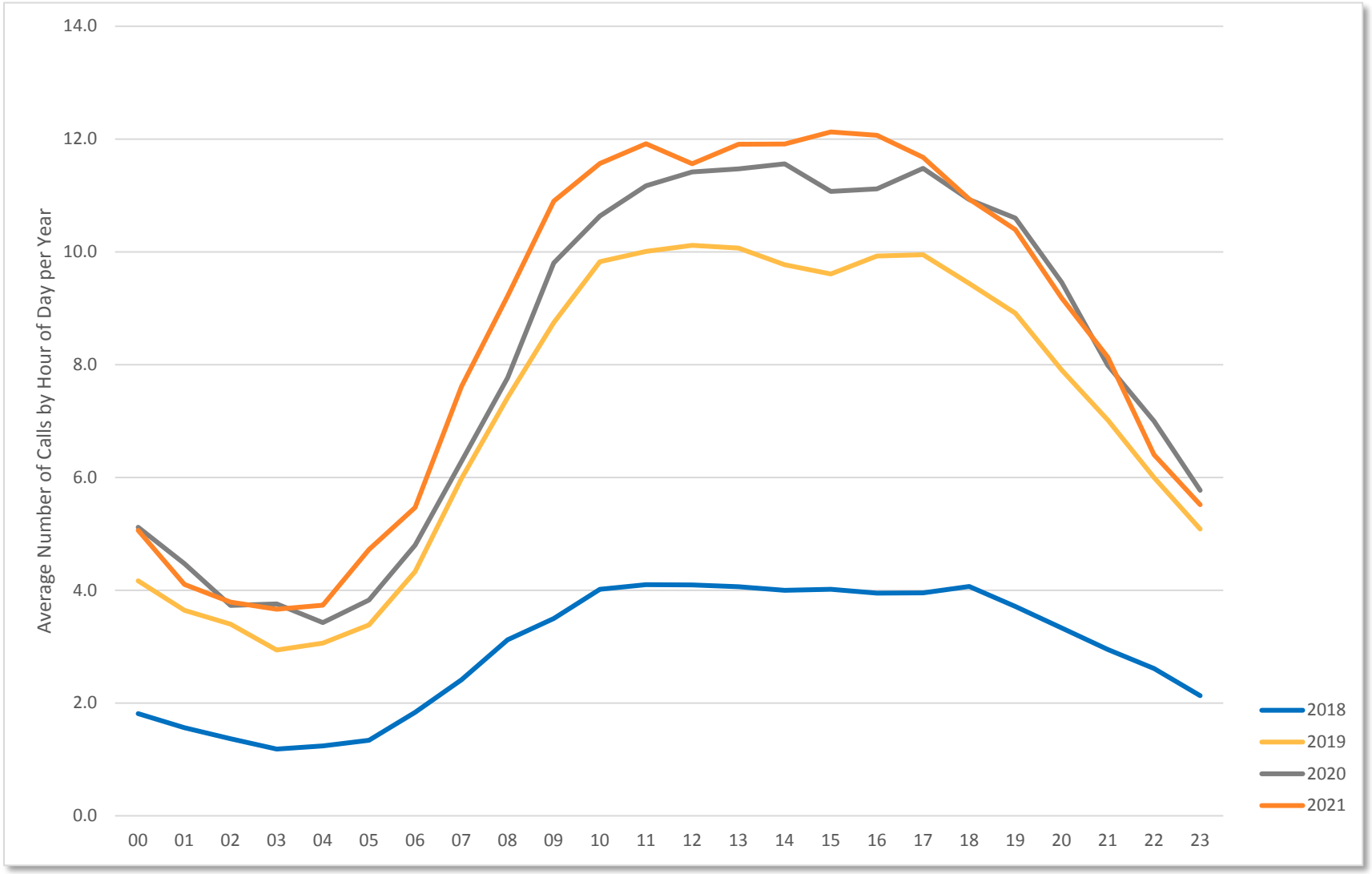

Figure 8: Number of Calls and Average Number of Calls per Hour of Day, Reporting Period – RPS - Jefferson County

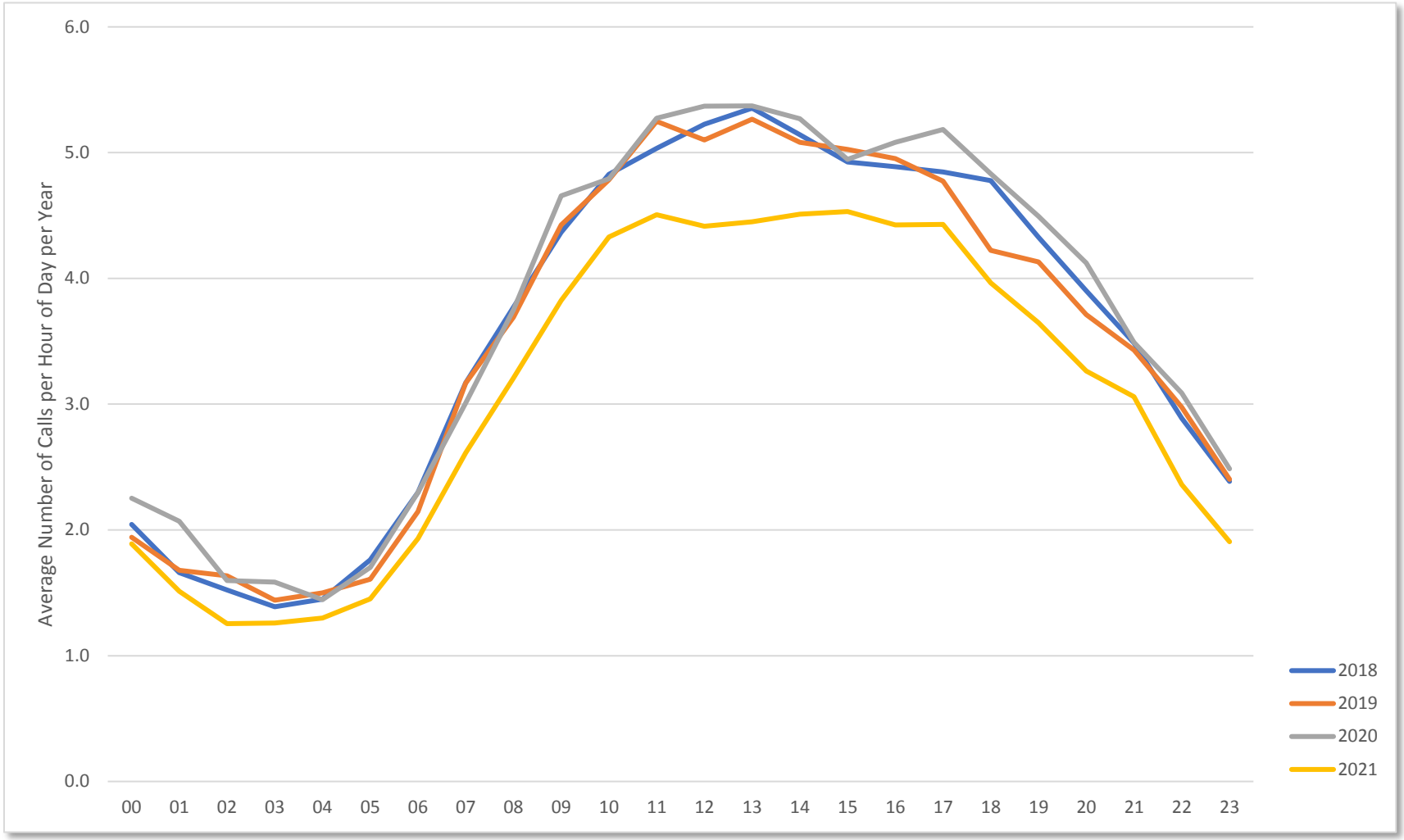

Figure 9: Number of Calls and Average Number of Calls per Hour of Day, Reporting Period – Shoals Ambulance

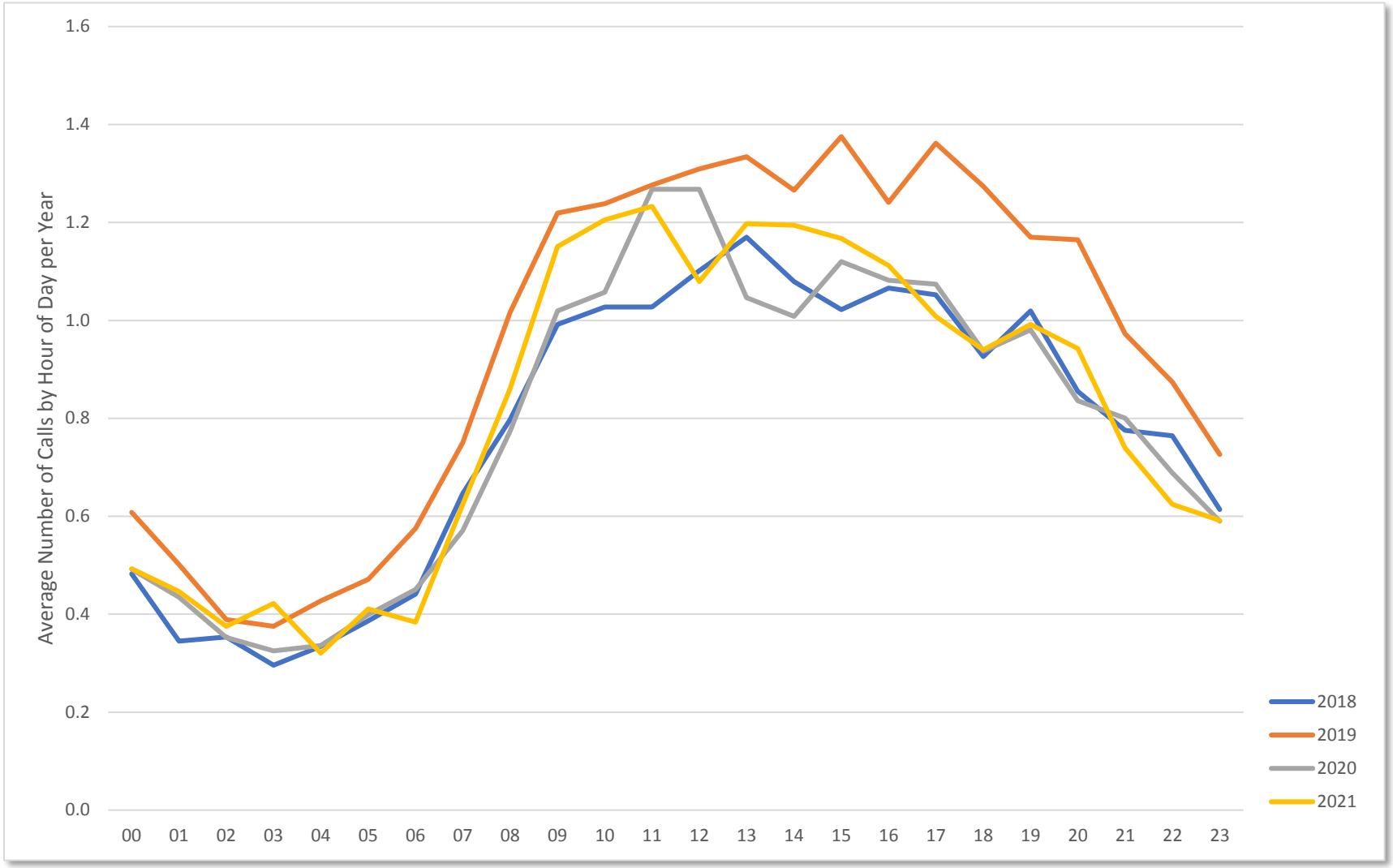

Table 10: Count of Events, Arrival, Arrival percentage, 90th percentile Response Time and Transport by Incident City and Reporting Period

Data ranked in order of highest to lowest and communities with smaller total counts were combined into a single row of "OTHER (COMBINED)"

		2020						2021					
		# Events	# Arrived	% Arrived	Resp Time (90th %)	# Trsp	Trsp %	# Events	# Arrived	% Arrived	Resp Time (90th %)	# Trspt	Trsp %
JEFFERSON COUNTY	JEFFERSON COUNTY	16878	276	1.6%	0:12:17	116	42.0%	19620	220	1.1%	0:16:25	82	37.3%
	HOOVER	10787	9390	87.0%	0:17:37	2093	22.3%	9674	8895	91.9%	0:17:24	2929	32.9%
	BESSEMER	6529	5289	81.0%	0:23:07	3915	74.0%	6712	5333	79.5%	0:23:47	3849	72.2%
	HOMEWOOD	5821	2357	40.5%	0:23:11	1831	77.7%	6257	2378	38.0%	0:27:16	1874	78.8%
	CENTER POINT	3408	0	0.0%		0	0.0%	3585	0	0.0%		0	0.0%
	FULTONDALE	2775	962	34.7%	0:20:13	588	61.1%	2887	853	29.5%	0:21:44	484	56.7%
	TRUSSVILLE	3065	0	0.0%		0	0.0%	3650	0	0.0%		0	0.0%
	FAIRFIELD	2649	550	20.8%	0:26:59	388	70.5%	2794	244	8.7%	0:28:37	171	70.1%
	CLAY	1372	0	0.0%		0	0.0%	1377	0	0.0%		0	0.0%
	GARDENDALE	1419	1204	84.8%	0:21:54	822	68.3%	1568	1252	79.8%	0:24:18	878	70.1%
	HUEYTOWN	1679	1274	75.9%	0:25:22	966	75.8%	1922	1386	72.1%	0:29:06	1060	76.5%
	VESTAVIA HILLS	1041	479	46.0%	0:07:09	380	79.3%	1318	620	47.0%	0:07:16	484	78.1%
	TARRANT	1183	930	78.6%	0:22:33	741	79.7%	1279	968	75.7%	0:26:22	783	80.9%
	ADAMSVILLE	997	788	79.0%	0:23:19	522	66.2%	845	661	78.2%	0:23:59	441	66.7%
	GRAYSVILLE	772	320	41.5%	0:21:43	228	71.3%	841	294	35.0%	0:24:57	222	75.5%
	IRONDALE	1133	886	78.2%	0:21:18	593	66.9%	552	387	70.1%	0:24:31	275	71.1%
	PINSON	670	0	0.0%		0	0.0%	741	1	0.1%	0:51:40	1	100.0%
	MIDFIELD	807	638	79.1%	0:24:05	511	80.1%	806	626	77.7%	0:26:57	503	80.4%
	PLEASANT GROVE	686	463	67.5%	0:29:09	385	83.2%	770	524	68.1%	0:32:54	446	85.1%
	WARRIOR	937	1	0.1%	0:17:24	0	0.0%	925	1	0.1%	0:49:35	1	100.0%
	BROOKSIDE	586	162	27.6%	0:22:04	122	75.3%	629	159	25.3%	0:25:44	118	74.2%
	BRIGHTON	598	272	45.5%	0:24:58	176	64.7%	274	3	1.1%	0:16:47	2	66.7%
	MINOR	594	490	82.5%	0:24:25	318	64.9%	561	435	77.5%	0:29:34	287	66.0%
	KIMBERLY	348	5	1.4%	0:23:20	5	100.0%	314	0	0.0%		0	0.0%
	SYLVAN SPRINGS	287	17	5.9%	0:25:24	15	88.2%	320	8	2.5%	0:27:12	8	100.0%
	FORESTDALE	439	348	79.3%	0:21:11	249	71.6%	308	251	81.5%	0:24:10	191	76.1%
	MORRIS	238	4	1.7%	0:19:32	2	50.0%	298	1	0.3%	0:16:05	0	0.0%
	BAGLEY	388	325	83.8%	0:27:33	235	72.3%	421	343	81.5%	0:27:24	243	70.8%
	MT OLIVE	363	288	79.3%	0:24:39	174	60.4%	419	313	74.7%	0:27:59	223	71.2%
	EASTERN VALLEY	312	271	86.9%	0:22:49	178	65.7%	402	306	76.1%	0:30:05	194	63.4%
	OTHER (COMBINED)	2391	1441	60.3%	n/a	990	68.7%	2136	823	38.5%	n/a	572	69.5%
	(blank)	84	57	67.9%	n/a	41	71.9%	97	62	63.9%	n/a	45	72.6%

*n/a values for response times in the "OTHER (COMBINED)" and "(blank)" jurisdictions were not calculated due to inconsistent names and time values for these areas

Table 11: Count of Events, Arrival, Arrival percentage, 90th percentile Response Time and Transport by Incident City and Reporting Period

Data ranked in order of highest to lowest and communities with smaller total counts were combined into a single row of "OTHER (COMBINED)"

		2020						2021					
		# Events	# Arrived	% Arrived	Resp Time (90th %)	# Trsp	Trsp %	# Events	# Arrived	% Arrived	Resp Time (90th %)	# Trspt	Trsp %
RPS - JEFFERSON COUNTY	HOOVER	8348	5182	62.1%	0:22:40	3220	62.1%	3013	1529	50.7%	0:25:44	999	65.3%
	HOMEWOOD	3232	2431	75.2%	0:21:19	1809	74.4%	3966	2613	65.9%	0:26:14	1952	74.7%
	BESSEMER	3323	2645	79.6%	0:24:05	1903	71.9%	2070	1595	77.1%	0:26:15	1186	74.4%
	GARDENDALE	1700	1456	85.6%	0:21:17	991	68.1%	1922	1533	79.8%	0:24:11	1061	69.2%
	FULTONDALE	1551	1198	77.2%	0:20:08	710	59.3%	1581	1100	69.6%	0:21:19	616	56.0%
	TARRANT	1327	1045	78.7%	0:22:35	825	78.9%	1515	1137	75.0%	0:26:24	924	81.3%
	IRONDALE	1393	1055	75.7%	0:21:25	695	65.9%	640	400	62.5%	0:24:44	274	68.5%
	ADAMSVILLE	1198	953	79.5%	0:23:00	610	64.0%	1040	817	78.6%	0:23:18	524	64.1%
	HUEYTOWN	1848	1383	74.8%	0:24:52	1040	75.2%	2253	1596	70.8%	0:28:48	1211	75.9%
	MIDFIELD	952	758	79.6%	0:23:46	605	79.8%	1005	763	75.9%	0:26:57	608	79.7%
	MINOR	744	598	80.4%	0:23:55	390	65.2%	702	537	76.5%	0:29:02	350	65.2%
	FAIRFIELD	578	93	16.1%	0:21:46	69	74.2%	958	8	0.8%	0:15:26	6	75.0%
	PLEASANT GROVE	386	269	69.7%	0:27:36	230	85.5%	759	533	70.2%	0:31:30	450	84.4%
	FORESTDALE	522	401	76.8%	0:20:47	281	70.1%	409	286	69.9%	0:23:31	220	76.9%
	BRIGHTON	461	305	66.2%	0:24:45	188	61.6%	342	2	0.6%	0:15:09	2	100.0%
	BAGLEY	503	411	81.7%	0:27:36	302	73.5%	519	418	80.5%	0:27:26	290	69.4%
	MT OLIVE	448	357	79.7%	0:24:27	211	59.1%	534	390	73.0%	0:27:27	269	69.0%
	GRAYSVILLE	488	398	81.6%	0:21:45	284	71.4%	485	382	78.8%	0:23:56	289	75.7%
	EASTERN VALLEY	390	327	83.8%	0:22:55	211	64.5%	483	365	75.6%	0:29:56	225	61.6%
	LIPSCOMB	329	312	94.8%	0:27:55	192	61.5%	243	3	1.2%	0:23:38	3	100.0%
	BROOKSIDE	316	221	69.9%	0:21:50	160	72.4%	328	228	69.5%	0:25:04	165	72.4%
	CONCORD	168	26	15.5%	0:30:54	21	80.8%	263	2	0.8%	0:26:06	2	100.0%
	OTHER (COMBINED)	1855	1091	58.8%	n/a*	719	65.9%	1864	800	42.9%	n/a*	558	69.8%
	(blank)	207	89	43.0%	n/a*	67	75.3%	132	60	45.5%	n/a*	48	80.0%

*n/a values for response times in the "OTHER (COMBINED)" and "(blank)" jurisdictions were not calculated due to inconsistent names and time values for these areas

Table 12: Count of Events, Arrival, Arrival percentage, 90th percentile Response Time and Transport by Incident City and Reporting Period

Data ranked in order of highest to lowest and communities with smaller total counts were combined into a single row of "OTHER (COMBINED)"

		2020						2021					
		# Events	# Arrived	% Arrived	Resp Time (90th %)	# Trsp	Trsp %	# Events	# Arrived	% Arrived	Resp Time (90th %)	# Trspt	Trsp %
SHOALS	BESSEMER	4078	3253	79.8%	0:22:50	2454	75.4%	5623	4490	79.9%	0:23:31	3274	72.9%
	FAIRFIELD	736	501	68.1%	0:28:19	354	70.7%	522	286	54.8%	0:30:04	208	72.7%
	ALABASTER	678	526	77.6%	0:24:21	387	73.6%	9	2	22.2%	0:00:36	2	100.0%
	PLEASANT GROVE	411	266	64.7%	0:31:04	216	81.2%	149	76	51.0%	0:35:40	74	97.4%
	BIRMINGHAM	194	142	73.2%	1:17:59	121	85.2%	163	102	62.6%	1:47:03	93	91.2%
	HOMEWOOD	144	137	95.1%	1:07:30	134	97.8%	68	58	85.3%	1:33:31	56	96.6%
	HUEYTOWN	59	46	78.0%	0:36:54	42	91.3%	10	8	80.0%	1:38:35	8	100.0%
	MC CALLA	160	110	68.8%	0:23:23	94	85.5%	163	110	67.5%	0:28:12	84	76.4%
	ADGER	120	76	63.3%	0:53:50	57	75.0%	44	34	77.3%	0:55:20	23	67.6%
	CENTER POINT	28	0	0.0%		0	0.0%	130	0	0.0%		0	0.0%
	MULGA	62	43	69.4%	0:40:21	39	90.7%	26	14	53.8%	0:41:09	12	85.7%
	OTHER (COMBINED)	139	87	62.6%	n/a*	69	79.3%	84	48	57.1%	n/a*	37	77.1%
	(blank)	121	59	48.8%	n/a*	3	5.1%	132	70	53.0%	n/a*	18	25.7%

ATTACHMENT B

Financial Report

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ATTACHMENT C

PowerPoint Presentation

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EMS System Assessment
Jefferson County, Alabama

Final Report
August 9, 2022

Critical Findings

There is No EMS System in Place Today

- ***Delayed or No Ambulance Response***
  - "In large portions of the County, ambulances do not or are not regularly available to respond quickly to 911 emergency medical calls."
- ***Chaotic 911 Call System***
  - "There are 14 emergency 911 dispatch centers that are not connected or coordinated, compromising patient care."
- ***EMS Not Recognized as Essential Public Safety Service***
  - "EMS in Jefferson County is not legislatively recognized as an essential public safety service and there is no designated countywide funding"
- ***No Single Entity is Accountable***
  - "There is no single entity that is responsible to coordinate and provide accountability for the overall system that includes 911 dispatch, first response, and ambulance transport"

Options for Implementation

- Although there are several options for Jefferson County to consider, FITCH urgently recommends the formation of a Public Safety Department to provide strategic and organizational oversight for the provision of all emergency services.
- Four options incorporating five finding phases
  - Option Zero: Status Quo
  - Option One: Purchase Ambulance Coverage From External EMS Agency & Implement Public Safety Department
  - Option Two: Centralized Purchases for System Improvement
  - Option Three: Single Provider System
- Options One through Three assume addressing the chaotic 911 call system

Current System Design

Dispatch Centers

- 14 dispatch centers scattered throughout and serving various agencies.
- There is no interoperability or connection between the centers
- 911 callers are not routed to one center creating chaos in determining the right 911 center to use
- Many 911 centers do not meet the National Fire Protection Administration (NFPA) 1221 standard

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Current System Design

EMS System

- The current EMS system is at best, broken, although there are a few areas within the County that receive relatively timely and appropriate EMS coverage
- Any given day there should be a total of 42 staffed ambulances ready to respond to emergencies within the County, excluding those utilized by Birmingham.
- Ambulance coverage and service are comprised of the following:
  - Four for-profit EMS agencies – Shoals, Regional Paramedic Services (RPS), Advantage Ambulance, and NorthStar
  - Two adjacent county services – Blount EMS and Shelby County
  - 12 Fire Departments within Jefferson County (excluding Birmingham) as follows:

Center Point Fire District	Mountain Brook Fire Department
Concord Fire District	Palmerdale Fire District
Forestdale Fire District	Rocky Ridge Fire District
Hoover Fire Department	Trussville Fire & Rescue Service
Irondale Fire Department	Vestavia Hills Fire Department
McAdory Area Fire District	Warrior Fire Department

Current System Design

County Oversight

- County currently does not provide and coordinate EMS activity in the county
- Act 79, that provides maintenance of districts for fire service requires additional clarification regarding the provision of EMS. Additional legislation may be needed to support EMS funding mechanisms.
- Many high-functioning EMS systems in the United States and across the world have one entity that provides coordination and oversight.

Emergency Declaration to Contract for Ambulance Service

- The single most important action that the County can take is to declare a public health and safety emergency.
  - County should immediately contract with an external entity for dedicated ambulance service in the unprotected areas and require an EMS dispatcher position that will be co-located in the Jefferson County Communications Center.
  - Contracted ambulances should be dispatched anywhere in the County, as needed for primary or secondary back-up to established providers.

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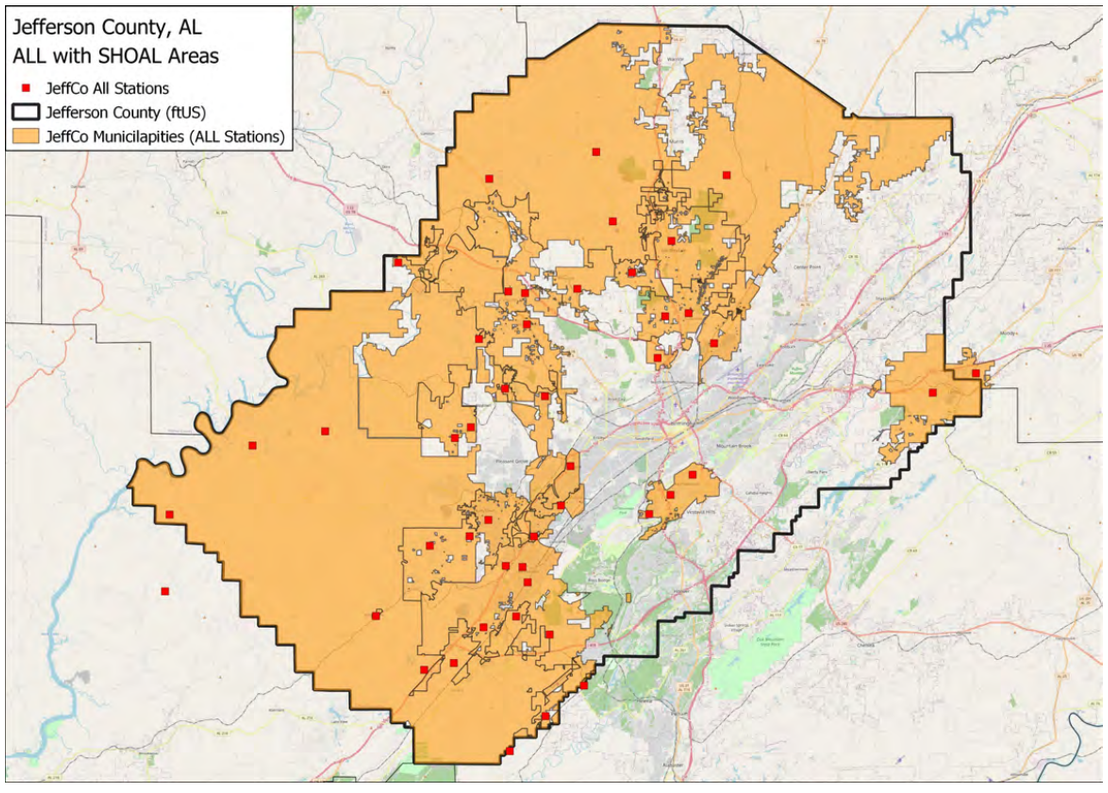
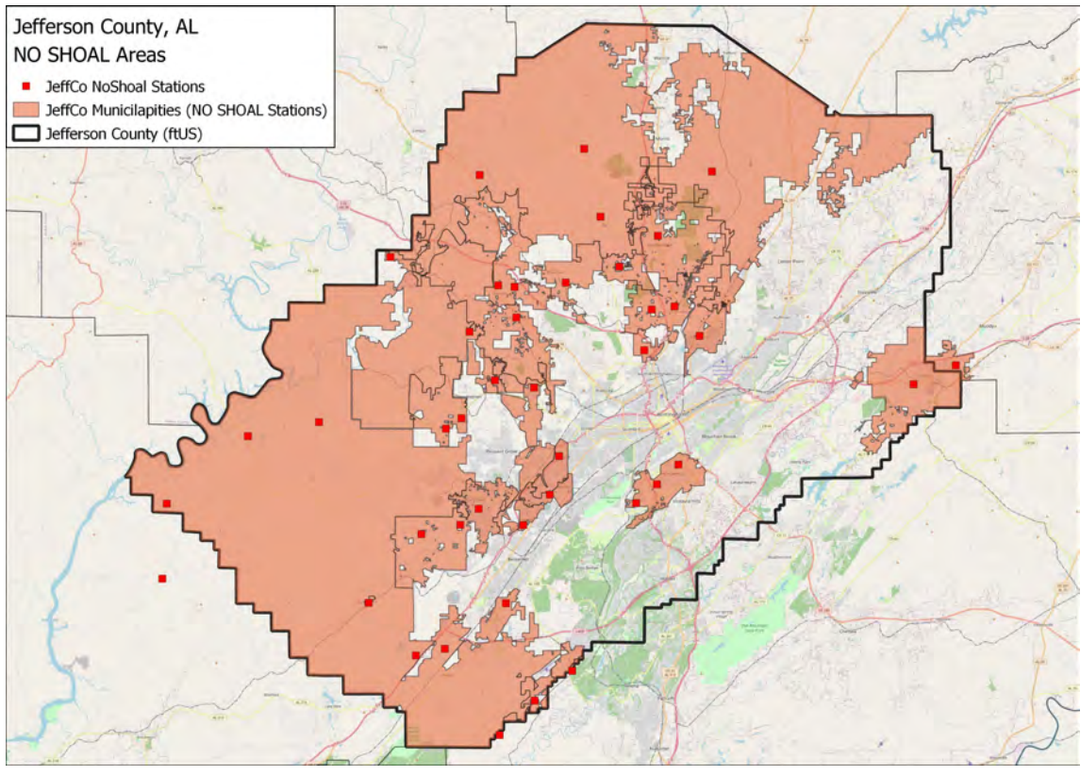
Emergency Declaration to Contract for Ambulance Service

Jefferson County: Shaded Areas with No Dedicated EMS Coverage



Jefferson County: Shaded Areas with No Dedicated EMS Coverage (Without Shoals)



Estimated Annual Responses & Transports

Types	Volumes for Areas Covered	0.65 Transport Rate
No Shoals	32,343	21023
Shoals Inc.	38,115	24775

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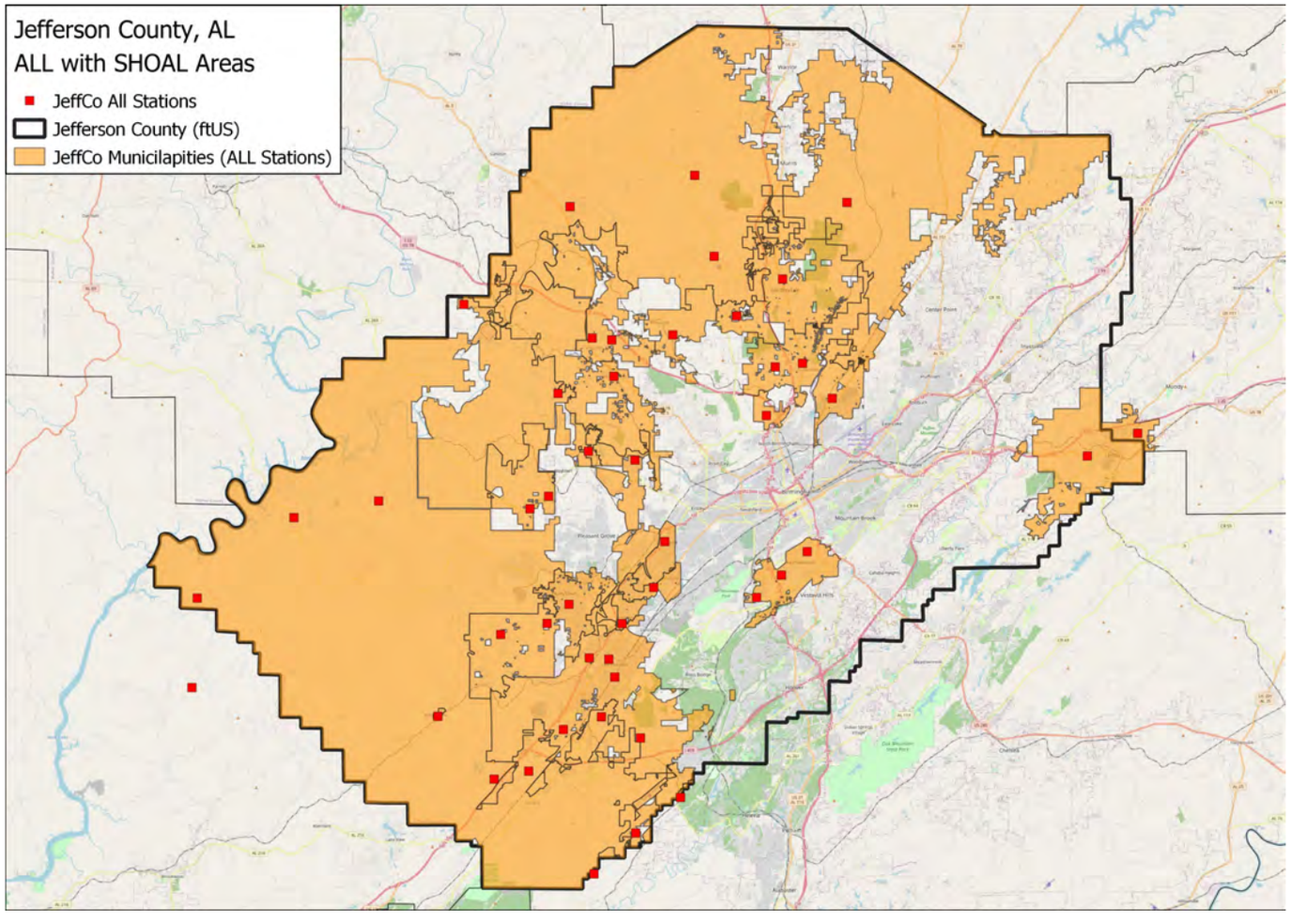
Emergency Declaration to Contract for Ambulance Service

Jefferson County: Shaded Areas with No Dedicated EMS Coverage



10/20 Minute Drive Time for Geographic Coverage

Rank	Post Number	Drive Time	Class	Post Capture	Total Capture	Percent Capture
1	Bes1	10	Urban	8243	8243	20.69%
2	Hom2	10	Urban	5721	13964	35.05%
3	Gar2	10	Urban	3933	17897	44.93%
4	Hue2	10	Urban	1264	19161	48.10%
5	Lee1	10	Urban	54	19215	48.24%
6	3793	20	Rural	11016	30231	75.89%
7	893	20	Rural	4739	34970	87.79%

10/30 Minute Drive Time for Geographic Coverage

Rank	Post Number	Drive Time	Class	Post Capture	Total Capture	Percent Capture
1	Bes1	10	Urban	8243	8243	20.69%
2	Hom2	10	Urban	5721	13964	35.05%
3	Gar2	10	Urban	3933	17897	44.93%
4	Hue2	10	Urban	1264	19161	48.10%
5	Lee1	10	Urban	54	19215	48.24%
6	3793	30	Rural	18152	37367	93.80%

One geographic unit removed if Bessemer/Shoals was not included

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Emergency Declaration to Contract for Ambulance Service

Range	No Shoals 10 Min Urban / 30 Min Rural 8 24/7 Units 2 BLS & 6 ALS	W/Shoals 10 Min Urban / 20 Min Rural 9.5 24/7 Units 2 BLS & 7.5 ALS
Low Range	$ 1,866,050	$ 2,333,760
High Range	$ 3,442,850	$ 4,173,360

- Estimated average revenue per transport to be $348.15
- Advanced Life Support (ALS) Unit, *FITCH* estimated a range of $135 to $155 and for a Basic Life Support (BLS) Unit, $105 to $135 per hour

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Funding and Governance Options

- **Phase 1:** Contract with an external EMS agency for additional ambulances to cover gaps in service and provide oversight for system response.
- **Phase 2:** Purchase both ambulances and fire first response resources.
- **Phase 3:** Consistently provide education programs for EMTs and Paramedics to begin developing a feeder system of providers into EMS.
- **Phase 4:** Ensure all 911 calls for Jefferson County are directed to one Communications Center. If multiple centers continue to exist, then the one center should be designated as principle and can distribute calls to secondary centers.
- **Phase 5:** Evaluate Phase 1-4 efforts and design future models that will ensure consistent and measurable services across the county.

Options for Implementation

- Although there are several options for Jefferson County to consider, FITCH urgently recommends the formation of a Public Safety Department to provide strategic and organizational oversight for the provision of all emergency services.
- Four options incorporating five finding phases
  - Option Zero: Status Quo
  - Option One: Purchase Ambulance Coverage From External EMS Agency & Implement Public Safety Department
  - Option Two: Centralized Purchases for System Improvement
  - Option Three: Single Provider System
- Options One through Three assume addressing the chaotic 911 call system

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Conclusion

- Jefferson County is positioned to not only change the EMS system within the county, but also provide a pathway forward to ensure legislation is enacted for EMS.
- Ensuring that there is a common goal of the safe, fair, and equitable provision of EMS should be the primary focus.
- This is obtained by implementing the recommendations included in this report and ensuring that industry best-practices are utilized when making decisions for the provision and sustainability of EMS in Jefferson County.
- The days of not having available EMS units to respond or choosing not to respond must end quickly.

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Pathway Forward

- Commission expresses a preference for an option.
- Commission directs County Administrator to draft an action plan
- Commission considers County Administrator's draft action plan
  - Adjusts or rejects as appropriate

Questions?

Guillermo Fuentes, MBA
Senior Partner, COO

J. Todd Sheridan, MBA
Senior Associate

Bruce Moeller
Senior Consultant

Kevin Preston
Senior Consultant

Fred Wurster
Senior Consultant

Dianne Wright
Senior Consultant

Tim Czapranski
Senior Consultant

Tom Little
Senior Consultant

Jerry Slaughter
Senior Consultant

www.fitchassoc.com