



**CABARRUS COUNTY**  
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# **Cabarrus County, North Carolina Fire Service Strategic Analysis**

**August, 2020**



**A Progressive North Carolina Local Government Initiative Compiled and Presented by:**



[www.NCFireChief.com](http://www.NCFireChief.com) 336-266-7998

# **Cabarrus County Fire Service Strategic Analysis**

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### **1. EXECUTIVE SUMMARY**

Many North Carolina counties, including Cabarrus County, are experiencing transition and growth in service demands, which is presenting increasing complexities of providing core local government functions, such as fire and rescue services. When dynamics change, so must the infrastructure and systems that enable and support those basic functions. These “growing pains” are a natural progression of the maturity cycle of a unit of local government and are not unique to Cabarrus County. However, Cabarrus County is aware of the changing environment and has proactively stepped forward to implement progressive measures to effectively manage that growth and transition, such as initiating an independent, third-party, strategic analysis of the fire protection service delivery system in Cabarrus County.

#### **Purpose:**

The purpose of this initiative was to produce an overview look at the current fire and rescue service delivery system in the unincorporated areas of Cabarrus County and provide insight to priority needs and issues in the short term (1-3 years) and long-term (3-5 years). Recommendations were sought as to how to best position Cabarrus County Government to manage projected service delivery demands in the next few years, as well as ensure sustainable provision of fire and rescue services for the County in the most efficient manner possible.

To accomplish this task, the County engaged EnviroSafe to provide an independent, third-party analysis. Note that before the completion of the process, EnviroSafe staff transitioned to North Carolina Fire Chief Consulting due to the worldwide pandemic crisis. A team of highly experienced fire service professionals from throughout North Carolina were assembled to review and provide input to the County staff on methods that could strengthen, improve, and sustain the Cabarrus County fire protection service delivery system. This work was accomplished with a solid focus on continuous improvement.

This innovative and progressive approach by Cabarrus County is to be commended. It requires strong county government leadership and a progressive-minded fire departments to step forward and proactively invite a third-party review of their organization for the purposes of continuous improvement. Leadership and engagement at the county management, the fire department command level, and of the firefighters of the county and contracting fire departments has been admirable.



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### **Feedback/Input:**

Fire and Rescue industry standards identify that both quantitative and qualitative data is necessary for public officials to make responsible policy decisions related to providing essential fire and rescue services in a community. In order to gather a basic level of qualitative feedback, the NC Fire Chief Consulting team provided a face-to-face opportunity for the fire service leadership in the County to provide feedback coupled with an electronic survey for firefighters in Cabarrus County. In addition, electronic public feedback for Cabarrus County residents and firefighters was provided by utilizing an external public survey and firefighter survey.

### **Fire Chiefs:**

Fire Chiefs in the county provided valuable feedback as to their perspective about the current fire protection service delivery system in Cabarrus County. They answered questions about what they saw as strengths, gaps, missed opportunities and threats. This SWOT type analysis is effective in capturing a snapshot of where the department sees their capabilities and effectively allows for articulation of improvements that attendees envision necessary to both sustain and advance fire services in Cabarrus County. Those in attendance were asked to help identify what their perceptions were of the greatest strengths of their fire and rescue service delivery system, what were the greatest gaps within the system, what missed opportunities they saw within their delivery system and what were the perceived threats to future success.

Collectively, Fire Chiefs in attendance highlighted the following aspects about the fire service in Cabarrus County as strengths:

Partnerships/Automatic aid, funding, availability of part-time staffing, pride, junior firefighter program, social media usage, staffing grant, quality of performance and efforts to enhance benefits for volunteers.

As gaps, the group highlighted:

Drawing part-time personnel from the same pool, challenges in attracting adults to be firefighters due to competition with family/work, recruitment and retention, guidance on social media usage countywide, communications-more training needed on run cards and dispatches, staffing incidents requires personnel from multiple departments, funding needs increasing due to rapid county growth, no apparatus replacement plan, apparatus responding with only one person, volunteer's communication limits their ability when the department is using tactical channels, departments don't talk enough/work together more as a collective group, water supply/availability, fire district set up, family environment not as strong, culture change, during severe weather (flooding) limited services we are dependent upon cities and it is hard to provide specialized services, Squad 410 provides more benefit for some rather than others (due to station location). Additional squad needed to enhance staffing.



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Identifying missed opportunities, the group spoke to:

Firefighter prospects not “caught” by age 16 do not stick with the service, expansion needed of Concord H.S. program, technology-MCT/AVL to fix run card issues, improve communication challenges, training together, departments working together for common goals, lower ISO ratings, would like to see squad arrive on scene more quickly, EMS unit reliable coverage-slim coverage a couple times a week.

Without changes made to the service delivery system, the following threats were highlighted:

Staffing growth, losing people, retirees leaving, annexation, increasing call volume, standards affecting volunteers, not having qualified personnel needed to operate, being able to respond to all hazards-can only do so much, depending more & more on part time staffing, not know who can respond and what specialized skills are on hand, therefore being very dependent upon cities.

#### **Public Survey:**

The external survey instrument was specifically developed for Cabarrus County as a component of this project. A “SurveyMonkey” instrument was utilized and the link was provided by County staff in a variety of methods open to public input for approximately one month. Over 360 responses were received from Cabarrus County residents for the fourteen (14) question survey. Sixty-Eight percent (68%) of the respondents had received emergency services from a fire department in Cabarrus County in the past five (5) years. Additionally, thirty-six percent (36%) had interaction with one or more of the community outreach programs provided by the County.

Respondents were overall satisfied with the quality of services that they received, with eighty-six percent (86%) responding that they were either “very satisfied” or “satisfied” with the quality of fire and rescue services they received. Overwhelmingly, ninety-six percent (96%) of the respondents identified providing quality fire services as an important part of economic growth for Cabarrus County.

Respondents affirmed their fire and rescue services were effective with eighty-four percent (84%) replying that they believed that their services were either “very effective” or “effective”. Respondents offered positive feedback with words such as, “dedicated, dependable, and professional.”

Respondents also affirmed their feelings of safety within the community. Eighty-seven percent (87%) felt either “very safe” or “safe” in their homes in relation to fire protection. Additionally, eighty-four percent (84%) believe they are safe when visiting business or commercial settings within the County.



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Respondents were given the opportunity to provide qualitative input based on specific statements. Two that stood out were that seventy-seven percent (77%) believe response times and station locations should be in accordance with national standards. Additionally, eighty-four percent (84%) support additional funding for fire and rescue services if the additional funding directly improved the service delivery levels.

Recommendations from the community for future improvements included areas such as: assuring equipment met national standards, increasing minimum staffing levels, and adding fire stations in areas of high growth. Concerns identified included examining the method of delivery and the leadership hierarchy within the County fire services.

#### **Firefighter Survey:**

In addition to the public survey, a separate electronic survey was provided to firefighters in Cabarrus County to gain their perspective about the fire protection service delivery system. A well representation of career, part-time, and volunteer firefighters provided input in the survey. Almost 100 responses were received from Cabarrus County firefighters and officers for the twelve (12) question survey.

Firefighters were overall satisfied with the quality of services provided, with over seventy-five percent (75%) responding that they were either “very satisfied” or “satisfied” with the quality of fire and rescue services provided for the community. The effectiveness of the fire and rescue services also were identified with a strong approval percentage (“satisfied” or “very satisfied” - 75%).

Respondents were asked a series of questions in the form of a S.W.O.T. (Strengths, Weaknesses, Opportunities, and Threats) analysis. Those responding to the request to identify the greatest strength of the fire protection service delivery system in Cabarrus County provided an array of responses. Key areas of strengths included: Trained firefighters and efficient resources are providing a quality service, response times are adequate, a variety of fire and rescue equipment are in service, and an obvious commitment and pride in the local community fire protection was identified.

Key areas identified as weaknesses and most needing attention included: Communication, leadership and support of all County fire departments needs attention, recruitment of new volunteer firefighters has suffered over recent years.

Key areas identified as the greatest missed opportunities included: Training, inception of the County Squad generated considerable passionate responses, equity in funding for all fire departments, dispatching of closest fire or rescue unit is not consistent, 24/7 staffing methodology.

Key areas identified as the greatest threats to future success included: Firefighters are not joining the volunteer ranks of the service, departments are struggling to meet the needs of





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the community with existing staffing mechanisms, perception of a push towards “one County-wide Fire Department”.

Respondents were given the opportunity to provide qualitative input based on specific statements. A request was made to provide single words that best represent the fire and rescue services in Cabarrus County. The highest responses included the following: Dedicated, Brotherhood, Reliable, Pride, Quality, Professional, Loyal.

All of the responses were not provided in a positive light. Areas of concern used the following words: Understaffed, Disjointed, Rivalry.

Respondents were asked for any individual, specific feedback. Several responses were generated and can be summed into the following high priority areas: Fire and rescue service delivery methodology, need for more department collaboration, County Administration needs to show support for all of the departments. An appearance of favoritism within the delivery system was suggested throughout the survey.

An interesting fact was many respondents felt no improvements were needed to the fire and rescue services provided for the County. In both the public survey feedback and the firefighter survey feedback, there were scores of comments and opinions related to the operation of the county’s supplemental staffing unit – Squad 410. Many of the open comments provided were negative. These comments reflect the great importance of consistent communication throughout all levels of the fire service in Cabarrus County about the purpose and mission of the Squad as well as the need to further integrate the Squad into daily emergency operations across Cabarrus County.

It should also be noted that comments provided in the public survey could be duplicative of comments in the firefighter survey. Hence, some firefighters may have completed both public and firefighter surveys. With both of these surveys, it is imperative to remember that the results are simply indicators as these are not scientific surveys whatsoever. They are designed to provide leadership a “pulse” of perceptions within the county about the fire service and are not based upon fact.



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### **Squad Feedback:**

Current Cabarrus County squad staff were asked for input regarding positives and gaps within their work environment with the desire to determine priority areas to address.

The following priorities were established from this input:

Determine a more optimal location to operate the squad from, Provide an appropriate vehicle to better meet equipment and safety needs, dedicated leadership to direct the squad program, and adjust funding and processes as part of program development in the budget process.

### **Fire Apparatus Assessment:**

While the fire service is extremely dependent upon human resources to accomplish the mission of saving lives and property, adequate capital resources are also necessary to enable firefighters to perform their jobs. NC Fire Chief Consulting conducted a mechanical assessment of contracting fire department's fire apparatus utilizing a veteran subject matter expert. Overall, the assessment indicated that most resources are meeting the needs today.

Throughout the ten volunteer fire departments in Cabarrus County the total fleet is comprised of forty-four (44) fire apparatus. The total includes twenty-two (22) fire engines which all are considered front-line except one reserve engine at Allen VFD. The next largest type of apparatus is represented by fifteen (15) tankers spread throughout the ten (10) departments. The county departments have six (6) rescue trucks with one considered a heavy rescue at Allen VFD, five (5) medium rescues, and one with no rescue certification at Odell VFD. The county departments also have one aerial apparatus (Ladder 1) at Mount Pleasant VFD.

Seven (7) of those apparatus in six (6) different departments have exceeded the NFPA life expectancy for emergency fire apparatus and several more are fast approaching the twenty-five (25) year mark.

The NFPA Technical Committee on Fire Department Apparatus has recommended that "tires shall be replaced at least every seven (7) years or more frequently depending on the amount of use", this requirement was incorporated in a complete rewrite of the 2007 edition of NFPA 1911. Cabarrus County has multiple apparatus with tires that exceed this important standard and should be considered a safety issue.

The safe operation of fire apparatus is of the utmost importance and braking systems play a key role in that process. Apparatus weight, distribution of that weight, and responding emergency traffic are considerable factors that make adequate braking systems crucial to the safety of responders, citizens, and adequate service delivery. The county has two apparatus that had insufficient brakes at the time of this study.

Eight (8) apparatus were found to have a host of other mechanical issues that need to be addressed as soon as possible that is outlined in the detailed aspects of this report.



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### **Geographic Information Services Analysis:**

Analysis of current fire station locations indicates that the county is well covered both on an insurance distance standpoint as well as a modeled travel time basis. 98.6% of past incidents were within an eight-minute travel time of a fire station. Pockets of higher demand is scattered throughout the fire districts with more intense areas noted in Midland, Mt Pleasant, and the Jackson Park/Allen area. Despite potential municipal boundary expansion, only a very slight loss of workload would be experienced by the fire districts.

While responses for medical incidents is a significant portion of the fire district workload, it was found that responding to neighboring districts on mutual aid is not at a level of concern except for the Mount Mitchell Fire District.

Squad 410 is currently based in one area of higher demand at current Cabarrus County EMS Base 2. However, its demand is also higher in Rimer, Mt Pleasant, and Georgeville indicating a potential relocation. Analysis of assembling of an effective firefighting force varies within county based upon the location of mutual aid stations and the roster depth for each district. Flowe's Store had the youngest average age, but the longest 80<sup>th</sup> percentile travel time to the station while Mt. Mitchell had the eldest and the lowest count of members. The factors here should be considered for duty staffing.

The fire district lines should be considered for realignment as new stations in Harrisburg and Midland impact the Flowe's Store district especially.

New stations planned by several fire departments in the county may create a concern of being over resourced. An analysis to minimize the number of stations was conducted based upon the current and planned stations revealed that some planned stations may need to be reconsidered and some current stations should be evaluated for future feasibility.

### **Data Analysis:**

Progressive fire and rescue service managers should utilize data available to them to make the best long-term decisions possible. NC Fire Chief Consulting has provided a dynamic, interactive application tool to Cabarrus County that enables County staff to conduct unlimited hypothetical scenarios to determine how to most efficiently assess resources based upon data collected in the "FireHouse" software system that collected emergency response data prior to July 1, 2019. This tool, called PowerPivot, collects incident data from each contracting fire department over time and is effective in predicting future outcomes. Although Cabarrus County changed the records management system one year ago in 2019, this historical data from the former "FireHouse" system which we evaluated can be used to assist in determining the impacts of deployment



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considerations into the future. As with any data analysis, when using this tool it is critical that precise input data is utilized to produce the most accurate predictions and decisions possible.

Detailed, individual department by department analysis of data was constructed using the PowerPivot tool to assess the service levels delivered by each fire department during the time period that data was available. The peer-review team recommends that collection and evaluation of data ongoing is absolutely essential to understanding the demonstrated performance of the fire service in Cabarrus County and good data will enable County staff to make the best-informed decisions possible moving forward.

#### **Peer Review Team Strategic Analysis and Recommendations:**

Given that this analysis occurred during the time of an International pandemic, a model of dividing the scope of the project into separate subject matter expert teams was utilized in lieu of a single group format. This methodology provided a deeper analysis into the different dynamics of this project than was originally programmed. Therefore, the material is presented below for each specified area of analysis.

#### **Fire Marshal's Office:**

The Fire Marshal's Office (FMO) is meeting their minimum requirements for service delivery objectives, including specific programs for fire prevention inspection and code enforcement, plan review, fire investigation, and public education.

Personnel responsible for fire prevention and code enforcement activities meet the job performance requirements for the duties they perform. Personnel who perform plan reviews or field acceptance inspections meet the job performance requirements established by the State of North Carolina. All personnel conducting the investigation of the origin, cause, and circumstances of any fire, explosion, hazardous materials incident, or other hazardous condition are trained and qualified commensurate with the duties they are expected to perform.

The Cabarrus records management system (RMS) has the capability to provide a means of measuring performance outcomes and trends for each program under their purview. The RMS can be improved in its data capture to support the management of the FMO by providing the leaders with data that indicate the effectiveness of the organization in its programs and procedures. This outcome is also needed with the Building Inspections software which is not being used to its full potential.

The various Zoning Officials and Cabarrus County staff provided valuable feedback as to their perspective about the current service delivery of the Fire Marshal's Office in Cabarrus County. They answered our questions about what they saw as strengths, gaps, missed





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opportunities, and threats. Collectively, the interviews conducted identified the following aspects about the Fire Marshal's Office in Cabarrus County as:

**Strengths:** Experienced and well-trained staff, Pride and dedication of staff members in performing their assigned tasks, Strong interpersonal relationships with other county departments and local jurisdictions involved with their service deliveries, Training and education programs to ensure that competency is maintained to execute all responsibilities effectively, efficiently, and safely, Career ladder for employees in the Assistant Fire Marshal rank, and emergency management needs supported by the FMO staff.

**Gaps:** The defined workload exceeds employee availability. The published FMO job descriptions should be revised to include those "Fire Marshal Staff Other Duties" that are outlined in the Appendix. FMO staff supporting Emergency Management (EM) incident operations affect staffing availability, occupancy vacancy and change of uses communicated to the appropriate zoning official, youth fire setter educational programs based on the community risk reduction (CRR) plan.

**Missed Opportunities:** Squad operations are not fully developed to support FMO objectives, such as more involvement in Community Risk Reduction (CRR) hazards identification or mitigation planning and their delivery of public fire education programs. Some FMO functions are within the scope of duties that can be performed by the Squad, The employee career ladder needs additional steps to support succession planning, The work being performed is not being fully captured in the data documentation methods or records management systems, Monthly activity reports should be shared with all affected staff and jurisdictions, Educational programs should be developed based on the CRR plan for all identified risks, There are opportunities for the utilization of firefighters from various departments to participate in specific fire prevention activities such as delivering public education to school children.

**Threats:** Employee turnover and loss of experienced personnel, Lack of written policies and standard operating guidelines for all supported programs, use of staffing as additional EM staff is not sustainable if FMO service delivery is concurrently expected, Data analysis of expected future workload is not available from partner Zoning jurisdictions.

NFPA Standard 1790 contains minimum requirements relating to the organization and deployment of fire prevention inspection and code enforcement, plan review, investigation, and public education operations and can be used as a guide for improving operations. Annex B and C of the standard contains tools to measure the staffing needed for operations and developing a CRR plan through a Community Risk Assessment (CRA). A CRA should be undertaken to determine and establish the CRR plan and programs to eliminate, reduce, and mitigate risks.



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### Squad Operations:

Cabarrus County Government is currently utilizing a supplemental staffing unit to support fire and emergency operations with contracting private, non-profit corporation and municipal fire department operations throughout Cabarrus County. This supplemental staffing program is supported by the Cabarrus County General Fund and is consistent with the approach that several North Carolina counties have taken who do not desire to provide all public fire protection services internally. In recent years, the supplemental staffing program for the Squad (recognized as Squad 410) has adjusted to provide four firefighters as minimum staffing to respond in a pickup truck anywhere that is needed within Cabarrus County. This model is recognized within the North Carolina fire service as an efficient use of public funds because the personnel can serve a large geographic area. However, it is noted that this crew is only supplemental to the first responding, contracting fire departments and is intended and equipped as such. This unit is not designed or intended to provide services beyond staffing and support services for contracting fire departments.

County Governments in North Carolina can provide fire protection internally. However, most counties contract for fire protection services with municipalities or private, non-profit fire departments. Due to the significant decline in volunteer firefighters coupled with the growth that many areas of North Carolina is experiencing, more counties are needing to further support fire protection services beyond simply issuing contracts to non-profit corporations. The need to provide an effective firefighting force in Cabarrus County is as prevalent as it is in many other areas of North Carolina and the United States. Cabarrus County's use of the Squad to help support contracting fire departments to ensure that a safe number of qualified firefighters are on the scene of working structure fires should remain a priority of Cabarrus County Government.

The peer review team evaluated the current Squad operation and developed a set of six specific recommendations that involved both short-term and long-term needs. These recommendations included areas related to developing and improving the squad operation, designating a lead person to be responsible for the Squad operations, expanding the full-time equivalent positions associated with the shift squad from 12 to 15 qualified firefighters, evaluating another physical location for the Squad to operate out of, evaluating the Squad's current response vehicle and making associated funding adjustments to the program as it matures.



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### Recruitment and Retention:

Volunteerism across North Carolina and the United States has been diminishing in all sectors. However, one of the most heavily impacted services affected by the loss of volunteers has been the fire service. Loss of volunteer firefighters is a top tier issue and concern in the North Carolina fire service today. Cabarrus County is no exception to this trend. In review of rosters from 2012 compared to rosters in 2020, data shows that the total numbers of firefighters has actually increased overall, with one significant exception – Mount Mitchell which reports 18 fewer firefighters in 2020 than in 2012. However, a closer review of the rosters in 2012 will indicate that approximately 40% of persons on the rosters are career firefighters at the department hosting the roster, or at a municipal fire department in the region. This factor should be considered when evaluating the overall fire protection service delivery system response strength, especially during storms and crisis situations. While data from 2012 did not evaluate the contrast of career versus volunteer firefighters on the rosters, all indicators demonstrate that the actual number of volunteer firefighters is decreasing. This trend is concerning to the Fire Chiefs in the county. While much of the loss of volunteers is indicative of changes and adjustments in the larger overall society, there are specific strategies that Cabarrus County Government and contracting fire departments can engage to mitigate this trend and minimize adverse impacts.

The team analyzed trend lines for number of firefighters responding to structure fires between fiscal year 13/14 and fiscal year 18/19. During those six years, there is an approximate 25% decrease in the number of firefighters responding to structure fire calls. It is projected that the trend line will continue for that decrease in firefighters responding, while at the same time growth is occurring in the county, the number of emergency calls for service is increasing and the hazards and complexity is increasing. Collectively, this is a very concerning trend. To address the need additional career staffing will be needed. However, additional efforts are also needed to support and bolster the volunteer programs throughout Cabarrus County.

The subject matter expert team analyzed the programs currently in place in Cabarrus County and developed a series of both short-term and long-term strategies that could be effective to utilize in Cabarrus County. Twelve (12) short-term recommendations were developed, including strategies around training, community outreach, utilizing volunteers for non-traditional roles, family involvement, use of committees and continued involvement with the Concord High School firefighter program. Three longer-term strategies are offered including engaging a volunteer coordinator, recognition programs and further developing junior and live-in programs.



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While no known volunteer fire department has found a single strategy to counteract declining volunteerism, there are many departments that find that implementing multiple strategies can have a positive effect on sustaining volunteerism. Therefore, utilizing multiple approaches is recommended by the peer review team.

#### **Tax Districts and Funding:**

Insurance districts hold importance for Cabarrus County Government in order to obtain the lowest insurance ratings possible for residents of Cabarrus County. Those insurance districts should also reflect the closest station response. Cabarrus County effectively utilizes countywide automatic aid between fire departments, which enables areas between five and six road miles from a fire station to obtain the most basic of insurance ratings (class 9). Ratings for Cabarrus County range from Class 1 (the highest level for public protection) to Class 9 (the lowest recognized level) with insurance districts rated at Class 3,4,5 and 6 in between. Most North Carolina Counties strive to support all areas reaching Class 6 or better because of the positive impact for homeowners. Currently, three Cabarrus Districts are above Class 6 and are all at Class 9 (Georgeville, Northeast Cabarrus and Rimer). The peer review team recommends Cabarrus County place a focus on improving the insurance ratings for these three districts in order to achieve the greatest positive impact for the property owners paying property insurance. It is important to note that the insurance rating system is based upon 50% credit from the fire department itself, 40% related to water supply and 10% associated with emergency communications systems. There can also be “bonus” points awarded for community risk reduction measures that are taken by the fire department. This is a very important method that fire departments are finding is making a positive difference in the rating outcomes.

Funding of county fire protection systems is a very complicated process in North Carolina. Cabarrus County currently utilizes rural fire tax districts that were established last century. Cabarrus County’s approach is not unusual. However, many North Carolina counties are moving away from rural fire tax districts primarily due to expanding costs to provide fire protection and urbanization. Typically, the rural fire tax districts do not provide county governments modification ability. However, Cabarrus County is fortunate to have the authority and ability to make modifications to rural fire tax districts due to a local legislative bill specifically for Cabarrus County.

Currently, Cabarrus County taxes sixteen (16) separate rural fire tax districts between a low of \$.06 per \$100 valuation (Cold Water) and a high of \$.15 per \$100 valuation (Harrisburg Rural), with a mean average of \$.0975 per \$100 valuation. Cabarrus County’s mean average is slightly lower than a statewide average of \$.10 per \$100 for rural fire tax districts. The associated annual funding appropriation from these rural fire tax districts ranges from a low of \$11,073 (Richfield) to a high of \$1,124,899 (Harrisburg Rural). The mean average annual appropriation is \$355,785. In addition to the funding from the rural fire tax districts, there is also annual funding from local sales tax





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distribution from Cabarrus County. Externally, additional funds to support contracting fire departments come from contracts with municipalities, fund raising and grants. In order to optimize insurance premiums for taxpayers, Cabarrus County should ensure that the closest responding fire station serves the persons and property in the unincorporated areas of Cabarrus County. Coupled with that effort should be a focus on reducing/improving the insurance ratings wherever possible, especially in the three areas where residents are in an insurance Class 9, or minimally protected area. Urbanizing counties across North Carolina are striving to include as many areas as possible into Class 6 or better rated areas.

North Carolina State Statutes enable several methods to provide funding for fire protection. Currently, Cabarrus County is utilizing a small amount of funding from the County General Fund and providing most of the funding through rural fire tax districts enabled by Chapter 69 of the State Statutes. The peer review team recommends that long-term, Cabarrus County move towards regional or unified fire protection service districts as enabled by Chapter 153A. Counties across North Carolina have found that the service district model provides a more sustainable model for funding and provides funding to more equitably balance service across all the unincorporated areas of the County. The rural fire district model can provide resources for areas with tax bases, but does not provide well for more rural areas. The great accelerator is the greatly expanding need for firefighter staffing. Traditionally, fire departments in both suburban and rural areas have relied on volunteers, but with the number of people willing to volunteer now and in the foreseeable future, more resources are going to be needed for staffing, and that need impacts all unincorporated areas of Cabarrus County.

The team recommends a collaborative approach to implementing the fire protection service district model by including municipalities that desire to be a part of the service district in the early planning. Those participating municipalities should be considered collaborative partners moving forward. Also, the team recommends that the Board of Commissioners establish a fire commission, comprised of elected leaders, fire service leaders and citizens to make recommendations to the Board of Commissioners on funding distribution related to the recommended service district. This advisory board would focus on the policy and service delivery enhancement for the overall service district.

In addition, the team recommends that as the service district model is implemented that adjustments be made to response areas to ensure the closest station response and that areas where overlap occurs be re-evaluated to determine the overall best allocation of resources.

Furthermore, as Cabarrus County moves towards a service district model, that the agreement between Cabarrus County and contracting private, non-profit corporations be re-evaluated and updated in order to bring the contract up to best practice in North Carolina. Using the service district model can enable some creative provisions in the



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contract such establishing base funding based upon the property value that is protected by each contracting fire department, incentive funds for achieving improved ISO ratings, one-time grant funds to help with initiatives that will improve service delivery and other creative ideas. There is not a need for contracting fire departments to experience a disconnect between the value of the property they protect (the risk) and the funding that is received for protecting those risks. A funding distribution model can be constructed that will provide equity and balance to the contracting fire departments.

Current Cabarrus County General Fund dollars that are supplementing the contracting private, non-profit fire departments would not be necessary for those departments operating within the service district. However, the team recommends utilizing those funds to strengthen the countywide staffing squad that serves the entire county as staffing is projected to continue to be one of the greatest needs in the foreseeable future.

#### **Next steps:**

Next steps for this process will be for Cabarrus County staff and officials to receive the input from this report and allow it to be contributory towards their overall strategic plan for the fire protection service delivery system. Most immediate policy direction decisions could best focus on:

1. Determining if Cabarrus County desires to progress towards a unified fire protection service district and move away from the rural fire tax district model.
2. If so, reach out to municipalities and identify a diverse group of persons that would comprise a Cabarrus County Fire Commission to conduct planning and research to make recommendations to the Board of Commissioners on the transition.
3. In the meantime until the service district system is fully functional, strengthen the staffing levels within the fire protection service delivery system wherever possible in order for enough firefighters to safely operate at structure fires and other emergency incidents. This is a combination of career and volunteer staffing methods.
4. Also, adjustments to response districts to ensure closest station response should be made whenever possible.
5. Support Fire Chiefs of contracting fire departments and county staff to develop implementation strategies that include compromise and development of an updated contract for services reflective of enhanced funding structures.

With a continued commitment to continuous improvement demonstrated by Cabarrus County throughout this process, the peer review team is confident that the County can advance the fire protection service delivery system by utilizing the recommendations contained in this report.



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The North Carolina Fire Chief Consulting Team sincerely appreciates the opportunity to provide this report and we are proud to have assisted in efficiently providing this project to improve and strengthen the fire service delivery system within Cabarrus County, North Carolina. We sincerely thank everyone who supported this progressive initiative and express our honor to serve in this beneficial capacity of continuous improvement.



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### **2. BACKGROUND/PROCESS:**

#### **A. Core initiative Goals and Directives**

The following are identified by Cabarrus County staff as the sixteen (16) desirable outcomes – or deliverables of this initiative:

- a. Depict a “State of the Volunteer Service”.
- b. Determine the greatest gaps with the overall service delivery system.
- c. Look at the municipalities in the County and project what the future will look like based upon each municipality having rural districts designated by the county.
- d. Produce a needs analysis identifying fire protection service delivery system gaps forecasted in the next 3-5 years based upon data.
- e. Identify alternate funding mechanisms that could be considered by Cabarrus County as permitted by NC General Statutes and provide illustrative examples with pros and cons to each funding model enabled by state law.
- f. Evaluate the pros and cons of instituting fire protection service district(s) in the County.
- g. Utilize GIS service delivery data to identify premium service enhancement opportunities that should be considered by policy makers.
- h. Determine where the current districts are NOT providing closest unit response, with special attention to medical responses due to fire service automatic aid.
- i. Determine the current standard of coverage based upon the best data available.
- j. Based upon NFPA 1720 rural standards (estimated 8-minute travel time with a 6-minute turn out time) identify any areas of redundancy coverage. This travel time model can be changed if needed. This information will be used to evaluate the effectiveness and efficiency of station placement. It can also be used to evaluate automatic aid coverage capability.
- k. Based on travel time, compare existing response areas to closest station response. Since the entirety of Cabarrus County is utilizing automatic aid for fire response, the district lines should convey the closest station rather than arbitrary areas.
- l. Conduct general mechanical evaluations of identified major fire apparatus for non-municipal contracting fire departments.
- m. Evaluate the staffing for the Cabarrus Fire Marshal’s Office to operate and support the current squad operation, with workload analysis and projected growth.
- n. Provide analysis of the FMO Operations and provide best practice industry recommendations for continuous improvement.
- o. Evaluate the current fire protection provider contract and provide recommendations for consideration in order to bring the document in closer alignment with North Carolina fire service best practices.
- p. Evaluate the current staffing grant system used by the County.





# **Cabarrus County Fire Service Strategic Analysis**

## **August, 2020**

In order to achieve the above desired outcomes and deliverables, NC Fire Chief Consulting (NCFCC) established the following core components for Cabarrus County:

### **1. Geographic Information Services (GIS) Work**

- a. Current base map with Fire Districts and Fire Stations  
Update all maps with municipality impact and create maps in collaboration with the Cabarrus County GIS staff.
- b. Drive Time Map – gaps and redundancy  
Based upon NFPA 1720 rural standards (estimated 8-minute travel time with a 6-minute turn out time) identify areas of redundancy coverage. This travel time model can be changed if needed. This information will be able to evaluate the effectiveness and efficiency of station placement. It can also be used to evaluate automatic aid coverage capability.
- c. Mileage Map – gaps and redundancy  
Based upon NCOSFM rating distances per fire station – 6 road miles.
- d. Closest Station Area – based on travel time to compare to existing district lines  
Based on travel time, compare existing response areas to closest station response. Since the entirety of Cabarrus County is on automatic aid for fire service, the district lines should convey the closest station rather than arbitrary areas.
- e. Squad from EMS 2 Coverage Effectiveness  
Demonstrate travel time coverage from this location at 6, 8 and 10 minutes.
- f. Service Demand Heat Map  
Amount reached by drive time as well as by department to evaluate automatic aid to medical calls outside of primary districts.
- g. Effect of Municipal ETJ expansion and annexation upon workload.
- h. System Design Modifications  
Should station redundancy be determined, additional mapping will be needed to provide the closest station response.
- i. Risk based upon parcel land use.
- j. Effective firefighting force by apparatus.



# **Cabarrus County Fire Service Strategic Analysis**

## **August, 2020**

### **2. Stakeholder Feedback**

- a. Initially Meet with the County Fire Chief Group
  - 1. Two NCFCC staff will personally meet with the fire chiefs in Cabarrus County to discuss the study scope, the objectives, the components and the deliverables to ensure that all stakeholders are knowledgeable on what we will be doing and clarify what the expectations will be.
  - 2. During this same session, we will conduct an overall County SWOT analysis of the fire protection service delivery system in Cabarrus County and collect responses from the fire chiefs for analyzation.
- b. Conduct Fire Service Surveys
  - 1. Firefighter Survey

In coordination with the Emergency Services Director, NCFCC will develop and electronically administer a survey for all identified personnel from contracting fire departments in Cabarrus County to gage what issues firefighters identify that demand priority attention within the overall Cabarrus County fire protection service delivery system.
  - 2. Public Perception Survey

NCFCC will administer a survey for gathering and collecting input from the general public, targeted to residents in unincorporated areas of Cabarrus County. We will provide the survey instrument. Distribution of the link and promotion of the feedback opportunity will be the full responsibility of Cabarrus County.

NCFCC will collectively compile this stakeholder data. A component of the final written report would reflect this information.
- c. Management and Elected Officials
  - 1. NCFCC will interview the identified senior County Management staff and interested Cabarrus County elected officials to gain their perspective on desired outcomes long-term for the fire and rescue service delivery system. These interviews may be one-on-one, two at a time, or by phone as conditions allow.

### **3. Mechanical Evaluation of Apparatus**

- a. Two NCFCC staff will visit each private, non-profit fire station and perform a mechanical evaluation of each major fire apparatus, determining the condition to be “Excellent”, “Good”, “Fair” or “Poor”.
- b. An individual apparatus report and a comprehensive spreadsheet will be provided.



# **Cabarrus County Fire Service Strategic Analysis**

## **August, 2020**

### **4. Statistical Analysis**

Providing that we can access the individual FireHouse applications; we will load five (5) predefined queries designed to export data for evaluation in Excel. This should be a one-time export for each of the ten (10) individual databases. From this data, we will calculate the 90<sup>th</sup> percentile evaluation of call processing, turn-out and travel time on structure fire response times, flame confinement and loss to value percentages and total staff count per incident. Additional measures can be accomplished depending on the data collected from the database. Examples are evaluation by fire demand zones, districts, station first due and nature code, if the data exists.

Unit response evaluations will be conducted providing the 90<sup>th</sup> percentile of call processing, turn-out and travel time, staff count averages and incident counts. The 80<sup>th</sup> percentile may also be utilized for performance data if so desired (NFPA 1720).

We will notate where possible for data captured post changeover from FireHouse.

### **5. Peer Review Analysis**

#### **a. Provide a High-Level Needs Analysis**

From the information compiled and provided, NCFCC staff will prepare an agenda collaboratively with County Staff outlining the key issues that will be most beneficial for Cabarrus County to consider in the next three to five years. At this point, we understand that some key interests are:

- What viable funding options are available to Cabarrus County to sustainably address fiscal and capital needs in the next five years?
- What modifications within the county's service delivery system are needed to sustain and improve service levels?
- What changes are needed to the county's fire service contracts in order to align with industry best practices in North Carolina?

The Cabarrus County Emergency Services Staff will be asked to provide a host of information for the Peer Review Team as collected and coordinated by NCFCC, including data summaries, maps, statistical information and other items that are requested by peer assessors. In addition, NCFCC will coordinate with the Cabarrus County Emergency Services Director and review all the information assembled to this point and establish the schedule and agenda for the full day Peer Review Team session.

#### **b. Assemble a High-Quality Peer Review Team**

Based upon the feedback from all of the areas listed above, NCFCC will identify, select and assemble a team of approximately six (6) professional, experienced fire chiefs or executive level fire service/local government leaders from throughout North Carolina who have extensive experience that is directly applicable to the



## **Cabarrus County Fire Service Strategic Analysis**

### **August, 2020**

priority needs in Cabarrus County and/or who have very similar operations that are recognized as best practice agencies within the fire service profession.

In addition, two or three members of the Cabarrus County fire service will be asked to serve as integral team members by the County Fire Chief's Association (or equivalent). The County Manager may choose a couple county staff as well as an elected official to be a part of the Peer Review Team if so desired. Generally, the total members of the Peer Review Team should not exceed 10-12 people as a maximum. The Cabarrus County Emergency Management Director will have final approval of the members of the Peer Review Team.

These Peer Review Team members will receive all correspondence throughout the entire process on a regular basis from EnviroSafe and EnviroSafe will launch an electronic file system for all materials on the study to be housed. Each team member is asked to provide approximately two full workdays to be a part of this effort – one day on site and a portion of one day both before and after the on-site visit to review materials and provide feedback and input.

NCFCC will coordinate with the members of the Peer Review Team and the Emergency Management Director for an agreeable date for the on-site work and will manage the logistics of assembling this team of professionals, including all written correspondence and reciprocal agency approvals.

#### **b. Hold the Peer Review Team Full-Day Assessment**

This is a major component of the initiative. NCFCC will interactively facilitate a full-day session with the approximate total ten (10) to twelve (12) member Peer Review Team on site in Cabarrus County. This session will allow a high level of interaction between the Emergency Services Director, key Cabarrus County staff and the peer subject matter experts from throughout the state. During this session, observations and recommendations for improvement will be established for the Cabarrus County fire service. EnviroSafe will capture this information and develop it into a set of organized improvements for the Emergency Services Director.

Cabarrus County will be responsible for the meeting location and providing support services for this session.

#### **c. Complete Best Practice Research**

NCFCC will assemble illustrative examples and models of applicable practices from other North Carolina local governments that will be helpful to consider for use in Cabarrus County. This research and best practices will be very customized to the needs and issues in Cabarrus County and specific adjustment to Cabarrus County will be made as needed.



# **Cabarrus County Fire Service Strategic Analysis**

## **August, 2020**

d. **Package and Send Peer Review Team Final Draft and Analyze Feedback**

NCFCC will distribute and seek feedback and input from all peer review team members on the final draft report, making modification where necessary. We will take the feedback from peer review team members and compare, contrast and apply that input against industry best practices and research as well as legal requirements and modify the reporting accordingly to be consistent with those standards.

NCFCC will personally follow up with all peer team members thanking them for their service, providing a copy of the final PowerPoint presentation and giving them an opportunity for constructive feedback. We will analyze that feedback and provide it to Cabarrus County for continuous improvement and career development.

**6. Draft Report for County Manager and Emergency Services Director Review**

NCFCC will analyze all written and oral feedback given during the on-site peer review analysis and all other components and assemble that information in a usable format for Cabarrus County staff, interpreting this feedback information and prioritizing the feedback in a meaningful and realistic way. This will be a substantial portion of the project and will require a high level of technical work. The report will include an executive summary, written documentation of all the components and the majority will focus on observations and recommendations. There will also be a substantial section of references of best practices in the appendix section.

**7. On-Site Meetings/Presentations**

a. **Develop Technical Presentation PowerPoint**

Based upon the report's executive summary, NCFCC will develop a basic PowerPoint presentation of the process and strategic recommendations from the peer review process. The Cabarrus County Emergency Services Director will be consulted in the composition of this PowerPoint.

b. **Meet with County Fire Chiefs**

NCFCC will personally meet with the fire chief's group in Cabarrus County to review the outcomes of the study effort and present the PowerPoint presentation to keep them informed and aware of the work and outcomes of the collective effort.

c. **Make a presentation to the County Commissioners**

NCFCC will make up to a one-hour presentation to the Cabarrus County Commissioners of the findings of the team's work and will present a hard copy of the report to each commissioner, with eight (8) total hard copies provided.



## **Cabarrus County Fire Service Strategic Analysis August, 2020**

*Note: Important adjustments to the above scope of work were made due to the worldwide pandemic that occurred during the midst of this project. Certain aspects were mandated to change due to limitations of face-to-face contact by the Governor's Executive Orders. Primarily, the peer review session was transferred to multiple peer review teams, each with a separate focus. Also, the contract was made and carried out through EnviroSafe. However, the fire consulting component of EnviroSafe transitioned to North Carolina Fire Chief Consulting on July 1, 2020.*





# **Cabarrus County Fire Service Strategic Analysis**

## **August, 2020**

### **B. Analysis Team**

#### **Core North Carolina Fire Chief Consulting staff assessors for the project included:**

- Greg Grayson, Fire Chief (ret), City of Greensboro, NC
- David Bullins, Fire Chief (ret), City of Statesville and Mitchell Comm. Coll.
- Mike Varnell, Fire Chief (ret), City of Rocky Mount, NC
- Frank Blackley, Assistant Fire Chief (ret), City of Wilmington, NC
- Wayne Hamilton, Assistant Fire Chief (ret), City of Asheville, NC
- Wes Greene, Fire Chief (ret), Town of Mooresville, NC
- Wes Hutchins, Fire Chief (ret), Walkertown, NC
- Todd Tuttle, Battalion Chief, City of Greensboro, NC
- Robert McNally, Beacon GIS
- Tommy Millikan, City of Greensboro Fleet Manager

#### **Specialized Subject Matter Experts assisting NCFCC included:**

- Tracy Mosley, NC Association of Fire Chiefs and Deputy Chief (ret), Wilson, NC
- Spencer Cheatham, International Association of Fire Chiefs
- Wayne Bailey, Deputy Director (ret), NC Department of Insurance, OSFM
- Tom LaBelle, Deputy Chief, Henrico County, VA Fire Department
- Stephen Thomas, Guilford County Emergency Services
- Gary Styers, Forsyth County Emergency Services
- Darrell Alford, Operations Chief, Wake County Fire Services
- Tracy Jackson, Assistant County Manager, Cumberland County, NC
- Perry Davis, Fire Marshal, Cleveland County, NC

#### **Assisting the teams from the Cabarrus County Fire Service included:**

- Steve Langer, Cabarrus County Fire Marshal
- Allen Burnette, Midland Fire Chief
- Jody Johnson Odell Fire Chief
- Patrick Bergeron, Northeast Fire Board of Directors
- Jake Williams, Concord Fire Chief
- Timothy Mills, Cabarrus County Captain
- Jeremy Eury, Cabarrus County Captain
- Stephen Jackson, Cabarrus County Captain



# **Cabarrus County Fire Service Strategic Analysis**

## **August, 2020**

### **3. REVIEW OF STAKEHOLDER FEEDBACK**

#### **A. Community Input via Social Media Feedback**

A simple form was presented through the County's electronic and Social Media outlets to gauge public perceptions of the fire service in the Opportunity for residents to provide feedback was active for more than a month. The results are indicators only and are reported as follows:

The external survey instrument was specifically developed for Cabarrus County as a component of this project. A "SurveyMonkey" instrument was utilized and the link was provided by County staff in a variety of methods open to public input for approximately one month. Over 360 responses were received from Cabarrus County residents for the fourteen (14) question survey. Sixty-Eight percent (68%) of the respondents had received emergency services from a fire department in Cabarrus County in the past five (5) years. Additionally, thirty-six percent (36%) had interaction with one or more of the community outreach programs provided by the County.

Respondents were overall satisfied with the quality of services that they received, with eighty-six percent (86%) responding that they were either "very satisfied" or "satisfied" with the quality of fire and rescue services they received. Overwhelmingly, ninety-six percent (96%) of the respondents identified providing quality fire services as an important part of economic growth for Cabarrus County.

Respondents affirmed their fire and rescue services were effective with eighty-four percent (84%) replying that they believed that their services were either "very effective" or "effective". Respondents offered positive feedback with words such as, "dedicated, dependable, and professional."

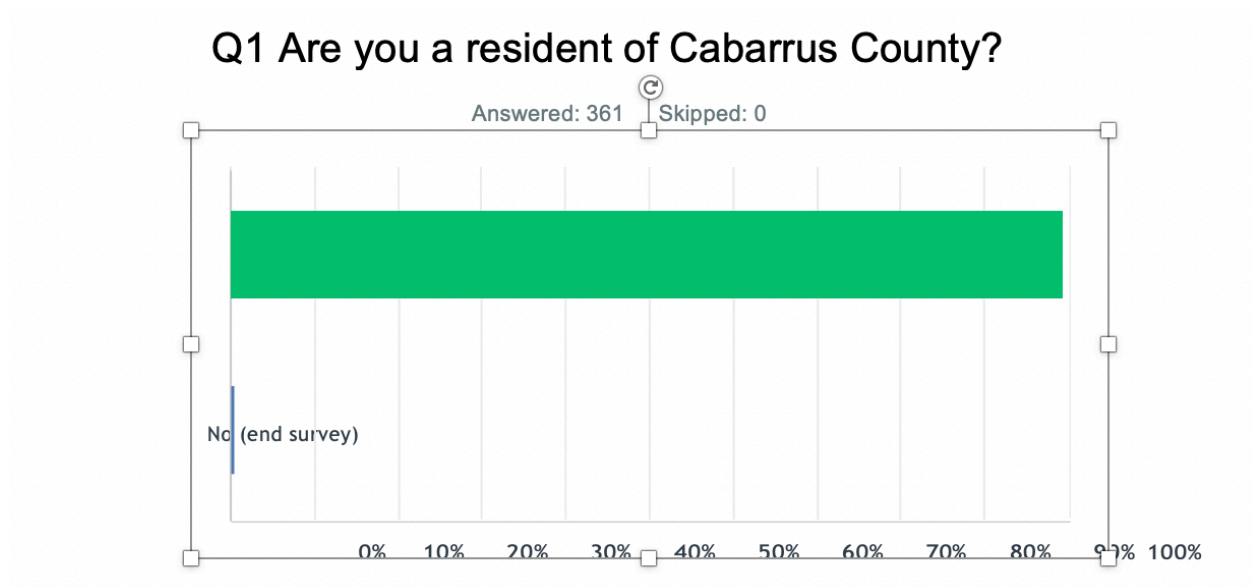
Respondents also affirmed their feelings of safety within the community. Eighty-seven percent (87%) felt either "very safe" or "safe" in their homes in relation to fire protection. Additionally, eighty-four percent (84%) believe they are safe when visiting business or commercial settings within the County.

Respondents were given the opportunity to provide qualitative input based on specific statements. Two that stood out were that seventy-seven percent (77%) and seventy-six percent (76%) believe response times and station locations should be in accordance with national standards. Additionally, eighty-four percent (84%) support additional funding for fire and rescues services if the additional funding directly improved the service delivery levels.



## Cabarrus County Fire Service Strategic Analysis August, 2020

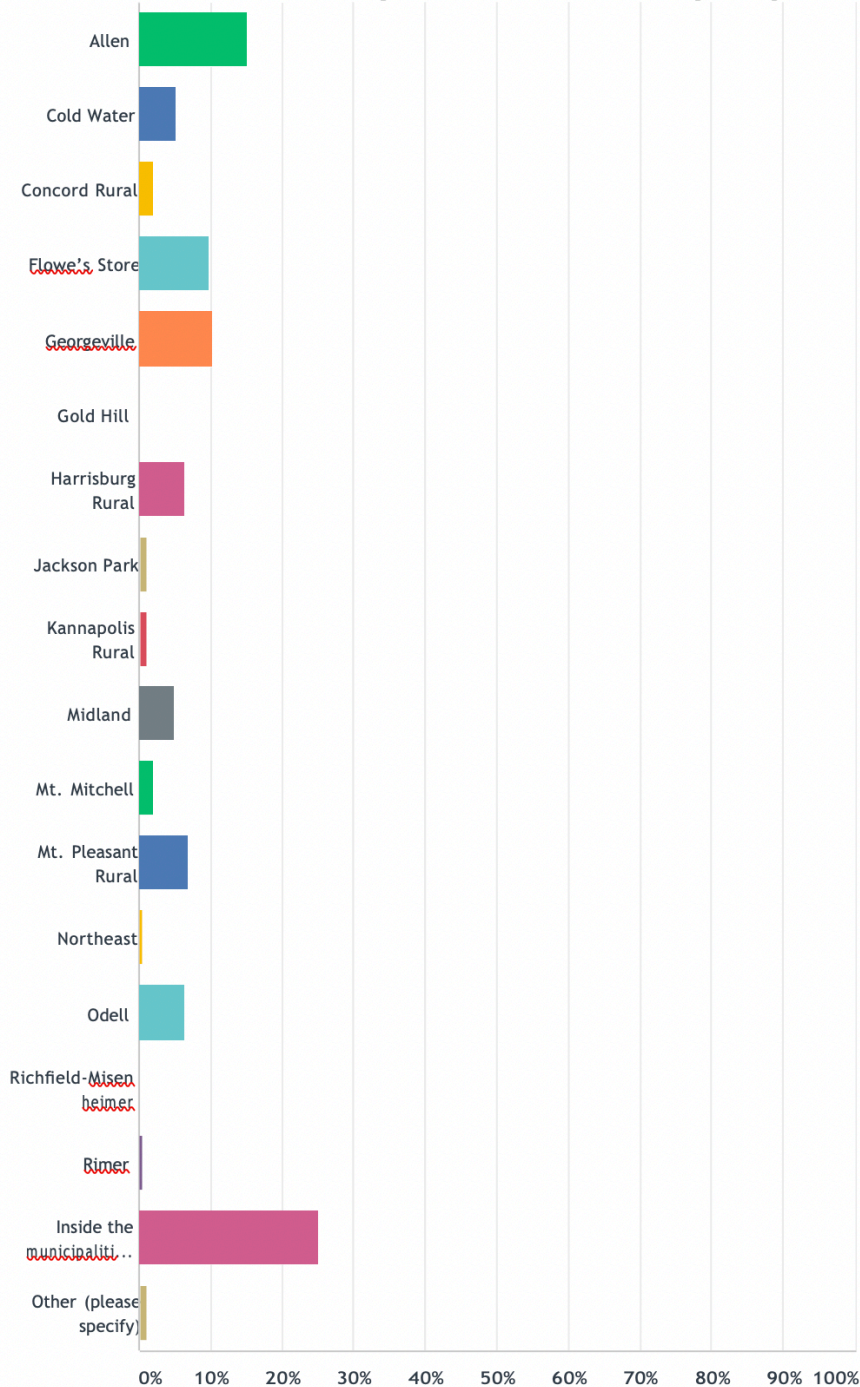
Recommendations from the community for future improvements included areas such as: assuring equipment met national standards, increasing minimum staffing levels, and adding fire stations in areas of high growth. Concerns identified included examining the method of delivery and the leadership hierarchy within the County fire services.



# Cabarrus County Fire Service Strategic Analysis

## August, 2020

Q2 If so, in which community of Cabarrus County do you reside?



## Cabarrus County Fire Service Strategic Analysis August, 2020

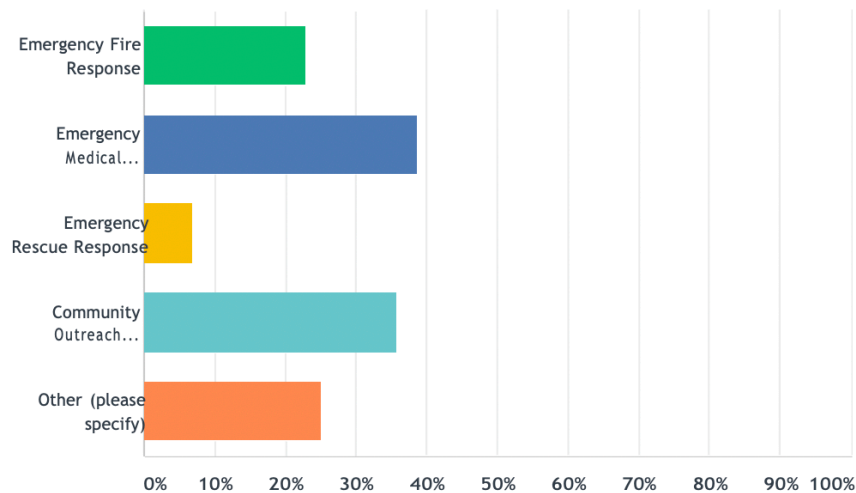
### Q3 How would you describe the area where you primarily reside?

Answered: 183    Skipped: 178

ANSWER CHOICES	RESPONSES	
Urban (more than one home or business per acre)	30.05%	55
Suburban (homes or businesses on one to five acres)	36.07%	66
Rural (parcels of land greater than five acres with public access roads)	28.42%	52
I don't know	3.28%	6
Other (please specify)	2.19%	4
<b>TOTAL</b>		<b>183</b>

### Q4 Have you received any of the following services provided by any fire department in Cabarrus County in the last five (5) years? Please check all that apply.

Answered: 183    Skipped: 178

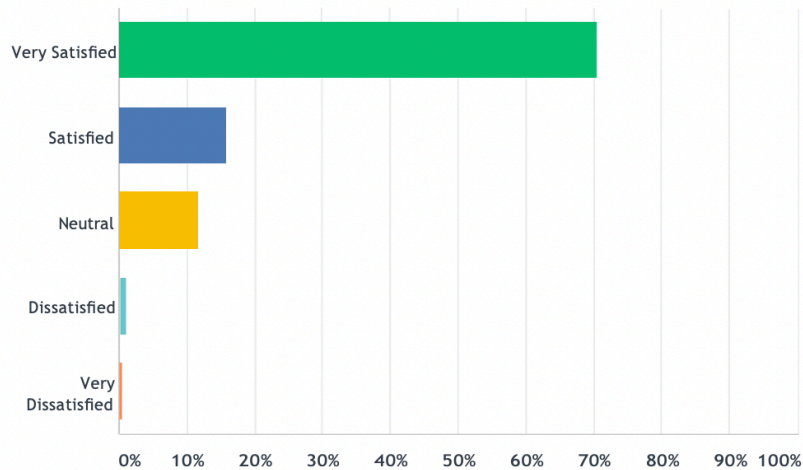




## Cabarrus County Fire Service Strategic Analysis August, 2020

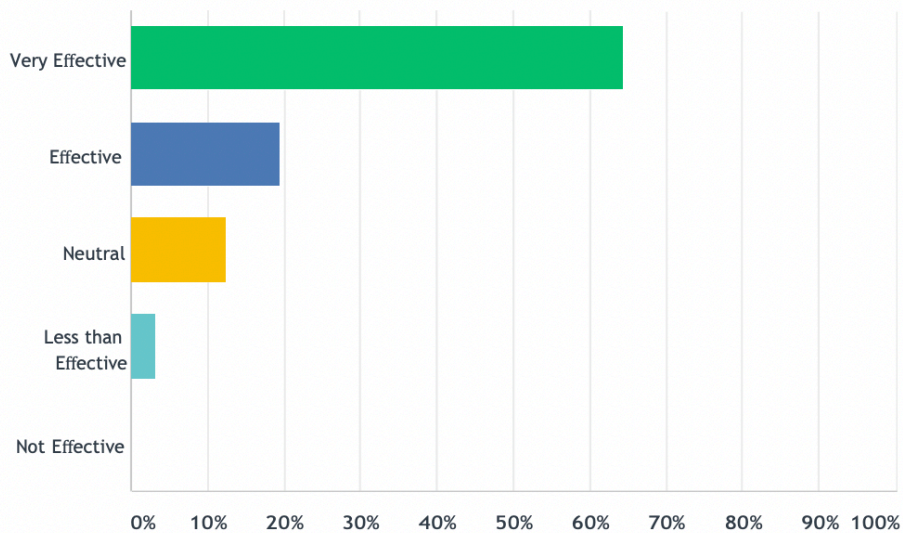
Q5 How satisfied are you with the overall quality of services provided by fire departments in Cabarrus County?

Answered: 183 Skipped: 178



Q6 How would you rate the overall effectiveness of fire and rescue services in Cabarrus County?

Answered: 183 Skipped: 178





# Cabarrus County Fire Service Strategic Analysis

## August, 2020

Q7 Please list up to five (5) single words that you believe represents  
your perception of the fire and rescue services in Cabarrus  
County

Answered: 183

Skipped: 178

### Word 1

un-organized  
Fast  
Reliable  
Strong  
Competent  
RESPONSIVE  
Adequate  
Helpful  
Prompt  
Knowledgeable  
Prompt  
Competent  
Underfunded  
Helpful  
Decentralized  
good  
Inconsistent  
Responsive  
Reliable  
Dedication  
Reliable  
Brave  
Dependable  
Expensive  
Knowledgeable  
Great  
Outstanding  
Dedicated  
Responsive  
Professional  
strong  
Excellent services  
Competent  
responsive  
Professional  
Quick  
Hero  
Efficient  
Committed  
Fast  
Available  
Loyal  
Respectful  
Dependable  
Prepared  
Informative  
5/22/2020 11:21 AM  
Timely manner  
Prompt  
Aware  
Courageous  
Underfunded  
Dedication  
Bravery  
Heroes  
Professional  
Dedicated  
Trustworthy  
Loyal  
Professional  
Trustworthy  
Available  
Reliable  
Independent  
"waiting  
Fine  
Dedicated  
Clean  
Competent  
Safe

Compassionate  
Professional  
Quick  
Not a volunteer Dept anymore. It's a  
paid department.  
Dedicated  
Great  
under funded  
Committed  
Need more participation  
Quick  
fast  
No answer  
Helpful  
Local  
Quick  
Responsive  
fire great  
Responsive  
Selfless  
Caring  
Quick  
Professional  
Dedicated  
N/A as k haven't used them  
Quick  
Nearby  
Quality  
Trustworthy  
Professional  
Knowledgeable  
Dedicated  
Exceptional  
Professional  
Reliable  
Dependable  
Efficient  
Quick  
Great  
Professional  
Professional  
Reliable  
Professional  
Professional  
Unique  
Fabulous  
Effective  
County  
Volunteer  
Friendly  
Unproductive  
Dedicated  
Active  
Strong  
Dependable  
Dedicated  
Underfunded  
Excellent  
Professional  
professional  
Compassionate  
Dedication  
Limited  
Ready to serve  
Ready to serve  
Honest  
Dedicated  
Good  
Expedient  
Dedication

Professional  
Fire marshal is power hungry  
Slow  
Under equipped  
Available  
Unknown  
Good  
Leadership  
Adequate  
Understaffed  
Under staffed  
Professional  
Dedicated  
Good  
Efficient  
Dedicated  
involved  
Friendly  
Professional  
Efficient  
Leadership  
Quick  
Local  
Intelligent  
Essential  
Community-based  
This  
Na  
Efficient  
Professional  
Efficient  
Professional  
Dedicated  
ready  
Good  
Fast  
Quick  
great  
Dedicated  
Professional  
Professional  
equipment  
Good  
Responsive



# Cabarrus County Fire Service Strategic Analysis

## August, 2020

### Word 2

Territorial  
 Professional  
 Visible  
 Quick  
 Quick  
 Dependable  
 Courteous  
 Professional  
 Professional  
 Dependable  
 Understaffed  
 Fearless  
 Entitled  
 Understaffed  
 Prepared  
 Community  
 Well trained  
 Smart  
 Professional  
 Lots of trucks  
 Fast  
 Patience  
 Knowledgeable  
 Dedicated  
 Helpful  
 brave  
 Professional  
 professional  
 Neighbors  
 Respectful  
 Prompt  
 Quick  
 Effective  
 Dependable  
 Professional  
 Great  
 Responsive  
 Caring  
 Concerned about citizens  
 Helpful  
 Effective  
 Disorganized  
 Commitment  
 Dedication  
 Courageous  
 Respectful  
 Honorable  
 Hard working  
 Trustworthy  
 Efficient  
 Dependable  
 Competent  
 Professional  
 Wavering  
 Kind  
 Available

Safe  
 Competent  
 Caring  
 Reliable  
 Volunteers are run off to  
 make room for paid ( fire ems  
 leo) personal so they can  
 make extra money  
 Professional  
 Limited  
 dedicated personnel  
 Dedicated  
 Need more up to date  
 equipment  
 Knowledgeable  
 kind  
 Kind  
 Responsive  
 Caring  
 med bad  
 Professional  
 Respectful  
 Selfless  
 Professional  
 Knowledgeable  
 Professional  
 Well trained  
 Unappreciated  
 Committed  
 Smart  
 Responsive  
 Aggressive  
 Dedicated  
 Prompt  
 Proud  
 Honorable  
 Direct  
 Nice  
 Responsive  
 Fast  
 Educated  
 Flexible  
 Knowledgeable  
 Duplicated  
 Great  
 Quick  
 VFD's  
 Understaffed  
 Knowledgeable  
 Unorganized  
 Hard working  
 Hardworking  
 Proud  
 Helpful  
 Motivation  
 Short-staffed

Fast  
 Honesty  
 comforting  
 Quick  
 Prepared  
 overstretched  
 Equipped for service  
 Equipped  
 Brave  
 Professional  
 Fast  
 Caring  
 Great departments  
 Under staffed  
 trained  
 Trying  
 Apparatus  
 improvement  
 Antiquated  
 Courageous  
 Trained  
 Effective  
 Effective  
 proactive  
 Helpful  
 Short funded  
 Friendly  
 Safety  
 Caring  
 FDs  
 Helpful  
 Professional  
 Is  
 Professional  
 Courteous  
 Helpful  
 Well trained  
 Loyal  
 professional  
 Thorough  
 Trained  
 Knowledgeable  
 Eager  
 volunteer  
 Prepared



# Cabarrus County Fire Service Strategic Analysis

## August, 2020

### Word 3

Cliquish	Officers are in the	Food
Knowledge	department for what it can do	Dedicated
Friendly	for them or their full-time job	Professional service is
Vigilant	Safer	provided
Friendly	Helpful	Dedicated
Reliable	caring personnel	Busy
Prepared	Selfless	Underfunded
Nearby	Need more daily staff funding	Response
Sympathetic	to fulfill 3 certified employees	Staffing
Efficient	to meet NFPA 1710	Underfunded
Dedicated	Professional	Fast
Appreciated	knowledgeable	Outstanding
"Smoke stacked"	Necessary	prepared
Pride	Trained	Concerned
Well equipped	Thorough	Selfless
Courageous	Well trained	Kind
Respected	Aggressive	Knowledgeable
Low paid firefighters	Considerate	Need
Nice	Caring	Honest
Teamwork	Quick response	Busy
Helpful	Thorough	The
Honest	Understaffed	Na
helpful	Passionate	Education
Considerate	Compassionate	Kind
caring	Strong	Brave
Accessible	Quick	Competent
Knowledgeable	Heros	Courteous
Competent	First class	Invaluable
Thorough	Community-oriented	Skilled
Caring	Reliable	Knowledgeable
Respectful	Helpful	territorial
Courageous	Involved	Knowledgeable
Ready	Well equipped	
Involved	Trustworthy	
Timely	Underpaid	
Knowledgeable	Respectful	
Caring	Compassionate	
Isolationist	Some unorganized	
Underpaid	Quick	
Reliability	Friendly	
Brave	are	
Attentive	Friendly	
Efficient	Quick	
Hardworking	Dedicated	
Trained	Dedicated	
Committed	Professional	
Caring	Inadequate equipment	
Competent	Dependable	
Goodolboy	Integrity	
backup	timely	
Fast	Friendly	
Trained	dedicated	
Safe	Dedicated	
Understanding	Dedicated	
Timely	Kindness	
Hardworking	Prompt	



# Cabarrus County Fire Service Strategic Analysis

## August, 2020

### Word 4

Funded	Friendly
Happy	Knowledgeable
Consistent	Available
Up-to-date	Well trained
Loyal	Quick
Caring	Compassionate
Personable	Life savers
Political	Excellent
Supportive	Skilled
Leaderless	Understanding
Professional	Underfunded
Community oriented	Compassion
Trained	Superheroes
Respectful	Trusting
Family	Efficient
Friendly	No county leadership
blessed	Considerate
Local	Trained
prepared	Under financed
Friendly	Caring
Compassion	Hardworking
Outstanding	responsive
Professional	Diversified
Supportive	Trained
Understanding	Trained
Helpful	Generous
When	Courageous
Courteous	Calm
Helpful	Prepared
Well-equipped	Committed volunteers
Honest	Reliable
Diverse	Busy
Understaffed	Staffing
Comforting	Selfish
Reliable	Knowledgeable
Knowledgeable	Great
Knowledgeable	available
Kind	Responsive
Caring	Dictatorship
Fast	Professional
Courteous	Respectful
while man	More
Willing	Caring
Safe	Underfunded
Trained	Dumbest
Caring	Na
Needed	Responsiveness
knowledgeable personnel	Honest
Caring	Fearless
Better swift water training and	Trustworthy
funding for equipment	Thoughtful
Educative	Underpaid
helpful	Humble
Capable	Responsive
Willing	adversarial
Considerate	Engaging



# Cabarrus County Fire Service Strategic Analysis

## August, 2020

### Word 5

Organized	410 is not effective
Approachable	Quick
Trained	Honorable
Knowledgeable	Knowledgeable
Neighbors	Pride
Nice	Life Savers
Caring	Welcoming
Unappreciated	Wasting money
Willing to serve	Accessible
Efficient	backbone
Smart	Amateur
Professional	Hardworking
Giving	Awesome
determined	Grateful
Clean	Knowledgeable
Dedicated	Loyal
Timely	Loyal
Knowledgeable	Hero's
Friendly	Volunteer
Family	Winning
Awesome	Great pride is shown in
Servants	serving the community
Needed	Trained
Respected	Busy
Professional	Budgets
Family	Disorganized
Responsive	Caring
Noncentralized	Awesome
Helpful	Knowledgeable
There	Serving
Fast	Dedicated
Effective	Outgoing
Quick	\$
Caring	Prepared
Community	Quality
Technical	Question
Thorough	Na
drowns"	Friendly
Capable	Outreaching
Safe	Under appreciated
Neighborly	Intelligent
Respectful	Nice
another of area to cover	Underappreciated
Compassionate	Friendly
Dry hydrant installation to	Supportive
help reduce ISO rating from	
9s to much less	
Efficient	
compassionate	
Reassuring	
Powerful	
Loving	
Sympathetic	
Trained	
Organized	
Effective	



## Cabarrus County Fire Service Strategic Analysis August, 2020

Q8 Please rate how protected (safe) or unprotected (unsafe) you feel from the following:

Answered: 183      Skipped: 178

	VERY SAFE	SAFE	NEUTRAL	UNSAFE	VERY UNSAFE	DON'T KNOW	TOTAL
Business/Commercial fires	52.46% 96	31.69% 58	9.84% 18	2.73% 5	0.00% 0	3.28% 6	183
Residential fires	55.74% 102	31.15% 57	9.29% 17	2.73% 5	0.00% 0	1.09% 2	183
Assisted living facility fires	40.44% 74	24.04% 44	15.30% 28	2.73% 5	0.55% 1	16.94% 31	183
Hazardous materials fires	43.72% 80	28.42% 52	15.30% 28	5.46% 10	0.00% 0	7.10% 13	183
Natural disasters	39.34% 72	33.33% 61	20.22% 37	4.92% 9	0.55% 1	1.64% 3	183
Terrorist incidents	37.16% 68	19.13% 35	22.40% 41	7.10% 13	3.83% 7	10.38% 19	183

Q9 Which of the following statements most represents your opinion:

Answered: 183      Skipped: 178

ANSWER CHOICES	RESPONSES	
Cabarrus County should provide response times within national standards.	77.05%	141
Maintaining low property taxes is more important than quicker response times.	7.10%	13
No opinion.	15.85%	29
<b>TOTAL</b>		<b>183</b>





## Cabarrus County Fire Service Strategic Analysis August, 2020

Q10 Which of the following statements most represents your opinion:

Answered: 183      Skipped: 178

ANSWER CHOICES	RESPONSES	
Cabarrus County should build fire stations where needed in order to meet national response time standards	75.96%	139
Maintaining low property taxes is more important than building additional fire stations.	8.74%	16
No opinion.	15.30%	28
<b>TOTAL</b>		<b>183</b>

Q11 To what extent do you agree with the following statements:

Answered: 183      Skipped: 178

	STRONGLY AGREE	AGREE	NO OPINION/NEUTRAL	DISAGREE	STRONGLY DISAGREE	TOTAL
In the past ten years, the fire and rescue services in Cabarrus County have grown in proportion to the growth occurring within the county.	16.39% 30	37.70% 69	19.13% 35	22.95% 42	3.83% 7	183
Providing quality fire and rescue services is an important part of economic development for Cabarrus County.	60.11% 110	36.07% 66	2.73% 5	0.55% 1	0.55% 1	183
I would support additional funding for fire and rescue services if the additional funding directly resulted in improved service delivery levels for Cabarrus County residents.	47.54% 87	37.16% 68	9.29% 17	3.83% 7	2.19% 4	183



## **Cabarrus County Fire Service Strategic Analysis**

### **August, 2020**

**Q12 List up to two future improvements that would you like to see, if any, in the fire and rescue services in Cabarrus County:**

Answered: 183      Skipped: 178

#### **Improvement 1**

- More oversight of staffing at volunteer departments
- Medical knowledge for Firefighters
- More funding for the volunteer departments
- Training
- Speed up response time
- Increase volunteer support
- Newer trucks
- More paid volunteers
- More funding if needed
- Additional funding for the staffing grant
- Minimum of 3 full time firefighters in areas that currently have Volunteer FD only
- Better Fire Marshal Leadership
- See the trucks staying in its county at lunch time
- Recruiting
- More departments
- More fire stations in high growth areas
- Improved leadership at county level.
- More personnel at station
- New fire station for Allen VFD
- A larger station for our community
- Pay raises over infrastructure
- Quicker response times
- New trucks
- Better training
- Continued advanced training
- Paid firemen
- More visible in the community
- People in community be nicer
- Ensure personnel have necessary training and equipment
- RCCC fire grounds expansion with site in Cabarrus
- Frequent drills at and communications with each school served.
- Just keep equipment and training up to date
- Additional paid staffing at volunteer stations



## **Cabarrus County Fire Service Strategic Analysis**

### **August, 2020**

- Make Allen a larger facility
- Sleep quarters for volunteer fire depts if there are not any
- Make sure equipment is at or above standard
- More recognition for first responders
- 2nd Mount Pleasant fire station
- Bigger fire department for GVFD
- More modern fire education trailers for schools to use to teach kids what to do in an emergency.
- Additional stations added
- Central facility to encompass all aspects of training. May cover multiple acres for all the various specialties: aerial, entrapment, water, etc.
- More funding
- Group purchasing
- Staffed rural stations
- Increase in pay for rescuers
- More stations in high volume living areas
- Increased EMS stations
- More visibility to overall community
- 24-hour service
- Do your job and the oath you took
- 24-hour staffing at volunteer departments
- Update the looks on the station
- Additional people
- Keep up the great work
- Fire and rescue college at Rowan Cabarrus Community College
- Georgeville to get a Ladder truck
- County needs to preform audits to make sure training hours are correct. That classes last the hours they say. i.e.: 7 to 10 pm
- Fire hydrants in the hole countywide
- More paid fire fighters in rural areas
- More stations
- Adding additional stations where needed
- 24 hr. coverage in all districts
- VOLUNTEER SUPPORT
- More EMS stations across the county
- Appropriate response times
- Make sure VFD's are supported
- Continued local control of departments
- More qualified ems



## **Cabarrus County Fire Service Strategic Analysis August, 2020**

- Additional funding given directly to each department
- All good
- New equipment
- Volunteer Departments
- School safety programs
- Discontinue the little red pickup, split those funds to all departments.
- More paid responders
- 24 hour paid staff throughout the county
- Water rescue team
- Increased staffing at ALL VFDs from that departments roster. No more 410
- More community interaction
- More money provided to the volunteer stations so they can buy more or better equipment for their members
- More paid firefighters
- Paid county wide department incorporating the existing departments unless the individual town is able to
- Higher staffing
- Stop spending tax dollars on high end appliances at the stations
- Flowe's Store is great
- Competitive salary
- Additional funding for part time staffing
- Another squad 410
- The disbanding of Squad 410 with the money going to the existing FDs to provide additional & far more effective staffing levels.
- Better staffing
- Additional stations in rural areas
- Disband squad 410
- Additional fire and rescue departments in growing areas
- Less county involvement in the operations and decisions of individual fire departments
- Keep independent departments in place
- Funding for training
- County Staffing grants for all rural fire districts, especially Mount Pleasant, which covers a huge rural area
- Newer Trucks
- Departments need to receive more funding from the county to provide adequate fire/medical coverage
- I am content with the department
- More funding for volunteer dept
- Increased community education



## **Cabarrus County Fire Service Strategic Analysis**

### **August, 2020**

- Better staffing
- Better relationship/communication with bordering counties
- Better relationships/ communications with bordering counties
- More funding for the volunteer departments
- Providing additional staffing funds to the Fire departments that are established in their communities so they can continue to grow with the needs of the community
- Firewomen
- Funding according to their needs
- Dispatch closest department regardless of territory
- More staffing
- Get rid of squad 410 and give the money back to the departments
- More Fire Department
- More staffing to the local fire departments
- Equipment upkeep
- More visibility to community especially to rural areas
- More stations
- More staffing for each department
- More staffing
- Centralized organization
- Staffing
- I would like to see the closest department respond regardless of whose district it is
- Do away with squad 410
- Add an additional “Squad” unit / manpower unit.
- More EMS ambulances
- New equipment
- Stop going in districts taking commercial and housing developments to city of concord help support the local fire department
- More funding for the departments that are in place.
- More funding for volunteer departments
- Better funding to our rescue members to retain quality personnel
- More
- Better equipment
- More funding
- Pull the wasteful funding from Squad 410 and increase the VFD staffing grant which hasn’t changed in years
- Additional stations
- Disband squad 410
- More fire houses
- Response times



## **Cabarrus County Fire Service Strategic Analysis**

### **August, 2020**

- 24/7 staffing of 5 members/station
- More stations
- Give back the 30k funding to municipal departments
- More volunteer participation
- Improved stations for the firefighters
- More stations
- More funding to individual fire stations
- More on duty firefighters
- lower ratings in my district
- Additional funds
- Employee retention

#### **Improvement 2**

- Paid professional staffing at volunteer departments
- Response
- Equipment
- Extension of water to get fire hydrants in rural areas
- Stop annexing
- More community outreach
- Allow each department to determine their needs instead of fire marshal trying to dictate
- Countywide dept concept
- More community outreach programs/activities
- If fire departments are successful leave them alone, if they need help county should provide assistance.
- More benefits to firefighters
- Bigger budget for training facilities
- Quicker dispatch times
- Training facility
- More involvement
- Most efficient and up to date equipment
- Fire and ambulance out of same station since both are first responders
- more stations
- Drills and training with industrial hazmat and firefighters
- Whatever they need to stay comfortable at station and in protecting us
- Staffing is at or above requirements
- Fast response
- Funding for more staff
- Once a month open public training clinics on proper fire extinguisher use.
- Leadership other than county FMO
- More events exposing the residents to the first responders in the county: especially children





## **Cabarrus County Fire Service Strategic Analysis**

### **August, 2020**

- More EMS personnel to prevent burnout.
- More people appreciating the services provided
- Improved staffing
- Someone should man all stations
- More funding for volunteer dept
- Add sleeping quarters for 24 hr. staffing
- More community paramedics
- Automatic defibrillators in more public locations.
- 24-hour staffing in all stations
- More education for rescuers
- Additional updated equipment
- More volunteer involvement
- Enhanced Cabarrus County communication center that provided more detail and showed better support to fire and ems personnel
- VOLUNTEER DEPARTMENT SUPPORT
- Tornado Sirens installed around the county
- More dollars for local departments
- Additional funding given directly to each department for additional staffing
- All good
- Remodel or build new stations
- Give addition funds for more staffing in each department
- Additional manpower squads
- Move away from squads
- Properly staffed volunteer stations
- County should assist VFDs with what is asked for as far as station, apparatus and recruitment needs are concerned. Let the VFDs run themselves and assist them as needed
- Keep up with the National standard
- Increase funding to existing volunteer and combo departments.
- Stop having to go the nursing homes 15 times a day
- Reappropriating funding from squad 410
- More funding
- The removal of the county FMO from having any control of the County FDs & the disbanding of the Cabarrus County fire service board.
- Career professionals on duty
- Give squad 410s money to the county fds for staffing
- Volunteer departments being dispatched more with paid city departments
- Funding for equipment
- New Joint emergency services station in Mount Pleasant area
- Newer Equipment
- Staffing is a high priority, to meet demands of the declining volunteer service in some departments
- It is already located close to where I live
- Improved response



## **Cabarrus County Fire Service Strategic Analysis**

### **August, 2020**

- More involvements with high schools to generate more interest in volunteering
- Give the money used for the county pickup truck to the Volunteer fire departments so they can staff functional fire apparatus and keep response times within the national averages
- I think the new stations are fine
- More stations
- Support the local volunteer fire departments instead of hindering their progress
- A rescue truck and ladder truck to the local department
- Disaster training
- Instructions to rural areas on how best to use services if needed
- More people
- More training
- More funding
- Less individualism
- Pay
- I would like to see less duplication of resources. For instance, not every FD needs a rescue or ladder company. Build relationships with area departments with what's best for the citizens in mind... Not who's popular at the moment
- Distribute that money to other departments
- Help local fire department instead of putting them in city limits!
- Stop trying to duplicate services already provided by the local departments. These departments are strategically located and just need better funding for staffing.
- Continued funding of our centers and equipment upgrades
- Support
- Better protection fire uniforms
- More support for volunteer departments from county leaders and FMO
- Give more funding to volunteers departments
- Quicker response times
- Community outreach
- Less duplication of equipment. i.e.: each VFD does not need a Heavy Rescue
- Take all the money that is budgeted for squad 410 and split it between the depts. they do no good on one end of the county being dispatched to the other side of the county having to drive past several depts.
- improved equipment/pay
- More personnel
- Keeping the same members, staffing 24 hours
- A training facility the firefighters could training at.
- more team oriented/long term goal approach from departments
- Necessary equipment provided



# **Cabarrus County Fire Service Strategic Analysis**

## **August, 2020**

### **Q13 List up to two concerns you have, if any, regarding fire and rescue services in Cabarrus County:**

Answered: 183      Skipped: 178

#### **Concern 1**

- Lack of physically capable and certified firefighters in volunteer departments
- Are they ready for high casualty events
- Training
- I have none at this time
- Loss of rural department support
- Equipment
- Midland Staffing their station 2 on the edge of their fire district instead of Station 1 when short staffed
- Add minimum 3 full time firefighters at ALL Volunteer FD's
- Lack of Fire Marshal leadership
- Recruiting
- Not enough departments spread out in community to reduce service times
- Bad leadership in fire marshal's office.
- Financial problems because of the virus. People not able to pay taxes.
- CABARRUS counties lack of transparency
- Getting sufficient water resources in rural areas for fires
- Politics
- I can't think of any right now
- 24 hour paid coverage
- Population of county continues to grow without having ample services; fire, sheriff, ambulance services, and not so crowded public schools
- Ensure personnel are appropriately compensated for their time and commitment
- Ability to serve students, teachers and staff responsively.
- Adequate but always room for improvement
- Squad 410 is a waste of resources
- Pay
- Not enough staff
- Having an ambulance at GVFD
- Pay is in line with the hard job they face
- Influx of people needs additional manpower
- People not giving them room to work.
- Lack of centralization, inter-department organizational planning
- Volunteer departments not having available personnel to respond to calls
- The new work schedule
- EMS BURN OUT
- Hope there are enough fire/emt



## **Cabarrus County Fire Service Strategic Analysis**

### **August, 2020**

- Don't know if staffing is adequate for all parts of the county.
- Unreliable staffing
- Having kids on staff that just want to drive the truck
- Lack of support to volunteer departments from the fire Marshall
- Training
- Staffing
- Offer High School classes in Fire Rescue and Public Safety.
- Enough personal show to a call
- Not enough full-time staffing
- Limited number of resources
- Response time
- Lack of communications in the comm. center
- Volunteer agencies being shut down
- They are spread thin because they are sent as first responders to EMS calls
- Does the county have adequate equipment?
- Too much emphasis on countywide services. Be local.
- Countywide budget cutting dollars to local departments
- No increase in funding given directly to each department for staffing since the initial staffing program was put into place in 2006
- All good
- Response time
- In county training facility for all departments
- Availability of volunteers
- Funding for squads
- Need to pay volunteer stations for staffing
- Staffing levels at some VFDs and the quality of firefighters that respond from some of them
- Squad 410 being utilized properly. There still seemed to be some confusion on what they are used for. There is a lot of money being used for their service so if they are not useful then that money could greatly benefit volunteer stations
- The reliance on part time firefighters coming from other counties after they work their full-time job
- Concord and Kannapolis.
- Squad 410 is a waste of money put that money to other fire departments
- Lack of addition funding
- Wasted \$\$ on Squad 410
- Staffing
- The mismanagement of funds by the County for Squad 410. Its response to calls in the county is ineffective. The falsifying of records for responses and response times for 410.
- Ability to perform needs
- Squad 410 is unproductive
- Not enough full-time staff



## **Cabarrus County Fire Service Strategic Analysis**

### **August, 2020**

- Funds that could be used to support local VFD being used to support the county squad 410
- Disbanding volunteer stations for county run stations
- Enough personnel for responses
- Lack of funding
- The County trying to take over Fire districts
- Lack of staffing at some departments within the county
- Limited personnel
- Raise standards to show a more professional mindset in all dept.
- Raise standards to show a more professional mindset
- Squad truck isn't utilized correctly with the money it cost the county
- The county wide “manpower” truck is a waste taxpayer money
- Rural should expect longer times
- Need more paid staff.
- Under staffed
- The fire marshal is ruining the Cabarrus co fire departments
- Slow response
- Lack of optimum staffing arriving on scene as needed
- Response time
- Response time
- Response times
- Big fish in little ponds, individual fire chiefs and officers that won't work together for standardized operations or centralized budgeting and purchasing
- Staffing
- Staffing, volunteering is becoming very hard
- Squad 410 personnel turnover rate
- Individual departments not supporting county goals
- Support of Council
- That a lot of great fire fighters will get lost when you push the volunteers out
- My concern is the fact that the county has a hidden agenda that involves the takeover of all volunteer departments.
- Lack of or ability to retain personnel
- Lack of equipment
- Lack of personnel
- Wasteful spending in the form of a “squad” truck that is not needed
- County trying to instill a service tax on the community?
- Response time?
- Funding
- Response time
- Community outreach
- Lack of a central comprehensive training facility



## **Cabarrus County Fire Service Strategic Analysis**

### **August, 2020**

- Squad 410's budget should be given to all the fire depts they could hire more manpower that would better benefit the county vs one pickup truck driving all over the county and not really accomplishing anything unless it happens near them.
- Response times
- Understaffed trucks
- Recruitment
- The next generation firefighters
- duplication of equipment purchases

#### **Concern 2**

- City resources having to be pulled to support rural departments
- Do they have sufficient staff
- Equipment
- Annexation
- This scratch my back and I'll scratch yours politics game that's being played with the county fire departments
- Interest of citizen is secondary to Department interest in staying as is.
- Not prepared to handle major incident due to lack of needed facilities & staff
- County works against instead of with fire departments.
- No news updates
- Morale
- Response time
- Big fish/little pond syndrome, each department isolated
- Stricter guidelines and requirements pushing volunteer stations out
- Firefighters leaving to go to Charlotte
- Unqualified staffing
- Have people that want to do this for the right reason
- Funding
- Enough future volunteers.
- County already spends money to fund squad 410.
- Long response time outside city
- equipment needed
- Poor retention
- Money being routed away from volunteer departments
- Need stations closer to interstates
- Funding put in place for staffing in the county that doesn't benefit the communities when it comes to their fire taxes that each household and business pays
- All good
- Amount of personnel
- Better working relationship between county Fire Marshal staff and Fire department
- Funding going to each department
- County wasting money on 410
- Squad 410 has zero impact for residents



## **Cabarrus County Fire Service Strategic Analysis**

### **August, 2020**

- Equipment
- The county not increasing the FD's "staffing grant" ever since 2006 when it started.
- Staffing
- County EM wants to close VFDs
- Squad 410 being used in areas where there are unneeded leaving them unable to support the more rural departments with less staffing
- Property travel Need personnel
- Need to consistently provide fire inspections for nonresidential buildings
- Making sure departments are able to pay part time staff adequately
- Lack of leadership in some departments
- I'd rather have my local fire department showing up in a fire truck with water and equipment in a timely manner versus having a pickup truck with some people on it show up and not be able to do anything.
- Urban is covered well
- Lack of support from the fire marshal office
- Not having a ladder truck for commercial building fires
- Need paid staffing
- Water system in rural areas
- Reliance on volunteers and 4-person pickup covering the whole county
- Pay
- A training center for area fd's to use.
- Why isn't additional money being given to departments throughout the county like it's being given to said 410
- Rescue and ambulance need a station further out
- There are people in place that make decisions for the county departments as a whole and not the individual the departments.
- Unwillingness of local boards to fund the department
- Interest by community
- The volunteer rescue squad was disbanded by the county due to lack of need, then several years later a paid "squad" is put in service that costs much more
- County trying to make a countywide fire tax increase?
- Staffing
- Low staffing
- If money is given back to the depts they can raise their part time pay to retain and attract more employees
- Turnover
- Politics getting involved



## **Cabarrus County Fire Service Strategic Analysis**

### **August, 2020**

**Q14 Please share any specific, individual feedback that you would like to share.**

- Feel the county needs to develop a plan for paid services and reduce it's dependency on city fire departments
- Great department
- Stop trying to be Charlotte
- If this stuff made the news they'd have a field day. Don't play politics with people's lives and property
- Do you still teach free CPR classes?
- Departments are petty and without a coordinated county plan. Budget should be countywide and resources allocated based on need as opposed to district tax base.
- More (funded) community involvement & outreach programs would be helpful
- Compare the information on county website and see where more time and effort were spent, helping recruit for fire departments or showcasing squad 410.
- Allen has responded several times to my home for medical calls with my wife. Very quick and professional and friendly.
- Thank you to the fire and rescue personnel
- Many thanks for your service to the entire County! David Harrison, member of CCS Board
- I so very grateful for my volunteer fire dept and rescue. They've come to me and my family's revue many times. They are each like family to our community
- Bigger and ambulance at GVFD
- Thank you to them for all that they do for the community
- Too much money is wasted by individual department operations and lack of coordination from county due to operations from an FMO with little to any actual fire service (suppression/operations) experience.
- Thankful for the dedicated personnel
- Georgeville fire department is a great community friendly station.
- Not all departments are as I answered the questions!
- George illegal needs to build community respect there is none
- Our dealings with EMS have been extremely positive
- Fix some of the hazardous pot holes in the area... specifically barrier Georgeville road and right at Halls Body Shop
- Harrisburg needs its own dispatch. It's a city. Like Concord Kannapolis. They act as Charlotte or Concord.
- They do a good job and is unappreciated until someone needs them.
- More transparent communication
- Support should be given to departments trying to better they're agencies
- As the county population grows and businesses move in, it is important to expand current county services to keep up with the demand of the new residents.





## **Cabarrus County Fire Service Strategic Analysis**

### **August, 2020**

- Please keep our local VFDs properly funded
- Do Not understand why fire dept. comes for medical emergency.
- In a deteriorating volunteer fire service on a national level. It is never been so important to support staffing for each district. Response times are everything when there is a life-threatening emergency
- Thank you for your service
- Thank you to all emergency personal
- I think this survey should g be about more than just fire services, what about police and other community services (police, public works etc.)?
- No feedback
- I believe Cabarrus county fire and rescue services are some of the best in the state. I think squad 410 is a great idea because of the lack of volunteers these days but it could use some improvement.
- Don't get me wrong. I appreciate our First Responders but I don't understand why they have to have high end appliances in the kitchens & tables that have their stations logo carved or painted on them. That is just my opinion as a taxpayer.
- Squad 410 is a waste of money get rid of it. I can't believe other tax's payers are paying for this. That money could be going to other departments that actually do something.
- County FMO doesn't stand behind vol departments.
- I love them. Needed then at least 3 times in 7 years. Each time they were quickly responsive and wonderful
- FMO needs to quit trying to run all the county FD's & let the AHJ of each handle their respective departments. The county does not & has not ever needed Squad 410, it has been the biggest waste of county tax dollars since it started in 2017.
- I have seen trucks with one guy show up how can they be effective in the job
- Squad 410 is useless, it's nothing but a few guys that can't get hired anywhere full time and they lack in training, no one wants them around. Use the money funding squad 410 and give it to the local Fire departments
- On multiple levels the county trying to control individual VFD instead of supporting what they would like
- Flowe's Store has responded to my house and they were wonderful.
- It is time for the county fire service to progress to modern standards
- Driving around Midland area I see the Squad 410 and then looked up what purpose is and think it should be in different areas of the county
- Using the money from the squad truck to increase staffing grant funding would help to improve the already in place VFDs
- I tried to answer this but your stupid survey keeps saying it's an invalid format.
- Please keep local fire departments. They are a valuable part of the communities they serve. Community driven fire departments truly care about their communities on a deeper level then a city type department
- What's been stated above. I would love to see more automatic aid based on who's closest to calls.
- I feel that more could be done to help the individual departments in the county



## **Cabarrus County Fire Service Strategic Analysis**

### **August, 2020**

- Squad 410 is an efficient way to fill a void in volunteer response.
- All previous concerns have already been discussed.
- A much better co-operation between our local boards and the rescue services.
- The local FD need more County support.
- I believe Cabarrus County Fire Departments work hard to provide the best services for the county, even though the county FMO and other leadership provide little to no support.
- I live off of Roberta Road and Blackwelder and I think that another station house should be closer. I don't know about other areas in Harrisburg but I have no problem having a mileage to support the fire department.



# **Cabarrus County Fire Service Strategic Analysis**

## **August, 2020**

### **B. Fire Service Leadership Input**

Fire Chiefs from throughout Cabarrus County provided valuable feedback as to their perspective about the current fire protection service delivery system in Cabarrus County. They answered questions about what they saw as strengths, gaps, missed opportunities and threats. This SWOT type analysis is effective in capturing a snapshot of where the department sees their capabilities and effectively allows for articulation of improvements that attendees envision necessary to both sustain and advance fire services in Cabarrus County. Those in attendance were asked to help identify what their perceptions were of the greatest strengths of their fire and rescue service delivery system, what were the greatest gaps within the system, what missed opportunities they saw within their delivery system and what were the perceived threats to future success.

#### **Strengths**

- Partnerships/Automatic Aid
- Funding
- Availability of part time staffing (due to larger departments nearby)
- Pride (community/department)
- Junior Firefighter program
- Social Media usage
- Staffing grant
- Quality of performance (personnel and equipment)
- Benefits (pay per call/upfit/insurance policies)

#### **Gaps**

- Part-time personnel being drawn from the same pool
- Challenges in attracting adults to be firefighters due to competition with family/work
- Recruitment and retention
- Guidance on social media usage countywide
- Communications-more training needed on run cards and dispatches (per FD)
- Staffing incidents requires personnel from multiple departments
- Funding needs increasing due to rapid county growth
- No apparatus replacement plan
- Apparatus responding with only 1 person
- Volunteers with pagers only limits when going to tac channel
- Departments don't talk enough/work together more as a collective group. Not all consistent.
- Water supply/availability (3 water systems)
- Fire district set up
- Family environment not as strong. Culture change.



## **Cabarrus County Fire Service Strategic Analysis**

### **August, 2020**

- During severe weather (flooding) limited services. Dependent upon cities. Hard to provide specialized services
- Squad 410 provides more benefit for some rather than others (due to station location). Additional squad needed to enhance staffing.

#### **Missed Opportunities**

- Firefighter prospects not “caught” by age 16 do not stick with the service
- Expansion needed of Concord H.S. program
- Technology-MCT/AVL to fix run card issues, improve communication challenges. Will need IT support
- Training together
- Departments working together for common goals
- Lower ISO ratings
- Would like to see squad arrive on scene more quickly (challenges of location)
- EMS unit reliable coverage-slim coverage a couple times a week

#### **Threats**

- Staffing growth
- Losing people
- Retirees leaving
- Annexation
- Increasing call volume
- Standards affecting volunteers
- Not having qualified personnel needed to operate
- Being able to respond to all hazards-can only do so much
- Depending more & more on part time staffing. Not know who can come and what specialized skills are on hand. Dependent on cities.



## **Cabarrus County Fire Service Strategic Analysis**

### **August, 2020**

#### **C. Firefighter Input and Squad Staff Input**

In addition to the public survey, a survey was provided to firefighters in Cabarrus County to gain their perspective about the fire protection service delivery system. A well representation of career, part-time, and volunteer firefighters provided input in the survey. Almost 100 responses were received from Cabarrus County firefighters and officers for the twelve (12) question survey.

Firefighters were overall satisfied with the quality of services provided, with over seventy-five percent (75%) responding that they were either “very satisfied” or “satisfied” with the quality of fire and rescue services provided for the community. The effectiveness of the fire and rescue services also were identified with a strong approval percentage (“satisfied” or “very satisfied” - 75%).

Respondents were asked a series of questions in the form of a S.W.O.T. (Strengths, Weaknesses, Opportunities, and Threats) analysis. Listed below are summary statements of the areas with the most multiple responses (not in numerical order).

Those responding to the request to identify the greatest strength of the fire protection service delivery system in Cabarrus County provided an array of responses. Key areas of strengths included: Trained firefighters and efficient resources are providing a quality service, response times are adequate, a variety of fire and rescue equipment are in service, and an obvious commitment and pride in the local community fire protection was identified.

Key areas identified as weaknesses and most needing attention included: Communication, leadership and support of all County fire departments needs attention, recruitment of new volunteer firefighters has suffered over recent years.

Key areas identified as the greatest missed opportunities included: Training, inception of the County Squad generated considerable passionate responses, equity in funding for all fire departments, dispatching of closest fire or rescue unit is not consistent, 24/7 staffing methodology.

Key areas identified as the greatest threats to future success included: Firefighters are not joining the volunteer ranks of the service, departments are struggling to meet the needs of the community with existing staffing mechanisms, perception of a push towards “one County-wide Fire Department”.

Respondents were given the opportunity to provide qualitative input based on specific statements. A request was made to provide single words that best represent the fire and rescue services in Cabarrus County. The highest responses included the following: Dedicated, Brotherhood, Reliable, Pride, Quality, Professional, Loyal.



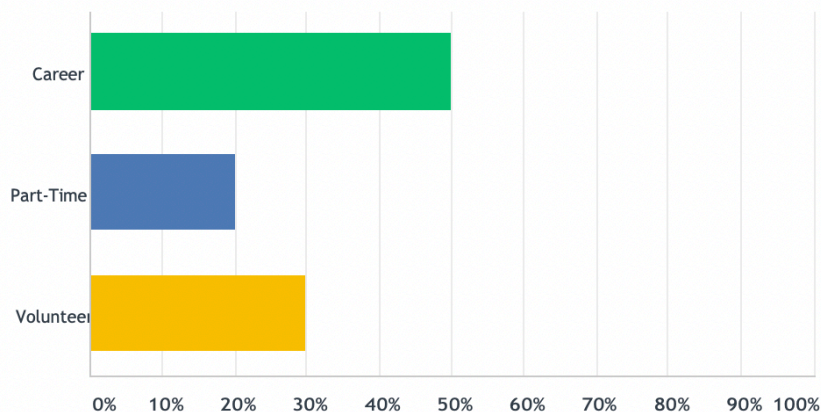
## Cabarrus County Fire Service Strategic Analysis August, 2020

All of the responses were not provided in a positive light. Areas of concern used the following words: Understaffed, Disjointed, Rivalry.

Respondents were asked for any individual, specific feedback. Several responses were generated and can be summed into the following high priority areas: Fire and rescue service delivery methodology, need for more department collaboration, County Administration needs to show support for all of the departments. An appearance of favoritism was suggested throughout the survey. An interesting fact was many respondents felt no improvements were needed to the fire and rescue services provided for the County.

### Q1 What type firefighter member role do you currently hold in Cabarrus County?

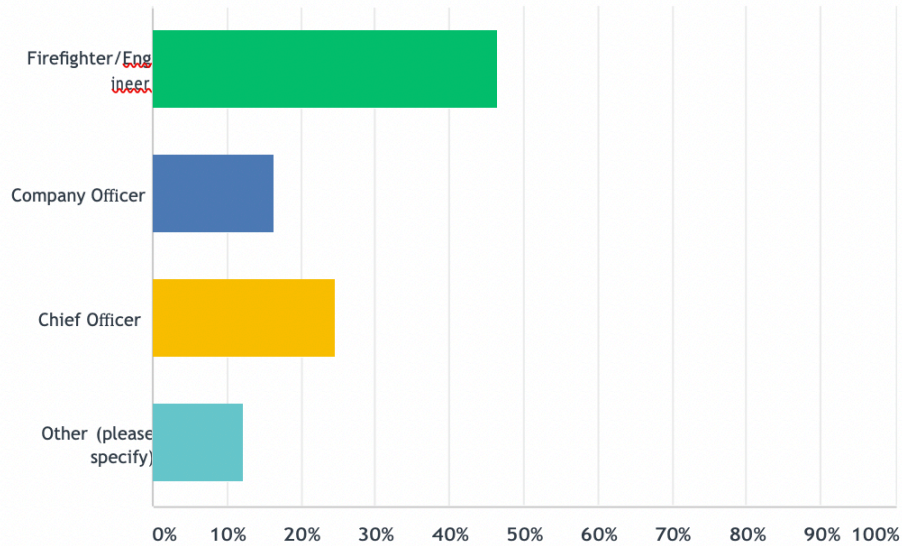
Answered: 73 Skipped: 0



## Cabarrus County Fire Service Strategic Analysis August, 2020

### Q2 What rank best represents the rank that you currently hold?

Answered: 73 Skipped: 0



## **Cabarrus County Fire Service Strategic Analysis**

### **August, 2020**

**Q3 What do you identify as the greatest strength of the fire protection service delivery system in Cabarrus County? What are you most proud of about the fire service in Cabarrus County?**

- Individual Fire Departments with members from the direct community of that dept
- Dedicated people who want to help in their community.
- I believe the greatest strength of Cabarrus County fire serve is the ability to work together to protect our community and their property.
- Ability to work together with neighboring departments to get the job done.
- We are still a close-knit family.
- All members pull together to support each other to get the job done and work with neighboring depts job
- Staffing Grant
- The multiple company's we have to come help on a seen if needed
- The greatest strength is the resources we have especially in rural areas. I'm most proud of our chief officers.
- The reliability of the fire service and the response time
- Mutual aid assistance
- Everything
- I think one great strength the fire service in Cabarrus County has is that there is great equipment and that if needed department with specialized equipment can come in and handle the situation
- Commitment, passion to cooperate with other departments
- Career Firefighters available to supplement the volunteer department
- Modern Apparatus. Community Support.
- Lots of resources available
- The ability the fire departments have to run their respective department the way they see best serves the community.
- High quality gear and equipment
- Mutual Aid
- That most all departments get along with good and are willing to help each other.
- From a career side I like having notes on the computer, which may/may not give us more information then dispatched did.
- Ability to put many people on calls.
- Close proximity to Charlotte allows for benefits of UASI grants and other unique funding. Additionally, auto-aid agreements with other career departments are benefiting our citizenry.
- Each department knows their area and responds in a quick efficient manner, volunteers seem to be the backbone of the fire service in the county, volunteers in our county are proud, dedicated, and motivated.
- Multi department response, sharing of resources





## **Cabarrus County Fire Service Strategic Analysis**

### **August, 2020**

- Equipped fairly well
- Great service without high fire tax rates.
- Greatest strength is the ability to mitigate most incidents within the county. I am the most proud that the major municipalities work well together
- Team work
- Public support and resources
- The most up to date equipment within my department. Serving such a diverse rich community
- Volunteers
- Quick response and level of expertise
- A constant state of readiness maintained by crews to respond to any situation within our community
- Our ability to have 2 stations staffed to provide optimal coverage to our shareholders. (Odell)
- The automatic aid between Concord, Kannapolis, and Harrisburg.
- Performance on incidents
- Our personnel and equipment. Over the last few years several departments have made improvements in their ISO ratings to help the customers within their respected districts.
- Crews that are at the stations ready to respond at all times.
- Great organizations
- I feel that we have well equipped and capable volunteer departments that provide excellent service for a very low cost to our communities.
- Departments willingness to assist other depts
- Lucky to have some great equipment and be well funded
- Community based
- Amount of Career FFs working part time at Vol FDs.
- Competent leadership in management levels of the county is needed in order to become effective
- Commitment to the members of the department.
- Ability to respond to areas of need within 4 minutes. We're still a brother/sisterhood; we always take care of one another.
- Always ready to assist the community
- Most of the volunteer Dept's in the county still have good staffing. I'm proud to be part of that.
- The dedication and aggressiveness of our members
- Our volunteer departments are outstanding in response times and training. I'm most proud of our ability to get quick on scene times anywhere in the district because our firefighters could be coming from anywhere, not just the station.
- The Volunteer Departments in this county have stood the test of time and still answer calls all day every day, 365 days a year, most with limited part time staff and volunteers.
- That we have some of the best firefighters, and some of the best equipment. Also, we have people that know how to use the equipment.



## **Cabarrus County Fire Service Strategic Analysis**

### **August, 2020**

- Senior men have stuck with and remain in the service. Departments are able to leverage pools of Career firefighters due to the proximity to Charlotte, Concord, and Kannapolis
- its membership in each community
- Brotherhood
- Pride
- The service that is provided.
- Cost effective
- Cost effective
- The professionalism and knowledge from my dept and surrounding ones
- I think the greatest strength of the fire service in Cabarrus county is the integrity, professionalism, and work ethic.
- Dispatching 5 departments on structure fires and closest departments on CPR
- The ability to provide high customer service in response within the fire district and the surrounding response areas.
- Dedicated firefighters
- A lot of firefighters in the county are passionate about the job
- Strong Tradition of solid firefighters the Cold Water Fire Department upholds
- The response times
- Individual department identities



## **Cabarrus County Fire Service Strategic Analysis**

### **August, 2020**

#### **Q4 What do you identify as the organizational weakness needing most of the attention within the Cabarrus County fire service? Where is the greatest gap?**

- Communication and support of county Fire Marshal Office to individual depts
- Lack of leadership and assistance from the fire marshal's office. Current leadership is very divisive and fire departments feel like they must constantly be on the defensive which puts a strain on department relations and impacts the overall level of service.
- The biggest weakness is the communication between the Fire Marshal Office and the fire departments. Run cards being changed without notifying the department to increase Squad 410 response numbers.
- Lack of communication between the FMO and the fire departments.
- The amount of funding each department receives to be able to staff each department 24/7.
- Lack of having someone available to respond to calls at all hours of the day and night
- Funds
- Accountability
- Finances cod gear and radios which leads to short comings and communication problems
- Some departments have old equipment that needs to be replaced
- Notes not being put in Active911
- Communication
- Weakness- the lack of people volunteering these days. It's sad to see that many don't volunteer anymore and those departments are hurting.
- Lack of effective staffing, closest department not going.
- Departments purchasing equipment / apparatus that they have no need for.
- Strong FM Office. Lack of vision/communication to FD's.
- Staffing lacks in many of the volunteer stations. Getting additional resources when needed can be a challenge. Also, the various districts don't want to play nice with each other so the closest appropriate resources may not always be responding. Last, no standard across the county for training and being able to respond to calls.
- Some fire department being to territorial. Not using the closest resources.
- To match the benefits that Police retirees receive
- Dispatch.
- Money to put FF on a Fire Truck not a pickup truck running round the county.
- Using GPS to send the closest truck. Not just set tones off because a " fire house" is closer.
- Giving in to pressure from very small numbers of the public regarding COVID
- Our greatest weakness is the lack of volunteerism in the area and the newer requirements/standards to perform fire services. Most of the volunteer departments are in the transition to paid employees; which limited funds and lack of volunteers often means little personnel response.



## **Cabarrus County Fire Service Strategic Analysis**

### **August, 2020**

- County should support the volunteer departments; the county shouldn't reject any ideas from a department trying to better their responses or resources
- EMS/Paramedic level FF on municipal apparatus.
- Day time help for Volunteer Departments
- Financial support for rural departments.
- The weakness is departments being more concerned about “turf” than what’s best for the customers of our county. The gap is a lack of communication between the FMO, the three municipalities and the volunteer departments.
- management
- Volunteer recruitment/retention in smaller departments and career dept acceptance
- The biggest weakness is getting and keeping volunteers within a volunteer department. The greatest gap is the tension between the volunteers and the part time paid staff within most departments.
- Communication
- Communication between departments and dispatch
- Not taking full advantage of being a self-delivery affect for members to gain extra certification within their own department and its facilities
- Nothing on this side of town
- Staffing at volunteer departments. They need more staffing and less buying of duplicate services. Not every department needs 4 engines, a rescue and a ladder
- County training facility
- Communications is always a weak link in the fire service. We need to do a better job Starting at the fire marshals office down to better communications between departments.
- Getting the recommended amount of personnel to the scene in an adequate amount of time.
- Utilizing appropriate resources and having departments call for assistance when it’s needed
- The greatest gap now is the division that has happened between departments and county leaders. The county squad program and other issues have caused a lot of division that has resulted in department members feeling like the county does not support them and the work they are doing.
- Number of available volunteer firefighters available in the county areas
- Communication and interagency cooperation. Putting the closest truck on the call.
- The fire marshal’s office trying to create a county wide department and their poor communication is a threat
- More personnel at volunteer departments as volunteer numbers are dropping
- Staffing of VFDs on weekends, redraw district lines to better represent response abilities, lack of county resources (EMS and Manpower Unit) in the farthest corners of the county.
- There is no competent leadership in county management for the fire service
- Standardized level of professionalism across departments.
- I've noticed we're moving away from hiring more qualified and beneficial employees in lieu of appealing to the minority complaints.
- Needing more manpower



## **Cabarrus County Fire Service Strategic Analysis**

### **August, 2020**

- The county is trying to go to a County wide career Dept with taxpayer's money but without telling the taxpayers and without the support of the volunteer Dept's. It's like a dictatorship.
- Staffing and allocation of resources
- The VFD need more support from the top down on what the individual departments want, not what the county or FM wants. The individual departments should be getting as much support as possible to get the best response times in their district without having to worry about losing any of it to another department. VFD should also be getting support in ways to increase staffing and volunteers for their individual department, not by sending "manpower" units (410).
- The County FMO's office and Squad 410. The squad concept is a total waste of money and a totally flawed system for providing the "proper" manpower needed.
- I think that not everyone knows what all everyone has, such as for rescue you may have a bunch of equipment two districts away but you may not know about it.
- The Fire Marshal's office is and always has been weak. It lacks leadership or the ability to centralize the service in. Cabarrus County. As a county in transition from rural to urban bold action is needed.
- Inner departmental overlap and cohesion
- Communications, 3 dispatch centers that bounce calls around delays service.
- Communications
- Some departments are held to a lower standard then my personal expectation.
- Recruitment and retention and funding for additional part time staffing with departments. No increase has been given since the start of staffing back in 2007. A \$30,000 is given to each department. This money doesn't even cover one person for 24hrs a day 7 days a week.
- Quality people
- Need increase in budgets so that the individual dept can properly staff, minimum 3 firefighters 24 hours a day at your depts with the higher call volumes
- The greatest gap is the funding for the local volunteer fire departments. I think that the best way to serve our community is by providing more funding to local Fire Departments for better equipment and more part time staffing.
- Recruit young volunteers and offer ways to keep them active
- I feel that taking away the staffing grants have really set back the staffing potential for the municipality fire houses. With this money the ability to place into service the service companies and specialties would greatly increase and attract more potential members to our depts. the greatest gap in the communication between the county and the FMO office on their goals for the county fire services for the future.
- Direct communications between the firefighters and fire marshals and county emergency management
- Getting each individual department additional funding to assist with part time staffing and being competitive to other counties
- Additional funding for each department to provide additional staffing for their district and/or surrounding districts



## **Cabarrus County Fire Service Strategic Analysis August, 2020**

- We don't train a lot together
- Squad 410 is a waste



## **Cabarrus County Fire Service Strategic Analysis**

### **August, 2020**

**Q5 What do you feel like is the Cabarrus County fire service's greatest missed opportunity? What could you be doing that you are not that would make your department much better?**

- Full support by FMO to the individual depts. To make them successful in their direct community
- A training center where departments could train and also train together with other departments.
- Missed opportunity, the money spent on Squad 410 rather than additional staffing at each department in the county.
- I believe a huge missed opportunity was not distributing the money spent to form and staff Squad 410 between the county departments. That money could have been used for additional staffing at each department rather than a 3-4-person truck serving the entire county. As for what could I do to make my department better, I should have spoken out more against the form of and spending the money on Squad 410. However, it was pretty much a done deal before I ever heard of it.
- I could be doing so much more FLSE events if there was money to fund the program.
- To make it easier for volunteers to get their training
- Funds
- The old college rookie school schedule the new block schedule is terrible.
- I am currently not a department
- Have more meetings
- More training
- Not missed opportunity, it's just a change in the fire service for volunteer departments
- Sending closest department, forget district lines
- Training facility to maintain skills
- Creation of specialized response teams that are auto dispatched wherever needed.
- Merging all county departments into one. The problem will be finding the right Chief
- Some areas of the county are not being served by the closest fire department. The county needs to look at new district lines.
- I don't know
- Recruitment
- Money that wasted on squad 410. Paid FF on a Fire Truck.
- Having Squad 410 trained in heavy rescue, giving volunteer departments a heavy rescue that the departments would not have to buy.
- Physical fitness
- Departments who are barely making their staffing demands due low funding arrangements are struggling. Some of these departments boast that they are saving citizenry money when in turn they are not truly providing adequate services.





## **Cabarrus County Fire Service Strategic Analysis**

### **August, 2020**

- Departments should receive support from the county for volunteer for staffing and retention, I personally will continue to train and run as many calls as I am available for to support my department
- EMS, Paramedic level service by fire company
- making a unified dispatch center
- The biggest missed opportunity is utilizing each departments strength to maximize service within our county.
- Medical training
- EMS being incorporated into the fire service
- The greatest missed opportunity is there isn't any desire for the new generation to want to help their community
- Training
- Funding for staffing
- Hold more in-house courses for certifications
- Odell is spot on and second to none!!!
- Closest department responding regardless of who's territory it is.
- Recruitment
- Communications is our missed opportunity. Communicating with the other departments about needs and resources that would make all our departments function at a higher level to better serve the residence of Cabarrus county.
- Consolidated communications center.
- Having appropriate resources respond to incidents county wide
- Better funding for part time staffing at the volunteer departments. Many surrounding counties are far ahead of us with crews of 3 or more staffed at each volunteer station. It is still much more cost effective than full time staffing but also provides excellent community-oriented service since most members live in each respective fire district.
- Equal finding based on dollars not tax values
- Departments with greater capabilities responding to calls on initial dispatch for priority calls regardless of district
- Keeping staffing at the county departments and not moving towards a failing squad concept
- Higher trained personnel for the county squad
- Use of available resources by working together on training and mutual aid use.
- Leadership by example not just words that mean nothing
- Annex VFD districts.
- Read previous answer
- Outreach
- Staff VFDs with actual fire engines instead of 410
- Not letting VFD run with city departments as much as they should. As new neighborhoods are being proposed and our district is being annexed into city limits we are sometimes still closer than the city department and can have more manpower there in the first few min then a city department can.



## **Cabarrus County Fire Service Strategic Analysis**

### **August, 2020**

- Greatest missed opportunity of all time for this county is the county not giving more money to all the departments for additional staffing and coverage levels but instead wasting it on a useless Squad concept that has been an overall failure since day one and an over 100% turnover.
- As a Junior I would like to be able to participate more on calls. I feel like juniors should be department discretion on whether or not they are allowed to participate on certain calls.
- Re-evaluate the Fire districts and re-draw based on response rather than tradition or turf. Full time paid County Fire Chief
- More hands-on training. More volunteer recruiting.
- More realistic training. The burn building creates complacency.
- Using the money that's being used on Squad 410 and placing additional staff at departments that already have the equipment. Additional staffing at each department would aid in better outcomes at emergency scenes.
- Time. You have to pay people now to justify their time spent training or calls. It's tough to get true volunteers anymore
- I believe my dept is doing the best it can at this time
- Being able to provide the best service for our community means getting a truck on the road, staffed with volunteers/part time staffing. Being able to arrive on scene with enough personnel is much more beneficial than waiting on a mutual aid department.
- Recruiting. Encouraging and make the younger firefighters feel ownership in the department
- I feel if staffing money was brought back. A county wide heavy rescue response plan with qualified teams would be beneficial for our county. Each rescue company and ladder company would cover it mutual aid areas on all special rescue assignments and pin ins.
- Better relations with the Fire Marshals
- Training more with other departments
- Additional funding provided to each department that would have helped and currently help these departments provide a better service to their community and help lower their ISO rating
- Attend training more
- Cabarrus should give more money for departmental staffing



## **Cabarrus County Fire Service Strategic Analysis**

### **August, 2020**

**Q6 If changes are not made within the fire service in Cabarrus County, what do you perceive as the greatest threat to future success?**

- Failure of the individual Depts. To serve their direct community
- The loss of dedicated and experienced firefighters will mean a poorer level of service.
- I think the greatest threat to the county fire service is the county board not knowing what is really happening at the department level. The departments only being allowed to tell them what the FMO wants them to hear.
- I feel the greatest threat to the county fire service is the feeling that the FMO is pushing for a county wide fire department. Doing away with any sense of department pride. When you have no pride in your department or the way your department is preserved in the community, do you really care anymore. It's just a job.
- If funding is not provided to the departments to staff 24/7, there is a threat of citizens not getting the help they needed.
- Lack of volunteers to run calls
- Departments closing
- Pushing out all the volunteers that just love to help
- Some getting hurt
- People may not feel safe living in Cabarrus county
- No future volunteers
- Everything, If we don't fix it will all just go down hill
- I don't think that a county wide fire department is the way to go. There are too many unknowns. What qualifies someone for that position, Will they go through a recruit school, who will be doing the training for these people. Each department has its own unique area and they should be able to choose what brand of truck, and equipment they choose and works for them.
- Already happening, life safety to both citizens and firefighters.
- Continued dependency on career departments to provide adequate firefighting force on the firegrounds
- Effective responses to communities with stable or reduced funding.
- Lack of new volunteers supporting the non-paid departments and money for staffing
- Delay in service to areas. Chance of some fire departments being forced out of service rather than merging
- I don't know
- Dispatch is already overwhelmed with the volume trying to do law, Fire, EMS.
- Growth of departments
- Cohesiveness between departments
- The outlying departments will continue to lose volunteers and the departments that have staffing will continue to meet the needs of the neighboring departments.



## **Cabarrus County Fire Service Strategic Analysis**

### **August, 2020**

- The greatest threat to county departments is not being supported by county leaders, I feel that any and all effort should be made to accommodate any department trying to better their resources, assets, and responses.
- Money, loss to revenue, spreading service thin.
- Closing down of Volunteer departments either due to funding or annexation
- While not controlled by the fire service I believe over development is the greatest threat to the fire service and the county as a whole.
- If all departments don't utilize every available resource customers will suffer.
- No more volunteers
- No rural fire protection. County funded fire protection
- Not being ready for calls
- Not enough coverage
- Unsure
- What changes need to be made? Remember if it isn't broke don't fix it. Every department should have at least 2 paid people 24/7 365
- Staffing of smaller departments
- VFD's need to work together or create a County Department
- As fire service organizations we need to learn to communicate better and put aside our pride. If we do not do this we will fail from within.
- Reduced efficiency.
- Customers and personnel could have a negative impact
- Without the full support and cooperation of county leaders, Emergency Management and the Fire Marshal's Office, the volunteer departments will not be able to grow with the changing times and continue to meet their community's needs. We have to learn to work together.
- Injury and death to firefighters and citizens
- Being territorial
- Our dispatch center is focused on law and very little fire. A central dispatch system would be amazing
- Not enough personnel to response to calls
- Neighboring departments unwilling to help each other out, on scene issues with response areas and confusion over who is ultimately in command.
- Recruiting and retention of talent will suffer
- Decreased efficiency of service in unincorporated areas.
- Our high standards and quality of employees will quickly begin to diminish just to meet some arbitrary quota of minorities hired.
- Not having enough people to do the job
- The county commissioners putting a bad taste in the mouths of the chiefs of the volunteer Dept's. Then when the chiefs get frustrated and quit, the Dept's will not be providing the services they need to provide. Have the commissioners work with the chiefs, not against them. One example would be instituting squad 410 without the OK of the chiefs or the taxpayers.
- Moral and future recruitment



## **Cabarrus County Fire Service Strategic Analysis**

### **August, 2020**

- All the VFD eventually being annexed into city limits or other departments trying to take over neighboring fire districts.
- If no changes are made some departments are going to continue to struggle to have part time staffing due to only having limited money to do it with.
- Maybe the interest of younger generations being interested and helping to fill the gaps.
- Lack of a comprehensive plan to recruit new members
- The bigger departments will keep growing and the smaller departments will fail their communities as they get swallowed up or pushed out
- Dying volunteer involvement
- I think everyone is doing fine. Just small improvements can be made.
- The fire marshal's office will attempt to consolidate all departments and try and make a county wide department. Lack of support from with county officials. You only see them when they want something. Most of their focus is spent on finding ways to get more money allocated for squad 410 that is of minimal use to 70% of the departments in the county.
- Quality personal. More money is needed for staffing all departments at the same level.
- Quality personal. More money is needed for staffing all departments at the same level.
- I believe if budgets are increased then the depts are going to fall more behind in staffing as needed
- Community growth not being equal to department growth
- Failure if recruiting with incentives are not addressed. Or go with all paid which means higher taxes.
- I feel you will lose the love of the job and the quality of firefighter than staff our depts now. More money for pay and top of the line equipment also helps out. There should never be a time where money rule our decisions on public safety and how we operate. The citizens deserve more than what's cheapest for the county. The deserve what's the safest for them.
- No or little camaraderie between Concord FD and most Volunteer departments
- I feel that the focus is being taken off of the departments and focusing more on squad 410. Which I personally feel is a waste of taxpayer money
- Additional funding needs to be provided to each department. To help better support a deteriorating volunteer service. There's a greater chance departments will fall short when responding to life threatening situations due to low staffing
- Squad 410



## Cabarrus County Fire Service Strategic Analysis August, 2020

Q7 Please list up to three (3) single words that you believe best represents the fire service in Cabarrus County as of May, 2020.

Answered: 73      Skipped: 0

Word 1		
individual	Good Ole boys	Proactive
Dedicated	Pride	Prepared
<u>Struggling</u>	driven	Professional
Brotherhood	Timely	Proactive
unfunded	Evolving	Pride
Brotherhood	Proud	growing
Remarkable	Growing	Disjointed
People	Poor	Misguided
Timely	Competent	Progressive
Reliable	Disjointed	Prideful
Productive	team	<u>Hardwork</u>
Courage	dedicated	Pride
Young	Going away	Dedicated
Driven	Understaffed	Hardworking
Varied	Passion	Strong
Silo's	Determined	Cool
segregated	Dedicated	Divisive
strong	Dedicated	Rigid
Reliable	understaffed	Brotherhood
Pride	Pride	Passionate
Fun	Integrity	Aggressive
<u>Unrespected</u>	Apathy	Respect
Quality	Understaffed	Strong





## Cabarrus County Fire Service Strategic Analysis August, 2020



### Word 2

community	non-homogeneous	Underpaid
Capable	Unaccountable	Devotion
Interoperability	chaos	Dedicated
Endangered	territorial	Loyal
technologies	Professional	Professional
Busy	Cooperative	Separated
Determined	knowledgeable	Stuck
Honor	Honest	Effective
Responsible	Outdated	Potential
Quick	Efficient	Professional
Resourceful	Education	Na
Strength	Understaffed	Growth
aggressive	Dedicated	expanding
equipped	Unorganized	Unbalanced
County funded	skilled	Mislead
Honesty	Underfunded	Service
Training	Cheap	Respectful
Regressive	Cheap	Commitment
b	Pride	Service
Great	Tradition	Aggressive
Responsible	Fun	Active
Courageous	Old	Passionate
Fast	Forced	Calm





## Cabarrus County Fire Service Strategic Analysis August, 2020

### Word 3

engaged members	Teamwork	old (some management styles)
Underappreciated	Worrisome	Reciprocity
unheard	laid back	Uninteresting
Struggling	Protective	Honorable
shitshow	disorganized	Stagnant
Caring	Professional	professional
Perseverance	Ready	factional
Loyalty	Dedicated	Regressive
Strong	Enjoyable	Expertise
Fulfilling	Hopeful	Personable
Decentralized	Young	Punctual
Disinterested	Professional	Understaffed
Hardworking	Loyalty	Needed
Professional	Strength	Sandboxes
Fun	Competent	Timely
Tough	Rivalry	Disjointed
Tough	Pride	Divided
Professional	Collected	Low staffing
Dedication	Awesome	Na
Underpaid	Effective	Ready
Lost	Honest	integrity
Hardheaded	Eager	



## **Cabarrus County Fire Service Strategic Analysis**

### **August, 2020**

#### **Q8 In your own words, what is the most important component of the mission of the fire service in Cabarrus County?**

- The county FMS should support the individual depts as individual depts to ensure they can protect and serve their individual communities
- Preserving life and property.
- Ability to have the funds and equipment needed to protect our community.
- Protect the community
- To get help to the citizens as quickly as possible.
- To save lives and protect property
- Unsure
- Pleasing the taxpayers and making sure everyone goes home safe
- Life safety
- Being able to respect and respond to incidents around Cabarrus county
- Teamwork
- Everything
- You Keep asking about Cabarrus County, as if it is a one department. I can't answer for those living in other areas of the county cause each department is different in manpower and equipment, leadership and area.
- Community members should be first, not tax districts, boundaries, etc.
- forward thinking planning
- Not aware County Fire Services has one. Response to all hazards with respect to fiscal responsibility.
- Don't know what the mission is
- To quickly serve the citizens, shareholders, and customers of Cabarrus county to the best of our abilities.
- I don't know
- Preserve life and property through education
- To get 3 FF at every fire station in the county. That way we will meet NFPA for personal on the fire scene.
- Save lives and property
- To respond on calls with kindness to the public
- To provide quick and quality services to the citizenry.
- Life safety
- Best qualified performance that brings growth and expertise.
- Recruitment and Growth with Management that stands behind the fire service
- Protection of life and property.
- Doing what's best for the customer. Not calling which department you want, not protecting your area.
- Life safety
- Serve the taxing paying citizens with excellence
- Brotherhood



## **Cabarrus County Fire Service Strategic Analysis**

### **August, 2020**

- Service to the people in the community
- Providing the best possible service for the incident at hand whether it is hanging up a smoke alarm or putting out a fire, we take care of our community
- The most important component is the effectiveness of our service to the public. The public is the main component
- Quick response of trained and staffed apparatus
- Serve the community by responding to their needs
- To serve and provide the most efficient fire service for the residence of Cabarrus County.
- Life Safety
- Providing the best services to the customers
- Service to our communities. That is the reason we are all here, and we should continue to work to provide the best and most cost-effective service to the citizens of our fire districts.
- Save lives and protect property and educate
- The most important component would be a strong dispatch system which lacks greatly
- integrity through highly trained personnel with major experiences
- Saves lives and property by preventing and extinguishing fires.
- Who actually defined the mission????? And what is it?????
- Deliver a high level of service to the citizens.
- Life safety.
- Looking out for the citizens
- Life safety, no matter what the situation. Whether it be a fire, car accident, installing a car seat, befriending young people in the community, etc.
- Staffed rigs at firehouses
- Provide top notch service with the quickest response time in your own district
- All of the volunteer departments continuing to work strongly together, training together, and getting the mission done together.
- Preservation of life is no. 1
- Simple, serve the people of the Fire district always keeping their interest first
- Trained Talent, Paid of Volunteers
- To provide the best possible service to the areas we serve, and responding with professionalism
- Volunteers
- Do the job for them, while being my brother's keeper.
- High level of service provided to taxpayers
- Time is the most important piece. You have to have time to run the calls train and be effective. Paid staffing has to pick up to cover the volunteers lack of time
- Time is the most important piece. You have to have time to run the calls train and be effective. Paid staffing has to pick up to cover the volunteers lack of time
- Leadership to fight for the county dept to ensure they have the money for staffing and equipment
- Provide the best most trained volunteers/part time employees that we can to make sure life safety and property conservation is our top priorities.

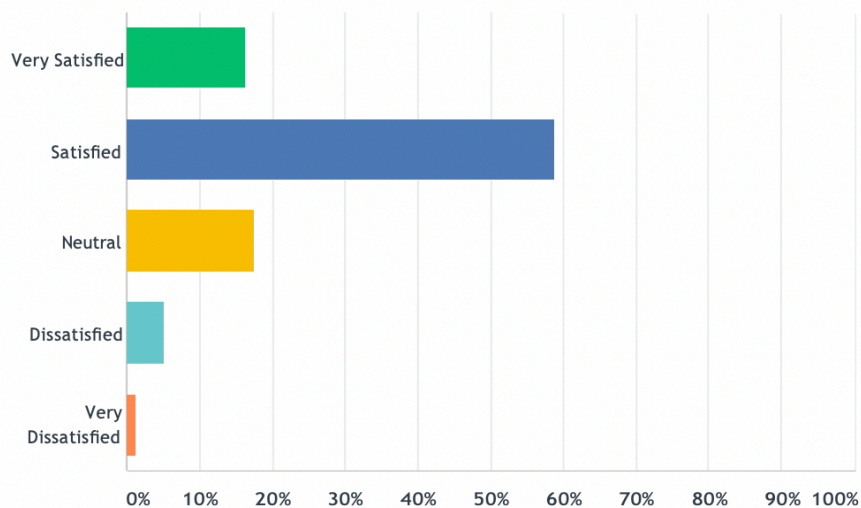


## Cabarrus County Fire Service Strategic Analysis August, 2020

- Serve the community with emergency services in a cost-effective manner
- Aggressive
- Community involvement
- It is our job to provide the best service we possibly can to the citizens we serve. They don't want someone to show up that is incapable. They expect us to do the best job possible. After all they are paying for the service
- Providing Life safety to the citizens
- Life safety
- Keeping strong individual department identities

### Q9 How satisfied are you with the overall quality of services provided by the fire departments in Cabarrus County?

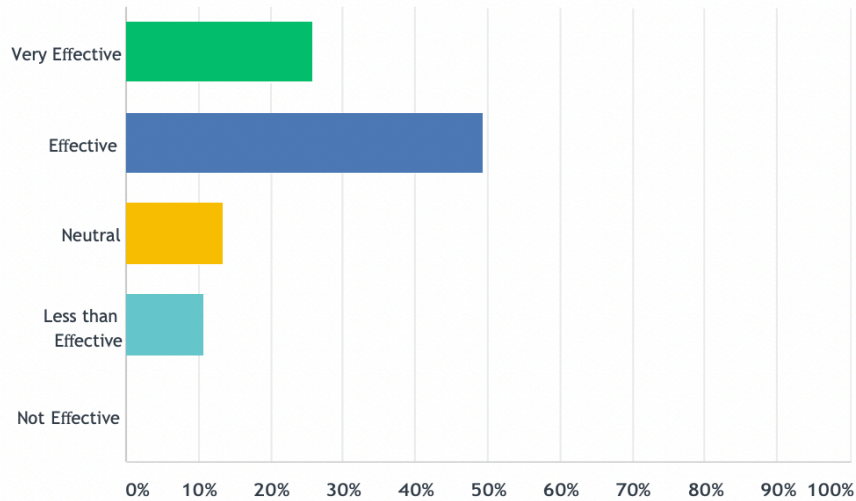
Answered: 73 Skipped: 0



## Cabarrus County Fire Service Strategic Analysis August, 2020

**Q10 How would you rate the overall effectiveness of fire and rescue services in Cabarrus County against your personal expectations?**

Answered: 73 Skipped: 0



## **Cabarrus County Fire Service Strategic Analysis**

### **August, 2020**

**Q11 If you could make only one change to improve 9-1-1 emergency communication overall system in Cabarrus County, what would that be?**

- Responsiveness to radio traffic with clear (not mumbled) communication
- Training dispatchers how to better handle fire department communications.
- Make it operate more like the city of Concord.
- Have Cabarrus County dispatch more like Concord dispatch.
- AVL
- More detailed information on dispatch
- Understanding and knowledge of what we do
- More towers for better communication and our radios be able to go to sheriff channel to take direct to them
- I wouldn't change anything
- No change
- Have better notes in for active 911
- To have dispatch slow down when there are talking over the radio and to actually take their time that way we can hear it and it have to get them to repeat it
- wish it was more uniform like the city of Concord
- Fund AVL for at least a front out apparatus from each station.
- None
- Have one PSAP.
- Increase staff to allow someone to focus on only fire, not bounce between fire and ems or call taking
- To work with the fire department on technology for the fire service. Currently we cannot get new or additional CAD link programs tailored to the fire service.
- They do a great job
- Separate Fire from Law dispatchers.
- One communication center with more personal to work in it.
- using GPS is all front-line trucks, so dispatch knows where they are and who is closer to calls
- Use Concord dispatch for the Fire service. Cabarrus is set up for Police.
- One communications center under county government with board of directors; model from Guilford County or Charleston County.
- I personally would like for dispatch to give a little bot more info pertaining to the call on dispatch, since majority of departments do not have CAD
- Single point of dispatch for all municipalities in the county.
- unified dispatch center
- An all agency communication center.
- Let them concentrate more on emergency services and have less wide range in incoming calls
- update CAD





## **Cabarrus County Fire Service Strategic Analysis**

### **August, 2020**

- Centralized dispatch of all entities
- Add notes to the active 911 app so responders have a better idea of what they are responding to
- More information over dispatch
- Communication to city departments
- Unsure
- They are spot on, they probably could use a few more people on shift but they work hard and do a good job.
- Monitoring ops channels from dispatch on all calls. We can share a channel for ems calls with EMS. There is no need for dispatchers having to listen to 2 different dispatch channels on ems calls.
- One Communication center
- A unified communications system.
- One communications center for the entire county.
- Specific fire/rescue training for dispatchers. I feel that we have law enforcement-oriented dispatchers which makes communications difficult at times.
- Additional dispatchers to handle the growing call volume
- Get more and new dispatchers
- Have county be dispatched via Concord as they are higher trained dispatchers
- Combine all 9-1-1 communications under one agency and make inter department communications easier by ALL units working on one channel, including LEOs. Then teach ICS to EMS and LEOs, and I force unified command on all emergency incidents.
- I'm fine with the system
- Concord manage all fire dispatch.
- A more up to date and responsive cad system
- Just keep improving on the current system
- I can't think of anything.
- Dispatchers and the amount of information FDs get enroute to calls
- dispatchers need to slow down while dispatching, they should repeat back what was said with the time, you shouldn't have to ask for them multiple times over dispatch, need to have full notes added to active 911 (sometimes you only get snippets and have no idea what you are really going to)
- Having one central communication center for Cabarrus, Concord, and Kannapolis.
- Them being able to see where the caller is calling from to be able to trace a phone call
- Combine all PSAPs into one center supervised by and independent board under the County or City but NOT the Sheriff's Dept.
- Priority Radio Service vs Secondary Service
- Combine the communications centers
- Drop cad notes into Active 911
- Not withhold information on calls. Pass all information along to responders. All departments are not fortunate to have computers where this information can be seen.
- Add people to focus on fire dispatch.
- Add people to focus on fire dispatch.





## **Cabarrus County Fire Service Strategic Analysis**

### **August, 2020**

- More dispatchers and give ops channel at dispatch
- Better Notes when responding to scenes.
- Merge Concord, Kannapolis, Harrisburg, and Cabarrus County into one 911 center
- Fire dispatched by concord or have dedicated fire dispatchers or more dispatchers.
- Have the dispatchers give us all the information needed on dispatches instead of just the bare minimum
- Be more consistent
- Additional funding for staffing
- Better quality dispatch
- Make the dispatchers better



## **Cabarrus County Fire Service Strategic Analysis**

### **August, 2020**

#### **Q12 Please share any specific, individual feedback that you would like to share.**

- Seems to be a tug of war between county fire marshal office and individual depts with FMO working on their own dept/squad rather than acquiring the county resources to support the individual depts
- Residents of unincorporated areas should not be treated like useless pawns. County fire departments seem to be held back because of other political motives. Fire departments should be allowed to do what is necessary to provide the best level of service possible for their residents and should receive the backing of the fire marshal's office. For departments that are in need of assistance, the fire marshal's office should be willing and able to help in any way possible.
- If you truly wanted to know you would allow more room for answering.
- I believe the effectiveness of the departments is because the members do what it takes to protect our communities regardless of what the FMO shoves on us. I believe the money spent on Squad 410 is money not wisely spent, but the first step toward a county wide department as certain members of the FMO want.
- After working in another county, CabCo is so underfunded and unable to provide the citizens with the protection and help they need.
- Thanks for asking my opinion
- Funding for departments with low tax base
- Hope it helps
- I'm proud to be a firefighter in Cabarrus county
- No feedback
- Please put better notes in for active 911
- Overall, well done Cabarrus County
- I would like to know what the FMO office for Cabarrus County has planned for the county and the volunteer departments.
- Great service, would like to see a countywide special operations task force like in Rowan. This is a great way to share resources, both logistical and personnel, without taxing any one district. The training is more formalized as is the notification process, versus piecemeal and hoping for the best.
- CCFD's solution to individual districts specialized needs is to purchase equipment instead of utilizing resources already available. Lack of accountability.
- 410 is a poorly executed idea. The location is not the best and they don't offer much for equipment. I don't believe their continuing education training is the best either due to lack of equipment that a true fire department has
- Some fire departments in Cabarrus County are too territorial and it's getting worse by the day. This jeopardizes the service to the citizens and assisting fire departments because they tend to act reckless.
- I think our biggest weakness is our dispatch.



## **Cabarrus County Fire Service Strategic Analysis**

### **August, 2020**

- That need to do away with 410 and give the money to the fire departments. The staffing money has never gone up since it started.
- I believe Midland and Georgeville Fire need to have better trained and more physically fit individuals. Some of those guys are VERY unhealthy and I'm surprised there hasn't been what's considered a "line of duty death", just from 1 of them having a heart attack.
- Many of the outlying departments are struggling with how to get staffing and their district values are not adequate to fund personnel. Other departments who have personnel are trying to maintain staffing levels to provide safe operations. A QRV with 4 guys is nice but not practical with the distance/land area they cover. They could be on the other side of the County when more personnel in a more strategic placement would be more efficient.
- I feel that county leaders could do a better job supporting volunteer stations and staff
- Nothing at this time
- The fire service in Cabarrus county provides an exceptional service.
- In order for this survey to matter the people who sent it actually have to read it and be willing to implement change and do what's best for the customer.
- Volunteer departments need more assistance (i.e. the rimer, northeast, gold hill, georgeville) area
- Training is weak, knowledge is weak, communications is weak, money is weak, equipment is weak
- The uni-cabarrus fire department that has been talked about is total bullshit. You try and shut down departments and you are going to have some pissed off people
- I like the 410 idea and think it should be built upon. Maybe add county staffing at volunteer houses
- This county has some great people in the fire service, but we could be much more. We need to learn to tear down barriers and work to share the burdens of the fire service. We tend to get stuck in our own little sandboxes and not allow others in. We need to give our customers the best possible serve.
- I believe departments need to be less territorial and ensure we are providing the best services to the customers and departments
- Cabarrus County VFD's do more with less every day. The call numbers are increasing rapidly, but staffing assistance and other support is not increasing at the same rate. We have an excellent group of fire departments in this county, but without the support of our county leaders and Fire Marshal's Office the departments will struggle to continue to meet the growing demands.
- Due to training requirements and societies way of thinking towards volunteering we need additional paid staffing throughout the county
- Get rid of 410 and improve dispatch
- 911 needs major work in the county as dispatch lacks greatly
- I've said my peace.
- I enjoyed working in my community
- Take it easy on the taxpayers. I see the commissioners spending tax money on squad 410 and it's a waste. I also see volunteer departments spending taxpayer money frivolously.



## **Cabarrus County Fire Service Strategic Analysis**

### **August, 2020**

It's irresponsible and bordering theft. One department recently bought 4 new dodge chargers at the same time for the Chief and assistant chiefs to drive. Not just for business, but for personal use also.

- 410 is a waste of money. Staff VFDs
- The fire marshal shouldn't be showing favoritism or dislike to any department. He should be there to support us in keeping our districts not in giving them up to other departments. Changing district lines should only be the absolute last resort after all other options are exhausted.
- There needs to be some drastic changes in the FMO's office. Starting with the FMO's office does not need to have any control of the volunteer fire departments, decisions should be up to the Chief's or AHJ's of them. The FMO's office should not have the ability to change departments run cards without proper permission from the Chief or AHJ. Squad 410 needs to be disbanded and those funds properly redistributed to the volunteer departments to provide additional staffing.
- This county has grown and changed but the Fire Service has failed to change with it. We need real progress toward a Countywide Fire service with a consolidated budget that eliminates the haves and the have nots. Our Emergency Management / Fire Marshal office has failed us in this respect
- I need more space to give my feedback. This doesn't allow enough space
- My personal opinion that Squad 410 is a great theory, I feel it is a waste of tax money that could go to the departments in the county with the higher call volume and need the extra staffing.
- I think that every department should receive more funding for part time staffing, because having more trained guys arriving on scene as soon as possible means there is a better chance of providing the best service we can for our taxpayers.
- All emergency services need to always have an open line of communication for the betterment of the county
- I would like to see a county wide rescues response plan and a county wide water shuttle team that involves all tankers on a response card.
- I would like the money spent on 410 divided between the volunteer departments to add additional personnel
- I personally feel that squad 410 is a waste of taxpayer money. If the county wants faster response times and better service to the community then they should distribute the money that is being spent on 410 to the departments of Cabarrus county. Someone sitting in a fire station near them is going to get there a lot faster than 410 and they are in a actual fire truck.
- Departments need additional funding for staffing. Each year the call volume and work load increases. And each department still operates on staff funding from 2006 that's never been increased
- Make squad 410 stop



# **Cabarrus County Fire Service Strategic Analysis**

## **August, 2020**

### **Squad Staff Input**

Current Cabarrus County squad staff were asked for input regarding positives and gaps within their work environment with the desire to determine priority areas to address. The following priorities were established from this input:

Determine a more optimal location to operate the squad from, Provide an appropriate vehicle to better meet equipment and safety needs, Dedicated leadership to direct the squad program, Adjust funding and processes as part of program development in the budget process.

### **Positives**

- Provide critical staffing needs to departments with very limited help.
- Community outside of the fire service is grateful to have us; recognize that volunteer departments are short-handed and appreciate our help.
- Able to drive ambulances in to keep VFDs in service and in operation.
- Response times are quicker than a 60,000 pound truck and can access areas faster.
- Run a lot of medical calls and use the pit crew method and auto pulse on our truck.
- Experienced personnel that are able to make a positive difference for medical patients.
- Provides necessary staffing when VFDs can't get enough folks out.
- Knowing that you have four guys coming.
- Many of the volunteer departments really need us – Rimer, Mount Mitchell, Northeast.
- Helps build rapport across the county – we are bridging gaps in the system.
- Building the esprits-de-corps within the fire service in the county.
- Going to the 24/48 schedule has really helped our level of service and being there at night to help train with the volunteers.
- Pulling departments together for training that might not do so without us.
- Squad program is a great concept. Run all structure fires, pin-ins and major calls.
- Great asset of the county – most departments have welcomed us with open arms.
- Capable, trained, experienced people on the emergency scene when they are needed.
- Making a positive difference to the people that we assist and serve.
- Having auto-pulse equipment on our truck.
- Quality, knowledge and experience of the four folks on the squad.
- Using quick response type vehicle to improve service delivery levels.
- Gets on the scene faster and puts people where help is needed, especially with staffing.



# **Cabarrus County Fire Service Strategic Analysis**

## **August, 2020**

### **Gaps**

- Some departments are hesitant to utilize us because they feel threatened and that we are taking work from them. They can't see that we are a valuable asset they should be using.
- Some would prefer that the money for Squad 410 would be better spent distributed to individual non-profit fire departments.
- Facility is in need. Currently in a house without adequate space to work. Cramped, truck out in the weather, no day room space.
- Location should be better. Location is unsafe and uncomfortable leaving vehicles here.
- We need to be out near the Cabarrus Arena near Mount Pleasant would get us to Rimer, Mount Mitchell. We always go out and go left. We never go right. Northeast has the most need and it takes us 17 plus minutes and they only have one person. Arena is already county owned. Mount Pleasant middle school property is unoccupied and may be a viable option as well. Geographically central is not central to our workload.
- In the future, it would be good to have a second squad in operation.
- Training is difficult for us. We don't have a training budget. We are expected to get training from our volunteer departments, but some of our folks don't have that option. Example is swift water training.
- We don't even have our own SCBA mask. We share masks – 4 masks for 12 people. It is not good for hygiene and safety. Level of quality of turn out gear was low budget. FireDex is not high-quality gear (though we very appreciative of new gear). It fatigues and is the least comfortable gear ever worn. When we buy equipment, spend more time specifying better quality equipment rather than what is least expensive.
- More appropriate vehicle. Our current vehicle is overweight and we are stressing the sidewalls of the tires. We don't need something huge. We need to have a F550 with a rescue body on it. We need to be carrying more than we are carrying.
- Funding is behind the 8 ball. Things we need we don't have access to. Example was extrication tools – full set to use with our one with e-draulic combi tool. Not enough funding to purchase \$1,500 set of tools and not enough space on the truck to add more.
- Some departments would benefit significantly if we operated on a rescue truck instead of a pickup truck with a camper shell. Space is needed to enhance our capabilities.
- Some of the equipment we have is in storage because we don't have space on the truck. We operate a F-250 and we are at the full capacity or over on weight.
- Turnover rate is high. People leave for Concord, Statesville career service.
- We work about 2 working fires per month per shift.
- Do not have RIT equipment on the truck so we have confidence that it is checked and working perfectly. We have to use others RIT equipment and it is unknown.
- Location where we are is center of the county, but we are not where we could help the most. Need to try to find the right location to be best utilized. Feel at Cabarrus Arena would be a much better area. We could hit all the major highways and could get to Northeast and Rimer, Midland. County owns the arena land and there is a large field where there is access to 49 and a hotel is going there as well.



## **Cabarrus County Fire Service Strategic Analysis**

### **August, 2020**

- More living space is needed than what we have now. Sharing with EMS now. Don't have adequate space to work with, meet at, etc. Very limited area to train at. EMS and Sheriff are here 85% of the time.
- Internet service at our current station is very poor.
- Initial program communication was not the best in how it was presented. Some fire chiefs feel the program was dumped on them and have never really bought in. Coldwater, Flowe's Store and (to a lesser degree) Mt. Pleasant will cancel us while we are enroute and dispatch another department. Note – crews are working to train with these departments to build better rapport.
- Communication is not what it should be. Recently, the Fire Marshal has been fully committed to the EOC and we can't get the connection and information and needs that we have – recent example was computer needs. A person managing the program is needed between Mr. Langer and us. He does his best but cannot do but so much.
- Response times. Where we are located, we take 20-25 minutes to get to where we need to go. We need to be out near the Cabarrus Arena area as a more central location to where we are called to help the most. We are at the geographic center of the county now, but we are surrounded by municipal fire departments, who we bring less value to.
- We have equipment needs because we are so limited in our pickup truck. We can quickly get beyond the equipment that we have immediately available to us. It is awkward for us to get equipment from another department. We can't drive the apparatus owned by the private, non-profit corporation fire departments.
- When you put the people, gear, SCBAs, chain saw, RIT pack and hand tools, battery extrication tool – we fill it up. We have equipment in storage, such as water rescue that can't stay on the truck.
- We don't have a dedicated budget for the program.
- We don't have the equipment and space to train at the current station. We have two bedrooms and two bathrooms shared with EMS.
- Our internet is very poor here. There are 8-10 people here at any time and there is not enough room in the building for all we are doing here. The storage building houses our gear, County EMS SMAT trailer and ATVs and UTV. It is packed.
- Some of our equipment is sub-par such as gloves, hoods, uniforms because enough money is not set aside to make adequate purchases.
- Would like to see the squad on more run cards. We are not close to the fire departments that we could help the most. For those that we are closest to, we are not on their run cards even when we could be there first and quickest. We are not utilized by some departments. Most push back can include Allen, Flowe's Store, Coldwater (hit or miss). Rimer, Northeast, Midland, Georgeville call us, include us on their operations – quick to call us and they engage us when we arrive. These departments have added us to run cards. Mount Mitchell utilizes us as well. Odell will call us, but it takes a long time to get there and they have some auto aid.
- Communication from the chief officers of some departments have not helped us with the front-line personnel in the field. We often find out that misinformation or lack of





## **Cabarrus County Fire Service Strategic Analysis**

### **August, 2020**

information is in some of the departments. When we can interact directly with the firefighters in the departments, we see we have a lot of support at that level.

- Need for a more appropriate truck. If we had a rescue or an engine company, we could be more effective. There are four heavy rescues in the county. Odell and Concord are two of these. It would be optimal for us to operate a heavy rescue. An engine company would give much more flexibility in the services we provide. However, we understand that a larger unit will cost us the maneuverability. The lost time is overcome by the higher capability when we get there.
- We can't send people to outside training opportunities because we do not have adequate funding.
- Feel micro-managed at times and with the heavy duties and responsibilities with our administration, we don't always get the information that we need. This is not intentional. Langer has so much going on that it is hard for him to keep up with all that is on his huge plate. We have to make the effort to be seen by our admin because they are spread so thin. They really try but it is a capacity issue. We could benefit by having more responsibility/authority.
- Need for fitness equipment. We have to share with the Sheriff's Department now.

#### **Identified Priorities:**

1. Getting to a station where we can best serve those that need us the most.
  2. Getting into a fire apparatus with the space, safety, etc. to do our job.
  3. Need for stronger defined/developed career ladder for all levels. An Operations Chief is needed between us and the Fire Marshal. Thought there was an officer position when the program first started. Don't know what happened to the position.
- 
1. Location where we could better serve the county.
  2. Adequate for funding – truck, gear, training, equipment.
  3. Increased training for personnel.
- 
1. Proper facility at the best location.
  2. Proper truck that will meet our needs.
  3. Up the staffing to two trucks with a minimum of three in the not distant future. Need to get these few departments on board in order to do that.



## **Cabarrus County Fire Service Strategic Analysis**

### **August, 2020**

#### **4. EXISTING FIRE APPARATUS INVENTORY/CONDITION**

NC Fire Chief Consulting conducted an on-site apparatus assessment on multiple days throughout the ten Cabarrus Volunteer Fire Departments (VFD). The assessments were based on mechanical attributes, road worthiness, and safety related issues of each emergency response apparatus in the county. The assessments were performed by emergency apparatus subject matter expert Tommy Millikan and retired Fire Chief Wes Greene who together have over 70 years of combined experience in the emergency fleet industry.

The goal of the apparatus assessment was to verify and validate the worthiness of the Cabarrus County fleet in consideration of current value and long-term serviceability. The fleet is represented by four different types of apparatus including: engines, tankers, rescue, and an aerial ladder. Included in the summary is a brief synopsis of each department, details for each unit, and a recommendations section for overall improvement and safety of the fleet.

The National Fire Protection Association (NFPA) total life expectancy of a fire apparatus is twenty-five years with preferably fifteen as a front-line apparatus and five to ten as a reserve depending on its condition, situation, and use. The assessment grades assigned to each apparatus were excellent, good, fair, and poor.

##### **Summary:**

Throughout the ten volunteer fire departments in Cabarrus County the total fleet is comprised of forty-four (44) fire apparatus. The total includes twenty-two (22) fire engines which all are considered front-line except one reserve engine at Allen VFD. The next largest type of apparatus is represented by fifteen (15) tankers spread throughout the ten (10) departments. The county departments have six (6) rescue trucks with one considered a heavy rescue at Allen VFD, five (5) medium rescues, and one with no rescue certification at Odell VFD. The county departments also have one aerial apparatus (Ladder 1) at Mount Pleasant VFD.



# Cabarrus County Fire Service Strategic Analysis

## August, 2020

### A. Department by Department Findings



#### Allen VFD

Allen has a total of five (5) apparatus represented by two (2) front line engines, one (1) reserve engine, one (1) tanker, and one (1) heavy rescue.

#### Engines

All three engines are rated with 1500 gallons per minute (gpm) pumps and carry 1000 gallons of water each. E3 is a 2014 Pierce Arrow XT and is the newest in the Allen VFD fleet with 26,948 road miles and 3,420 engine hours. This apparatus was overturned in 2018 and has been repaired and refurbished. E2 is a 1999 KME with 30,977 road miles and 3,029 engine hours. It has two class-2 oil leaks and the front brakes need to be replaced. E5 is 1994 Spartan and is considered a reserve engine with 2,616 road miles and 2,882 engine hours (assume due to age of this apparatus the odometer and hour meter have been replaced; therefore, making these miles and hours not accurate) rust on its structural supports and tires that are worn and out of date. The two front line engines are in in good condition and the reserve is considered to be in fair/poor condition.

#### Tankers

Allen VFD only has one tanker and it is a 2017 Kenworth/Pierce that carries 2,100 gallons of water and its pump is rated at 1,000 gpm. Tanker 11 only has 5,150 road miles and 318 engine hours and is considered to be in good condition.

#### Rescue

Allen VFD has the only heavy rescue truck in the county and it is a 1992 Pierce Lance with 75,851 road miles and 4,340 engine hours. This apparatus was purchased (in used condition) in 2019 as a refurbished truck. It has a class-3 oil leak, the tires are out of date the rear springs are beginning to sag. Overall, the truck is considered to be in good condition.



# **Cabarrus County Fire Service Strategic Analysis**

## **August, 2020**



### **Cold Water VFD**

Cold Water has a total of five (5) apparatus represented by two (2) front line engines, two (2) tankers, and one (1) medium rescue.

### **Engines**

E1 is a 2008 Pierce Velocity with a 2000 gpm pump and a 750 gallon booster tank. It has 22,435 road miles and 1,592 engine hours. E12 is a 1997 Pierce Dash with 1500 gpm rated pump and a 1250 gallon tank with 39,550 road miles and 2,496 engine hours. Both engines are considered to be in good condition and have no mechanical issues noted.

### **Tankers**

Cold Water has two tankers that are both Kenworth/Pierces that carry 2,100 gallons of water and pumps rated at 500 gpm. Tanker 1 is a 2005 and has 7,941 road miles, 696 engine hours, and is considered to be in good condition. Tanker 12 is a 2018 and is the newest apparatus in the Cold Water fleet. It has 3,031 road miles, 150 engine hours, and is considered to be in excellent condition. Neither tanker has any mechanical or maintenance issues noted.

### **Rescue**

Cold Water VFD has one medium rescue truck which is a 2001 Pierce Saber with 12,252 road miles and 1,210 engine hours. It has no mechanical issues noted and is considered to be in good condition.



## **Cabarrus County Fire Service Strategic Analysis August, 2020**



### **Flowe's Store VFD**

Flowe's Store VFD has a total of five (5) apparatus represented by two (2) front line engines, two (2) tankers, and one (1) medium rescue.

### **Engines**

Both engines are Seagraves with 1500 gpm pumps and a 1000-gallon booster tanks. E1 is a 2004 with 42,658 road miles and 2,734 engine hours with tires that are out of date. E2 is a 2009 with 51,420 road miles and 3,171 engine hours. E2's pump transmission has a Class 2 leak and the pump is also leaking water. Both engines are considered to be in good condition overall.

### **Tankers**

Flowe's Store VFD has two tankers in its fleet. Tanker 1 is 2017 Spartan Metro with a 2,000 gpm pump and a 2,000 gallon tank. It has 4,669 road miles and 314 engine hours. Tanker 2 is a 1989 Ford FMC with 1250 gpm pump and a 1,000 gallon tank. It has 28,117 road miles and is beyond the NFPA recommended life use. Neither tanker has any major mechanical issues and are considered in good condition.

### **Rescue**

The department has one medium rescue truck which is a 2006 Ford F-650 with 15,853 road miles. Rescue 1 has no mechanical issues noted and is considered to be in good condition.



# **Cabarrus County Fire Service Strategic Analysis**

## **August, 2020**



### **Georgeville VFD**

Georgeville VFD has a total of four (4) apparatus represented by two (2) front line engines, one (1) tanker, and one (1) medium rescue.

### **Engines**

E1 is a 1999 International KME with 26,457 road miles and 1,984 engine hours. All of the tires on this apparatus are out of date and is in overall good condition otherwise. E2 is a 2006 Smeal with 32,398 road miles and 2,192 engine hours. It is rated in fair condition due to having a Class-2 oil leak and the rear brakes need to be replaced. Both engines carry 1,000 gallons of water and have 1,500 gpm rated pumps.

### **Tankers**

The department only has one tanker and it is a 2003 Spartan Advantage that carries 2,500 gallons of water and its pump is rated at 1,500 gpm. Tanker 1 has 22,670 road miles and 1,702 engine hours. This apparatus has a large amount of rust on the frame rails and all of the tires are out of date. Tanker 1 is considered to be in fair condition.

### **Rescue**

The department has one medium rescue truck which is a 2007 CHE/C5500 with 14,122 road miles. Rescue 1 has no mechanical issues noted and is considered to be in good condition.



## **Cabarrus County Fire Service Strategic Analysis**

### **August, 2020**



### **Midland Fire Rescue**

Midland Fire Rescue has a total of five (5) apparatus represented by three (3) front line engines and two (2) tankers.

### **Engines**

E1 is a 2005 Pierce KME Predator with a 1,000 gallon tank and 1,750 gpm pump. It has 36,708 road miles and 1,628 engine hours with no mechanical issues noted. E2 is 2000 KME Excel with 2,000 gpm pump and 1,000 water tank with 40,816 road miles and 2,587 engine hours. It has Class-2 leaks on the power steering housing. E3 is 2013 Sutphen Shield with a 1,500 gpm pump and can carry 1,000 gallons of water. It has 64,108 road miles and 3,045 engine hours with a rear main seal leak. All three Midland engines are rated in good condition.

### **Tankers**

Midland has two tankers in its fleet. Tanker 1 is 1995 Mack/KME that carries 1,200 gallons of water with 1,500 gpm pump. It has 24,601 road miles and 1,833 engine hours with no mechanical issues noted. Tanker 2 is a 1990 Ford/C-8000 with a 1,250 gpm pump and a 1,000 gallon tank. It has 48,079 road miles with the front tires being out of date. This apparatus is beyond the NFPA recommended life expectancy. With all things considered these two tankers are still rated in good condition overall.





# **Cabarrus County Fire Service Strategic Analysis**

## **August, 2020**



### **Mt. Mitchell VFD**

Mt. Mitchell has a total of four (4) apparatus represented by two (2) front line engines and two (2) tankers.

### **Engines**

E1 is a 2007 KME Predator with a 1500 gpm pump and a 1000 gallon booster tank. It has 25,736 road miles and 2,118 engine hours. The rear tires on this engine are out of date but the truck is rated in overall good condition. E2 is a 1998 KME Spartan Gladiator with 1500 gpm rated pump and a 1000 gallon tank with 50,083 road miles and 7,606 engine hours. This engine has a Class-3 engine oil leak affecting the motor mounts and is rated in fair condition.

### **Tankers**

Mt. Mitchell has two tankers in its fleet. Tanker 1 is a 2001 International 4900 with 500 gpm pump and a 2,000 gallon tank. It has 16,368 road miles and 1,768 engine hours with rear tires that are due to be replaced in 2020. This apparatus is rated in fair condition. Tanker 2 is a 2019 Peterbuilt with a 500 gpm pump and 3,000 gallon water tank. It has 1,806 road miles and 71 engine hours with no mechanical issues noted. Tanker 2 is rated as being in excellent condition.



## **Cabarrus County Fire Service Strategic Analysis August, 2020**



### **Mt. Pleasant Fire Rescue**

Mt. Pleasant Fire Rescue has a total of six (6) apparatus represented by two (2) engines, two (2) tankers, one (1) aerial ladder, and one (1) medium rescue.

#### **Engines**

E1 is a 2007 Pierce Lance with a 750 gallon tank and 1,500 gpm pump. It has 53,301 road miles and 4,271 engine hours with no mechanical issues noted and rated as in good condition. E2 is 2011 Sutphen Shield with 2,000 gpm pump and 1,000 water tank with 35,390 road miles and 2,996 engine hours. It has a Class-2 oil leak and chronic mechanical problems due to being wrecked/overtaken. This truck has been refurbished and is rated in fair condition.

#### **Tankers**

Mt. Pleasant has two tankers in its fleet. Tanker 1 is 1993 Freightliner that carries 1,500 gallons of water with 500 gpm pump. It has 15,212 road miles and 2,292 engine hours with a minor engine leak and rated in good condition. Tanker 2 is a 2014 Kenworth T-4 with a 500 gpm pump and a 3,000 gallon tank. It has 3,548 road miles and 607 engine hours with no mechanical issues noted and rated in good condition.

#### **Rescue**

The department has a medium rescue truck which is a 2002 Spartan with 26,524 road miles and 2,188 engine hours. This apparatus has no mechanical issues noted and is considered to be in good condition.

#### **Aerial/Ladder**

Mt. Pleasant Fire Rescue has the only aerial/ladder truck in the ten departments covered in this apparatus summary. It is a 2000 KME with a 2,000 gpm pump capacity and a 750 gallon booster tank. Ladder 1 has 18,024 road miles and 1,728 engines hours with a Class-2 oil leak at the power steering pump. This apparatus is a 75 foot aerial ladder and is considered to be in good condition.



# **Cabarrus County Fire Service Strategic Analysis**

## **August, 2020**



### **North East VFD**

North East VFD has a total of three (3) apparatus represented by two (2) front line engines and one (1) tanker.

### **Engines**

E1 is a 1999 Pierce Saber with a 1250 gpm pump and a 1000 gallon booster tank. It has 35,212 road miles and 2,234 engine hours. The rear tires on this engine are out of date and it has a significant engine oil leak earning a rating of fair condition. E2 is a 1994 Pierce Dash with 1250 gpm rated pump and a 1000 gallon tank with 23,954 road miles and 1,575 engine hours. This engine has no mechanical issues noted and is rated in good condition.

### **Tankers**

North East VFD only has one tanker and it is a 2018 Kenworth T-370 that carries 2,000 gallons of water and its pump is rated at 1,250 gpm. Tanker 1 has 21,052 road miles and 123 engine hours and is considered to be in excellent condition.



## **Cabarrus County Fire Service Strategic Analysis August, 2020**



### **Odell VFD**

Odell VFD has a total of four (4) apparatus represented by two (2) front line engines, one (1) tanker, and one (1) rescue.

### **Engines**

Both of Odell's engines have 1,000 gallon booster tanks and pumps rated at 1,500 gpm. E1 is a 2015 Pierce Velocity with 52,447 road miles and 3,298 engine hours. E1 has a Class-3 engine oil leak and is rated in overall good condition. E2 is a 2008 Pierce Impel with 60,951 road miles and 4,014 engine hours. It has a Class-2 engine oil leak and is rated in good condition.

### **Tankers**

The department only has one tanker and it is a 1993 Pierce Lance that carries 2,000 gallons of water and its pump is rated at 1,250 gpm. Tanker 1 has 34,614 road miles and 2,337 engine hours. This apparatus has been sold and is being replaced in August 2020. All of the tires are out of date and it is rated in fair condition.

### **Rescue**

The department has one rescue truck with no rescue certification. It is a 2002 Pierce Saber with 45,378 road miles. Rescue 1 has a Class-3 engine oil leak and is considered to be in fair condition.



## **Cabarrus County Fire Service Strategic Analysis August, 2020**



### **Rimer VFD**

Rimer VFD has a total of three (3) apparatus represented by two (2) front line engines and one (1) tanker.

### **Engines**

E1 is a 2009 Pierce Contender with a 1250 gpm pump and a 1500 gallon booster tank. It has 19,548 road miles and 1,144 engine hours. All tires on this engine are out of date and it is good condition. E2 is a 1996 Freightliner FL-80 with 1250 gpm rated pump and a 1200 gallon tank with 24,729 road miles and 1,796 engine hours. This engine's rear tires are out of date and not in compliance with manufacturers recommendations. E2 is rated in fair condition.

### **Tankers**

Rimer VFD only has one tanker and it is a 2016 Freightliner that carries 3,000 gallons of water and its pump is rated at 500 gpm. Tanker 1 has 2,209 road miles and 183 engine hours and is considered to be in good condition.



# **Cabarrus County Fire Service Strategic Analysis**

## **August, 2020**

### **Recommendations for Improvement and Safety**

Fire Apparatus fleet must be maintained in the highest state of readiness in order to immediately respond to an emergency. The provision of a reliable firefighting apparatus is one of the most important capital assets of a fire department and a local government community.

#### **NFPA Life Expectancy**

The Cabarrus County ten (10) volunteer fire departments evaluated in this study have forty-three (43) front-line apparatus and one (1) reserve engine in its current fleet inventory. Seven (7) of those apparatus in six (6) different departments have exceeded the NFPA life expectancy for emergency fire apparatus and several more are fast approaching the twenty-five (25) year mark. See the lists of apparatus and their current age (in years) below that have exceeded the NFPA standard:

- Allen – Rescue 11 (28), Engine 5 (26)
- Flowes Store – Tanker 2 (31)
- Midland – Tanker 1 (25)
- Mt. Pleasant – Tanker 1 (27)
- North East – Engine 2 (26)
- Odell – Tanker 1 (27)

**An aggressive replacement Capital Improvement Plan (CIP) is needed to update the fire apparatus fleet for Cabarrus County. It is recommended that the county departments adopt a CIP and consider taking advantage of joint purchases for multiple apparatus to save on long term costs.**

#### **Apparatus Tire Life and Maintenance**

The NFPA Technical Committee on Fire Department Apparatus has recommended that “tires shall be replaced at least every seven (7) years or more frequently depending on the amount of use”, this requirement was incorporated in a complete rewrite of the 2007 edition of NFPA 1911. Cabarrus County has multiple apparatus with tires that exceed this important standard and should be considered a safety issue:

- Allen – Engine 5 and Rescue 11
- Flowes Store – Engine 1
- Georgeville – Engine 1 and Tanker 1
- Mt. Mitchell – Engine 1 and Tanker 1 (due 2020)
- North East – Engine 1
- Rimer – Engines 1 & 2



## **Cabarrus County Fire Service Strategic Analysis**

### **August, 2020**

**It is recommended that each department strongly consider replacing the out of date tires on the listed apparatus and perform annual inspections on the age of the tires, as well as, tire maintenance for tread wear, tire damage, improper inflation pressure and storage conditions.**

#### Apparatus Braking Systems

The safe operation of fire apparatus is of the upmost importance and braking systems play a key role in that process. Apparatus weight, distribution of that weight, and responding emergency traffic are considerable factors that make adequate braking systems crucial to the safety of responders, citizens, and adequate service delivery. The county has two apparatus that had insufficient brakes at the time of this study:

- Allen (Engine 1) – front brakes need to be replaced
- Georgeville (Engine 2) – rear brakes need to be replaced

**It is recommended that these two engines are taken out of service until sufficient repair can be made to the braking systems.**

#### Other Mechanical Issues

The apparatus evaluation found a host of other mechanical issues that need to be addressed if these apparatuses will continue to respond on emergency calls for service:

- Flowe's Store (Engine 2) – pump transmission leak
- Allen (Engine 5) – rust on frame rails showing long term deterioration of structural components. (Rescue 11) – Class-3 oil leak and rear springs starting to sag (structural issue).
- Georgeville (Tanker 1) - rust on frame rails showing long term deterioration of structural components
- Mt. Pleasant (Engine 2) – Class-2 engine oil leak. This apparatus has chronic mechanical problems due to being damaged in a motor vehicle crash rollover.
- North East (Engine 1) – significant oil leak
- Odell (Engine 1) – Class-3 oil leak. (Engine 2) – Class-2 oil leak.
- Midland (Engine 3) – rear main seal leak

**It is recommended that the above apparatus be serviced and repaired before more long-term damage is done.**

**It is recommended that scheduled systematic maintenance inspections be performed on all Cabarrus County apparatus in the future to alleviate undo safety issues and long-term damage to emergency apparatus. A county wide apparatus maintenance and inspection program would pay dividends for all departments and the county.**





# **Cabarrus County Fire Service Strategic Analysis**

## **August, 2020**

### **5. GEOGRAPHIC INFORMATION SERVICES (GIS)**

#### **ASSESSMENT**

Analysis of current fire station locations indicates that the unincorporated areas of Cabarrus County are well covered both on an insurance distance standpoint as well as a modeled travel time basis. 98.6% of past incidents were within an eight-minute travel time of a fire station. Pockets of higher demand is scattered throughout the fire districts with more intense areas noted in Midland, Mt Pleasant, and the Jackson Park/Allen area. Despite potential municipality jurisdiction expansion only a very slight loss of workload would be experienced by the fire districts.

While responses for medical incidents is a significant portion of the fire district workload, it was found that responding to neighboring districts on mutual aid is not at a level of concern except for the Mount Mitchell Fire District.

Squad 410 is currently based in one area of higher demand at EMS base 2. However, its demand is also higher in Rimer, Mt Pleasant, and Georgeville indicating a potential relocation. Analysis of assembling of an effective firefighting force varies within county based upon the location of mutual aid stations and the roster depth for each district. Flowe's Store had the youngest average age, but the longest 80<sup>th</sup> percentile travel time to the station while Mt. Mitchell had the eldest and the lowest count of members. The factors here should be considered for duty staffing.

The fire district lines should be considered for realignment as new stations in Harrisburg and Midland impact the Flowe's Store district especially.

New stations planned by several fire departments in the county may create a concern of being over resourced. An analysis to minimize the number of stations was conducted based upon the current and planned stations revealed that some planned stations may need to be reconsidered and some current stations should be evaluated for future feasibility.

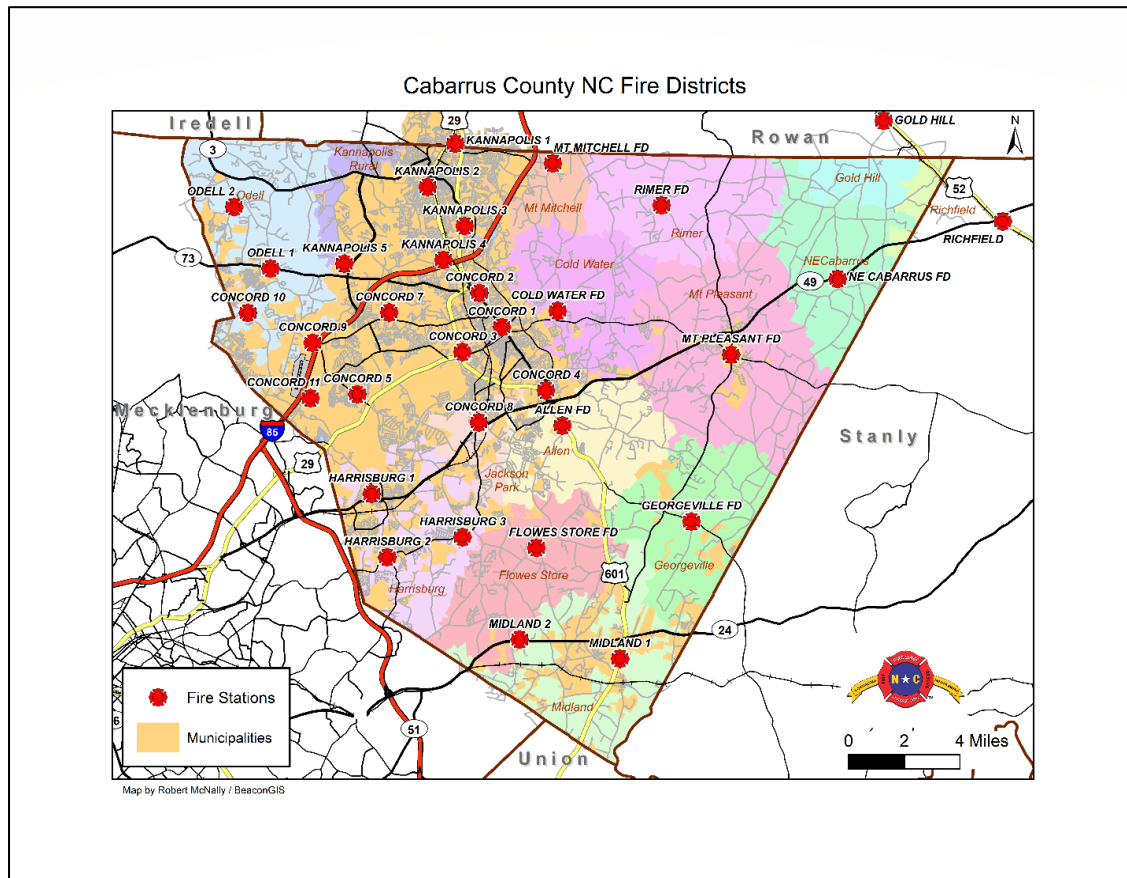


# Cabarrus County Fire Service Strategic Analysis August, 2020

## A. Summary of Findings

### Introduction

The unincorporated areas of Cabarrus County are provided fire service protection from twelve (12) districts. Certain fire districts also provide coverage to municipal jurisdictions such as in Midland. The following maps shows the various fire districts and the incorporated municipalities within the county. In addition, roadways and fire station locations are also featured.



# Cabarrus County Fire Service Strategic Analysis

## August, 2020

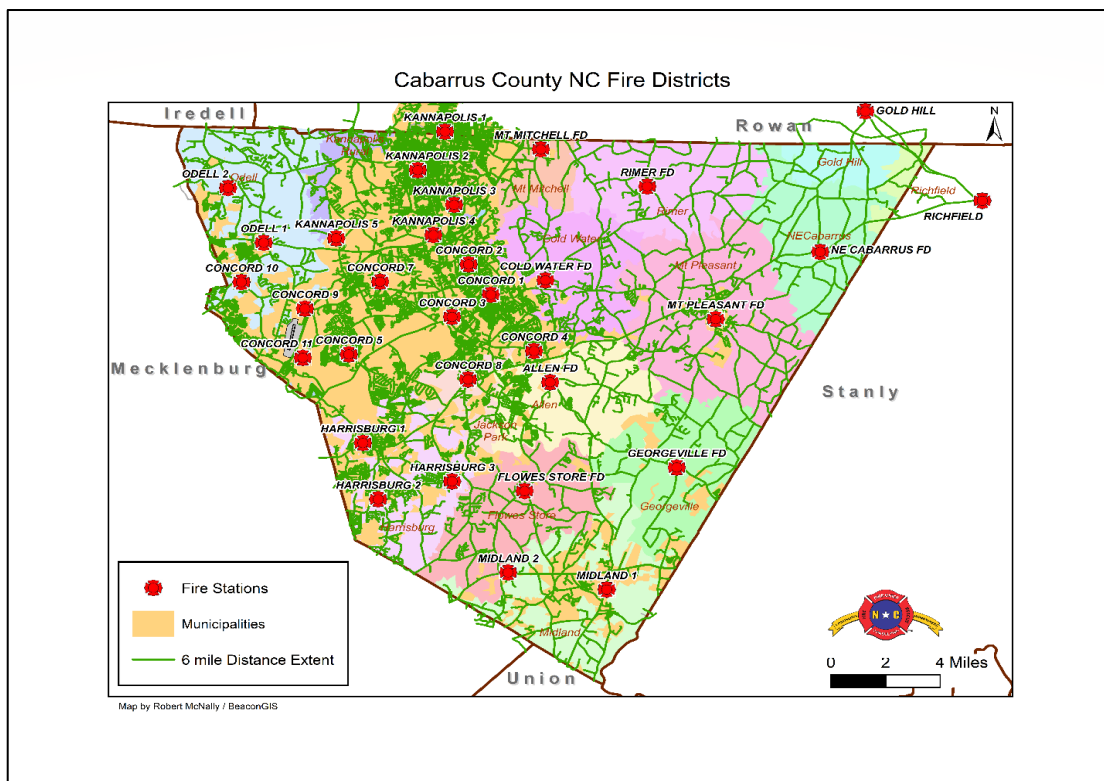
### Coverage Distance

The Office of the State Fire Marshal (OSFM) recommends that a six-mile distance from a fire station is needed for favorable insurance ratings for property owner premiums. The following map shows that no area of the County is left uncovered under the recommendation.

According to County FMO: *In 2006 /2007-time frame, planning for two additional volunteer fire stations occurred. This was due to 2006 ISO inspection conducted by Office of the State Fire Marshal. During this inspection, the Odell Fire District, Flowe's Store Fire District, and Midland Fire District were identified as having area beyond 6 miles. County staff approached departments about building additional stations. During this time, the board of directors for the Flowe's Store Fire Department were not interested in taking on additional debt. This led to the building of Midland Station 2 and modifications made to both Midland and Flowe's Store Fire Districts boundaries in 2008.*

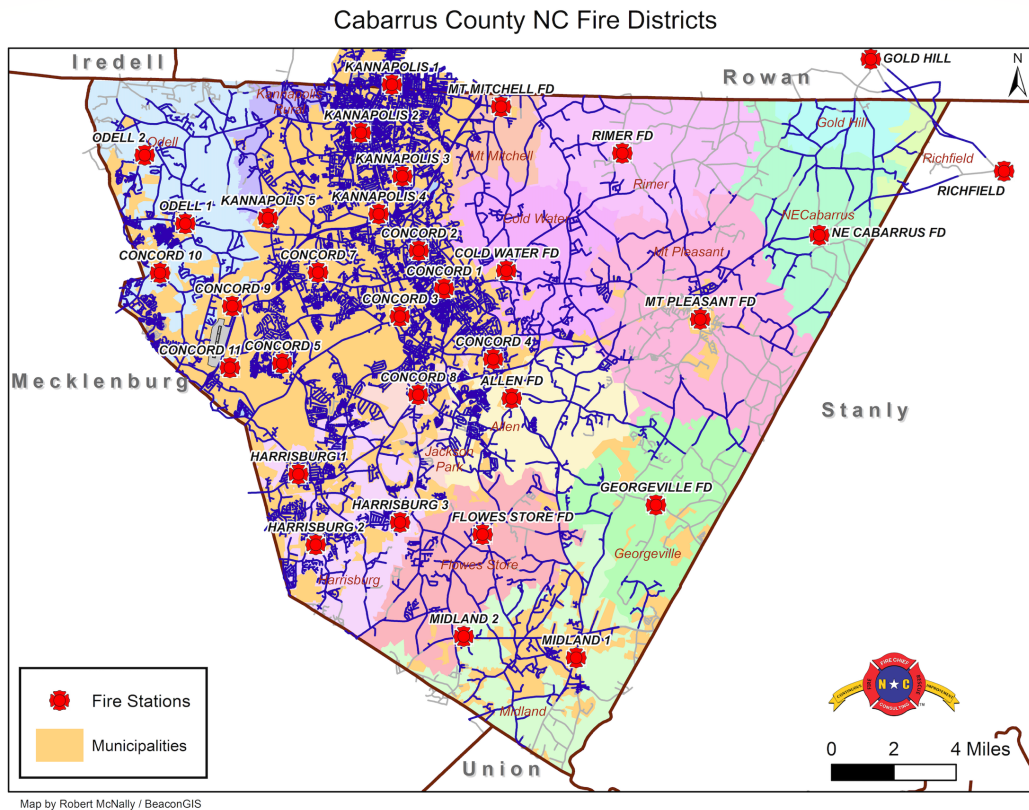
While the changes made ensured there were no properties beyond 6 miles from a station (unprotected), it did not fully address closest unit response around Midland Station 2.

**There are properties identified as being over 5 miles from Flowe's Store Fire station and this area should be reevaluated again by county staff.**



## Cabarrus County Fire Service Strategic Analysis August, 2020

There is overlap of the six-mile distance extent between stations especially near the municipalities. Areas on the eastern side of the county and the very north by Iredell County do not. However, it should be kept in mind that fire stations in surrounding counties except for the Gold Hill and Richfield fire stations were not included in this coverage analysis.



### Travel Time Coverage

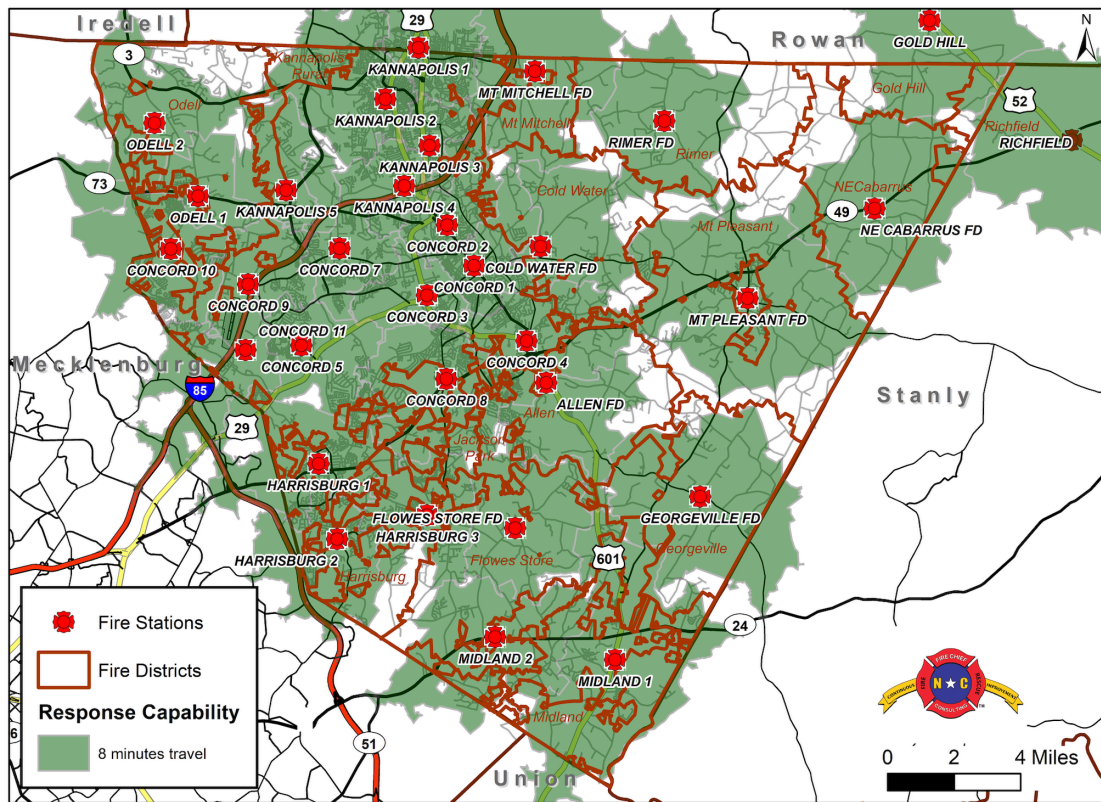
The National Fire Protection Association recommends in the 1720 Guideline that volunteer rural fire agencies respond within 14 minutes to a structure fire. Using a six-minute assembly time for firefighters to be dispatched, arrive at the station, don gear, and board apparatus in sufficient number, an eight-minute travel time is used in this model. The model does not account for variances such as traffic, weather, construction, etc. but it does respect the speed limit posted and one-way restrictions. Time delays for turning apparatus, leaving the station, and slowing for intersections has been inputted into the computer model. The following map illustrates the extent of travel time coverage from the fire stations that serve the county.



# Cabarrus County Fire Service Strategic Analysis

## August, 2020

Cabarrus County NC Fire Districts



Much of the county can be reached within the eight-minute travel model but gaps are again noted on the northeast side of the county, near Iredell County, and between Harrisburg and Midland. There are gaps between Mount Pleasant and its neighbors as well as Rimer and Northeast Cabarrus Fire Districts. Of the service demand noted in the following map, 98.6% of the incidents are within the travel model.

### Travel Time Coverage Overlap

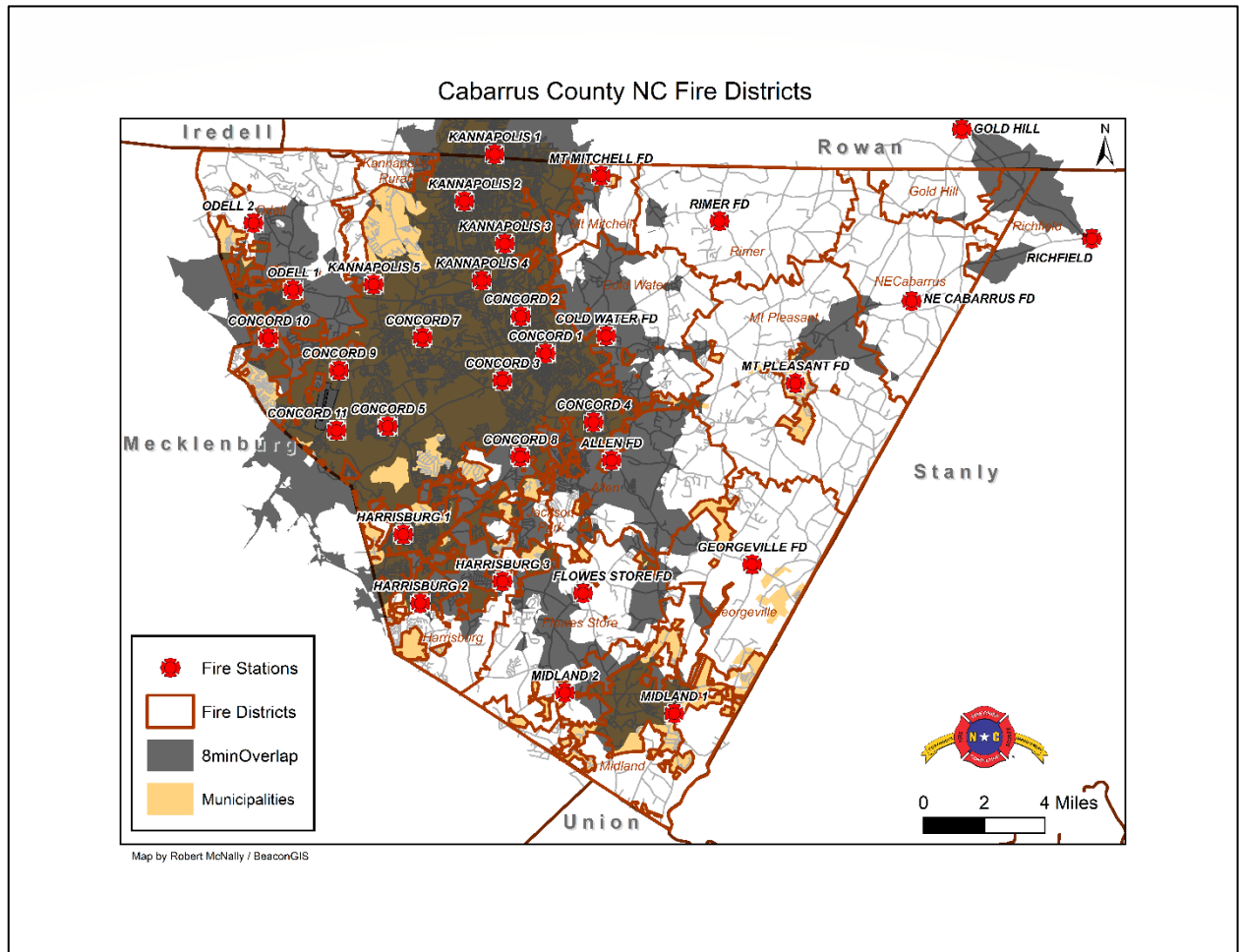
Overlapping of the travel model can be seen in the areas within and near the municipal fire stations. This coverage overlap can be beneficial in the case of a structure fire but excessive overlap can be cause to evaluate the fiscal responsibility of continued operations in stations that are in areas that have saturated coverage.





# Cabarrus County Fire Service Strategic Analysis

## August, 2020

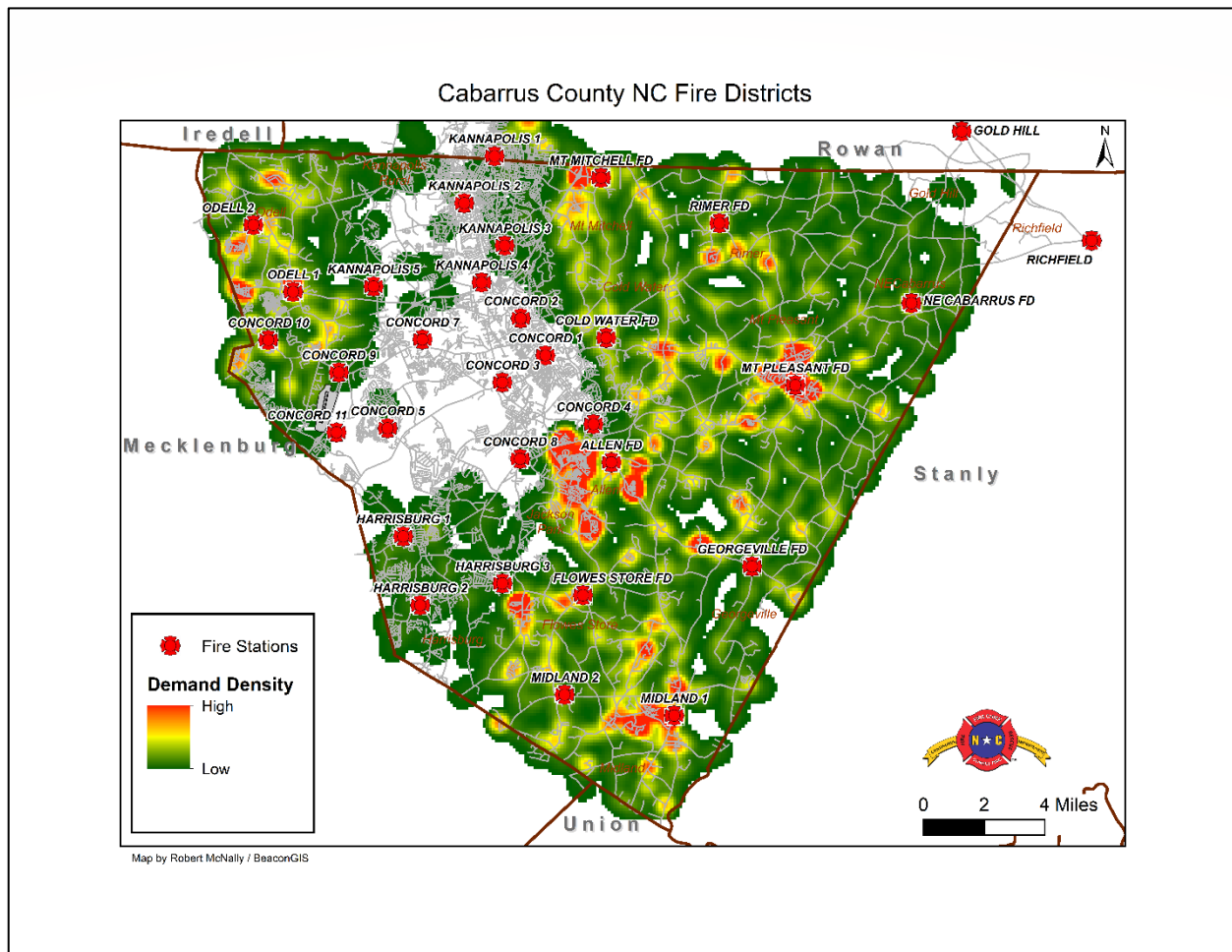


### Service Demand

Incident data for all the fire districts from the beginning of July 2013 to the end of June 2018 were geographically located. The locations were then analyzed for number of incidents per square mile to generate a density of incident locations as shown in the following graphic.



## Cabarrus County Fire Service Strategic Analysis August, 2020



Service demand for the fire districts is expectedly more voluminous in areas closer to the municipal areas where development has occurred. There may be other special areas such as nursing homes, remote workplaces, and tourism sites that may also show more intense service loads.

### Municipal Territory Workload Loss

There are areas of the unincorporated county that potentially could become annexed into municipal jurisdictions. Evaluating the workload loss in the annexable areas indicate that an overall workload loss would equate to 4.9% but some of these annexable areas are in Rowan County (Kannapolis) and others such as Mt. Pleasant would still be served by the fire districts in this study. Therefore, the net loss of fire district workload in the County is 1%.





## **Cabarrus County Fire Service Strategic Analysis**

### **August, 2020**

#### Medical Mutual Aid

Emergency medical incidents account for a significant portion of service demand as detailed in another section of this report. As a result, a concern was that fire districts may be responding to a large amount outside of their district. The following table details the percentage of medical emergencies handled outside of district areas compared to the overall emergency medical calls handled within each district.

<b>Dept</b>	<b>Medical MA</b>	<b>Total Medical</b>	<b>%MA</b>
Coldwater	84	974	8.6%
Flowes	45	1367	3.3%
Georgeville	4	1022	0.4%
Mt Mitchell	176	1056	16.7%
Mt Pleasant	22	3281	0.7%
Midland	46	1520	3.0%
Northeast	7	102	6.9%
Odell	80	1628	4.9%
Rimer	7	567	1.2%
Allen	14	2631	0.5%

Mt Mitchell FD has the most mutual aid medical responses, followed by Coldwater FD, and Northeast Cabarrus FD. The most medical mutual aid for these districts were in the neighboring municipality.

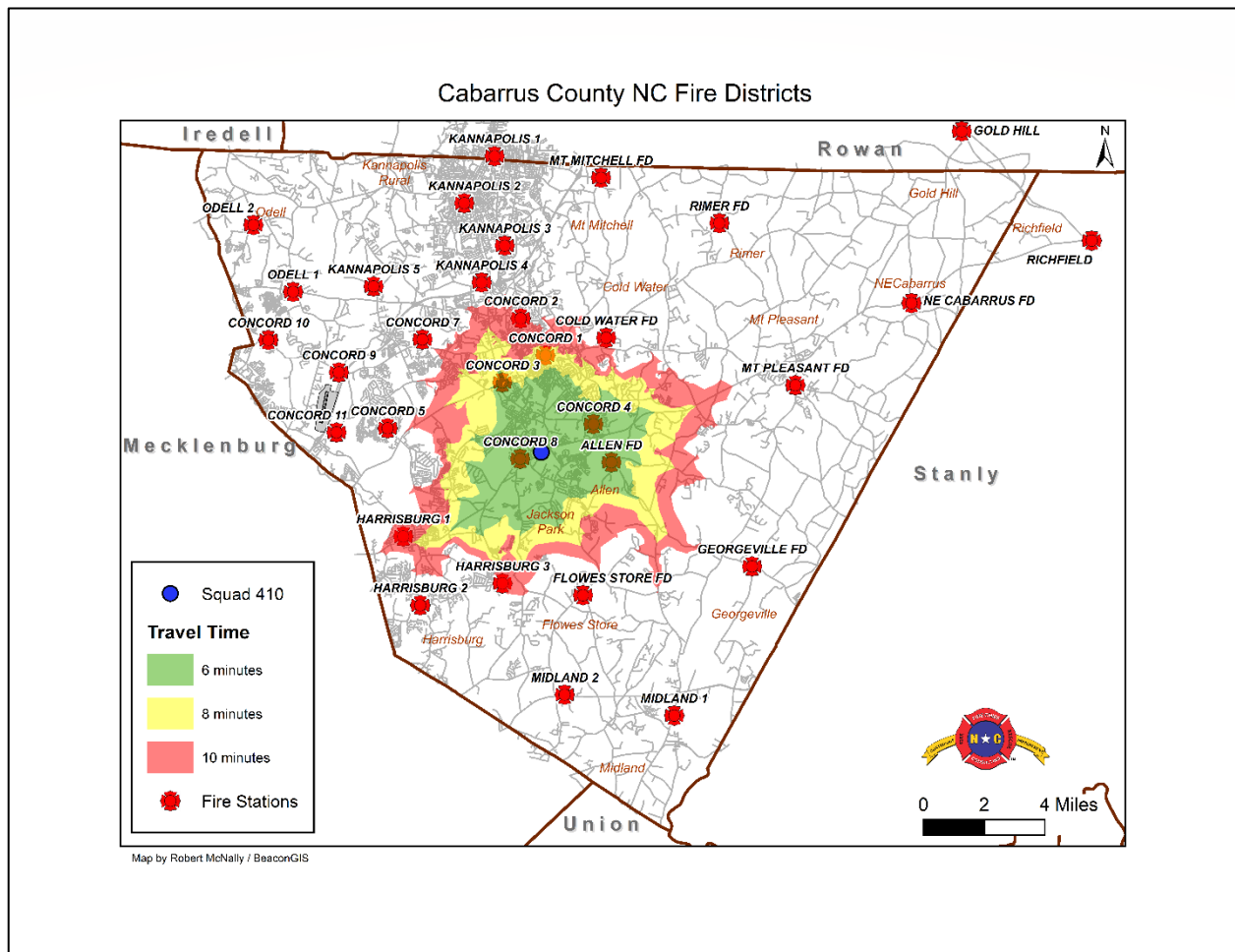


# Cabarrus County Fire Service Strategic Analysis

## August, 2020

### Squad 410 Coverage

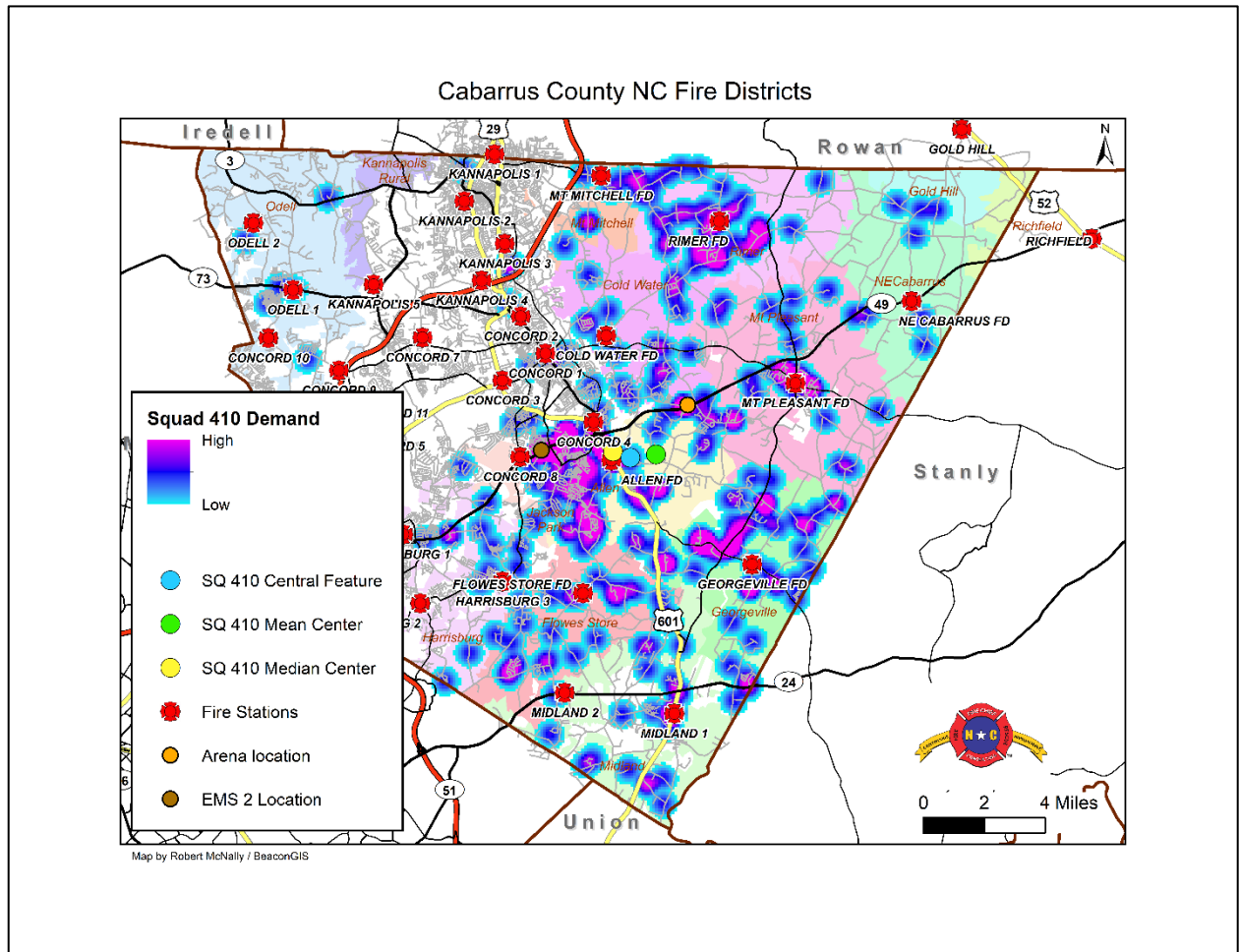
This Quick Response Unit is stationed at EMS 2, near Concord Station 8. While incident data for Squad 410 was supplied indicating its response performance, it was not clear if all the responses were originating from the station or from elsewhere such as another call location, while traveling, while on an errand, or the route taken. Being a lighter vehicle, it can travel at higher speeds. To model it's expected reach from the station, the speed parameter was increased by ten miles per hour. The resulting modeled reach extent is shown in the following figure.



Much of the central area of the county can be reached when the unit is responding from its based location. When comparing this location to the service demand volume for the squad, several measures of dispersions indicated that the area near the Allen Fire Station was central.



## Cabarrus County Fire Service Strategic Analysis August, 2020



From the current location, 43% of the squad's demand is reached within the ten-minute modelled travel time.

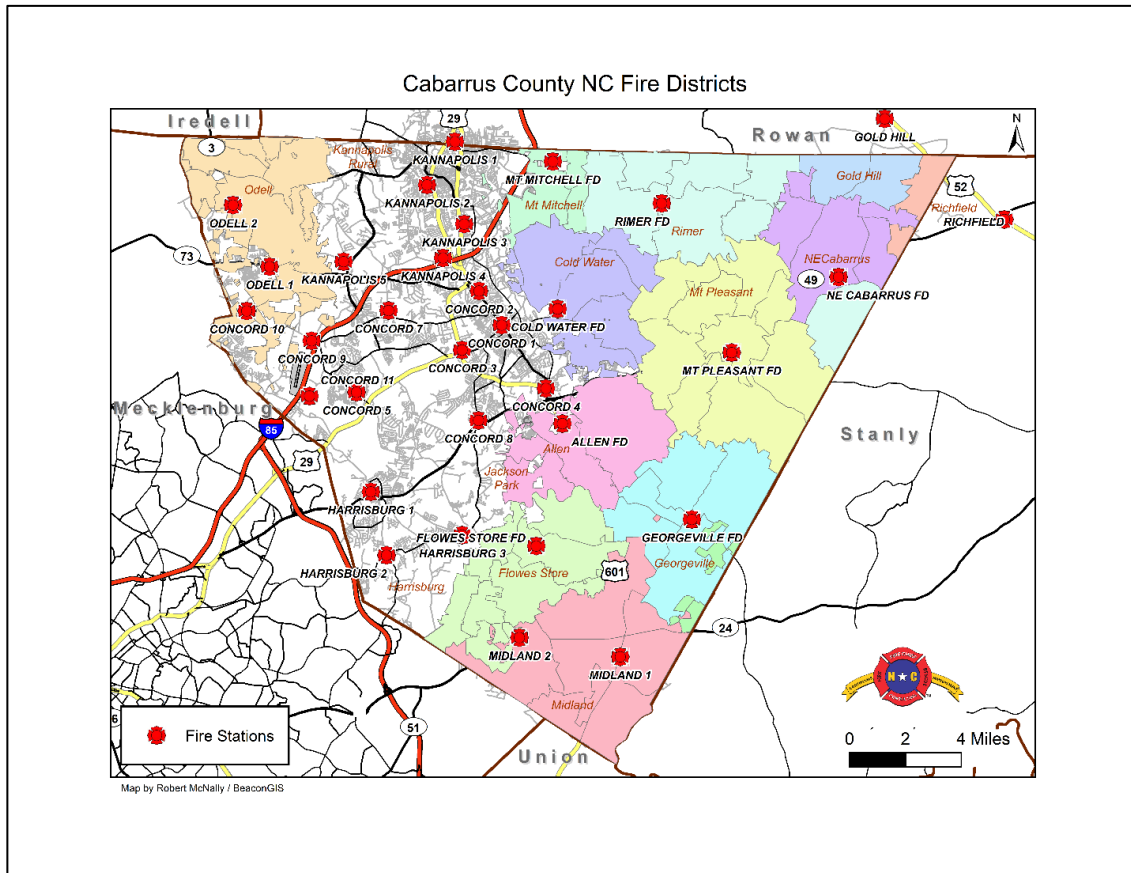


# Cabarrus County Fire Service Strategic Analysis

## August, 2020

### Effective Firefighting Force

There are numerous fire zones within each fire district. Each one relies upon not only the fire station within the district, but the neighboring stations, staff, and apparatus. The following map shows the fire zones within each fire district.



## **Cabarrus County Fire Service Strategic Analysis**

### **August, 2020**

An effective firefighting force (ERF) is the amount of firefighters needed for a structure fire. The amount varies depending on the type of structure and other hazards present. For a single-family residential structure fire, the National Fire Protection Association (NFPA) Guideline 1720 offers a response time/staffing performance benchmark for volunteer or mostly volunteer departments that vary based upon population density. Specifically, NFPA 1720 recommends:

- Urban areas with >1000 population/square mile (sqmi) a cadre of at least 17 firefighters within a total response time of 9 minutes.
- Suburban areas with population/sqmi of 500-1000 requires a cadre of at least 10 firefighters within 10 minutes.
- Rural areas with populations/sqmi of 500 or less need at least 6 firefighters within 14 minutes.

This can be accomplished by staffed apparatus leaving the station or firefighters arriving by personally operated vehicles (POVs).

Most of the fire districts within Cabarrus County are considered rural under the NFPA definition except for areas near or adjoining the cities of Concord, Kannapolis, and Harrisburg, Midland and Mount Pleasant. Actual performance has already been measured in this study. To assess the run card orders and model the travel time from stations in the county (since POV movements cannot be reasonably modeled). The surrounding area fire stations in outside counties as well as Squad 410 were added to the County stations. Station travel times to fire zone centroids was used to determine order. The cutoff time was 14 minutes to allow all fire zones to have response order and to account for staffed units that may have a zero turnout time. If a station traveled more than 14 minutes to reach a fire zone it was excluded by the methodology of the computer algorithm. Detailed run order by zone to validate the run orders for each zone is provided in the electronic cloud storage for this project. An example is as follows:

<b>Zone</b>	<b>Travel Minutes</b>
<b>FS1</b>	<b>9.02</b>
FLOWES STORE FD	3.18
ALLEN FD	7.30
MIDLAND 1	9.13
GEORGEVILLE FD	9.18
CONCORD 4	9.21
HARRISBURG 3	9.39
MIDLAND 2	10.34
Squad 410 @ EMS 2	11.21
CONCORD 8	12.25



## Cabarrus County Fire Service Strategic Analysis August, 2020

Turnout time would need to be added appropriately to each station by staffing type but if three stations respond with 2 firefighters per apparatus, a calculation of ERF:

Zone	Turnout	Response Time	Firefighters	
<b>FS1</b>				
FLOWES STORE FD	6	9.18	2	
ALLEN FD	6	13.30	2	
MIDLAND 1	6	15.13	2	
	Average>	12.54	6	Total

Taking the variant of turnout into consideration. The three best times are detailed below:

Zone	Avg. Travel Minutes	Turnout	Response Time	Firefighters	
<b>FS1</b>	<b>8.75</b>				
FLOWES STORE FD	3.18	6	9.18	2	
CONCORD 4	9.21	2	11.21	3	
HARRISBURG 3	9.39	2	11.39	3	
		Average>	10.59	9	Total

The table on the following page represents the average and 80<sup>th</sup> percentile travel time from the stations summarized within each zone.



# Cabarrus County Fire Service Strategic Analysis

## August, 2020

Total Travel Time by Zone					
Zone	Average	80 <sup>th</sup> Pctl	Zone	Average	80 <sup>th</sup> Pctl
AL1	9.40	12.44	MP1	10.52	12.71
AL2	9.89	11.98	MP2	10.63	13.00
AL3	9.66	12.96	MP3	9.70	12.11
AL4	9.95	12.82	MP4	10.55	12.66
CW1	9.34	11.34	MP5	10.04	12.45
CW2	10.48	12.98	MP6	8.76	11.18
CW3	10.56	13.17	MP7	9.66	11.18
CW4	10.22	12.98	MP8	9.53	10.28
CW5	9.27	12.31	MP9	9.29	13.59
CW6	10.05	12.51	NE2	9.19	11.80
FS1	9.02	10.69	NE3	9.07	10.61
FS2	10.14	12.26	NE4	11.76	12.43
FS3	8.19	9.72	NE5	10.45	11.81
FS4	8.74	11.38	NE6	9.52	13.19
FS5	9.55	12.06	OD1	11.21	13.74
FS6	10.80	13.21	OD2	10.86	12.72
FS7	8.15	10.45	OD3	9.97	11.61
GE1	9.76	12.52	OD4	9.69	12.11
GE2	10.30	13.39	OD5	9.17	11.47
GE3	10.24	12.07	OD6	9.96	13.07
GE4	9.96	11.87	OD7	9.25	12.70
GE5	9.89	13.15	OD8	9.43	13.22
GH1	8.31	11.07	RF1	8.92	12.34
GH2	9.51	12.15	RM1	9.76	13.15
MI1	8.44	11.03	RM2	10.62	13.18
MI2	9.95	12.21	RM3	11.52	13.76
MI3	10.02	12.32	RM4	10.72	12.75
MI4	8.63	11.56	RM5	10.64	11.39
MI5	10.07	12.78	RM6	9.75	12.28
MI6	10.13	13.61			
MI7	9.09	11.88			
MI8	8.84	11.72			
MI9	8.78	11.99			
MM1	10.28	12.35			
MM2	9.37	12.84			
MM3	10.62	12.57			





## Cabarrus County Fire Service Strategic Analysis August, 2020

### Roster Travel Analysis

All of the fire districts have some paid staff in addition to volunteers. Some may have duty schedules in various ways but when a structure fire occurs more hands are needed to fight the fire. The individual district rosters were supplied for this study. The rosters were reviewed by county staff after the project team found many were using the station address instead of either a local home or work address. Some also were PO boxes that would not locate accurately. The board members, retired members, and the ones determined no longer with a fire district were removed. While some addresses were found distant to the fire station by several miles, it was agreed by county staff to analyze those within each fire district including those within a mile of each fire district's border.

Fire District	Avg Age	Roster Count	Count within district & 1 mile beyond	Avg Travel time to Station (mins)	80th Percentile Travel To Station (mins)	Travel Time Range (mins)
Allen	35	30	22	3.87	5.20	0.37-9.03
Coldwater	37	37	33	6.55	7.49	3.28-9.48
Flowe's Store	33	29	17	5.88	10.33	0.24-12.37
Georgeville	38	30	15	4.34	7.14	0.04-9.53
Midland	40	56	25	3.71	4.93	0.03-6.68
Mt Mitchell	44	17	10	4.21	6.39	0.83-7.57
Mt Pleasant	35	46	28	4.08	6.30	0.22-11.32
NE Cabarrus	39	31	22	3.11	4.94	0.21-7.66
Odell	33	53	34	2.06	3.96	0.01-10.48
Rimer	38	29	21	4.69	6.06	0.70-10.02
<b>Overall</b>	<b>37</b>	<b>35.8</b>	<b>22.7</b>	<b>4.25</b>	<b>7.21</b>	

Some fire districts fare better than others in the metrics of the roster performance table. The shaded green metrics are the best overall while the yellow shaded metrics are areas of concern in relation to the other fire district rosters. Of course, the model travel times<sup>1</sup> may not reflect actual measures as where responders are when the alarm comes in along with other traffic and weather factors into response performance. Individual drive maps are provided in the electronic cloud storage for this project.

<sup>1</sup> Since civilian vehicles are used, lawful posted speed limits were used.





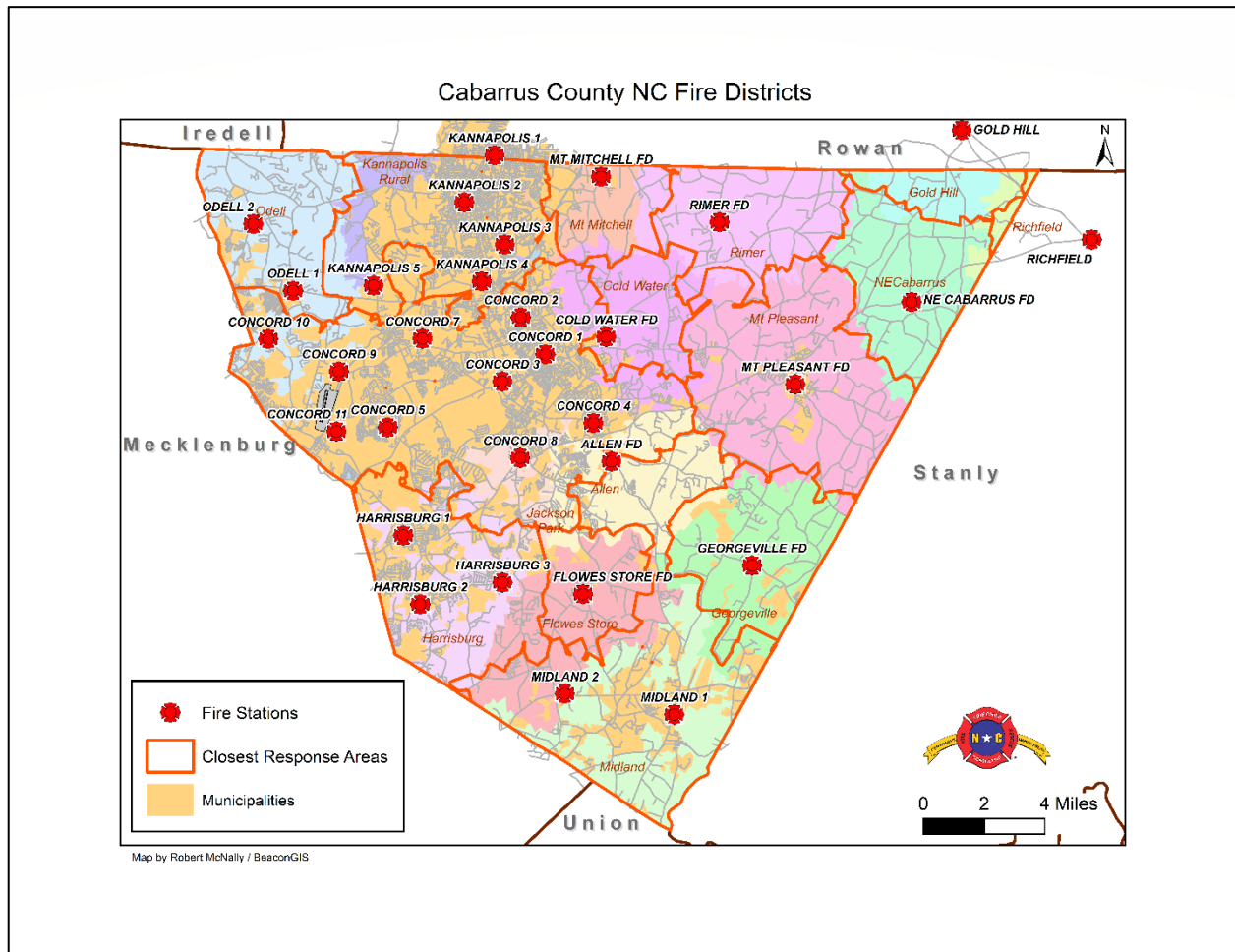
# Cabarrus County Fire Service Strategic Analysis

## August, 2020

The highest risk areas are near or within the municipal jurisdiction with a notable exception near Gold Hill. The remainder of the county has lower risk levels.

### Closest Service Response Areas

Fire District areas are drawn for a variety of reasons from fiscal, historical, generational factors. With the use of geographic technology, a closest service response area can be created by simulating apparatus traveling towards each other on all the streets in the network. The result shows wear the travel model has determined the borders of fire districts would be based solely on response travel time.



It appears that areas of the Flowe's Store Fire District are closer to the new fire stations in Harrisburg and Midland. Other fire districts also are impacted by the construction of stations in Concord and Kannapolis.

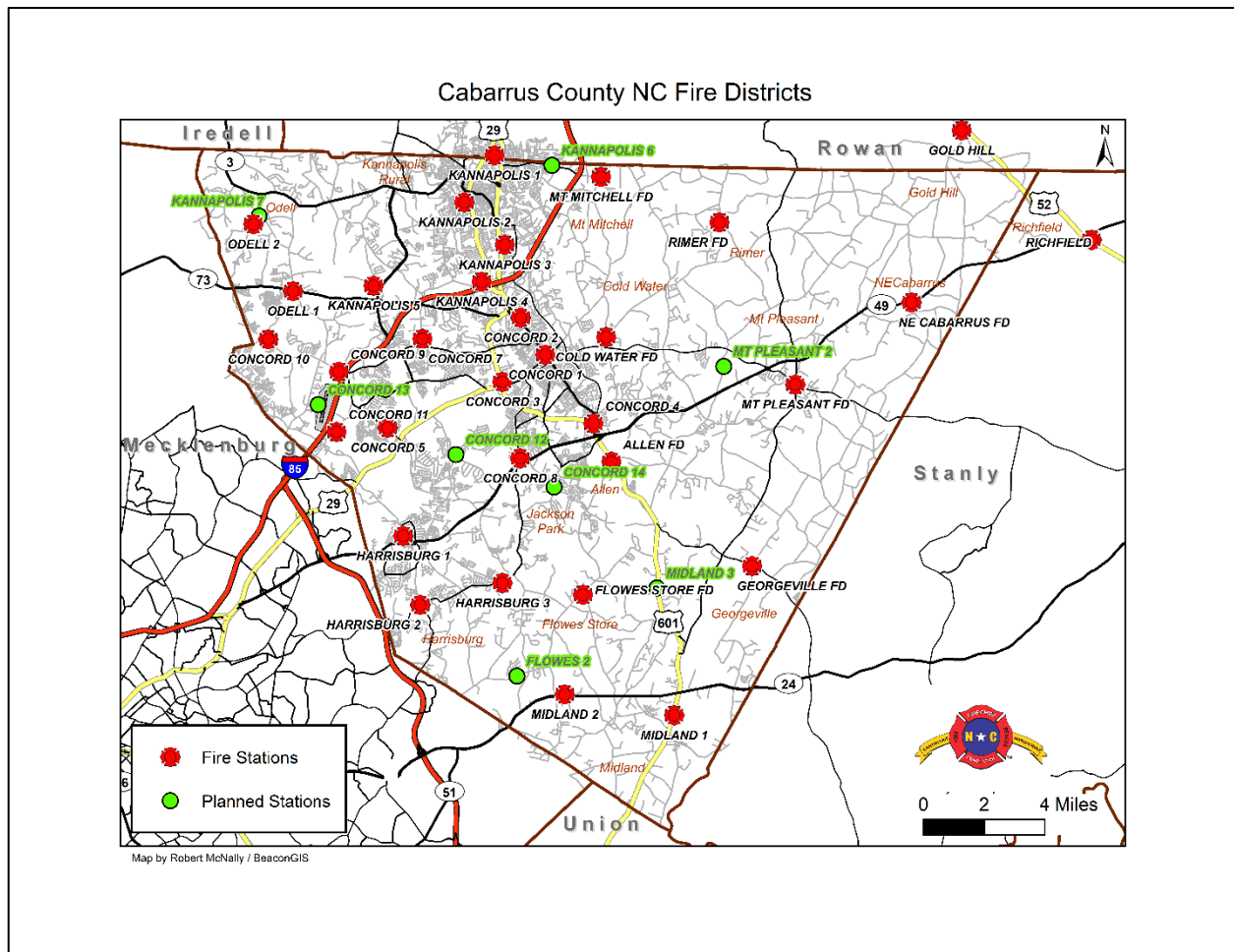


# Cabarrus County Fire Service Strategic Analysis

## August, 2020

### Future Station Planning

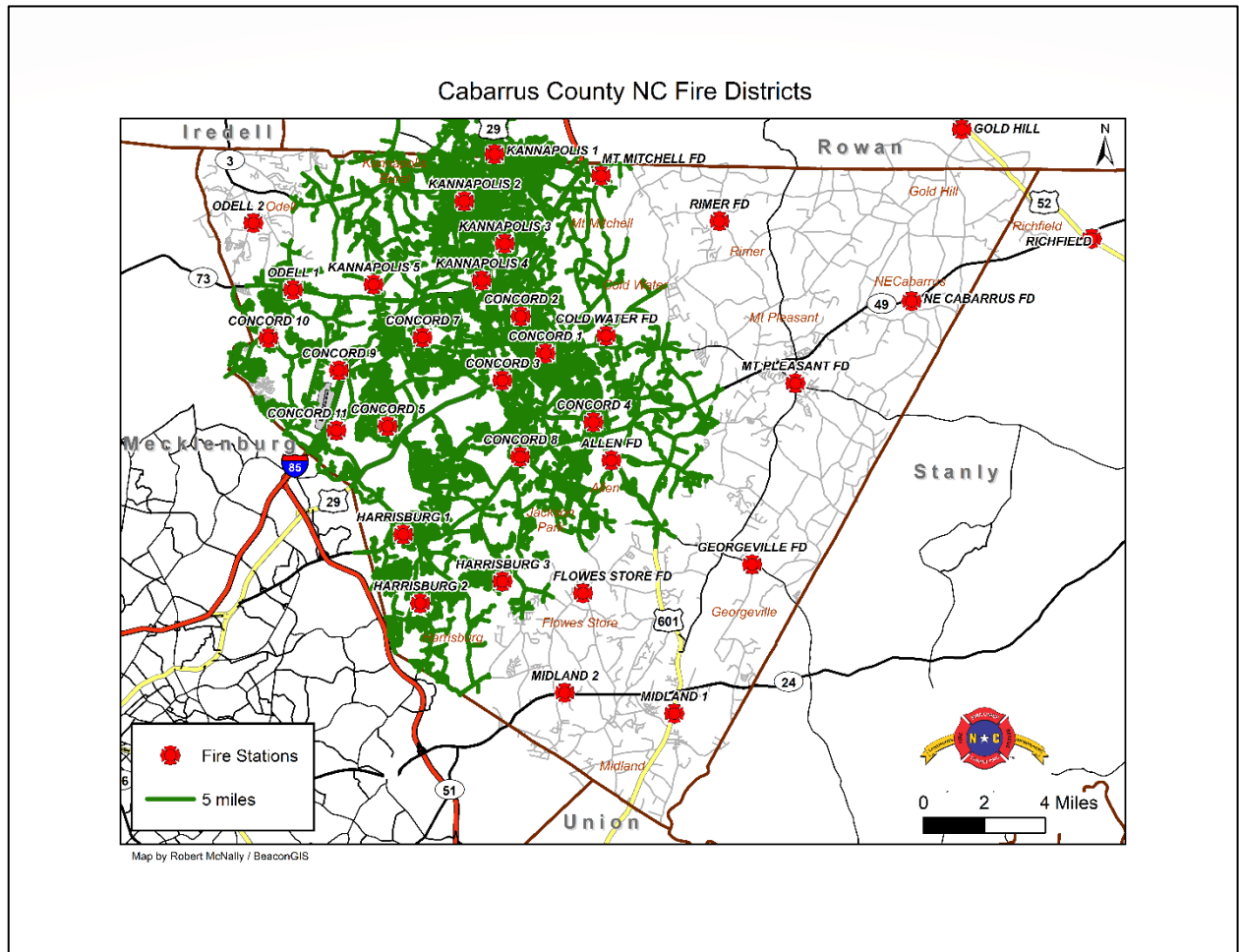
The jurisdictions of Concord and Kannapolis, Mount Pleasant along with the Midland Fire District have future stations planned and have supplied the county with potential sites. The future station sites are shown as green symbols on the station map that follows.



As these stations are built, they could potentially impact the coverage of the neighboring fire district fiscally and primary response areas. They can also be opportunities for mergers or consolidation. To determine the potential impact upon the fire districts, an analysis to evaluate coverage at a five (5) mile road distance was used. This is because the insurance ratings for career municipal departments is measured within that distance and it is the limit of a volunteer department able to improve its rating as well. The following map shows the five-mile extent from the Concord, Kannapolis and Harrisburg fire stations.



## Cabarrus County Fire Service Strategic Analysis August, 2020

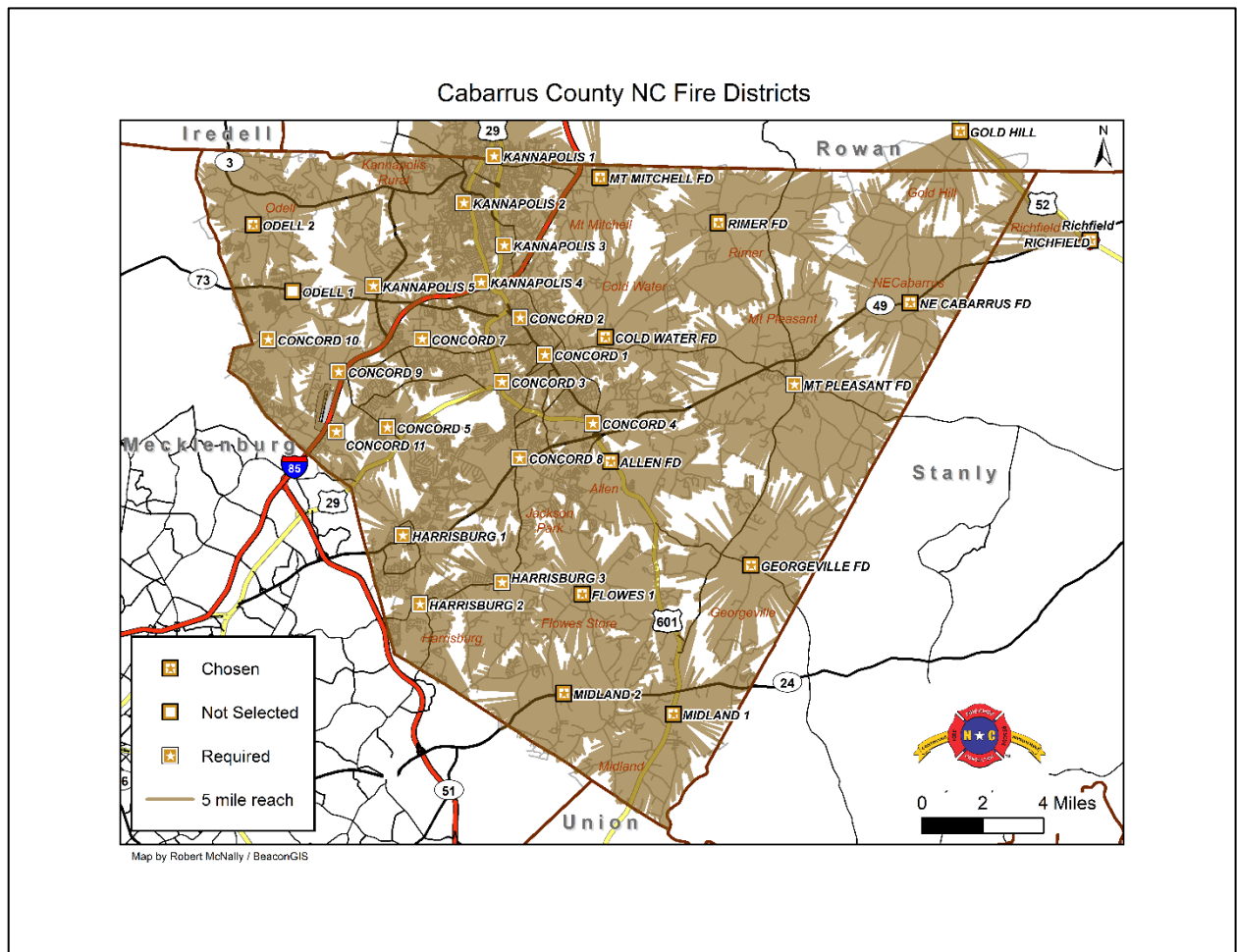


In the first analysis, the currently operating stations were used. The city fire stations of Concord, Kannapolis, Mt. Pleasant, and Harrisburg were set as fixed objects while the remainder were set as optional. The objective was to determine which fire stations were selected by the technology for maximum coverage based on the road distance measure to the address data. The result was that all the fire stations were selected except Odell Station 1 due to the proximity of a Concord and a Kannapolis Fire Station.





## Cabarrus County Fire Service Strategic Analysis August, 2020

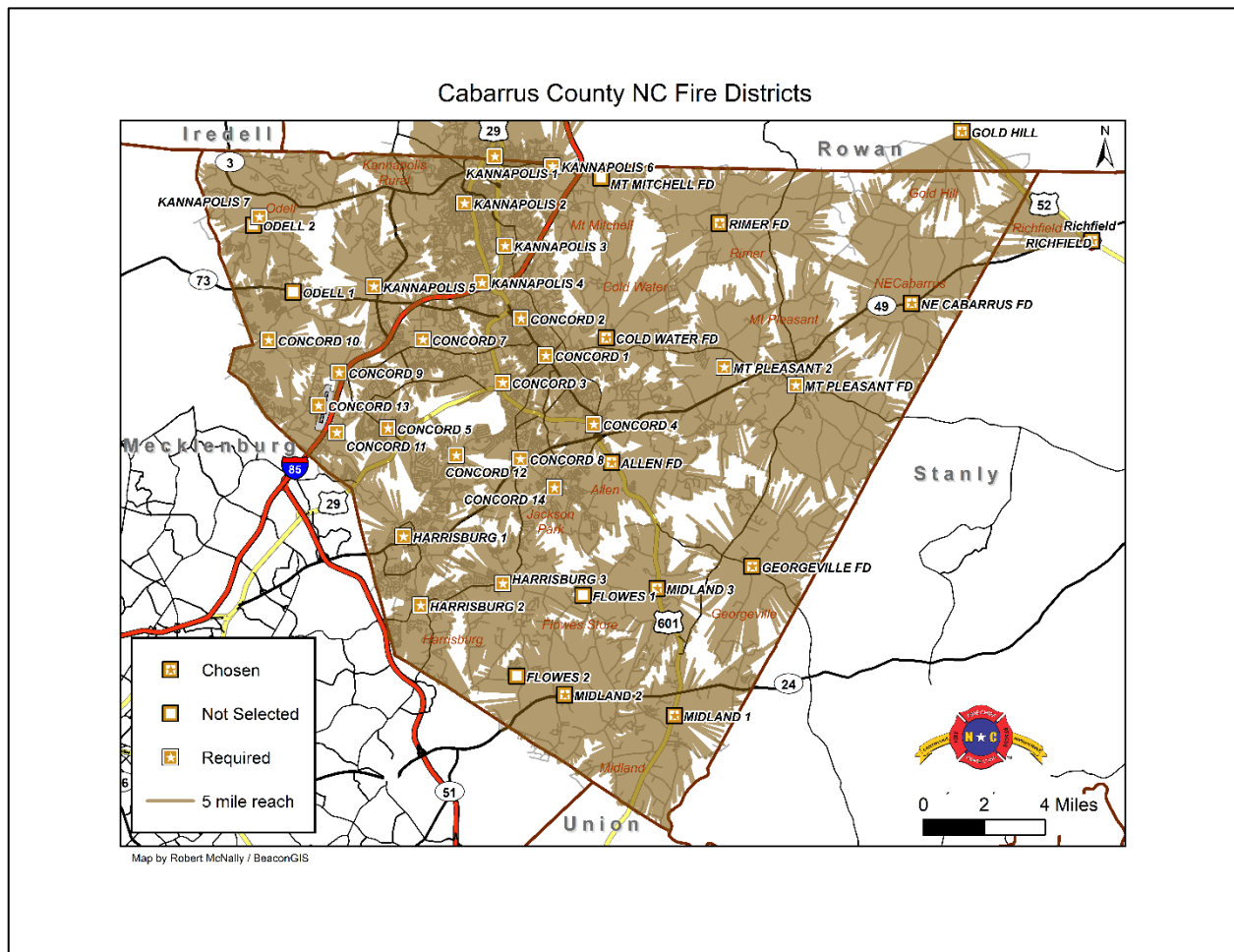


*Note that although the lines are straight for simplicity, they represent actual roads traveled.*

A repeated analysis was run this time with the planned stations added with the municipal career fire stations (Concord, Kannapolis, Mt. Pleasant, Harrisburg) set as fixed objects. The planned Midland 3 station and Flowe's Store Station 2 was not set as fixed and remained optional to see if they were needed based upon five road miles.



## Cabarrus County Fire Service Strategic Analysis August, 2020



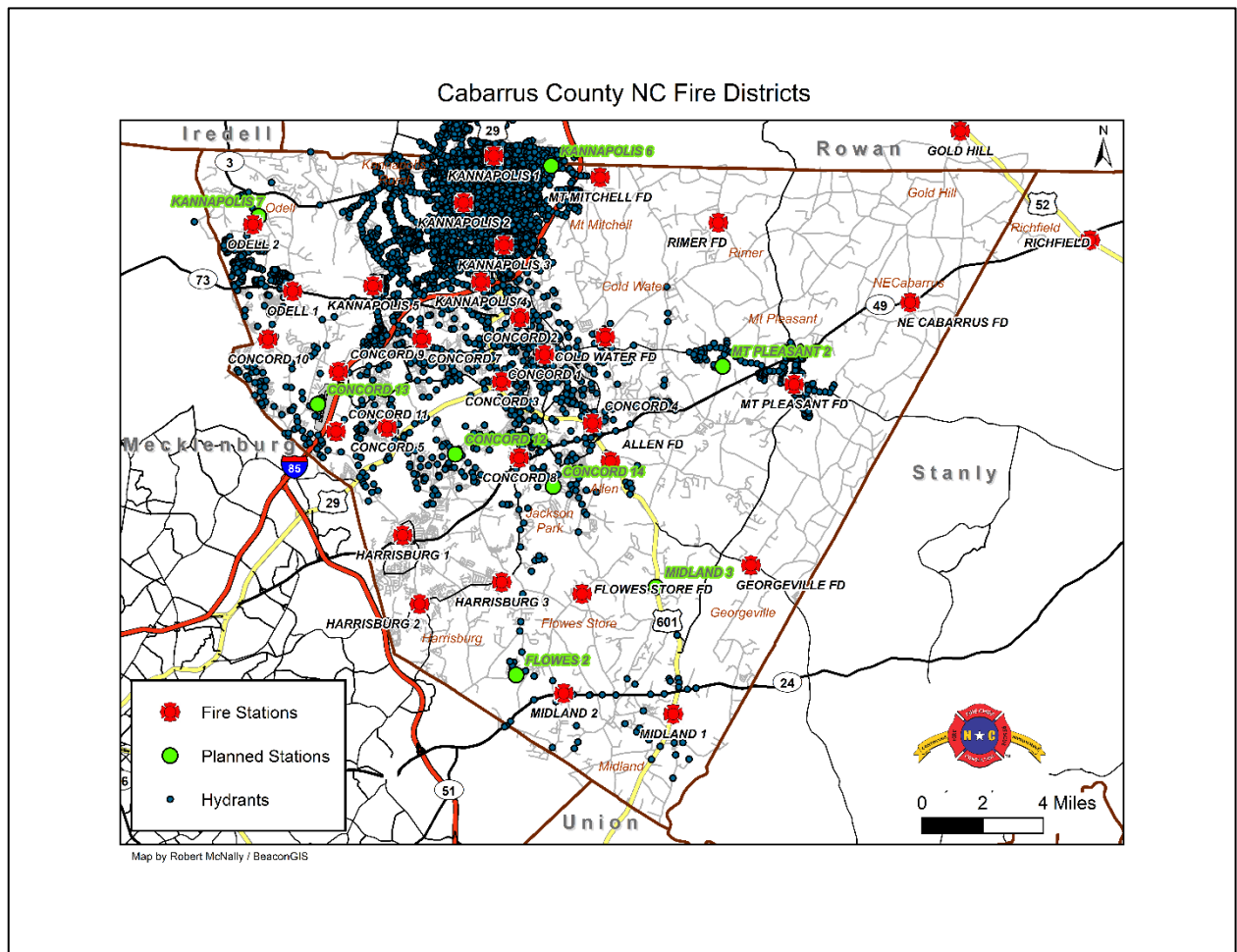
The result was partially expected in that Odell Station 2 was not selected in addition to Odell Station 1 from the previous analysis. Kannapolis Planned Station 6 excluded Mt. Mitchell from coverage and the Midland proposed station 3 was selected as needed in this analysis. It was favored over Flowe's Store Station 1. The Flowe's Store planned additional station was also not selected, the analysis favoring Midland Station 2 location. What was interesting is that the Allen Fire Station was selected despite the proximity of the existing and planned Concord Stations as well as the Midland Station 3 selection. The reason being is that the area east of the station towards Mt. Pleasant and Georgeville still needed coverage.

The concern for the departments with the new stations would be the water supply in these area or lack thereof which would potentially need tanker apparatus. Hydrant data was provided by Cabarrus County GIS department and shown in the following map.





## Cabarrus County Fire Service Strategic Analysis August, 2020

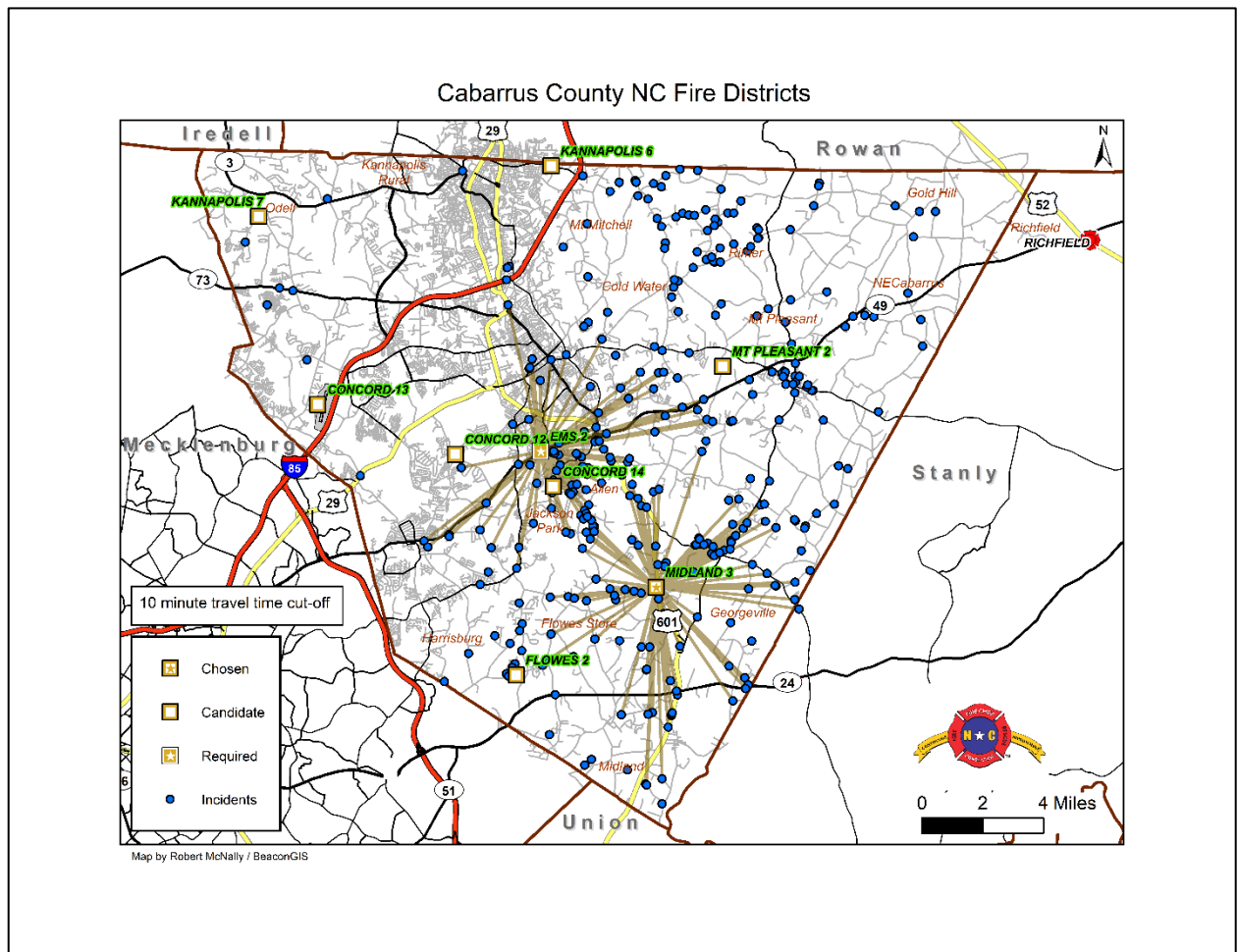


The planned stations, if built, also present an opportunity for a shared location for basing the current and/or a potential second squad unit. This is because they can be designed to include a squad unit before construction rather than retrofitted into an existing station, which many may not have room or suitable facilities for the unit and crew. The current squad unit at EMS 2 covers the entire county and even at the modeled travel time of 10 minutes, provides 43% coverage of its incident history. Choosing one of the planned locations based upon travel time cut-off varied the location selected.



# Cabarrus County Fire Service Strategic Analysis

## August, 2020



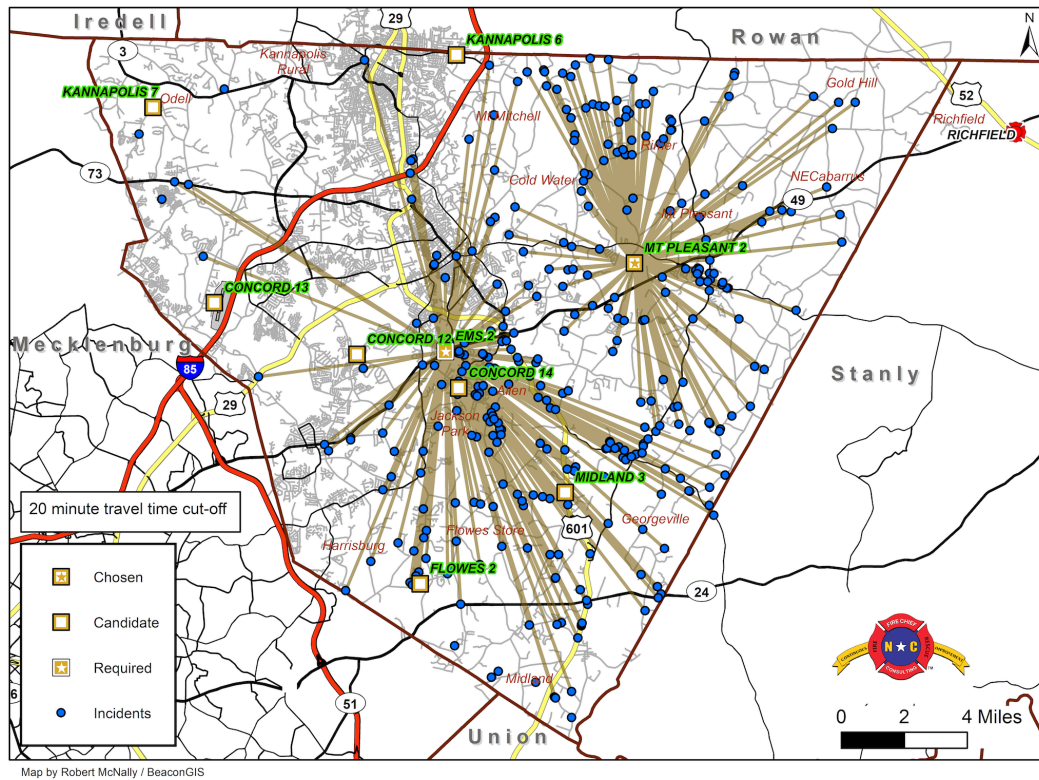
Using a 10-minute maximum travel time, Midland's planned station 3 was selected for a second squad unit. When the travel time was extended to 20 minutes, the planned station of Mt. Pleasant Fire Station 2 was selected.



# Cabarrus County Fire Service Strategic Analysis

## August, 2020

Cabarrus County NC Fire Districts



# **Cabarrus County Fire Service Strategic Analysis**

## **August, 2020**

### **6. DATA ASSESSMENT AND ANALYSIS**

Progressive fire and rescue service managers should utilize data available to them to make the best long-term decisions possible. NC Fire Chief Consulting has provided a dynamic, interactive application tool to Cabarrus County that enables County staff to conduct unlimited hypothetical scenarios to determine how to most efficiently assess resources based upon data collected in the “FireHouse” software system that collected emergency response data prior to July 1, 2019. This tool, called PowerPivot, collects incident data from each contracting fire department over time and is effective in predicting future outcomes. Although Cabarrus County changed the records management system one year ago in 2019, this historical data from the former “FireHouse” system which we evaluated can be used to assist in determining the impacts of deployment considerations into the future. As with any data analysis, when using this tool it is critical that precise input data is utilized to produce the most accurate predictions and decisions possible.

Detailed, individual department by department analysis of data was constructed using the PowerPivot tool to assess the service levels delivered by each fire department during the time period that data was available. The peer-review team recommends that collection and evaluation of data ongoing is absolutely essential to understanding the demonstrated performance of the fire service in Cabarrus County and good data will enable County staff to make the best-informed decisions possible moving forward.



# Cabarrus County Fire Service Strategic Analysis August, 2020

## A. Summary of Findings

### 01301 – Allen Fire District

#### Fire Department Baseline Performance Report

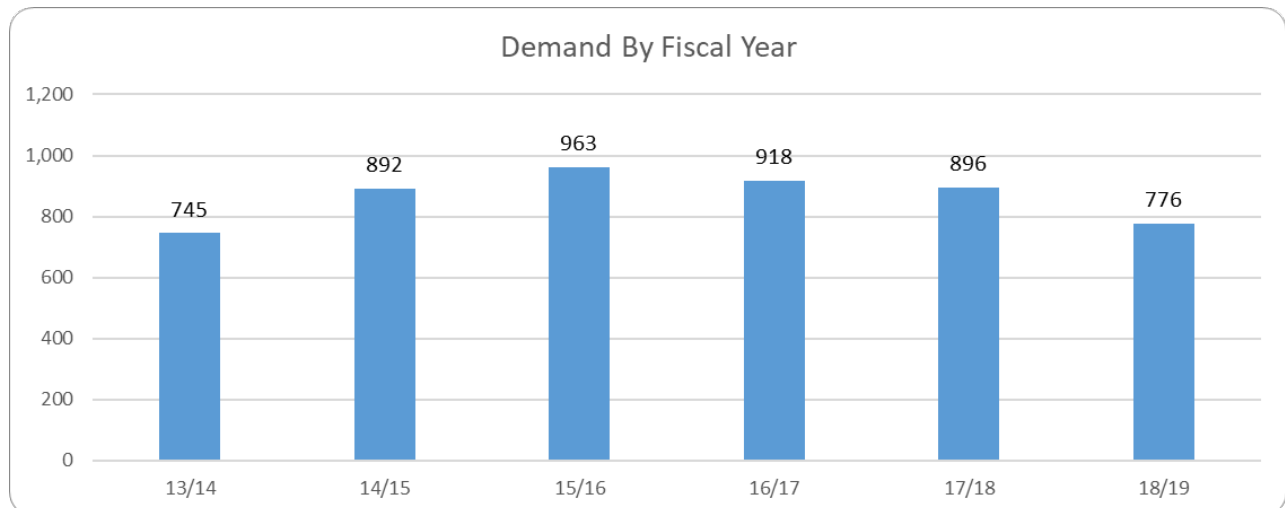
Disclaimer: The performance measures in this document are based on the data exported from the Firehouse Records Management System (RMS) as entered in the system by the end user(s) with no modifications. There is no guarantee of accuracy as it beyond the scope of this evaluation.

Multiple evaluations were conducted as seen below with the following understandings:

- Data evaluation spans from 07/01/2013 to 06/30/2019 with a focus on the last six, full, fiscal years (FY) of data; FY13/14 to FY17/19
- The dispatch received time, required to calculate Call Processing Time, was not entered for approx. 1.14% of events.
- When referencing incidents within the Authority Having Jurisdiction (AHJ), this was determined by excluding incidents where Aid Type was auto aid given or mutual aid given.

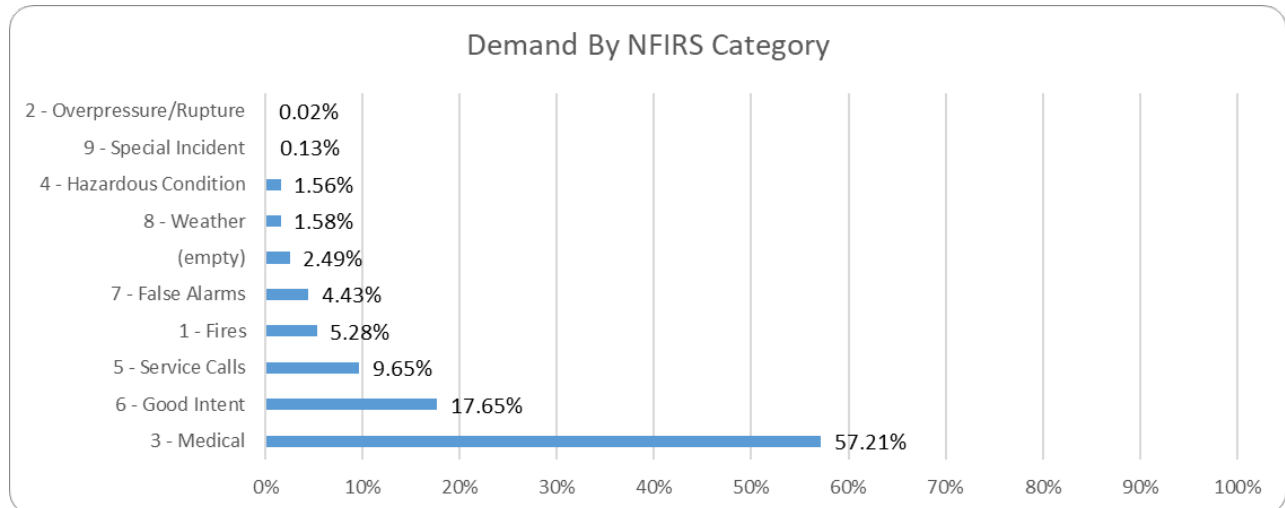
#### Demand for Service

The department's demand for service for FY18/19 was 776 events, approximately 2 per day. This is a 4.16% increase from FY13/14 with 745 events. The medical emergency contributes to 57.21% of the demand over the last 6 full years. The demand trend has fallen annually since the 15/16 fiscal year.



# Cabarrus County Fire Service Strategic Analysis August, 2020

## Demand by NFIRS Category – 07/01/2013 to 06/30/2019



## Response Times – Events within the AHJ

Using the National Fire Protection Association as a guideline for response (NFPA 1720, Urban Zone), goals for response performance were set and evaluated against the following:

**Call Processing Time:** 01 min 00 seconds  
**Response Time:** 09 min 00 seconds (turnout - 1.5 min and travel - 7.5 min)  
**Total Response Time:** 10 minutes (Call processing time, turnout, travel)  
**Incident Types:** All  
**Mutual Aid:** None, Mutual Aid Received and Auto Aid Received

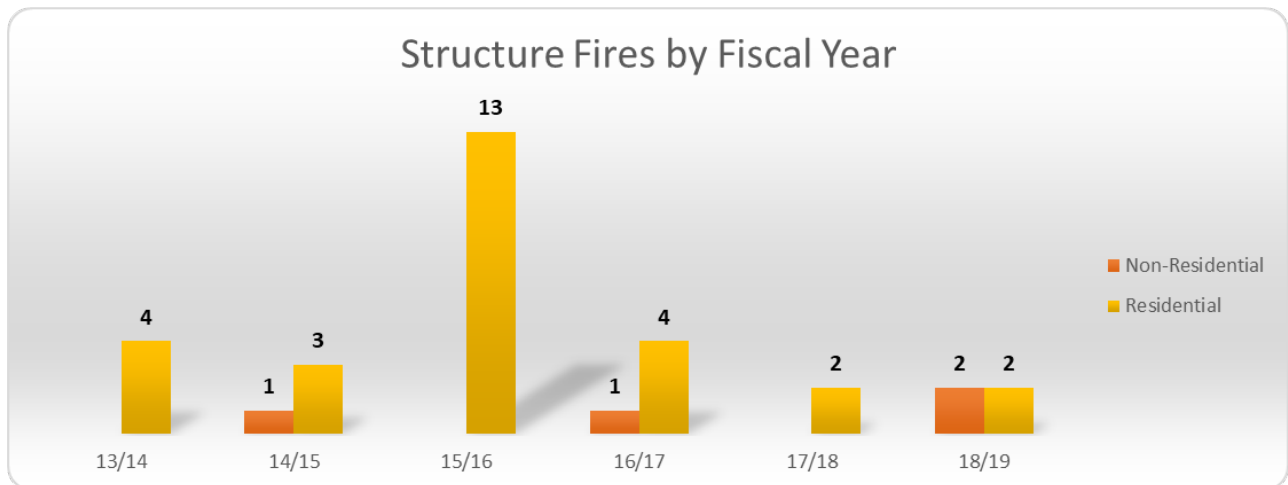
FDID 11301 - Allen		
Set Response Performance Goals Here		
Call Processing	Response Time	Total Response time
0:01:00	0:09:00	0:10:00
% Goals Met		
Call Processing	Response Time	Total Response Time
87.05%	84.45%	86.04%
90th Percentile Demonstrated Performance		
90th CP	90th RT	90th TRT
00:01:09	00:10:12	0:10:53
Staff and Counts per Incident		
90th Staff Count	Avg Staff Count	Incident Count
8.00	4.56	4,161

Evaluating all events within the AHJ, defined by the Mutual Aid values, the Total Response Goal of 10:00 minutes was met 86.04%. Of the 4,161 events measured here, 90% had a staff count of 8 persons or less; the average was 4.45 staff count. Response Time Goal of 9 minutes for the first arriving unit was met 84.45%

## Structure Fires



## Cabarrus County Fire Service Strategic Analysis August, 2020



Within the department's AHJ, [annual structure fires average 5.3](#). Over the last 6 fiscal years, 32 total structure fires have occurred with the following observations:

- [68.75%](#) of these fires were [confined to the room or origin](#).
- Average duration of the event was 1 hour, 31 minutes
- There were **no** fatalities, 1 civilian injury and **no** firefighter injury.
- The cooking area was the area of origin for 18.75% of the events, the highest percentage of any other area. Bedroom was the origin 9.38%
- A smoke alarm was found in 25.00% of these properties.
- Twenty-one percent (21.88%) were found to be unintentional, 25.00% remain under investigation.
- A first arriving [response time goal of 9 minutes was met on 84.38%](#) of events.
- \*Average incident staff count was 7.97 persons. 90% of these had a staff count of 11 or less persons. The max staff count on any incident was 24.

**\*Note:** Average incident counts are incident specific and could be inclusive of auto/mutual aid staff if the user chose to include those in the incident report by way of a checkbox in the report.

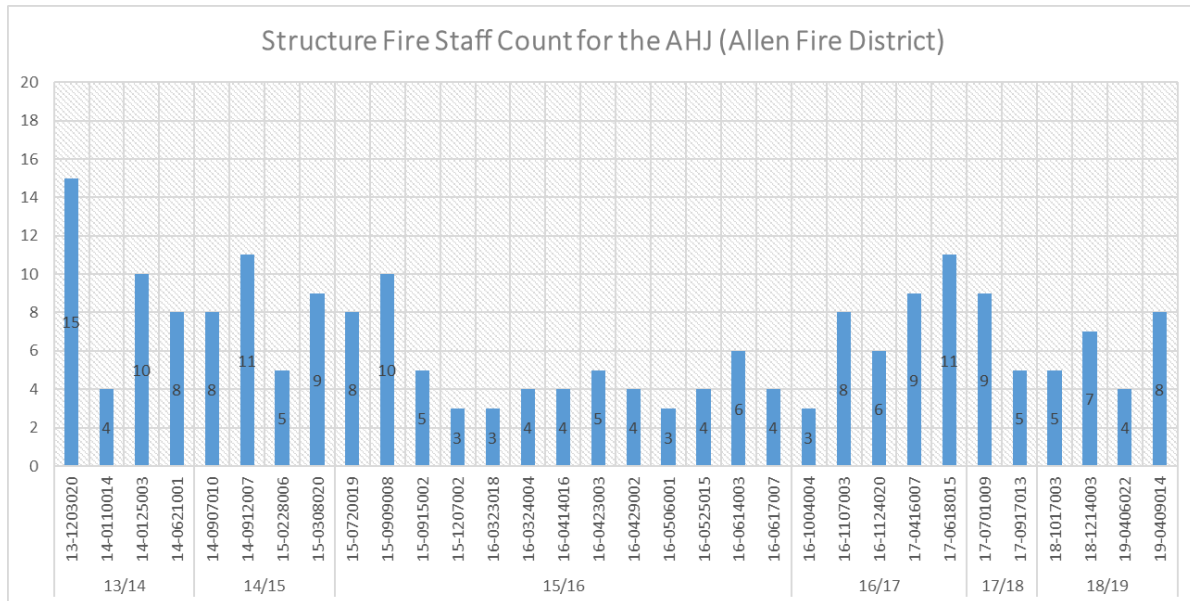




# Cabarrus County Fire Service Strategic Analysis

## August, 2020

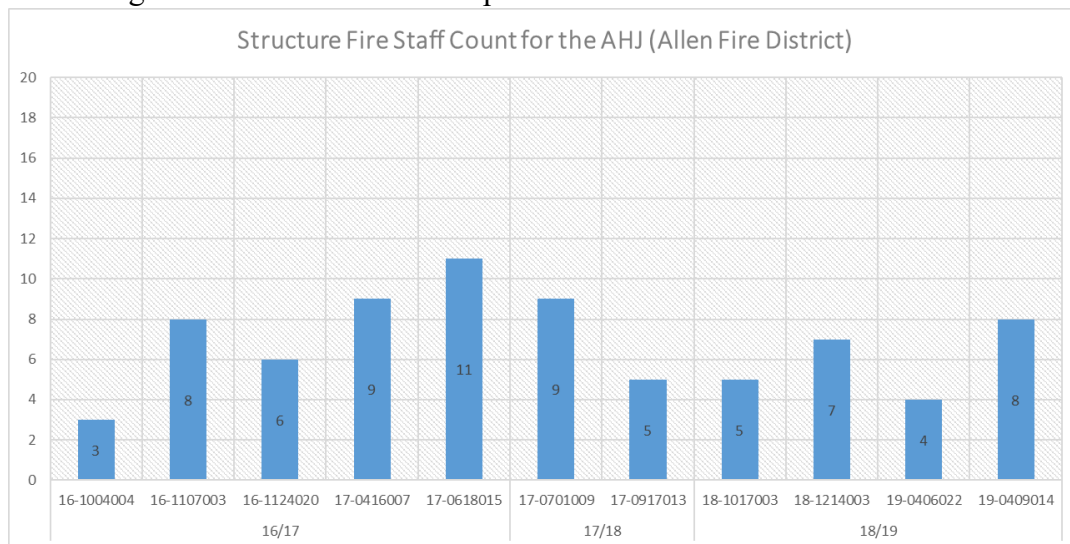
### Structure Fire Staff counts from Allen Fire District



To determine the department's ability to assemble an effective response force from their own staff (separate from mutual/auto aid companies), an evaluation of staff associated with the department's fire units, which arrived, was evaluated. It should be noted the evaluation found a unit called POV (personally owned vehicle) which was assumed to collectively count the total staff which arrived by POV. This unit was used in this evaluation.

Over the 6-year period of time consisting of 32 structure fire events, the department averaged 6.47 staff members arriving these events from their department.

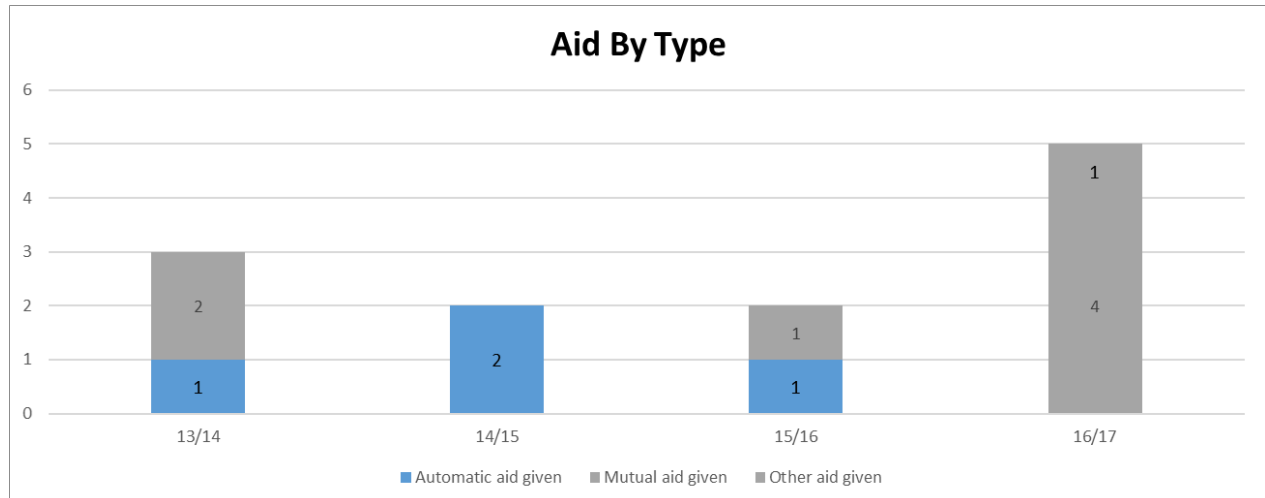
Over the last three years consisting of 11 structure fire events, the department averaged 6.82 staff members arriving these events from their department.



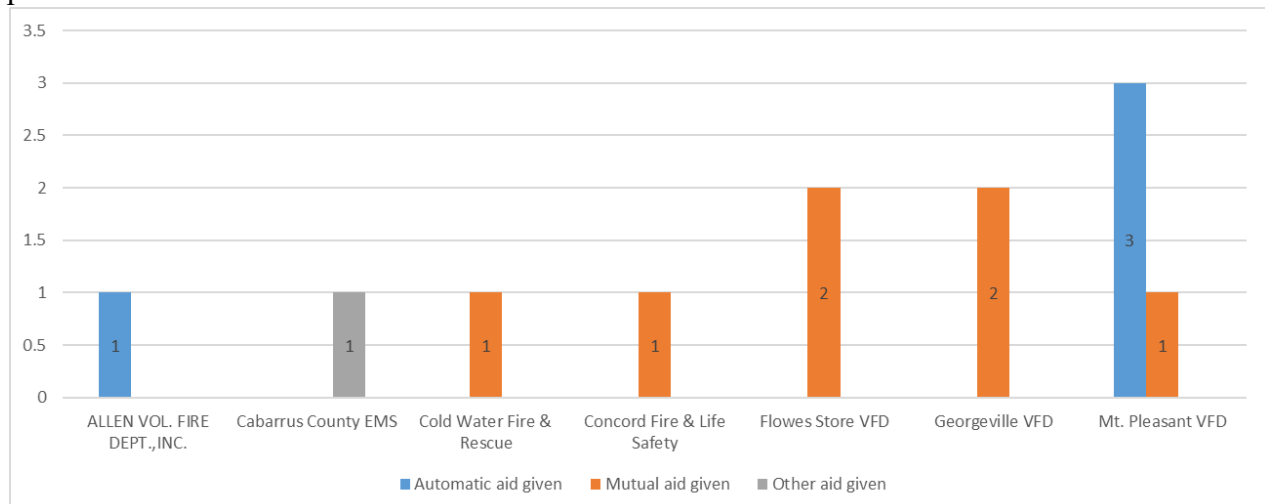
# Cabarrus County Fire Service Strategic Analysis August, 2020

## Mutual / Auto Aid

### Aid Given



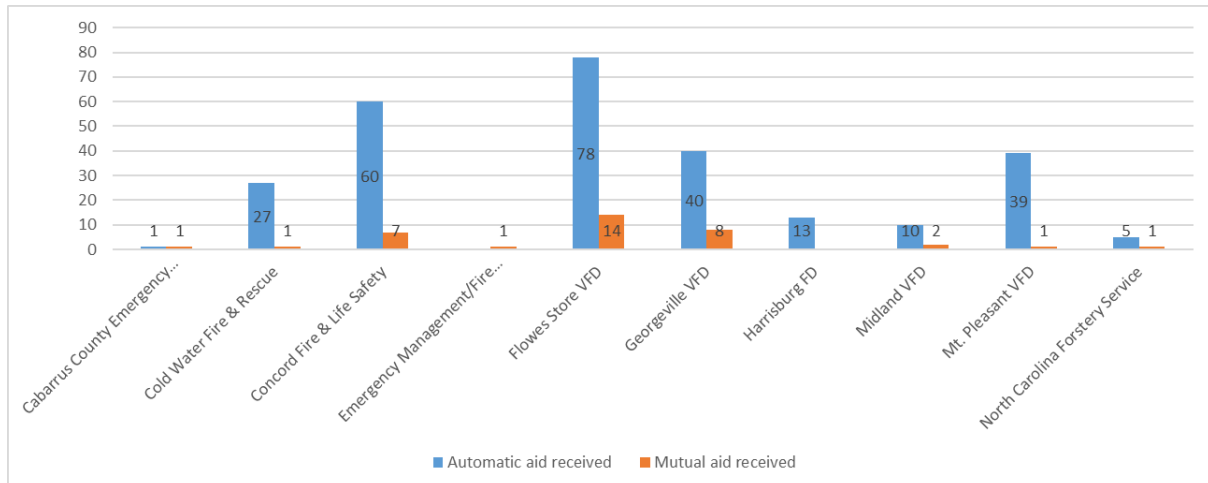
**Aid Given**, based on the data entered, was found to be minimal with Mt. Pleasant receiving the most aid of any other department. Average staff sent to these aid-given events over the 6-year period was 3.33. There were no records found for Aid Given in 17/18 or 18/19



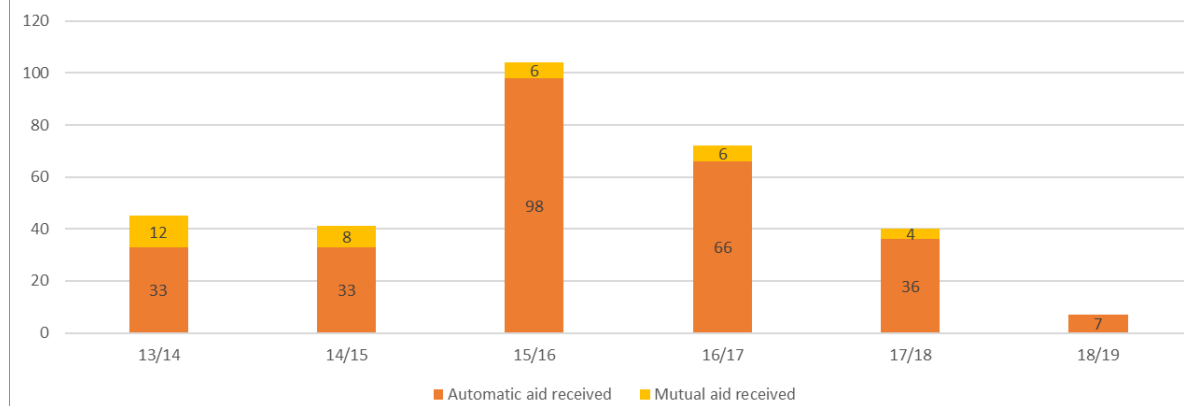
# Cabarrus County Fire Service Strategic Analysis

## August, 2020

### Aid Received



### Aid By Type



## Cabarrus County Fire Service Strategic Analysis August, 2020

Aid by Department Name	Count	Avg Appar Cnt	Avg Staff Cnt
⊞ Cabarrus County Emergency Management	2	1.00	4.00
⊞ Cold Water Fire & Rescue	28	1.32	4.36
⊞ Concord Fire & Life Safety	67	2.64	6.48
⊞ Emergency Management/Fire Marshal	1	1.00	4.00
⊞ Flowes Store VFD	92	1.15	2.85
⊞ Georgeville VFD	48	1.04	2.65
⊞ Harrisburg FD	13	1.77	4.46
⊞ Midland VFD	12	1.00	2.42
⊞ Mt. Pleasant VFD	40	0.88	2.90
⊞ North Carolina Forestry Service	6	1.00	1.17
<b>Grand Total</b>	<b>309</b>	<b>1.45</b>	<b>3.78</b>

Aid Received, with a majority in the form of [Auto-Aid Received](#), occurred on 309 events (approx. 60 annually). Top three departments sending aid were Flowes Store, Concord and Georgeville. The top 10 event types are listed below with a balance of medical and fires.

Incident Type   Aid Type   Department Name	Count	Avg Appar Cnt	Avg Staff Cnt
⊞ 111 - Building fire	61	1.72	4.48
⊞ 531 - Smoke or odor removal	27	1.96	4.41
⊞ 745 - Alarm system activation, no fire - unintentional	25	0.96	2.72
⊞ 735 - Alarm system sounded due to malfunction	22	0.77	2.32
⊞ 140 - Natural vegetation fire, Other	13	1.62	4.46
⊞ 743 - Smoke detector activation, no fire - unintentional	11	1.00	3.55
⊞ 114 - Chimney or flue fire, confined to chimney or flue	10	1.30	3.30
⊞ 442 - Overheated motor	10	1.70	3.10
⊞ 151 - Outside rubbish, trash or waste fire	8	1.25	3.00
⊞ 440 - Electrical wiring/equipment problem, Other	8	1.50	4.00

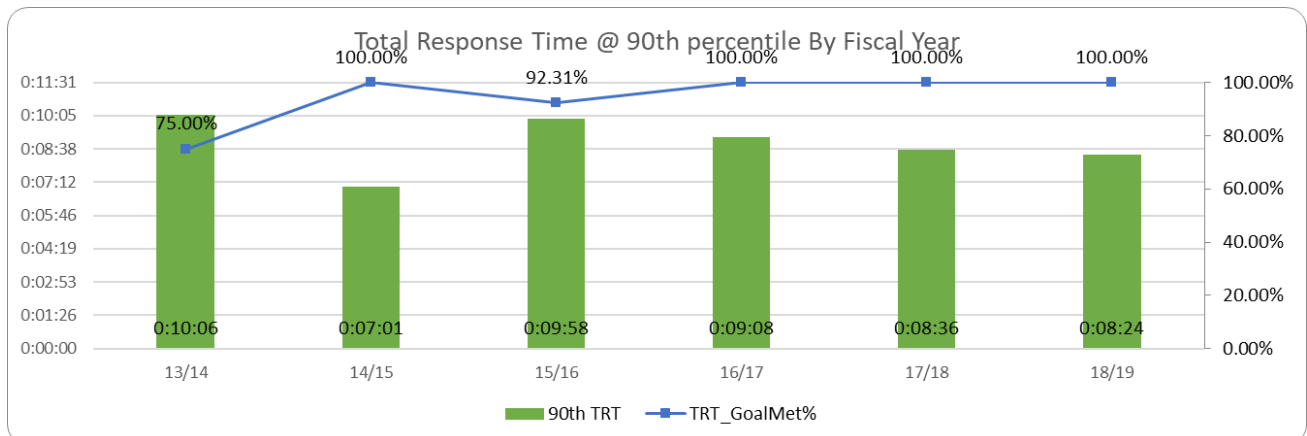
### Standard of Cover:

To establish a baseline of performance measured against the NFPA 1720 standard, a query for Structure Fires (NFIRS 111, 112, 120, 121, 122, 123) where Mutual Aid was None, Mutual Aid Received or Aid Received, was conducted. Total Response Time, inclusive of call processing, turnout and travel time of the first arriving unit are needed to evaluate against the standard of 10 minutes and 00 seconds. The current dataset evaluated was from 07/01/2013 to 06/30/2019. A [total of 32 events](#) met the criteria above.

Two evaluations were done: one to evaluate the Total Response Time of the 32 events containing the call processing time and another to evaluate only the Response Time (turnout and travel time) of the first arriving unit. The NFPA 1720 standard for Total Response Time would be 10 minutes and 00 seconds. (01:00 for call processing, 01:30 for turnout and 7:30 for travel) [The department's 90<sup>th</sup> percentile total response time is 09:44](#)

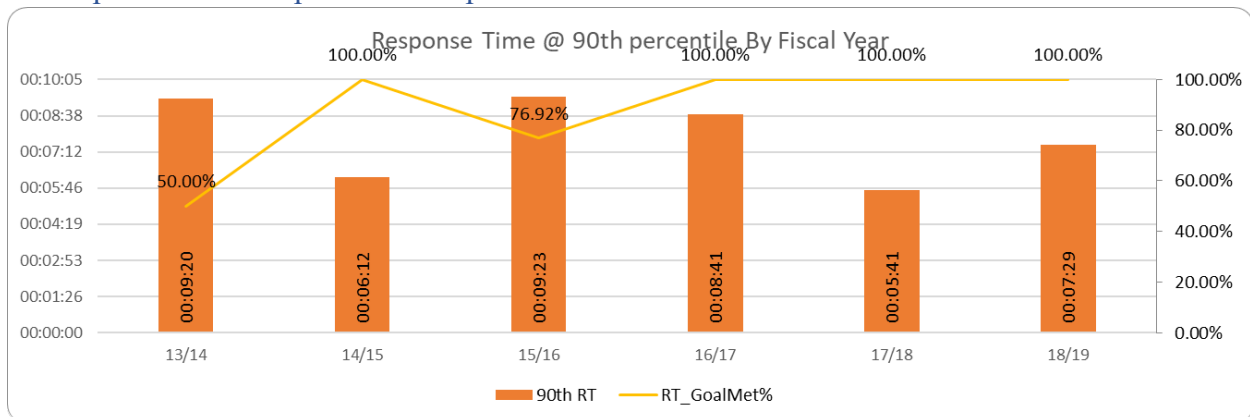


## Cabarrus County Fire Service Strategic Analysis August, 2020



The chart below represents the Response Time (turnout and travel time) of all 32 events. The goal is 09 minutes and 00 seconds. (01:30 for turnout and 7:30 for travel).

The department's 90<sup>th</sup> percentile response time is 09:12



### Baseline Statement:

For the period 07/01/2013 to 06/30/2019, For 90% of all **structure fire incidents**, the first arriving unit arrived within **9 minutes and 44 seconds or less**, from time received in the 911 center to arrival. This represents **Total Response Time**. The goal of 10 minutes was met **93.75%**



## Cabarrus County Fire Service Strategic Analysis August, 2020

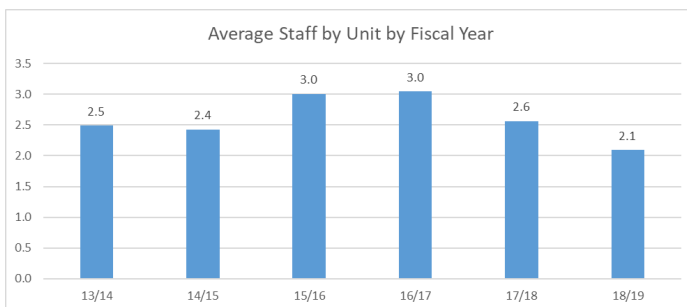
FDID 11301 - Allen		
Set Response Performance Goals Here		
Call Processing	Response Time	Total Response time
0:01:00	0:09:00	0:10:00
% Goals Met		
Call Processing	Response Time	Total Response Time
81.25%	84.38%	93.75%
90th Percentile Demonstrated Performance		
90th CP	90th RT	90th TRT
00:01:13	00:09:12	0:09:44
Staff and Counts per Incident		
90th Staff Count	Avg Staff Count	Incident Count
11.00	7.97	32

Unit	Responses	AvgStaffCount
Tanker & pumper combinator	2,627	2.7
ALE1	224	2.5
ALE2	575	2.3
ALE3	1,828	2.8
<b>Grand Total</b>	<b>2,627</b>	<b>2.7</b>

**Staffing** – Based on the first arriving unit reports for Engines, it appears the department is staffing the first arriving engine company with 2 or 3 staff members on average.

### Effective Response Force (ERF):

Due to the lack of information of auto/mutual aid companies, the staff on those companies and individual timestamps, the calculations of an Effective Response Force were not able to be determined. Of the 32 structure fire events, only one met a 15 person assembly with the department's own staff members.



# Cabarrus County Fire Service Strategic Analysis

## August, 2020

### 01302 – Coldwater Fire District

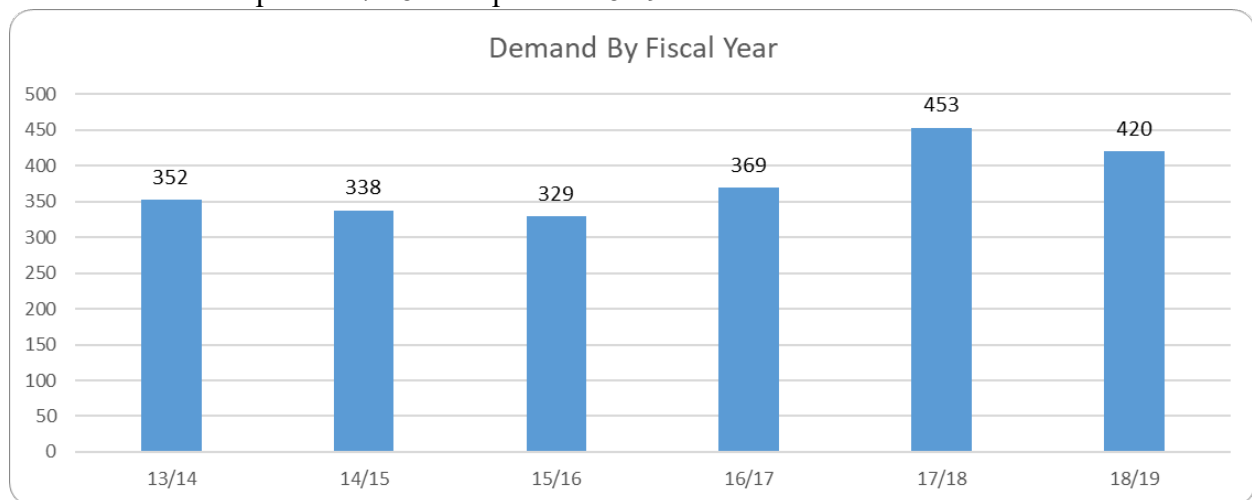
#### Fire Department Baseline Performance Report

Disclaimer: The performance measures in this document are based on the data exported from the Firehouse Records Management System (RMS) as entered in the system by the end user(s) with no modifications. There is no guarantee of accuracy as it beyond the scope of this evaluation. Multiple evaluations were conducted as seen below with the following understandings:

- Data evaluation spans from 07/01/2013 to 06/30/2019 with a focus on the last six, full, fiscal years (FY) of data; FY13/14 to FY18/19
- When referencing incidents within the Authority Having Jurisdiction (AHJ), this was determined by excluding incidents where Aid Type was auto aid given or mutual aid given.

#### Demand for Service

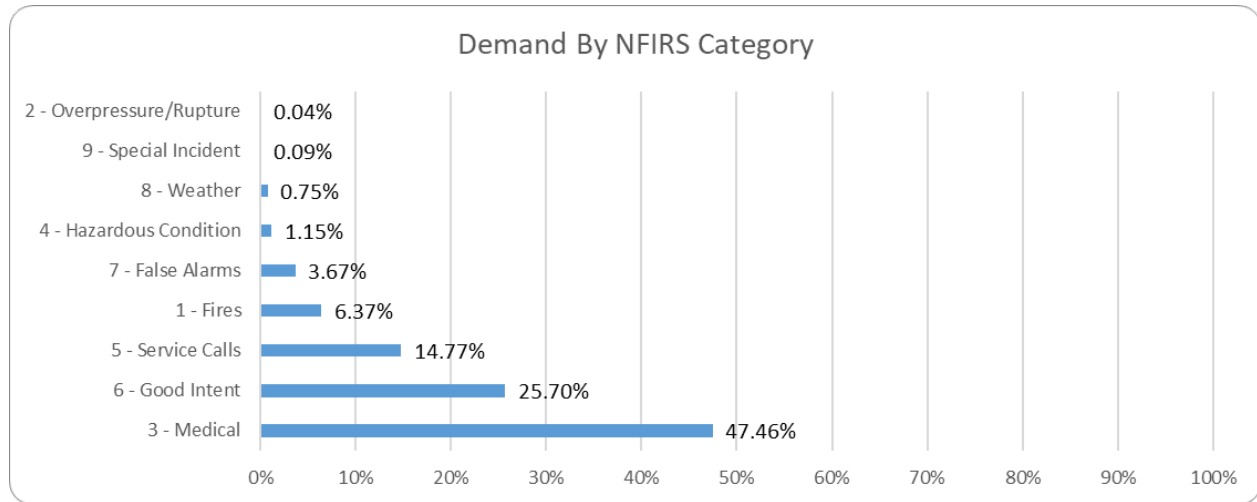
The department's demand for service for FY18/19 was 420 events, approximately 1 per day. This is a 19.31% increase from FY13/14 with 352 events. The medical emergency contributes to 47.46% of the demand over the last 6 full years. The overall demand for service is trending as an annual increase despite the 7.28% drop in FY18/19.





## Cabarrus County Fire Service Strategic Analysis August, 2020

### Demand by NFIRS Category – 07/01/2013 to 06/30/2019



### Response Times – Events within the AHJ

Using the National Fire Protection Association as a guideline for response (NFPA 1720, Urban Zone), goals for response performance were set and evaluated against the following:

**Call Processing Time:** 01 min 00 seconds  
**Response Time:** 09 min 00 seconds (turnout - 1.5 min and travel - 7.5 min)  
**Total Response Time:** 10 minutes (Call processing time, turnout, travel)  
**Incident Types:** All  
**Mutual Aid:** None, Mutual Aid Received and Auto Aid Received

FDID 11302 - Cold Water		
Set Response Performance Goals Here		
Call Processing	Response Time	Total Response time
0:01:00	0:09:00	0:10:00
% Goals Met		
Call Processing	Response Time	Total Response Time
88.68%	72.40%	74.13%
90th Percentile Demonstrated Performance		
90th CP	90th RT	90th TRT
00:01:00	00:08:42	0:09:19
Staff and Counts per Incident		
90th Staff Count	Avg Staff Count	Incident Count
11.00	5.89	2,261

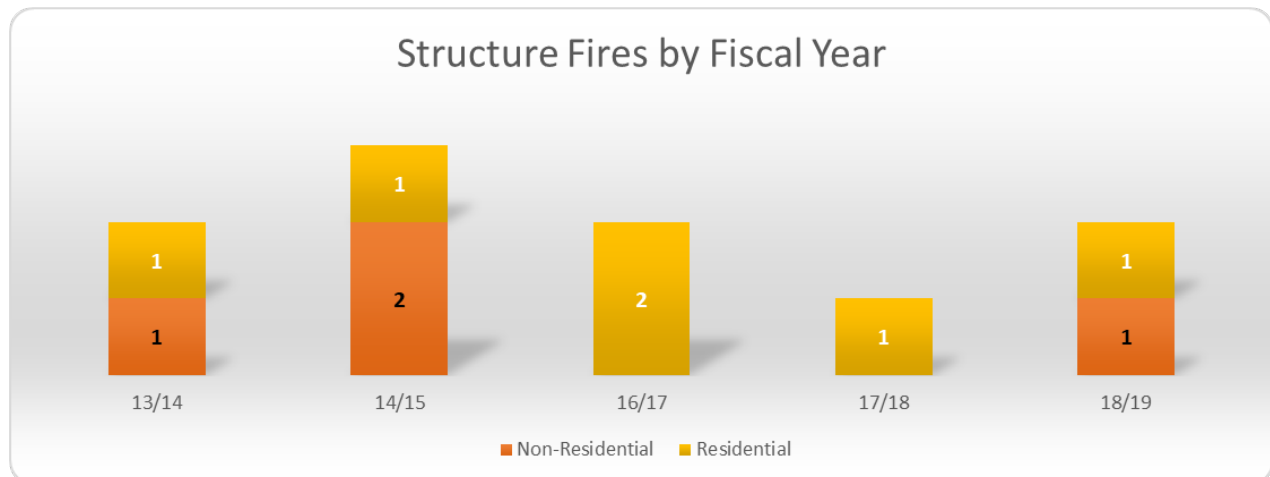
Evaluating all events within the AHJ, defined by the Mutual Aid values, the Total Response Goal of 10:00 minutes was met 74.13%

Of the 2,261 events measured here, 90% had a staff count of 11 persons or less per incident; the average was 5.89 staff count. Response Time Goal of 9 minutes for the first arriving unit was met 72.40%



## Cabarrus County Fire Service Strategic Analysis August, 2020

### Structure Fires



Within the department's AHJ, [annual structure fires average was 2](#). Over the last 6 fiscal years, 10 total structure fires have occurred with the following observations:

- [0.0%](#) of these fires were [confined to the room or origin](#).
- Average duration of an event was 2 hours, 51 minutes
- There were **no** fire fatalities, **no** civilian injury and **no** firefighter injury.
- The leading area of origin was undetermined on 30.00% of the events, the highest percentage of any other area. Bedroom was the origin 20.00%
- A smoke alarm was found in 20% of these properties.
- Cause of ignition was found to be still under investigation on fifty percent (50%) of the events. 20.00% were found to be unintentional
- A first arriving [response time goal of 9 minutes was met on 100% of events](#).
- Property savings were recorded at less than 19% of total property value. Some losses exceeded values leading to incorrect analysis of the property loss to save ratios.
- \*Average incident staff count was 30 persons. 90% of these had a staff count of 51 or less persons. The max staff count on any incident was 51.

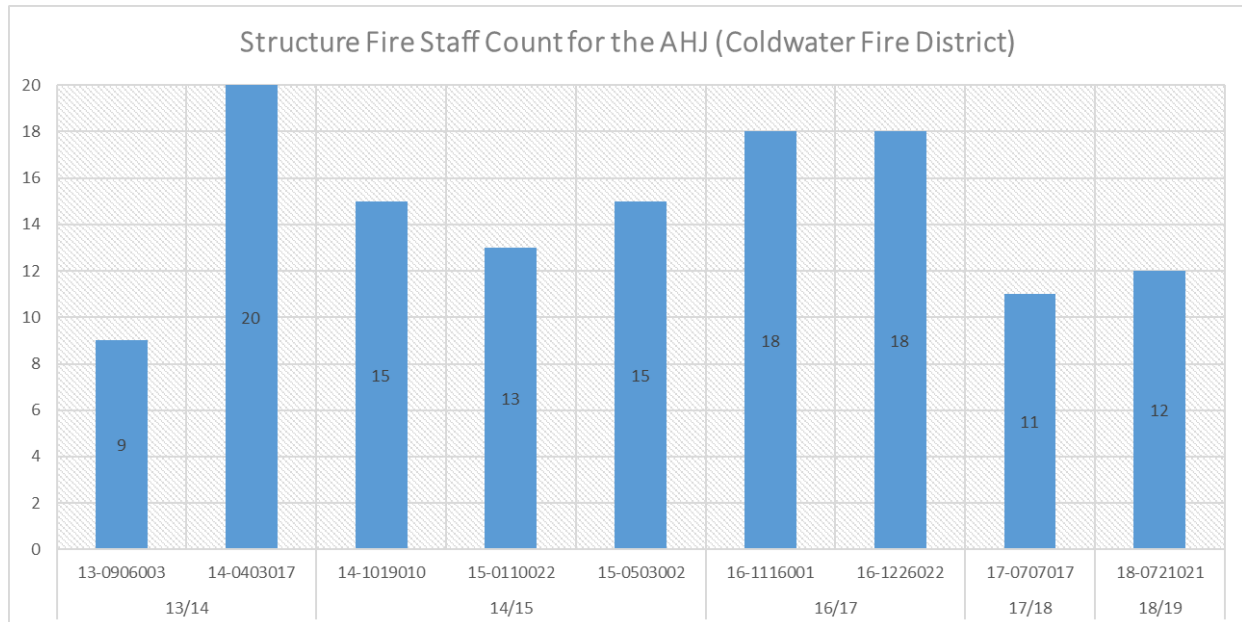
**\*Note:** Average incident counts are incident specific and could be inclusive of auto/mutual aid staff if the user chose to include those in the incident report by way of a checkbox in the report.



# Cabarrus County Fire Service Strategic Analysis

## August, 2020

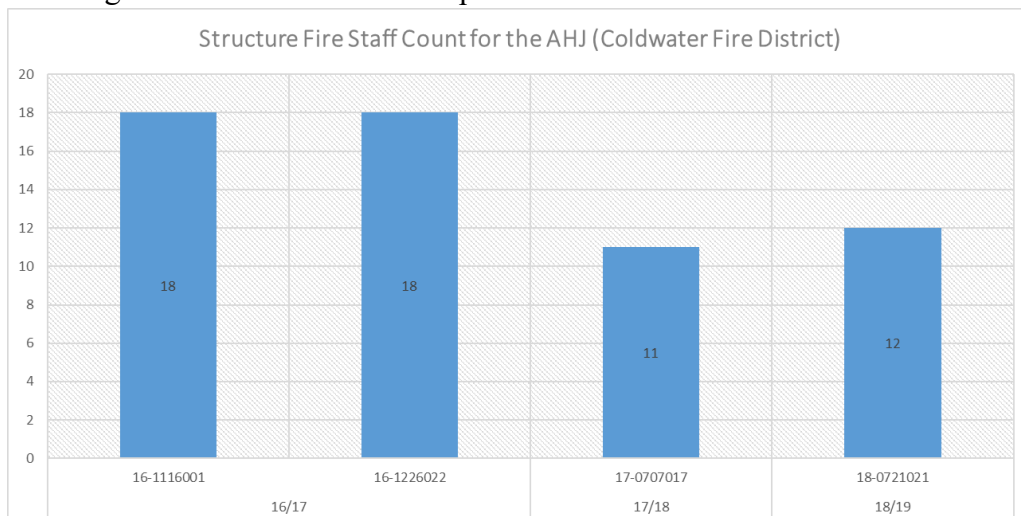
### Structure Fire Staff counts from Coldwater Fire District



To determine the department's ability to assemble an effective response force from their own staff (separate from mutual/auto aid companies), an evaluation of staff associated with the department's fire units, which arrived, was evaluated. It should be noted the evaluation found a unit called POV (personally owned vehicle) which was assumed to collectively count the total staff which arrived by POV. This unit was used in this evaluation.

Over the 6-year period of time consisting of 9 structure fire events, the department averaged 14.56 staff members arriving these events from their department.

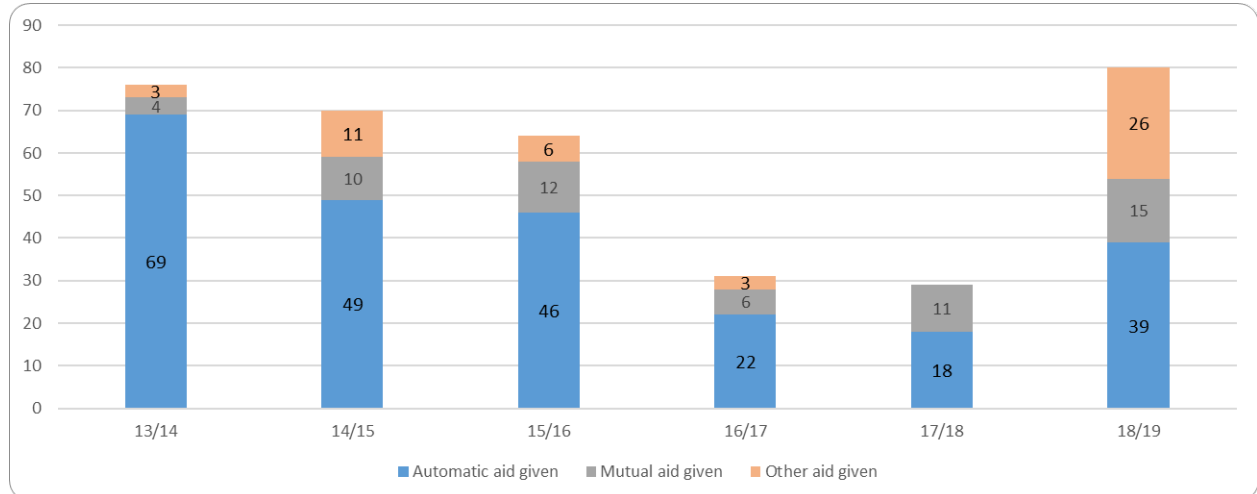
Over the last three years consisting of 4 structure fire events, the department averaged 14.75 staff members arriving these events from their department.



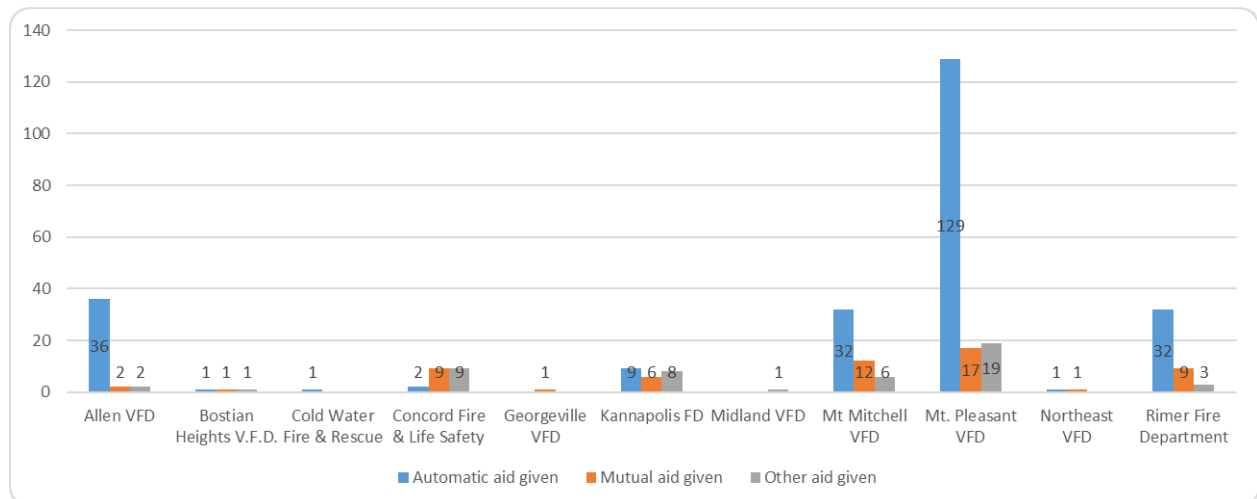
# Cabarrus County Fire Service Strategic Analysis August, 2020

## Mutual / Auto Aid

### Aid Given



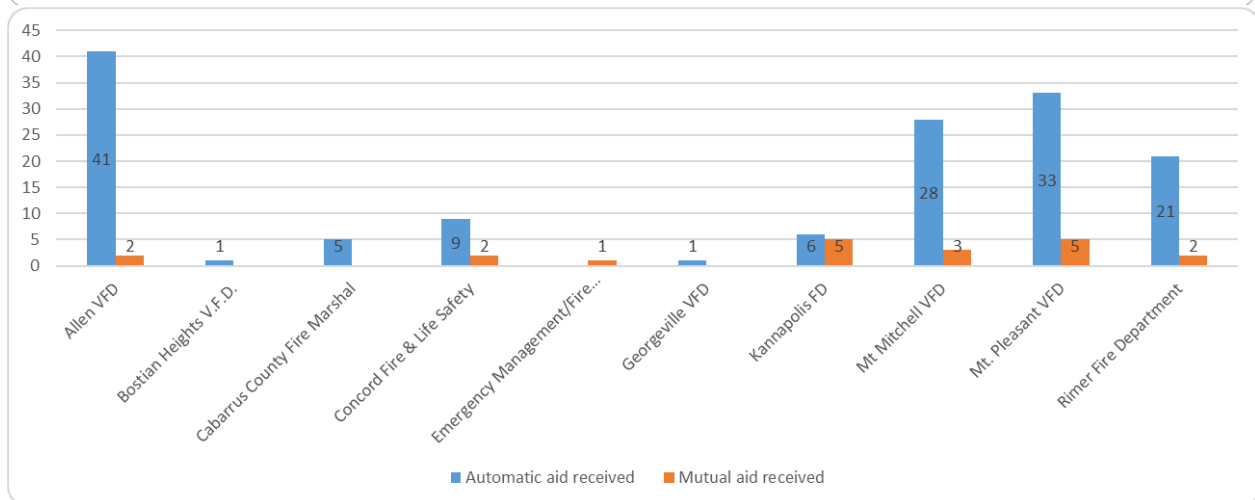
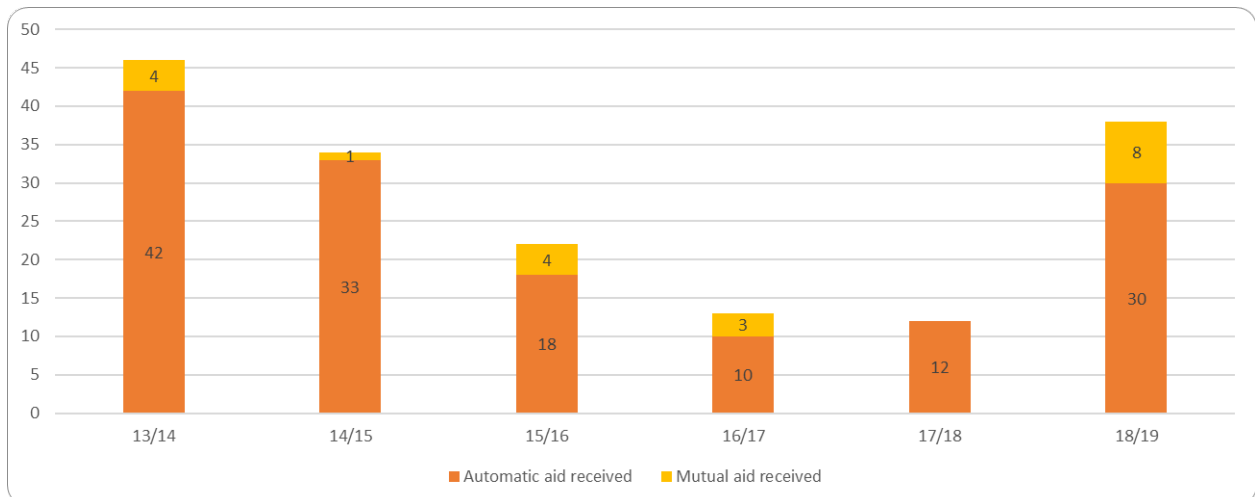
**Aid Given**, based on the data entered, Mt. Pleasant received the most aid of any other department at 165 events. Average staff sent to these aid-given events over the 6-year period was 6.49.



## Cabarrus County Fire Service Strategic Analysis August, 2020

Aid by Department Name	Count	Avg Appar Cnt	Avg Staff Cnt
± Mt. Pleasant VFD	165	1.39	6.22
± Mt Mitchell VFD	50	1.64	7.50
± Rimer Fire Department	44	1.61	7.89
± Allen VFD	40	1.68	8.03
± Kannapolis FD	23	1.00	3.35
± Concord Fire & Life Safety	20	1.20	3.75
± Bostian Heights V.F.D.	3	1.00	4.00
± Northeast VFD	2	1.50	8.00
± Georgeville VFD	1	2.00	14.00
± Midland VFD	1	0.00	0.00
± Cold Water Fire & Rescue	1	2.00	8.00
<b>Grand Total</b>	<b>350</b>	<b>1.45</b>	<b>6.49</b>

### Aid Received



## Cabarrus County Fire Service Strategic Analysis August, 2020

Aid by Department Name	Count	Avg Appar Cnt	Avg Staff Cnt
Allen VFD	43	1.30	4.21
Mt. Pleasant VFD	38	1.42	3.82
Mt Mitchell VFD	31	1.29	4.19
Rimer Fire Department	23	1.00	3.04
Concord Fire & Life Safety	11	2.00	7.00
Kannapolis FD	11	1.64	5.55
Cabarrus County Fire Marshal	5	0.60	2.40
Georgeville VFD	1	2.00	2.00
Bostian Heights V.F.D.	1	1.00	2.00
Emergency Management/Fire Marshal	1	1.00	1.00
<b>Grand Total</b>	<b>165</b>	<b>1.33</b>	<b>4.13</b>

Aid Received, with a majority in the form of [Auto-Aid Received](#), occurred on 165 events (approx. 27 annually). Top three departments sending aid were Allen, Mt. Pleasant and Mt. Mitchell. The top 10 event types are listed below with a balance of medical and fires.

Incident Type   Aid Type   Department Name	Count	Avg Appar Cnt	Avg Staff Cnt
111 - Building fire	21	1.52	5.43
743 - Smoke detector activation, no fire - unintentional	18	1.11	3.56
100 - Fire, Other	15	1.60	5.00
112 - Fires in structure other than in a building	11	1.82	4.64
140 - Natural vegetation fire, Other	10	1.60	4.80
138 - Off-road vehicle or heavy equipment fire	9	1.56	4.44
744 - Detector activation, no fire - unintentional	8	1.00	2.88
445 - Arcing, shorted electrical equipment	6	1.33	4.00
440 - Electrical wiring/equipment problem, Other	6	1.17	4.67
611 - Dispatched & cancelled en route	5	1.00	3.00

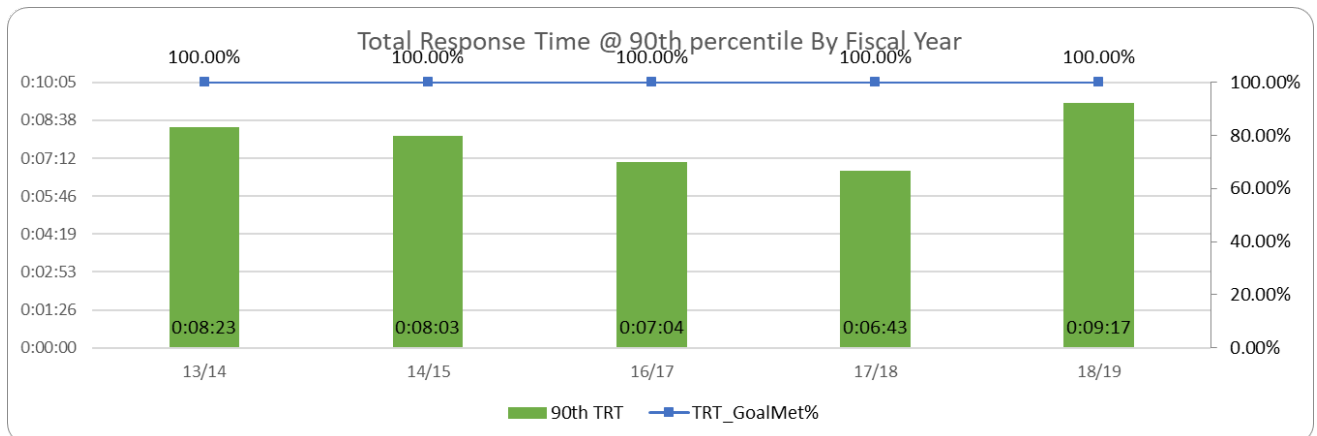
### Standard of Cover:

To establish a baseline of performance measured against the NFPA 1720 standard, a query for Structure Fires (NFIRS 111, 112, 120, 121, 122, 123) where Mutual Aid was None, Mutual Aid Received or Aid Received, was conducted. Total Response Time, inclusive of call processing, turnout and travel time of the first arriving unit are needed to evaluate against the standard of 10 minutes and 00 seconds. The current dataset evaluated was from 07/01/2013 to 06/30/2019. [A total of 10 events](#) met the criteria above.

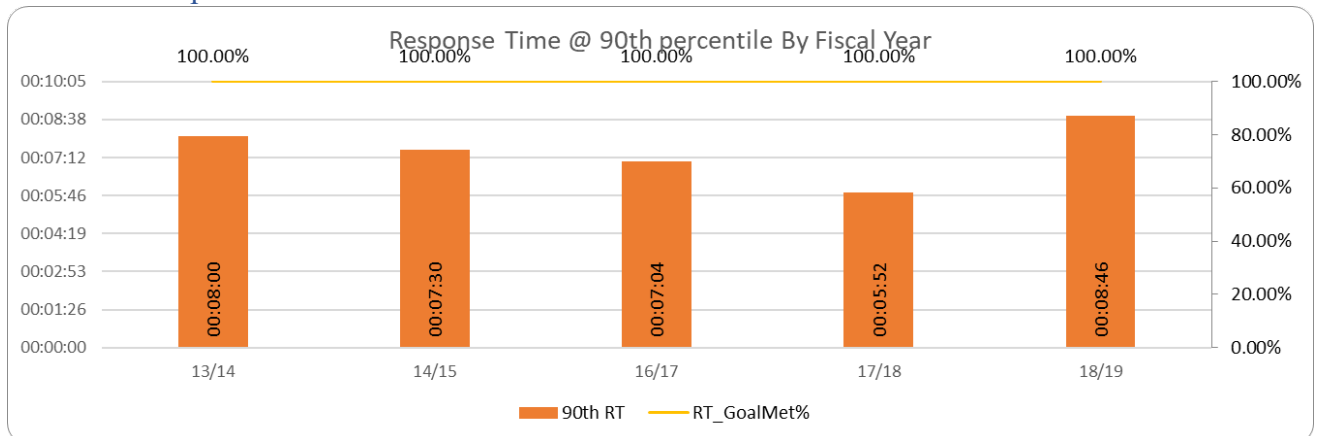
Two evaluations were done: one to evaluate the Total Response Time of the 10 events containing the call processing time and another to evaluate only the Response Time (turnout and travel time) of the first arriving unit. The NFPA 1720 standard for Total Response Time would be 10 minutes and 00 seconds. (01:00 for call processing, 01:30 for turnout and 7:30 for travel) The goal was met on all events. [Total Response Time 09:17](#)



## Cabarrus County Fire Service Strategic Analysis August, 2020



The chart below represents the Response Time (turnout and travel time) of all 10 events. The goal is 09 minutes and 00 seconds. (01:30 for turnout and 7:30 for travel) The goal was met on all events. **Response Time 08:46**



**Note:** one of these structure fires was an exposure to a vehicle fire and may not reflect in other areas of this report.

### Baseline Statement:

For the period 07/01/2013 to 06/30/2019, For 90% of all **structure fire incidents**, the first arriving unit arrived within **9 minutes and 17 seconds or less**, from time received in the 911 center to arrival. This represents **Total Response Time**. The goal of 10 minutes was met **100.00%**





## Cabarrus County Fire Service Strategic Analysis August, 2020

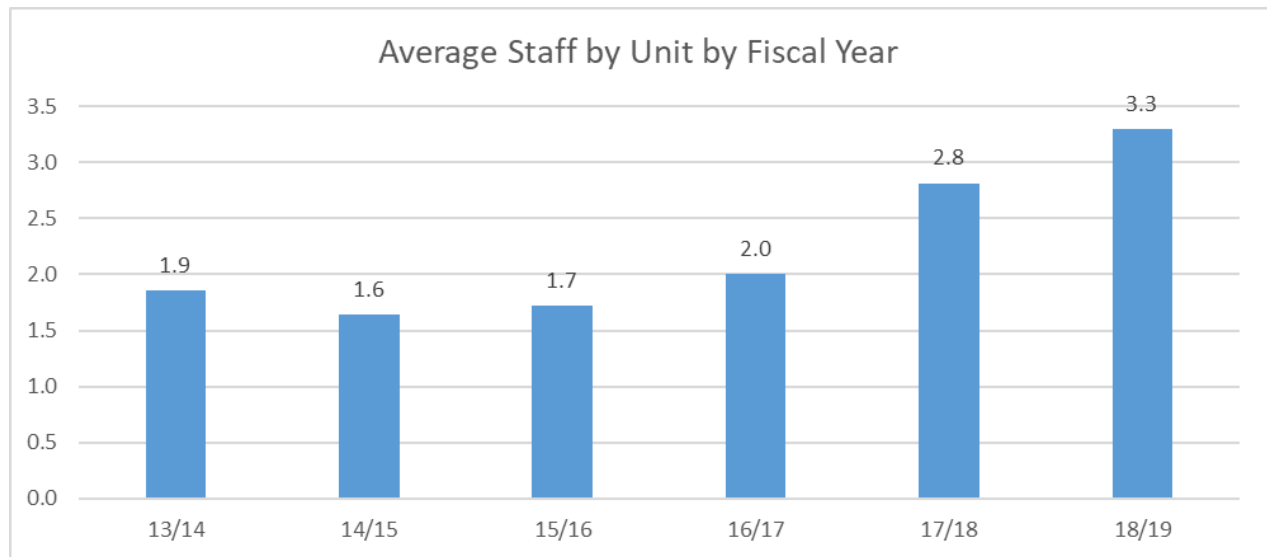
FDID 11302 - Cold Water		
Set Response Performance Goals Here		
Call Processing	Response Time	Total Response time
0:01:00	0:09:00	0:10:00
% Goals Met		
Call Processing	Response Time	Total Response Time
90.00%	100.00%	100.00%
90th Percentile Demonstrated Performance		
90th CP	90th RT	90th TRT
00:01:08	00:08:46	0:09:17
Staff and Counts per Incident		
90th Staff Count	Avg Staff Count	Incident Count
51.00	30.90	10

Unit	Responses	AvgStaffCount
BLS unit	43	2.8
CWM1	43	2.8
Engine	1,949	2.4
CWE1	1,142	2.3
CWE12	807	2.4
Brush truck	215	2.1
CWB12	215	2.1
Rescue unit	343	2.0
CWR12	343	2.0
Tanker	162	1.4
CWT1	154	1.3
CWT12	8	3.0
<b>Grand Total</b>	<b>2,712</b>	<b>2.2</b>

**Staffing** – Based on the first arriving unit reports for apparatus, it appears the department is staffing the first arriving engine company with 2.4 staff members on average.



## Cabarrus County Fire Service Strategic Analysis August, 2020



### Effective Response Force (ERF):

Due to the lack of information of auto/mutual aid companies, the staff on those companies and individual timestamps, the calculations of an Effective Response Force were not able to be determined.



# Cabarrus County Fire Service Strategic Analysis

## August, 2020

### 01304 – Flowe’s Store Fire District

#### Fire Department Baseline Performance Report

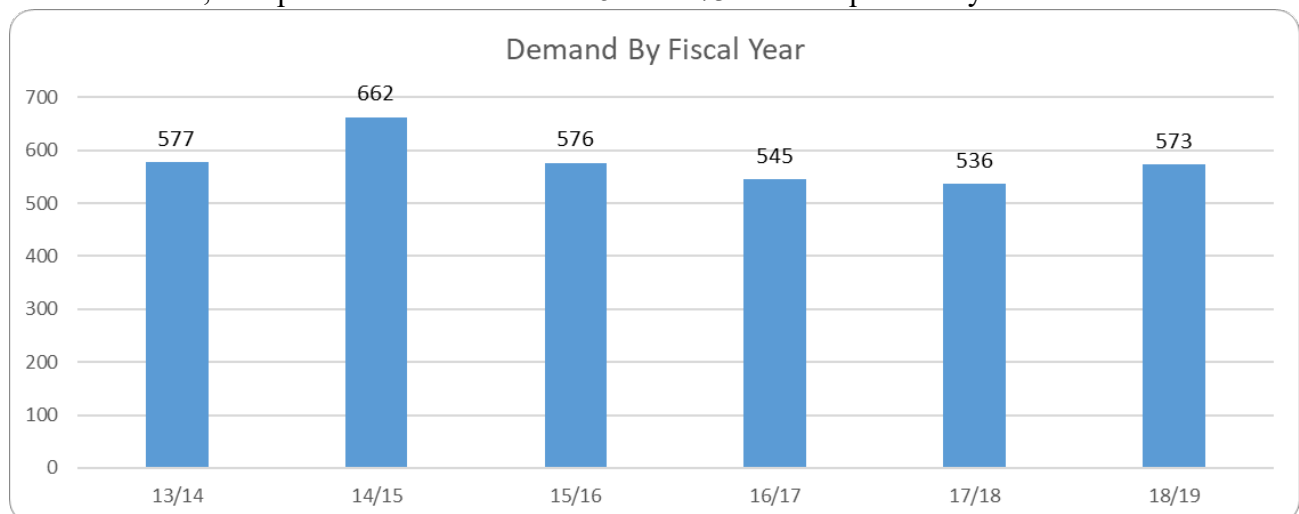
Disclaimer: The performance measures in this document are based on the data exported from the Firehouse Records Management System (RMS) as entered in the system by the end user(s) with no modifications. There is no guarantee of accuracy as it beyond the scope of this evaluation.

Multiple evaluations were conducted as seen below with the following understandings:

- Data evaluation spans from 07/01/2013 to 06/30/2019 with a focus on the last six, full, fiscal years (FY) of data; FY13/14 to FY18/19
- When referencing incidents within the Authority Having Jurisdiction (AHJ), this was determined by excluding incidents where Aid Type was auto aid given or mutual aid given.
- Errors which could affect results:
  - 75 of 3,469 events had a dispatch received time before the alarm time, affecting call processing evaluation
  - 155 of 3,469 event had no dispatch receive time, affecting call processing evaluation
  - 52 fire events had a fire loss but no pre-fire value, affecting save percentages on fire events.

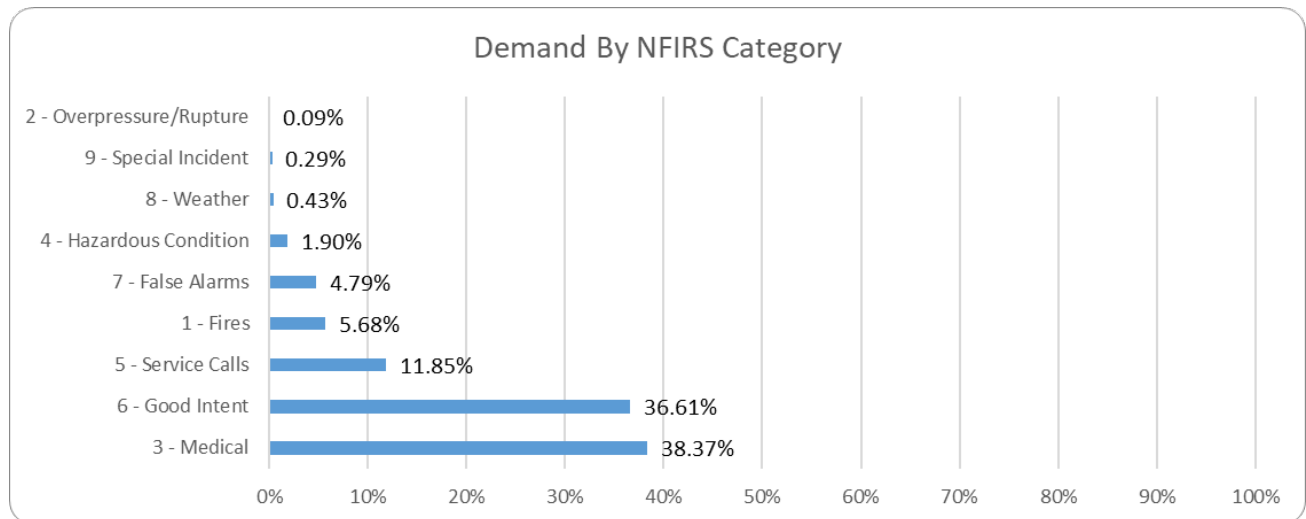
#### Demand for Service

The department’s demand for service for FY18/19 was 573 events, approximately 1.5 per day. Events over the entire 6 years yielded no remarkable increases or decreases. The medical emergency contributes to 38.37% of the demand over the last 6 full years. The demand for service is static, except for a small rise in 14/15 of 14.73 over the previous year.



## Cabarrus County Fire Service Strategic Analysis August, 2020

### Demand by NFIRS Category – 07/01/2013 to 06/30/2019



### Response Times – Events within the AHJ

Using the National Fire Protection Association as a guideline for response (NFPA 1720, Urban Zone), goals for response performance were set and evaluated against the following:

**Call Processing Time:** 01 min 00 seconds  
**Response Time:** 09 min 00 seconds (turnout - 1.5 min and travel - 7.5 min)  
**Total Response Time:** 10 minutes (Call processing time, turnout, travel)  
**Incident Types:** All

**Mutual Aid:** None, Mutual Aid Received and Auto Aid Received

FDID 11304 - Flowes Store		
Set Response Performance Goals Here		
Call Processing	Response Time	Total Response time
0:01:00	0:09:00	0:10:00
% Goals Met		
Call Processing	Response Time	Total Response Time
84.09%	55.03%	58.52%
90th Percentile Demonstrated Performance		
90th CP	90th RT	90th TRT
00:00:53	00:10:05	0:10:28
Staff and Counts per Incident		
90th Staff Count	Avg Staff Count	Incident Count
9.00	5.88	3,469

Evaluating all events within the AHJ, defined by the Mutual Aid values, the Total Response Goal of 10:00 minutes was met 58.52%

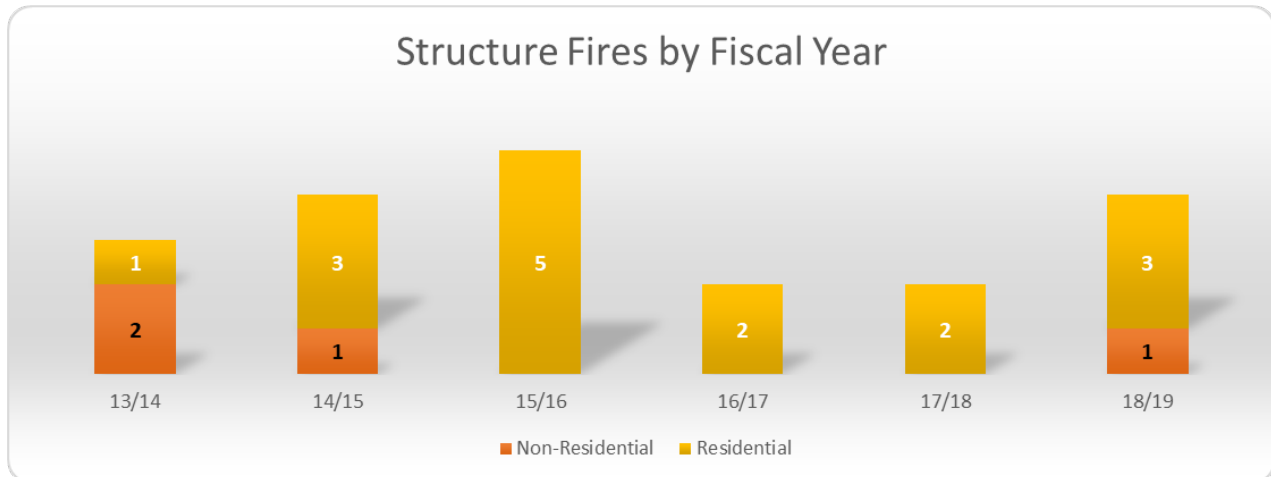
Of the 3,469 events measured here, 90% had a staff count of 9 persons or less per incident; the average was 5.88 staff count.

Response Time Goal of 9 minutes for the first arriving unit was met 55.03%



## Cabarrus County Fire Service Strategic Analysis August, 2020

### Structure Fires



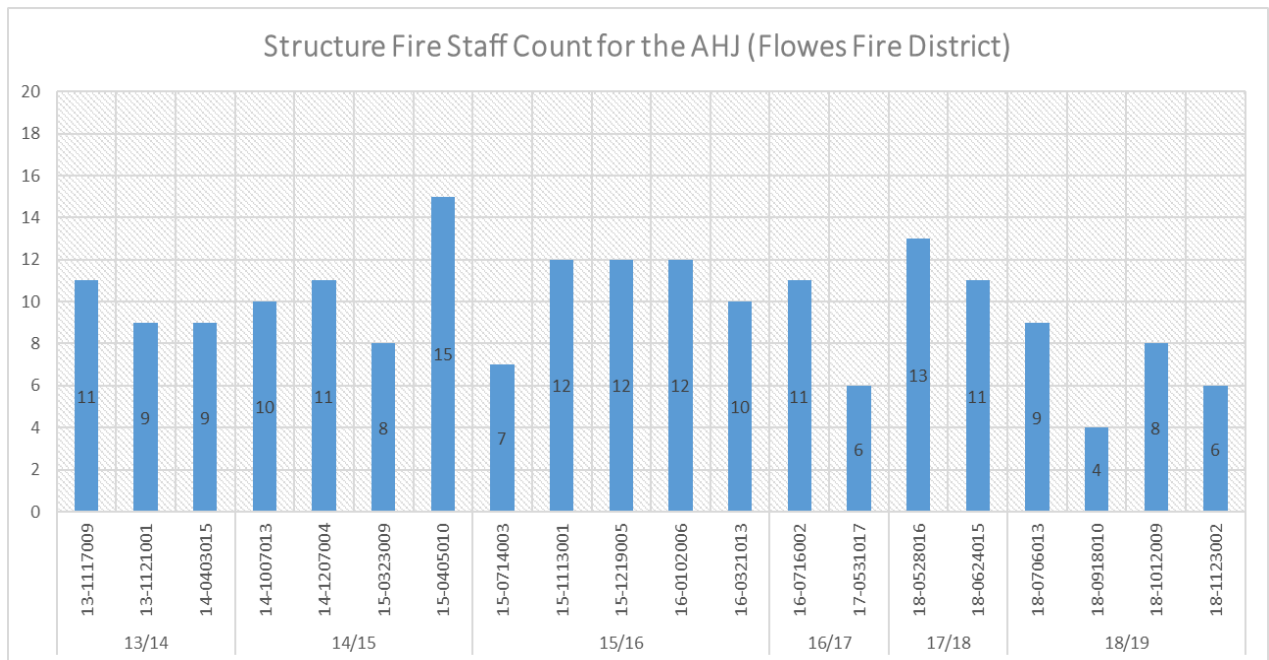
Within the department's AHJ, [annual structure fires average 3.3](#). Over the last 6 fiscal years, 20 total structure fires have occurred with the following observations:

- [45.0%](#) of these fires were [confined to the room or origin](#).
- Average duration of an event was 2 hours, 6 minutes
- There were **no** fire fatalities, **2** civilian injuries and **2** firefighter injuries.
- The leading area of origin was share with Cooking area and Undetermined, both on 15.00% of the events, the highest percentage of any other area.
- A smoke alarm was found in 45% of these properties.
- Cause of ignition was found to be unintentional on thirty percent (30%) of the events. 25.00% were still under investigation, 25% were due to failure of equipment or heat source
- A first arriving [response time goal of 9 minutes was met on 90% of events](#).
- Property savings could not be calculated as a summary of the 6 years due to numerous errors in the values and losses. Some event had values less than losses or no values at all.
- \*Average incident staff count was 19.55 persons. 90% of these had a staff count of 45 or less persons. The max staff count on any incident was 45.

**\*Note:** Average incident counts are incident specific and could be inclusive of auto/mutual aid staff if the user chose to include those in the incident report by way of a checkbox in the report. Structure Fire Staff counts from Flowe's Store Fire District



## Cabarrus County Fire Service Strategic Analysis August, 2020



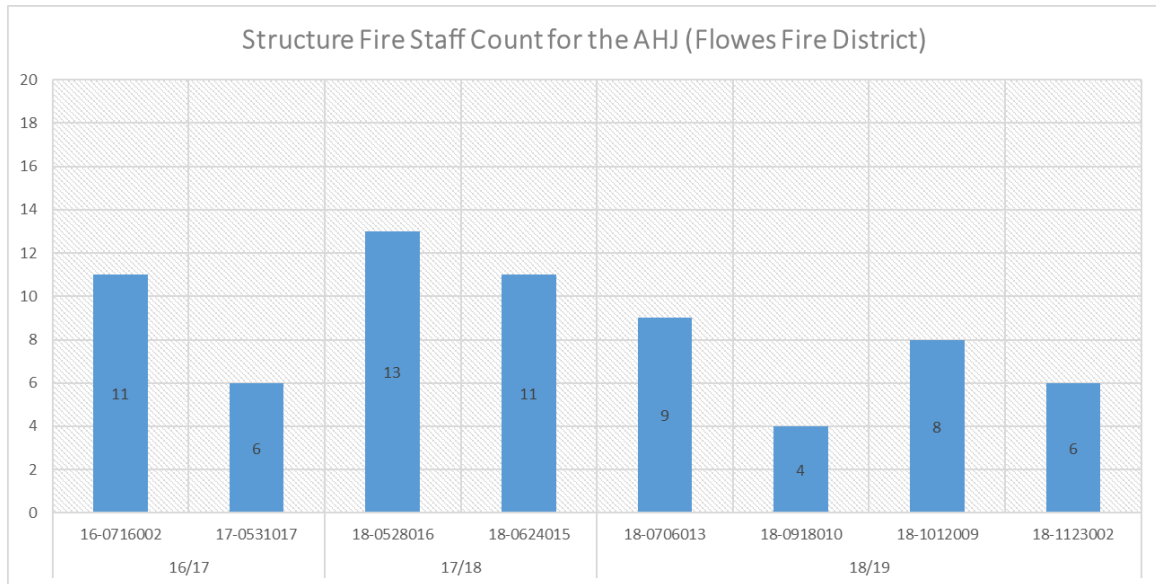
To determine the department's ability to assemble an effective response force from their own staff (separate from mutual/auto aid companies), an evaluation of staff associated with the department's fire units, which arrived, was evaluated. It should be noted the evaluation found a unit called POV (personally owned vehicle) which was assumed to collectively count the total staff which arrived by POV. This unit was used in this evaluation.

Over the 6-year period of time consisting of 20 structure fire events, the department averaged 10.44 staff members arriving these events from their department.

Over the last three years consisting of 8 structure fire events, the department averaged 8.50 staff members arriving these events from their department.

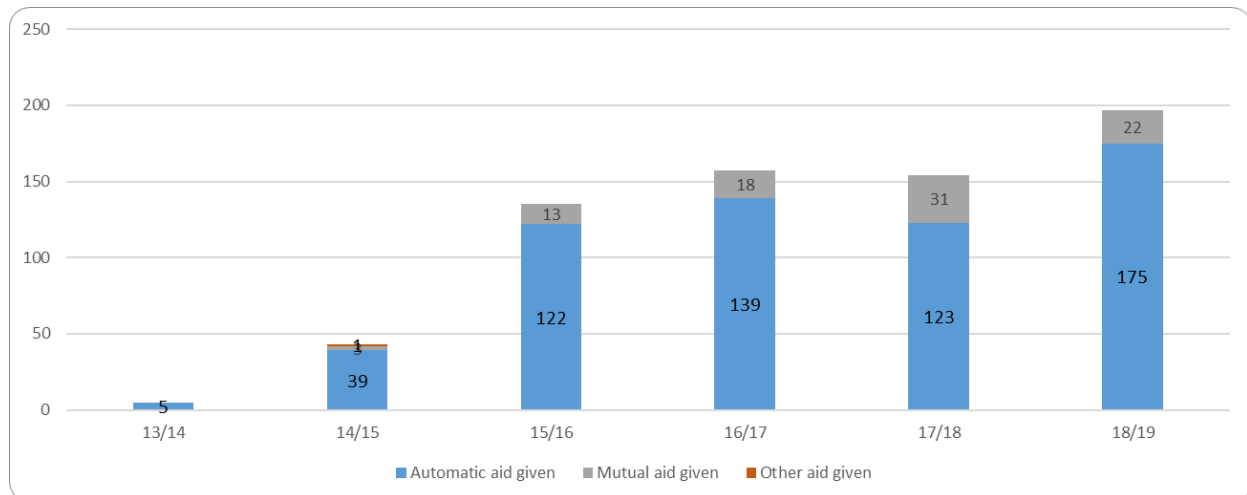


## Cabarrus County Fire Service Strategic Analysis August, 2020



### Mutual / Auto Aid

#### Aid Given

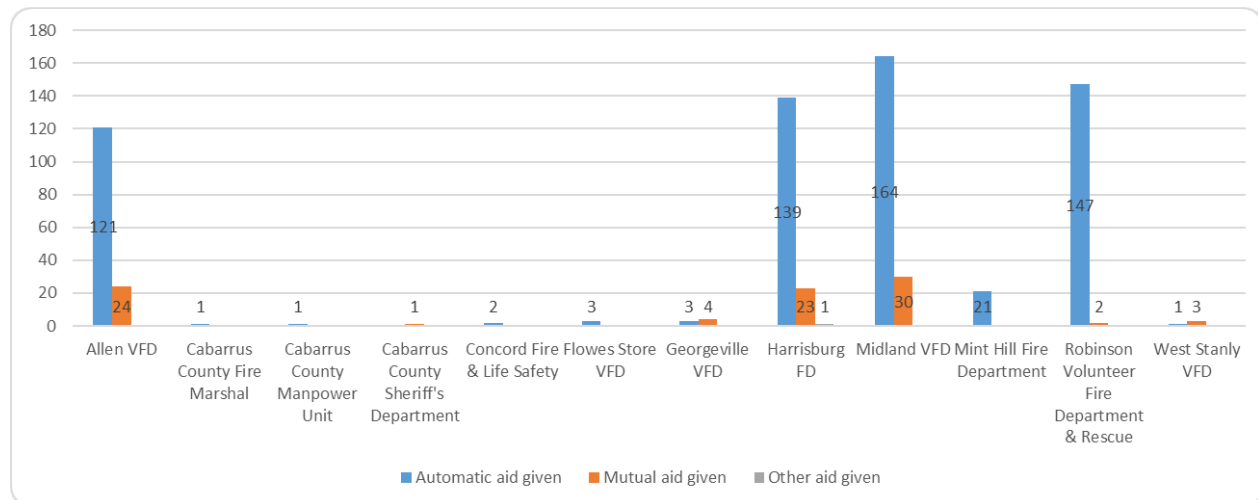


**Aid Given**, based on the data entered, Midland received the most aid of any other department at 194 events. Average staff sent to these aid-given events over the 6-year period was 5.93.



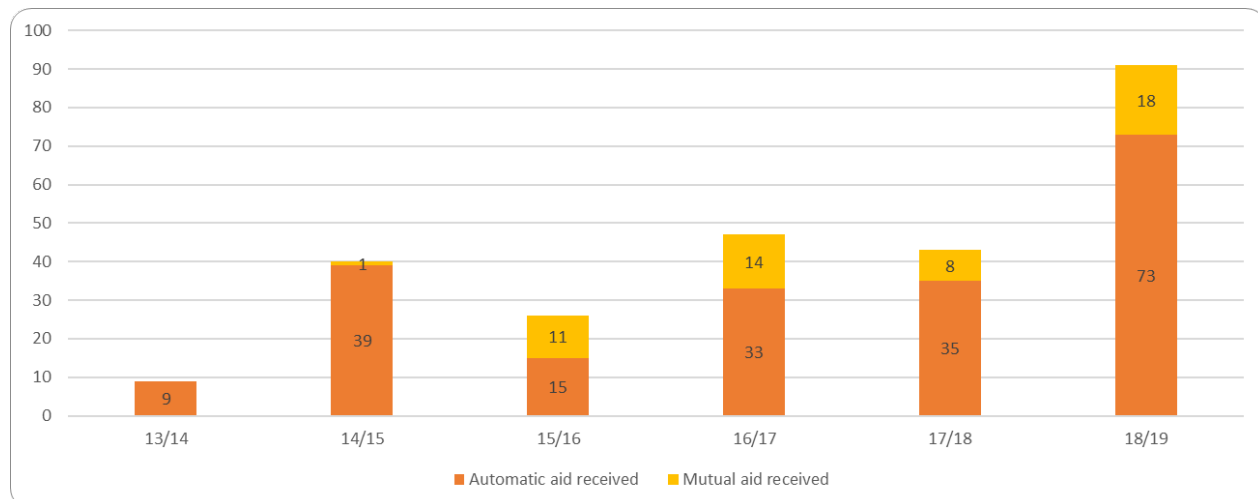


## Cabarrus County Fire Service Strategic Analysis August, 2020

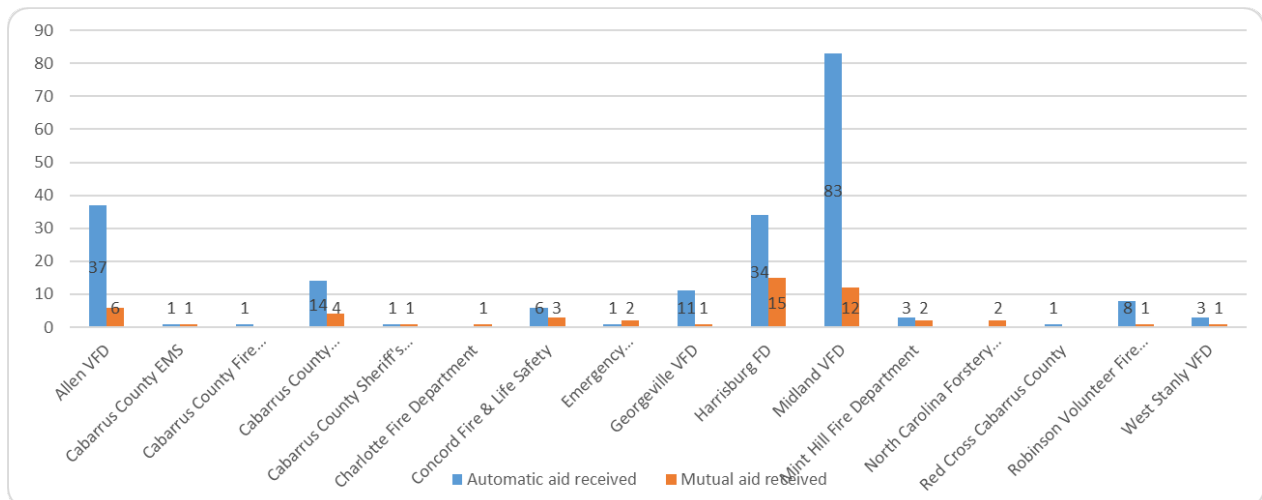


Aid by Department Name	Count	Avg Appar Cnt	Avg Staff Cnt
Midland VFD	194	1.85	5.84
Harrisburg FD	163	1.28	6.33
Robinson Volunteer Fire Department & Rescue	149	1.36	5.42
Allen VFD	145	1.63	5.99
Mint Hill Fire Department	21	1.38	5.95
Georgeville VFD	7	2.14	9.29
West Stanly VFD	4	2.25	7.00
Flowes Store VFD	3	1.33	5.67
Concord Fire & Life Safety	2	2.50	7.50
Cabarrus County Manpower Unit	1	1.00	3.00
Cabarrus County Sheriff's Department	1	2.00	4.00
Cabarrus County Fire Marshal	1	3.00	3.00
<b>Grand Total</b>	<b>691</b>	<b>1.56</b>	<b>5.93</b>

### Aid Received



## Cabarrus County Fire Service Strategic Analysis August, 2020



Aid by Department Name	Count	Avg Appar Cnt	Avg Staff Cnt
Midland VFD	95	1.21	3.05
Harrisburg FD	49	1.55	4.24
Allen VFD	43	1.67	4.26
Cabarrus County Manpower Unit	18	1.00	2.78
Georgeville VFD	12	1.33	3.42
Robinson Volunteer Fire Department & Rescue	9	1.11	2.11
Concord Fire & Life Safety	9	2.33	7.11
Mint Hill Fire Department	5	1.40	4.20
West Stanly VFD	4	1.50	3.00
Emergency Management/Fire Marshal	3	1.33	2.33
Cabarrus County EMS	2	2.50	4.50
Cabarrus County Sheriff's Department	2	3.50	3.50
North Carolina Forestry Service	2	1.50	2.00
Red Cross Cabarrus County	1	1.00	2.00
Charlotte Fire Department	1	3.00	5.00
Cabarrus County Fire Marshal	1	1.00	1.00
Grand Total	256	1.43	3.61

Aid Received, with a majority in the form of **Auto-Aid Received**, occurred on 256 events (approx. 42 annually). Top three departments sending aid were Midland, Harrisburg and Allen. The top 10 event types are listed below with a balance of medical and fires.

Incident Type	Aid Type	Department Name	Count	Avg Appar Cnt	Avg Staff Cnt
111 - Building fire			57	1.60	4.14
700 - False alarm or false call, Other			15	1.07	2.93
121 - Fire in mobile home used as fixed residence			15	1.40	3.60
311 - Medical assist, assist EMS crew			13	1.31	2.92
745 - Alarm system activation, no fire - unintentional			10	1.10	3.30
324 - Motor Vehicle Accident with no injuries			9	1.33	3.11
600 - Good intent call, Other			8	1.50	3.75
441 - Heat from short circuit (wiring), defective/worn			8	1.13	3.13
322 - Motor vehicle accident with injuries			8	1.13	2.75
114 - Chimney or flue fire, confined to chimney or flue			8	2.50	6.75

### Standard of Cover:

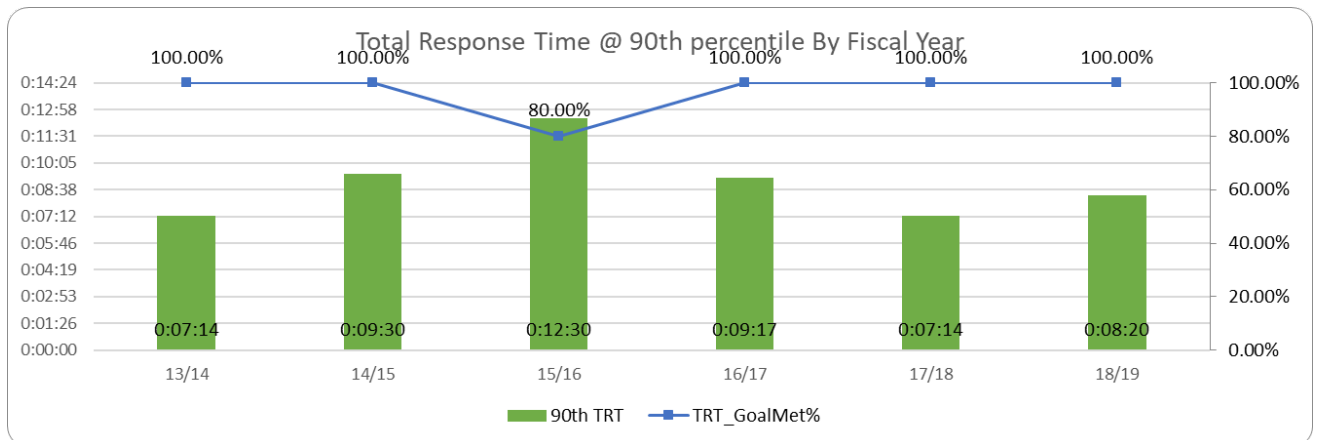
To establish a baseline of performance measured against the NFPA 1720 standard, a query for Structure Fires (NFIRS 111, 112, 120, 121, 122, 123) where Mutual Aid was None, Mutual Aid Received or Aid Received, was conducted. Total Response Time, inclusive of call processing, turnout and travel time of the first arriving unit are needed to evaluate against the standard of 10 minutes and 00 seconds. The current dataset evaluated was from 07/01/2013 to 06/30/2019. A total of 20 events met the criteria above.

Two evaluations were done: one to evaluate the Total Response Time of the 20 events containing the call processing time and another to evaluate only the Response Time (turnout and travel time) of the first arriving unit. The NFPA 1720 standard for Total Response Time would be 10 minutes and 00 seconds. (01:00 for call processing, 01:30 for turnout and 7:30 for travel) The goal was met on all events in every year except 15/16.

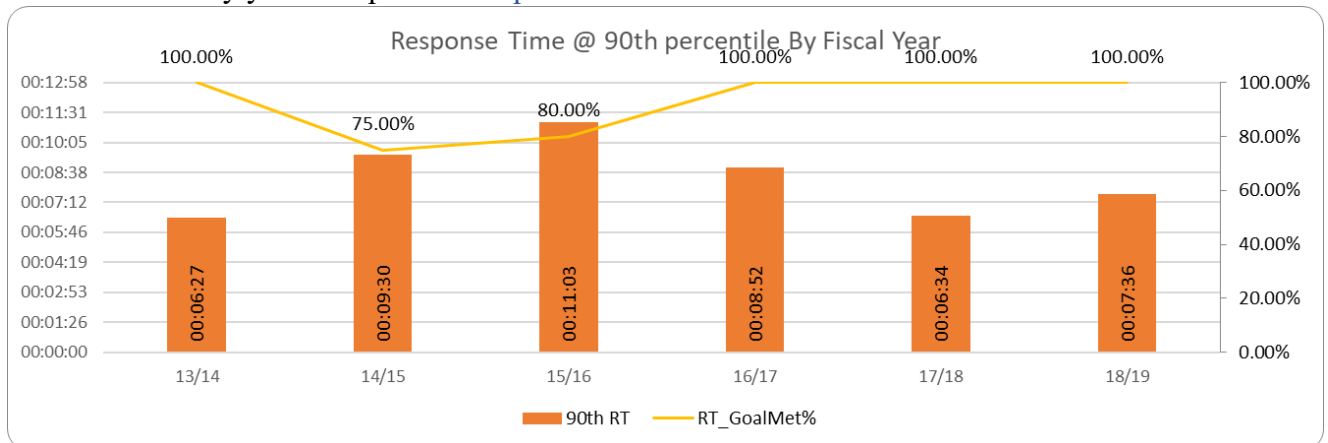
Total Response Time = 09:30



## Cabarrus County Fire Service Strategic Analysis August, 2020



The chart below represents the Response Time (turnout and travel time) of all 20 events. The goal is 09 minutes and 00 seconds. (01:30 for turnout and 7:30 for travel) The goal was met on all events in every year except two. **Response Time = 09:30**



### Baseline Statement:

For the period 07/01/2013 to 06/30/2019, For 90% of all **structure fire incidents**, the first arriving unit arrived within **9 minutes and 30 seconds** or less, from time received in the 911 center to arrival. This represents **Total Response Time**. The goal of 10 minutes was met **95.00%**



# Cabarrus County Fire Service Strategic Analysis

## August, 2020

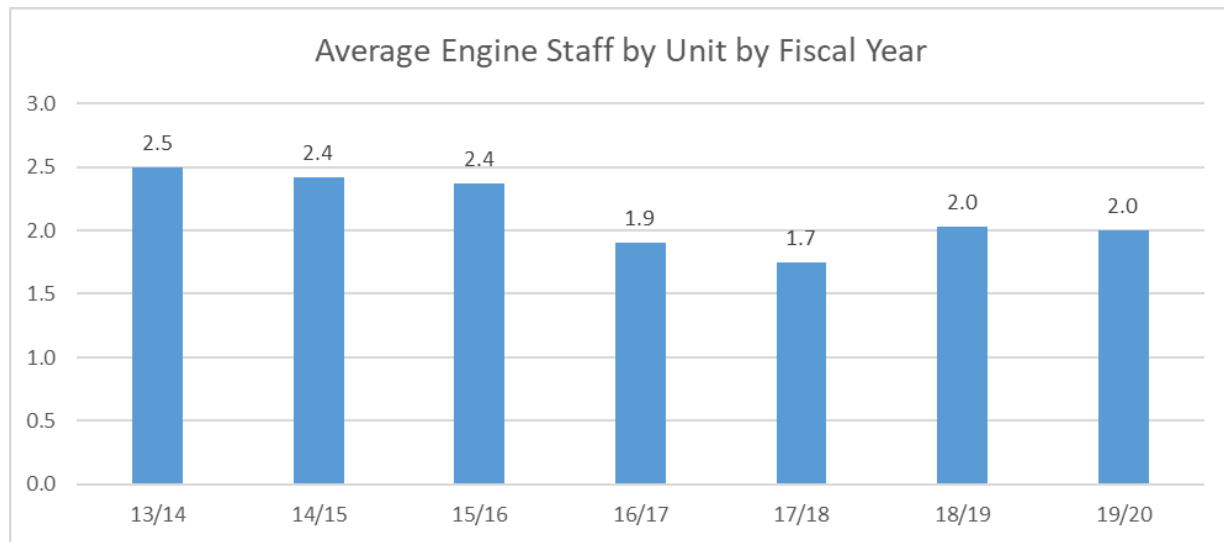
FDID 11304 - Flowes Store		
Set Response Performance Goals Here		
Call Processing	Response Time	Total Response time
0:01:00	0:09:00	0:10:00
% Goals Met		
Call Processing	Response Time	Total Response Time
70.00%	90.00%	95.00%
90th Percentile Demonstrated Performance		
90th CP	90th RT	90th TRT
00:01:27	00:09:30	0:09:30
Staff and Counts per Incident		
90th Staff Count	Avg Staff Count	Incident Count
45.00	19.55	20

Unit	Responses	AvgStaffCount
Engine	3,027	2.1
FSE2	2,222	2.1
FSE1	804	2.2
FSPOV	1	4.0
Tanker & pumper combinator	366	1.8
FST2	21	1.4
FST1	345	1.8
Rescue unit	460	1.7
FSS1	1	1.0
FSR1	459	1.7
Medical & rescue unit, Other	8	1.4
FSM1	8	1.4
<b>Grand Total</b>	<b>3,861</b>	<b>2.1</b>

**Staffing** – Based on the unit reports for apparatus, it appears the department is staffing the first arriving engine company with 2.1 staff members on average.



## Cabarrus County Fire Service Strategic Analysis August, 2020



### Effective Response Force (ERF):

Due to the lack of information of auto/mutual aid companies, the staff on those companies and individual timestamps, the calculations of an Effective Response Force were not able to be determined.



# **Cabarrus County Fire Service Strategic Analysis**

## **August, 2020**

### **01305 – Georgeville Fire District**

#### **Fire Department Baseline Performance Report**

Disclaimer: The performance measures in this document are based on the data exported from the Firehouse Records Management System (RMS) as entered in the system by the end user(s) with no modifications. There is no guarantee of accuracy as it beyond the scope of this evaluation. Multiple evaluations were conducted as seen below with the following understandings:

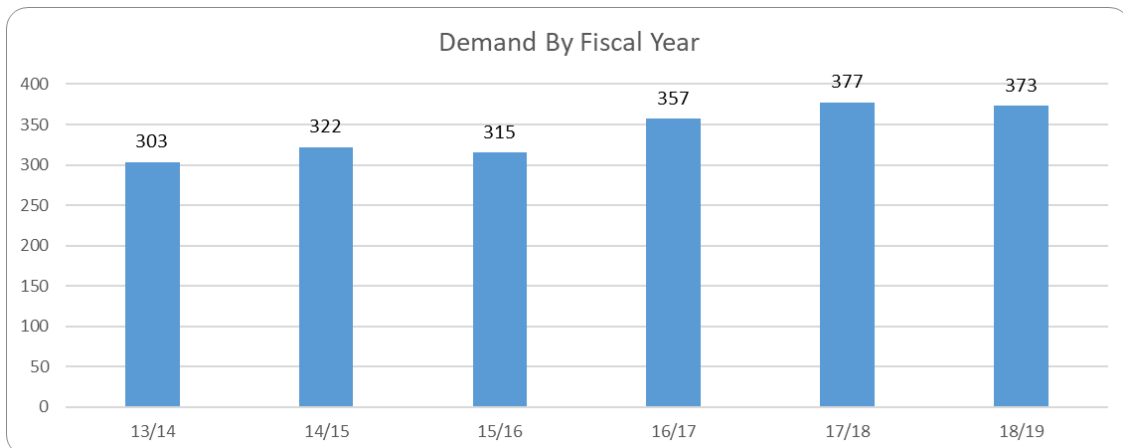
- Data evaluation spans from 07/01/2013 to 06/30/2019 with a focus on the last six, full, fiscal years (FY) of data; FY13/14 to FY18/19
- When referencing incidents within the Authority Having Jurisdiction (AHJ), this was determined by excluding incidents where Aid Type was auto aid given or mutual aid given.
- Errors which could affect evaluation results:
  - 22 of 2,047 events had a dispatch received time before the alarm time, affecting call processing evaluation
  - 3 of 2,047 event had no dispatch receive time, affecting call processing evaluation
  - 13 fire events had a fire loss but no pre-fire value, affecting save percentages on fire events.
  - 48 of 2,047 had no value in the Aid Type field. Many had no department identified as who aid was given to or received from.
  - 57 of 2,047 event were not complete, by NFIRS definition, which could have an impact on evaluation of some data. It is unsure what the missing elements are for these 57 events.

#### **Demand for Service**

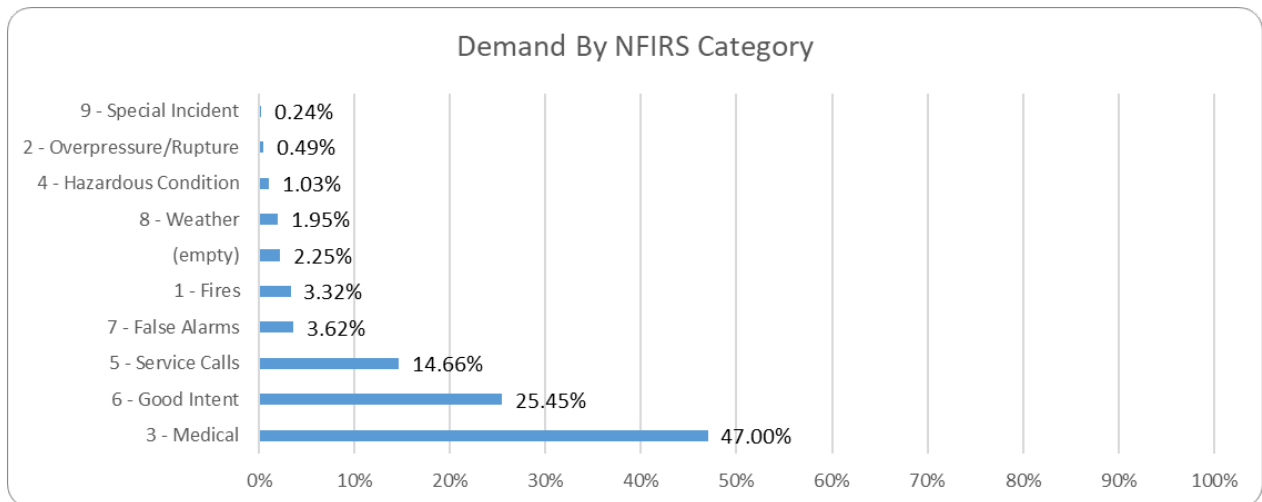
The department's demand for service for FY18/19 was 373 events, approximately 1 per day. Events over the entire 6 years yielded small annual increases and decreases with an overall increase of 23% from 2013 to 2019. The medical emergency contributes to 47.00% of the demand over the last 6 full years.



## Cabarrus County Fire Service Strategic Analysis August, 2020



### Demand by NFIRS Category – 07/01/2013 to 06/30/2019



### Response Times – Events within the AHJ

Using the National Fire Protection Association as a guideline for response (NFPA 1720, Urban Zone), goals for response performance were set and evaluated against the following:

**Call Processing Time:** 01 min 00 seconds  
**Response Time:** 09 min 00 seconds (turnout - 1.5 min and travel - 7.5 min)  
**Total Response Time:** 10 minutes (Call processing time, turnout, travel)  
**Incident Types:** All  
**Mutual Aid:** None, Mutual Aid Received and Auto Aid Received





## Cabarrus County Fire Service Strategic Analysis August, 2020

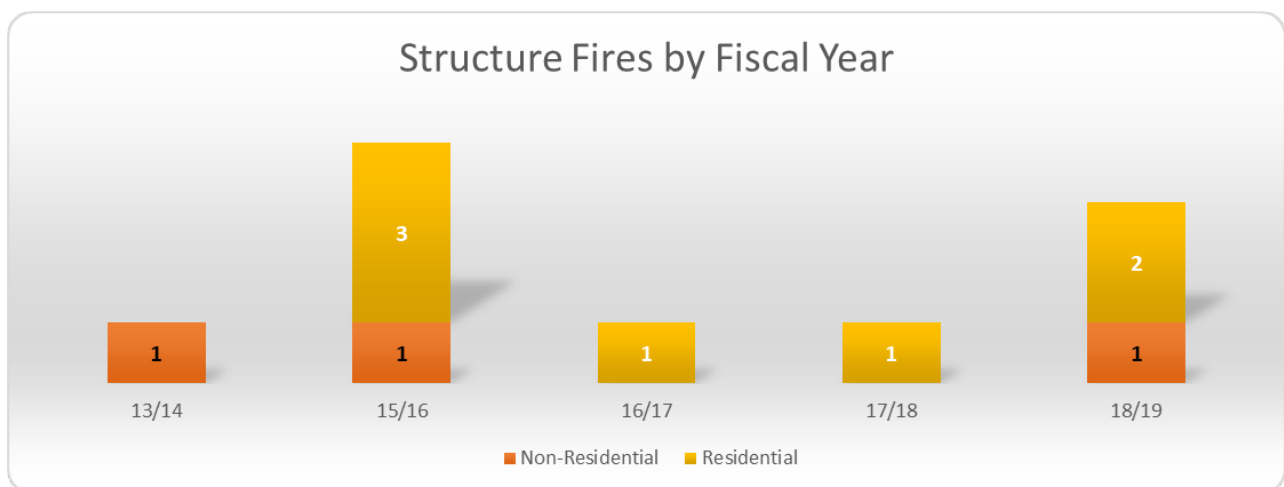
FDID 11305 - Georgeville		
Set Response Performance Goals Here		
Call Processing	Response Time	Total Response time
0:01:00	0:09:00	0:10:00
% Goals Met		
Call Processing	Response Time	Total Response Time
78.86%	61.71%	64.00%
90th Percentile Demonstrated Performance		
90th CP	90th RT	90th TRT
00:01:25	00:11:04	0:12:06
Staff and Counts per Incident		
90th Staff Count	Avg Staff Count	Incident Count
7.00	3.84	350

Using the filters above, the total incident count is 350. Compared to the total events, this number seems low as a number of AHJ events.

Evaluating all events within the AHJ, defined by the Mutual Aid values, the Total Response Goal of 10:00 minutes was met 64.0%

Of the 350 events measured here, 90% had a staff count of 7 persons or less per incident; the average was 3.84 staff count. Response Time Goal of 9 minutes for the first arriving unit was met 61.71%

### Structure Fires



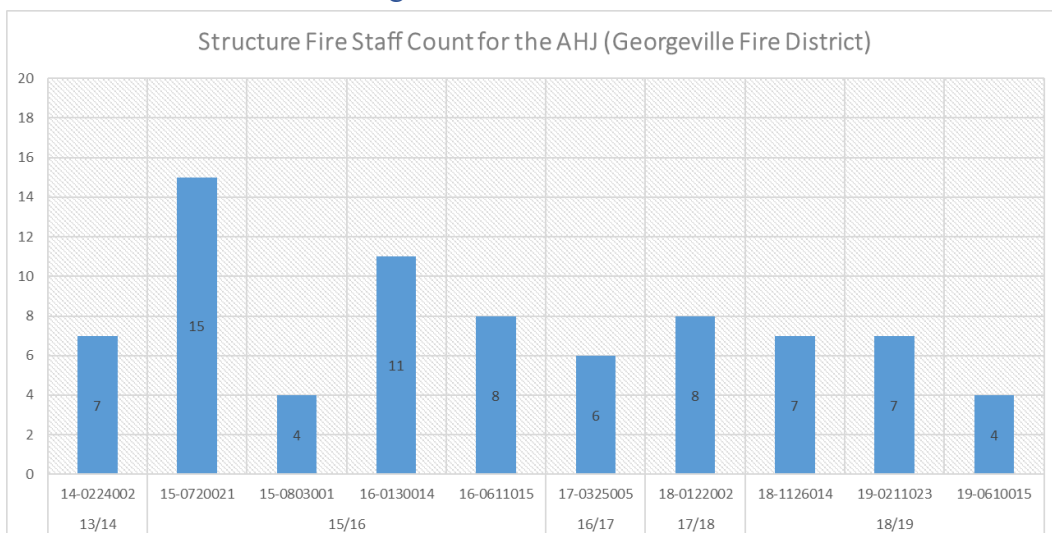
## Cabarrus County Fire Service Strategic Analysis August, 2020

Within the department's AHJ, **annual structure fires average was 2**. Over the last 6 fiscal years, 10 total structure fires have occurred with the following observations:

- **40.0%** of these fires were **confined to the room or origin**.
- Average duration of an event was 3 hours, 31 minutes
- There were **no** fire fatalities, **no** civilian injuries and **no** firefighter injuries.
- There was no leading are of fire origin as all 10 events had different fire origins.
- A smoke alarm presence was undetermined in 70%, the remaining 30% no alarm found.
- Cause of ignition is still under investigation on 50% of events, 20% undermined after investigation.
- A first arriving **response time goal of 9 minutes was met on 70% of events**.
- Property savings could not be calculated as a summary of the 6 years due to numerous errors in the values and losses. Some event had values less than losses or no values at all.
- \*Average incident staff count was 7.7 persons. 90% of these had a staff count of 15 or less persons. The max staff count on any incident was 15.

**\*Note:** Average incident counts are incident specific and could be inclusive of auto/mutual aid staff if the user chose to include those in the incident report by way of a checkbox in the report.

### Structure Fire Staff counts from Georgeville Fire District

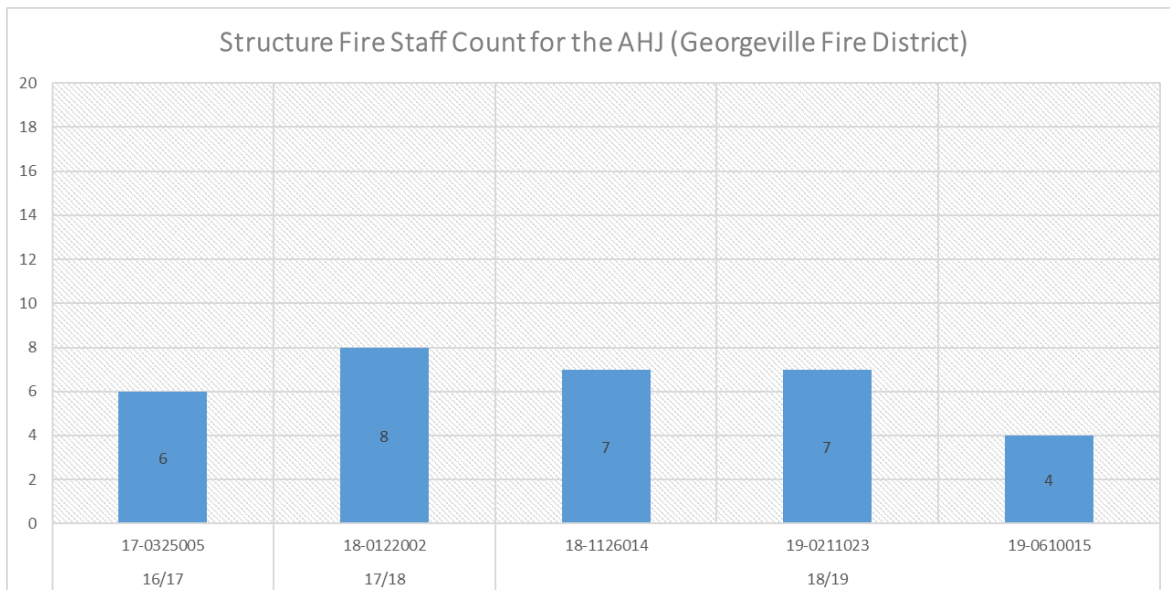


## Cabarrus County Fire Service Strategic Analysis August, 2020

To determine the department's ability to assemble an effective response force from their own staff (separate from mutual/auto aid companies), an evaluation of staff associated with the department's fire units, which arrived, was evaluated. It should be noted the evaluation found a unit called POV (personally owned vehicle) which was assumed to collectively count the total staff which arrived by POV. This unit was used in this evaluation.

Over the 6-year period of time consisting of 10 structure fire events, the department averaged 7.70 staff members arriving these events from their department.

Over the last three years consisting of 5 structure fire events, the department averaged 6.40 staff members arriving these events from their department.



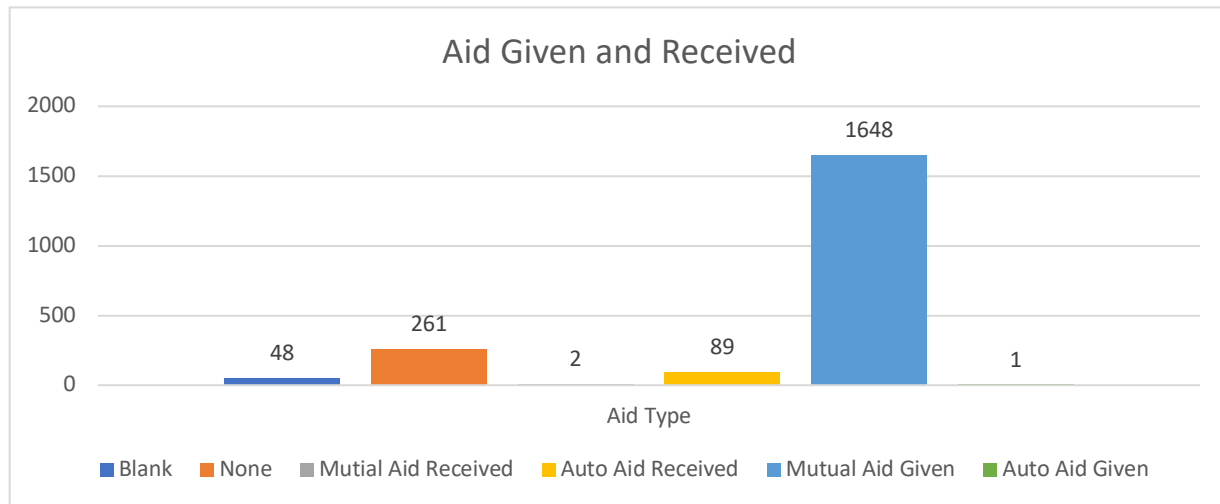
### Mutual / Auto Aid

The Aid Given and Received section for this department cannot be fully evaluated due to missing data in the Firehouse section designed to capture who the aid was given to or received from. It appears the section has some type of conditional requirements allowing the data on some types of events but disabled on others. Without administrative privileges, it could not determine the conditions set on the field.

Based on the NFIRS required field which determines what type of aid applies to an event, we can determine the following.



## Cabarrus County Fire Service Strategic Analysis August, 2020

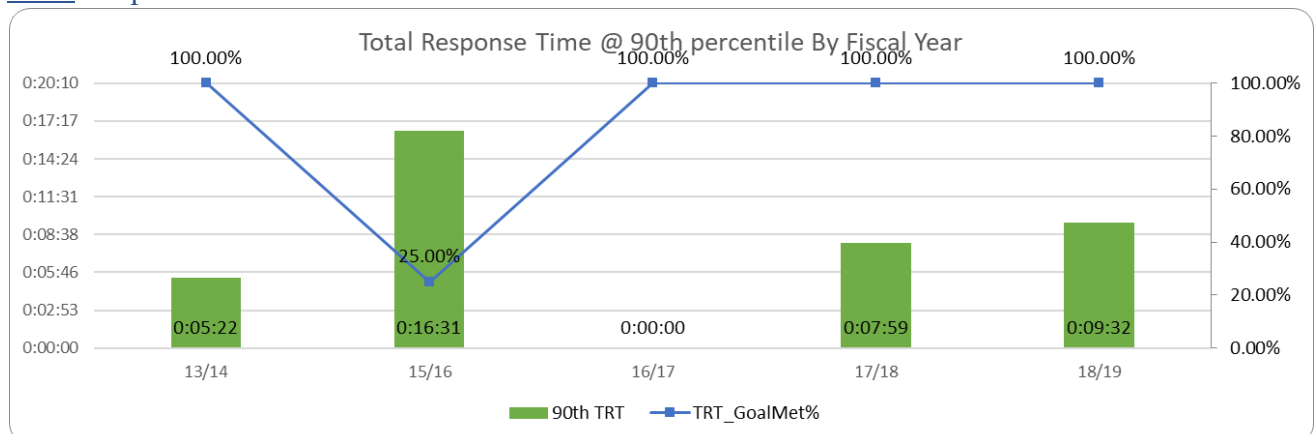


### Standard of Cover:

To establish a baseline of performance measured against the NFPA 1720 standard, a query for Structure Fires (NFIRS 111, 112, 120, 121, 122, 123) where Mutual Aid was None, Mutual Aid Received or Aid Received, was conducted. Total Response Time, inclusive of call processing, turnout and travel time of the first arriving unit are needed to evaluate against the standard of 10 minutes and 00 seconds. The current dataset evaluated was from 07/01/2013 to 06/30/2019. [A total of 10 events](#) met the criteria above.

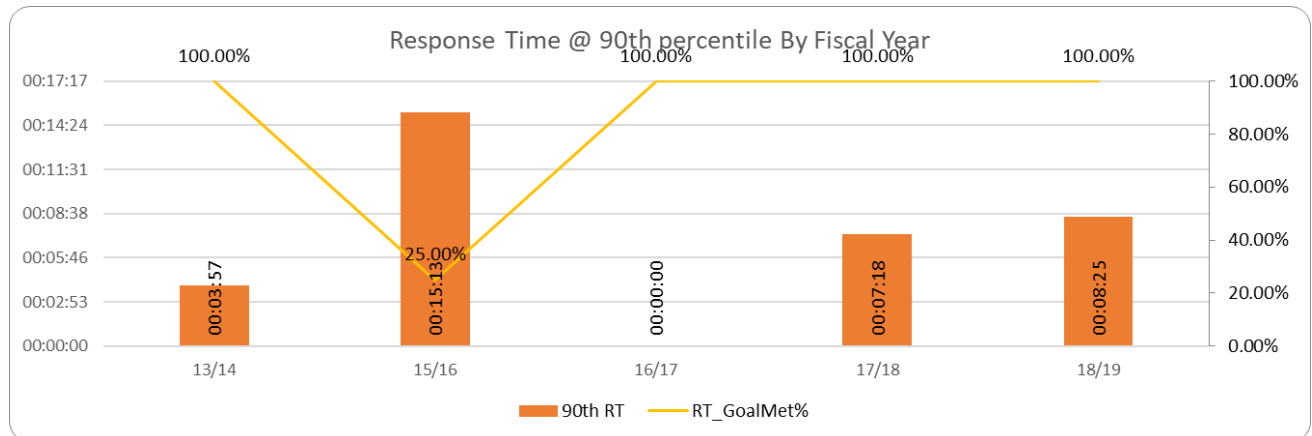
Two evaluations were done: one to evaluate the Total Response Time of the 10 events containing the call processing time and another to evaluate only the Response Time (turnout and travel time) of the first arriving unit. The NFPA 1720 standard for Total Response Time would be 10 minutes and 00 seconds. (01:00 for call processing, 01:30 for turnout and 7:30 for travel) The goal was met on all events in every year except 15/16.

Total Response Time = 16:31



## Cabarrus County Fire Service Strategic Analysis August, 2020

The chart below represents the Response Time (turnout and travel time) of all 10 events. The goal is 09 minutes and 00 seconds. (01:30 for turnout and 7:30 for travel) The goal was met on all events in every year except 15/16. **Response Time = 15:13**



### Baseline Statement:

For the period 07/01/2013 to 06/30/2019, For 90% of all **structure fire incidents**, the first arriving unit arrived within **16 minutes and 31 seconds or less**, from time received in the 911 center to arrival. This represents **Total Response Time**. The goal of 10 minutes was met **70.00%**

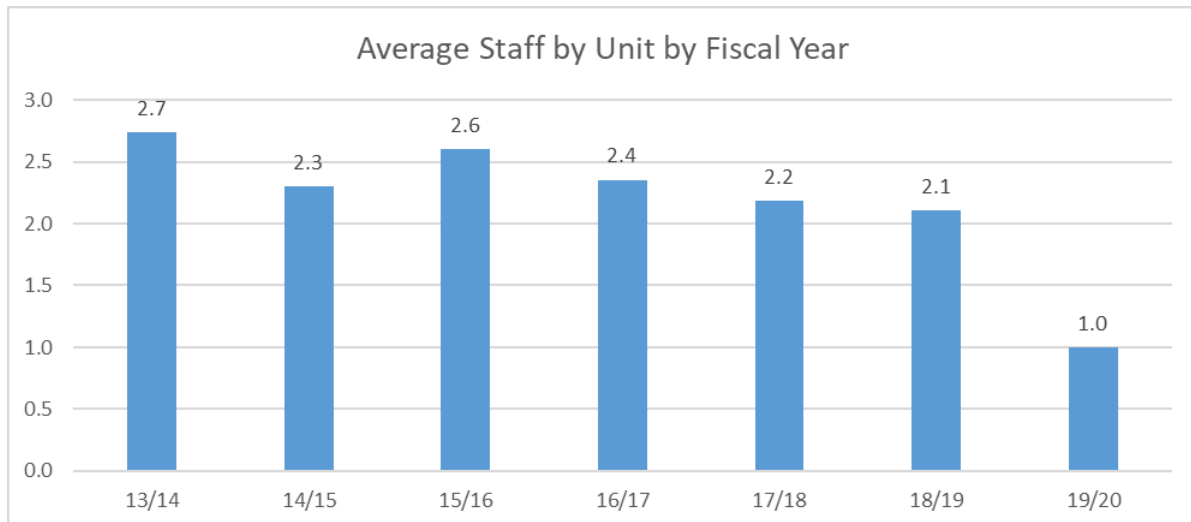
FDID 11305 - Georgeville		
Set Response Performance Goals Here		
Call Processing	Response Time	Total Response time
0:01:00	0:09:00	0:10:00
% Goals Met		
Call Processing	Response Time	Total Response Time
70.00%	70.00%	70.00%
90th Percentile Demonstrated Performance		
90th CP	90th RT	90th TRT
00:01:25	00:15:13	0:16:31
Staff and Counts per Incident		
90th Staff Count	Avg Staff Count	Incident Count
15.00	7.70	10



## Cabarrus County Fire Service Strategic Analysis August, 2020

Unit	Responses	AvgStaffCount
Engine	832	2.4
GER1	1	1.0
GEE1	74	1.4
GEE2	757	2.5
<b>Grand Total</b>	<b>832</b>	<b>2.4</b>

**Staffing** – Based on the unit reports for apparatus, it appears the department is staffing the first arriving engine company with 2.4 staff members on average.



### Effective Response Force (ERF):

Due to the lack of information of auto/mutual aid companies, the staff on those companies and individual timestamps, the calculations of an Effective Response Force were not able to be determined.



# **Cabarrus County Fire Service Strategic Analysis**

## **August, 2020**

### **01310 – Mt. Mitchell Fire District**

#### Fire Department Baseline Performance Report

Disclaimer: The performance measures in this document are based on the data exported from the Firehouse Records Management System (RMS) as entered in the system by the end user(s) with no modifications. There is no guarantee of accuracy as it beyond the scope of this evaluation. Multiple evaluations were conducted as seen below with the following understandings:

- Data evaluation spans from 07/01/2013 to 06/30/2019 with a focus on the last six, full, fiscal years (FY) of data; FY13/14 to FY18/19
- When referencing incidents within the Authority Having Jurisdiction (AHJ), this was determined by excluding incidents where Aid Type was auto aid given or mutual aid given.
- Errors which could affect results:
  - 47 of 2,105 were incomplete by NFIRS definition for report completion. It is uncertain what information is missing on these reports.
  - 4 of 2,105 events had a dispatch received time before the alarm time, affecting call processing evaluation
  - 9 of 2,105 events had no dispatch receive time, affecting call processing evaluation.
  - 7 fire events had a fire loss but no pre-fire value, affecting save percentages on fire events.

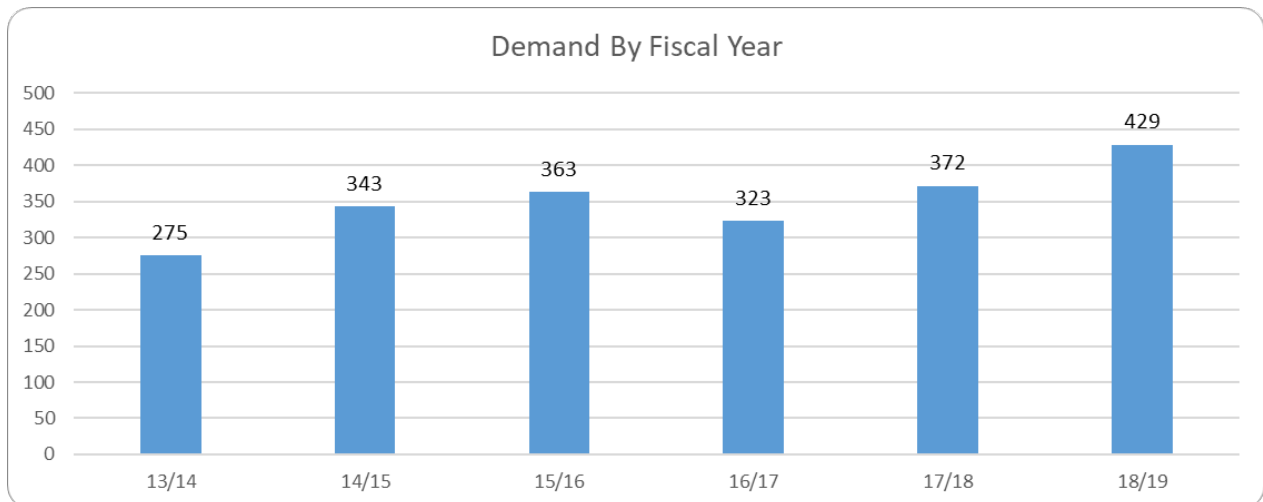
#### **Demand for Service**

The department's demand for service for **FY18/19 was 429 events**, approximately 1.17 per day. Events over the entire 6 years yielded annual increases ranging from 6% to 25%, except for 16/17. The medical emergency contributes to 61.62% of the demand over the last 6 full years. Medical demand is higher than the national average and higher than other Cabarrus County departments.

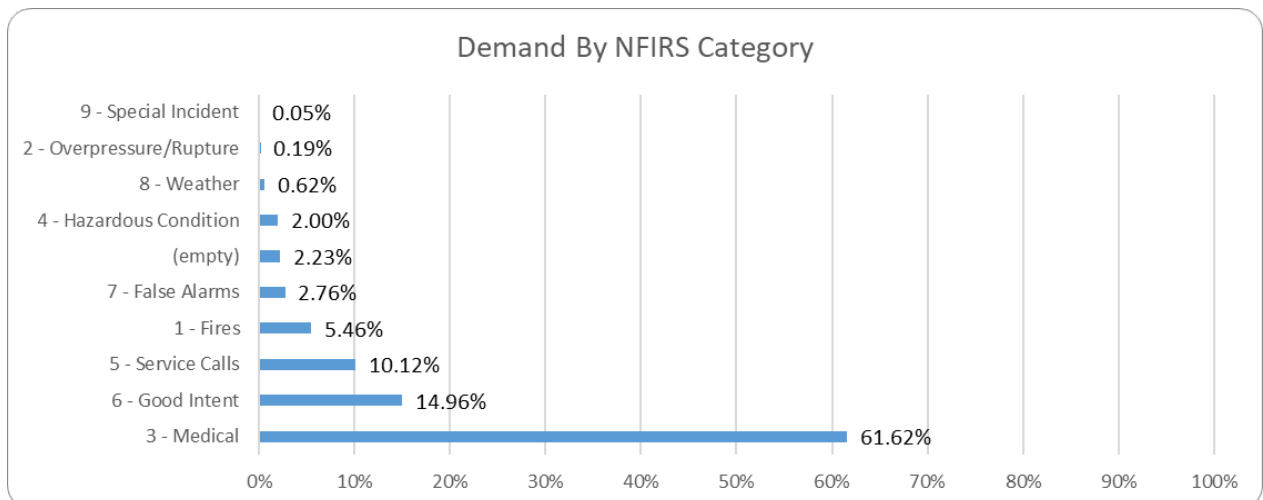




## Cabarrus County Fire Service Strategic Analysis August, 2020



### Demand by NFIRS Category – 07/01/2013 to 06/30/2019



### Response Times – Events within the AHJ

Using the National Fire Protection Association as a guideline for response (NFPA 1720, Urban Zone), goals for response performance were set and evaluated against the following:

**Call Processing Time:** 01 min 00 seconds  
**Response Time:** 09 min 00 seconds (turnout - 1.5 min and travel - 7.5 min)  
**Total Response Time:** 10 minutes (Call processing time, turnout, travel)  
**Incident Types:** All  
**Mutual Aid:** None, Mutual Aid Received and Auto Aid Received



## Cabarrus County Fire Service Strategic Analysis August, 2020

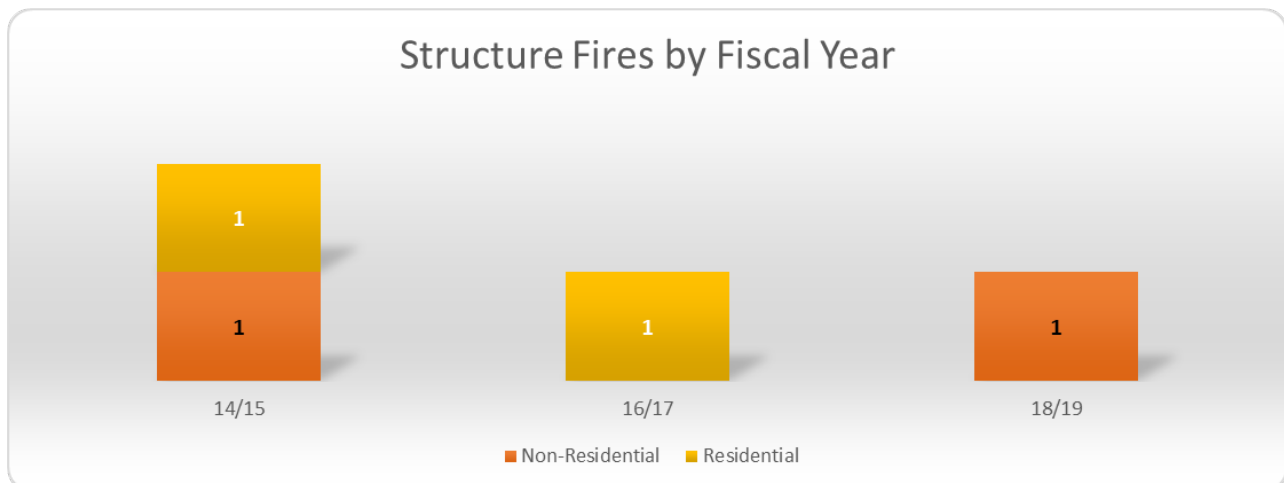
FDID 01310 - Mt. Mitchell		
Set Response Performance Goals Here		
Call Processing	Response Time	Total Response time
0:01:00	0:09:00	0:10:00
% Goals Met		
Call Processing	Response Time	Total Response Time
87.13%	64.51%	68.69%
90th Percentile Demonstrated Performance		
90th CP	90th RT	90th TRT
00:00:59	00:12:29	0:12:44
Staff and Counts per Incident		
90th Staff Count	Avg Staff Count	Incident Count
9.00	4.79	2,105

Evaluating all events within the AHJ, defined by the Mutual Aid values, the Total Response Goal of 10:00 minutes was met 68.69%

Of the 2,105 events measured here, 90% had a staff count of 9 persons or less per incident; the average was 4.79 staff count.

Response Time Goal of 9 minutes for the first arriving unit was met 64.51%

### Structure Fires



Within the department's AHJ, annual structure fires average less than 1. Over the last 6 fiscal years, 4 total structure fires have occurred with the following observations:

- 25.0% of these fires were confined to the room or origin.
- Average duration of an event was 2 hours, 14 minutes
- There were no fire fatalities, no civilian injuries and no firefighter injuries.
- There was no leading area of origin, all 4 fires had different values for each; 1 of the 4 was undetermined.

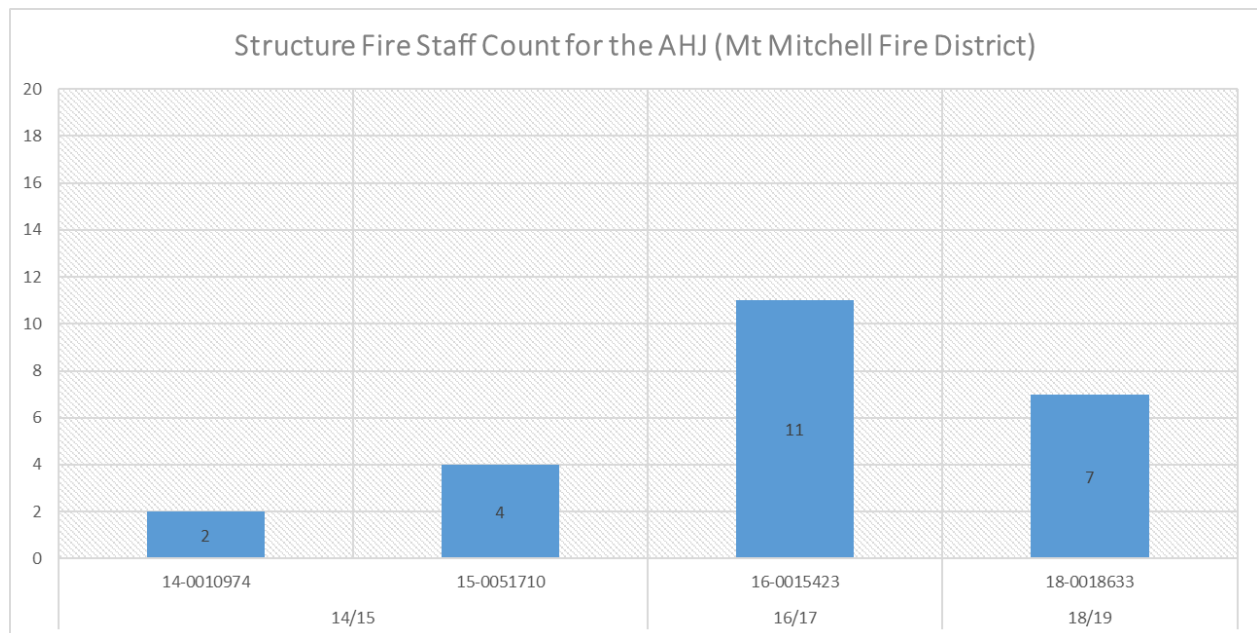


## Cabarrus County Fire Service Strategic Analysis August, 2020

- A smoke alarm presence was undetermined (2), not present (1) or value was left blank (1).
- Cause of ignition was found to be unintentional on fifty percent (50%) of the events. The remaining were undetermined after investigation.
- A first arriving **response time goal of 9 minutes was met on 100% of events.**
- Property savings could not be calculated as a summary of the 6 years as pre-incident values were not obtained on all and fire losses were omitted on all but one.
- \*Average incident staff count was 6.5 persons. 90% of these had a staff count of 11 or less persons. The max staff count on any incident was 11.

**\*Note:** Average incident counts are incident specific and could be inclusive of auto/mutual aid staff if the user chose to include those in the incident report by way of a checkbox in the report.

### Structure Fire Staff counts from Mt. Mitchell Fire District



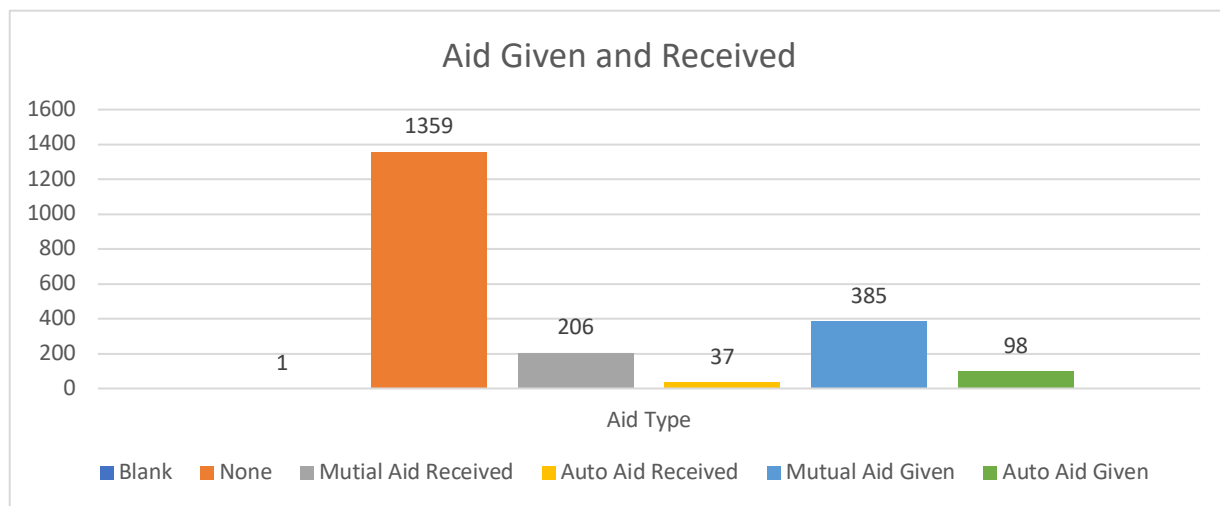
## Cabarrus County Fire Service Strategic Analysis August, 2020

To determine the department's ability to assemble an effective response force from their own staff (separate from mutual/auto aid companies), an evaluation of staff associated with the department's fire units, which arrived, was evaluated. It should be noted the evaluation found a unit called POV (personally owned vehicle) which was assumed to collectively count the total staff which arrived by POV. This unit was used in this evaluation.

Over the 6-year period of time consisting of 4 structure fire events, the department averaged 6.0 staff members arriving these events from their department.

### Mutual / Auto Aid

The Aid Given and Received section for this department cannot be fully evaluated due to missing data in the Firehouse section designed to capture who the aid was given to or received from. It appears the section has some type of conditional requirements disabling this section. Without administrative privileges, it could not determine the conditions set on the field. Based on the NFIRS required field which determines what type of aid applies to an event, we can determine the following.



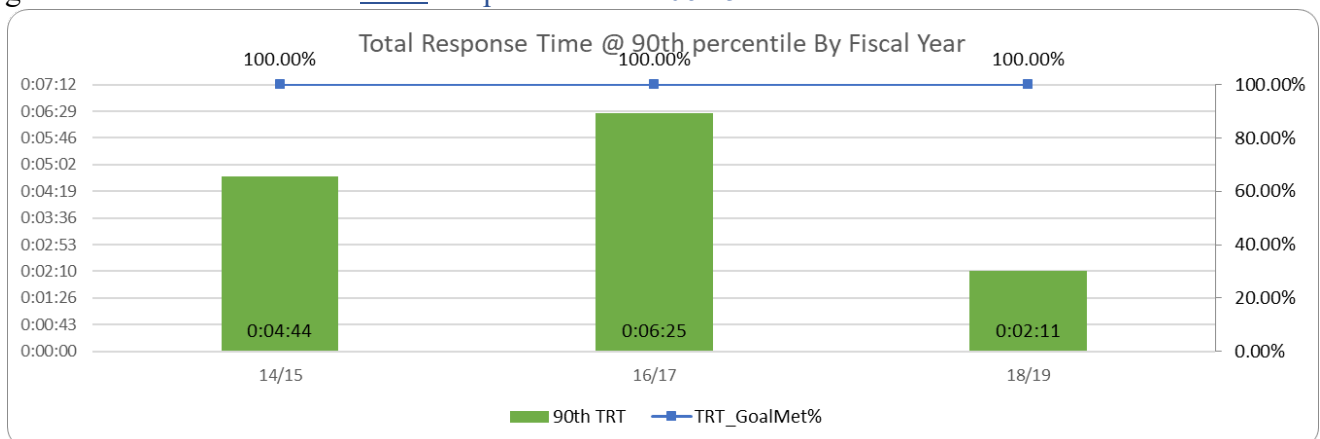
# Cabarrus County Fire Service Strategic Analysis

## August, 2020

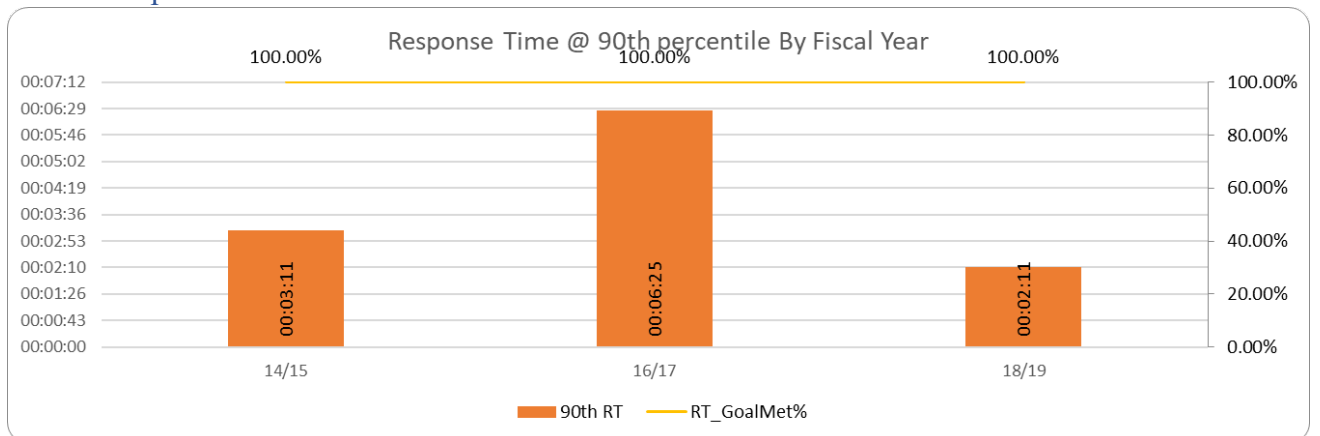
### Standard of Cover:

To establish a baseline of performance measured against the NFPA 1720 standard, a query for Structure Fires (NFIRS 111, 112, 120, 121, 122, 123) where Mutual Aid was None, Mutual Aid Received or Aid Received, was conducted. Total Response Time, inclusive of call processing, turnout and travel time of the first arriving unit are needed to evaluate against the standard of 10 minutes and 00 seconds. The current dataset evaluated was from 07/01/2013 to 06/30/2019. [A total of 4 events](#) met the criteria above.

Two evaluations were done: one to evaluate the Total Response Time of the 4 events containing the call processing time and another to evaluate only the Response Time (turnout and travel time) of the first arriving unit. The NFPA 1720 standard for Total Response Time would be 10 minutes and 00 seconds. (01:00 for call processing, 01:30 for turnout and 7:30 for travel) The goal was met on all events. Total Response Time = 06:25



The chart below represents the Response Time (turnout and travel time) of all 4 events. The goal is 09 minutes and 00 seconds. (01:30 for turnout and 7:30 for travel) The goal was met on all events. Response Time = 06:25



## Cabarrus County Fire Service Strategic Analysis August, 2020

### Baseline Statement:

For the period 07/01/2013 to 06/30/2019, For 90% of all **structure fire incidents**, the first arriving unit arrived within **6 minutes and 25 seconds or less**, from time received in the 911 center to arrival. This represents **Total Response Time**. The goal of 10 minutes was met **100.00%**

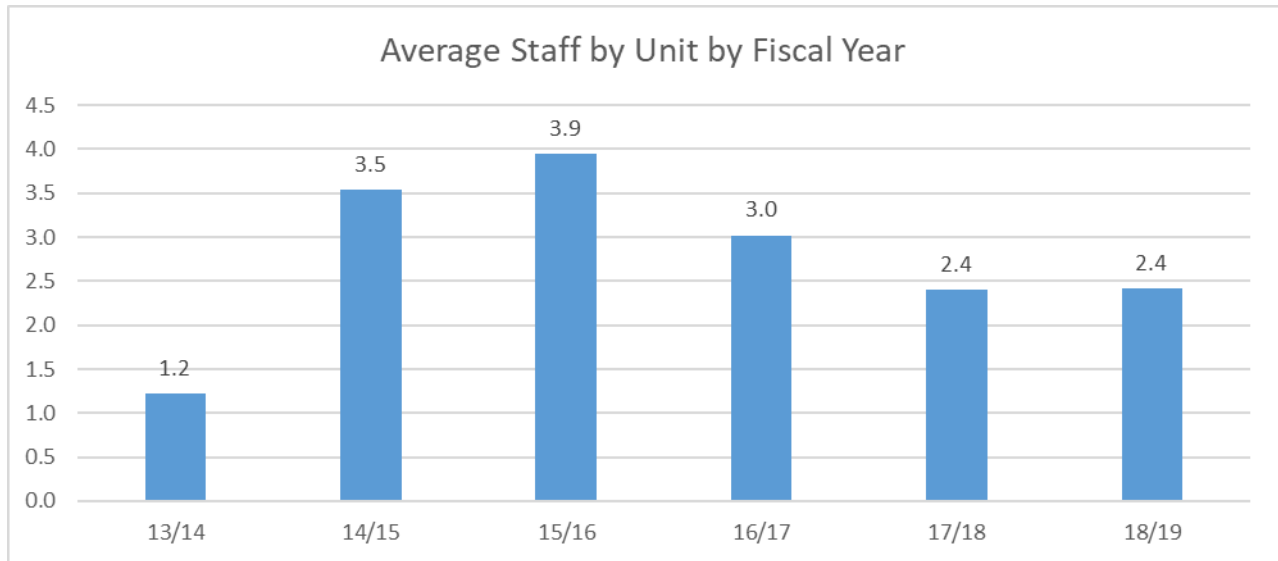
FDID 01310 - Mt. Mitchell		
Set Response Performance Goals Here		
Call Processing	Response Time	Total Response time
0:01:00	0:09:00	0:10:00
% Goals Met		
Call Processing	Response Time	Total Response Time
75.00%	100.00%	100.00%
90th Percentile Demonstrated Performance		
90th CP	90th RT	90th TRT
00:02:15	00:06:25	0:06:25
Staff and Counts per Incident		
90th Staff Count	Avg Staff Count	Incident Count
11.00	6.50	4

Unit	Responses	AvgStaffCount
Engine	893	2.8
MME1	655	2.6
MME2	238	3.3
<b>Grand Total</b>	<b>893</b>	<b>2.8</b>

**Staffing** – Based on the unit reports for apparatus, it appears the department is staffing the first arriving engine company with 2.8 staff members on average.



## Cabarrus County Fire Service Strategic Analysis August, 2020



### Effective Response Force (ERF):

Due to the lack of information of auto/mutual aid companies, the staff on those companies and individual timestamps, the calculations of an Effective Response Force were not able to be determined.





# Cabarrus County Fire Service Strategic Analysis

## August, 2020

### 01311 – Mt. Pleasant Fire District

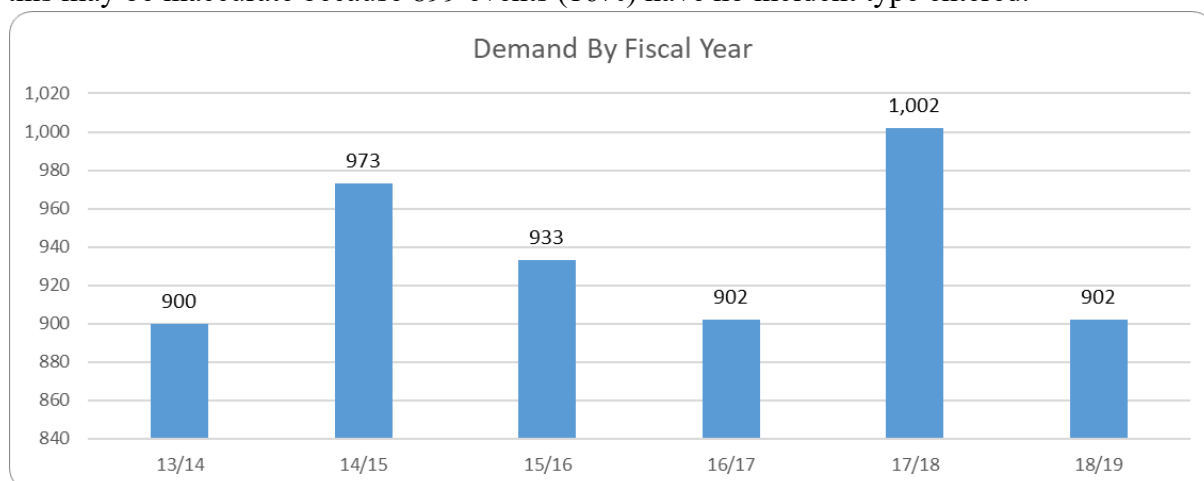
#### Fire Department Baseline Performance Report

Disclaimer: The performance measures in this document are based on the data exported from the Firehouse Records Management System (RMS) as entered in the system by the end user(s) with no modifications. There is no guarantee of accuracy as it beyond the scope of this evaluation. Multiple evaluations were conducted as seen below with the following understandings:

- Data evaluation spans from 07/01/2013 to 06/30/2019 with a focus on the last six, full, fiscal years (FY) of data; FY13/14 to FY18/19
- When referencing incidents within the Authority Having Jurisdiction (AHJ), this was determined by excluding incidents where Aid Type was auto aid given or mutual aid given.
- Errors which could affect results:
  - 958 of 4,654 were incomplete by NFIRS definition for report completion. It is uncertain what information is missing on these reports.
  - 10 of 4,654 events had a dispatch received time before the alarm time, affecting call processing evaluation
  - 68 of 4,654 events had no dispatch receive time, affecting call processing evaluation.
  - 47 fire events had a fire loss but no pre-fire value, affecting save percentages on fire events.

#### Demand for Service

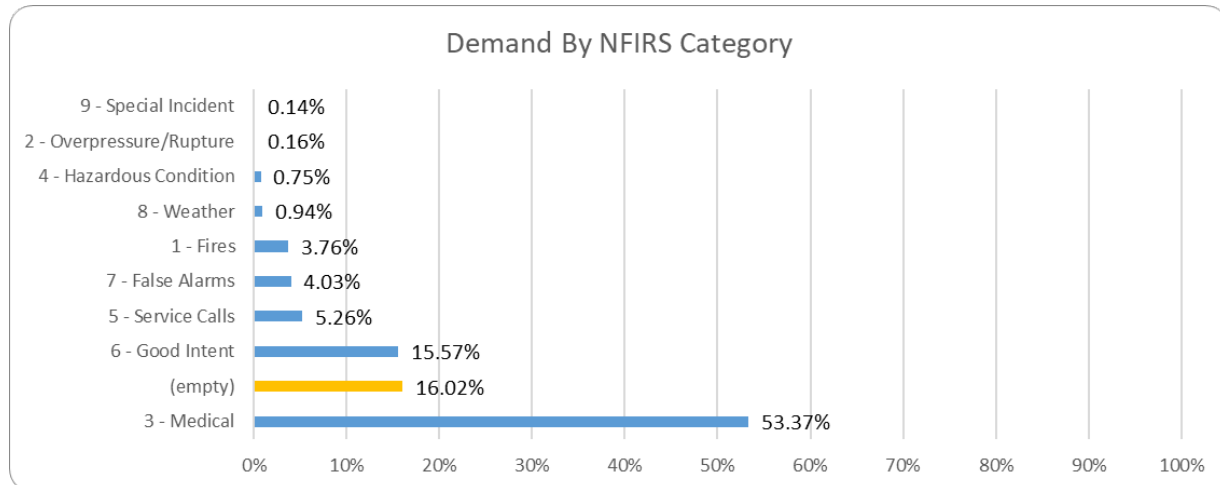
The department's demand for service for FY18/19 was 902 events, approximately 1.17 per day. Events over the entire 6 years yielded annual increases and decreases ranging from (4.11%) to 11%. The medical emergency contributes to 53.37% of the demand over the last 6 full years but this may be inaccurate because 899 events (16%) have no incident type entered.



# Cabarrus County Fire Service Strategic Analysis

## August, 2020

### Demand by NFIRS Category – 07/01/2013 to 06/30/2019



### Response Times – Events within the AHJ

Using the National Fire Protection Association as a guideline for response (NFPA 1720, Urban Zone), goals for response performance were set and evaluated against the following:

**Call Processing Time:** 01 min 00 seconds  
**Response Time:** 09 min 00 seconds (turnout - 1.5 min and travel - 7.5 min)  
**Total Response Time:** 10 minutes (Call processing time, turnout, travel)  
**Incident Types:** All

**Mutual Aid:** None, Mutual Aid Received and Auto Aid Received

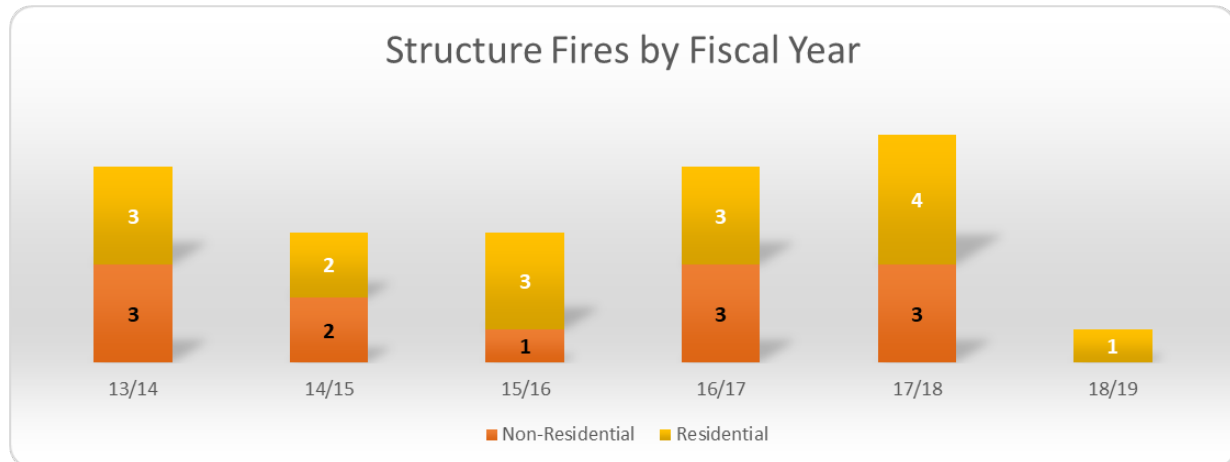
FDID 1131 - Mt. Pleasant		
Set Response Performance Goals Here		
Call Processing	Response Time	Total Response time
0:01:00	0:09:00	0:10:00
% Goals Met		
Call Processing	Response Time	Total Response Time
88.15%	84.13%	85.02%
90th Percentile Demonstrated Performance		
90th CP	90th RT	90th TRT
00:01:02	00:08:05	0:08:43
Staff and Counts per Incident		
90th Staff Count	Avg Staff Count	Incident Count
5.00	3.62	4,286

Evaluating all events within the AHJ, defined by the Mutual Aid values, the Total Response Goal of 10:00 minutes was met 85.02%  
 Of the 4,286 events measured here, 90% had a staff count of 5 persons or less per incident; the average was 3.62 staff count.  
Response Time Goal of 9 minutes for the first arriving unit was met 84.13%



## Cabarrus County Fire Service Strategic Analysis August, 2020

### Structure Fires



Within the department's AHJ, [annual structure fires average less than 4.6](#). Over the last 6 fiscal years, 28 total structure fires have occurred with the following observations:

- [50.0%](#) of these fires were [confined to the room or origin](#).
- Average duration of an event was 1 hours, 42 minutes
- There were **no** fire fatalities, **1** civilian injury and **no** firefighter injuries.
- The leading area of origin was the cooking area, tied with “other” at 17.86%
- Smoke Alarms were present 21.46%. A smoke alarm presence was undetermined (6), not present (9) or value was left blank (7).
- Cause of ignition was found to be unintentional on forty-two percent (42.86%) of the events. 25% remain under investigation.
- A first arriving [response time goal of 9 minutes was met on 100% of events](#).
- Property savings could not be calculated as a summary of the 6 years as pre-incident values were not obtained on all incidents.
- \*Average incident staff count was 9.8 persons. 90% of these had a staff count of 13 or less persons. The max staff count on any incident was 32.

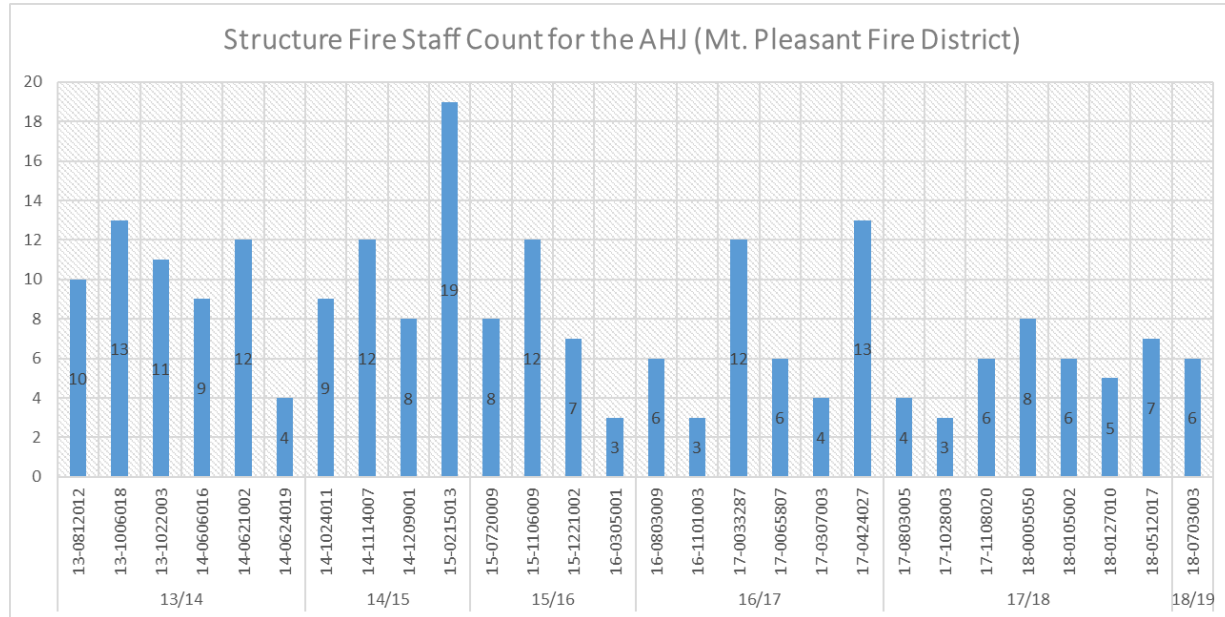
**\*Note:** Average incident counts are incident specific and could be inclusive of auto/mutual aid staff if the user chose to include those in the incident report by way of a checkbox in the report.



# Cabarrus County Fire Service Strategic Analysis

## August, 2020

### Structure Fire Staff counts from Mt. Pleasant Fire District



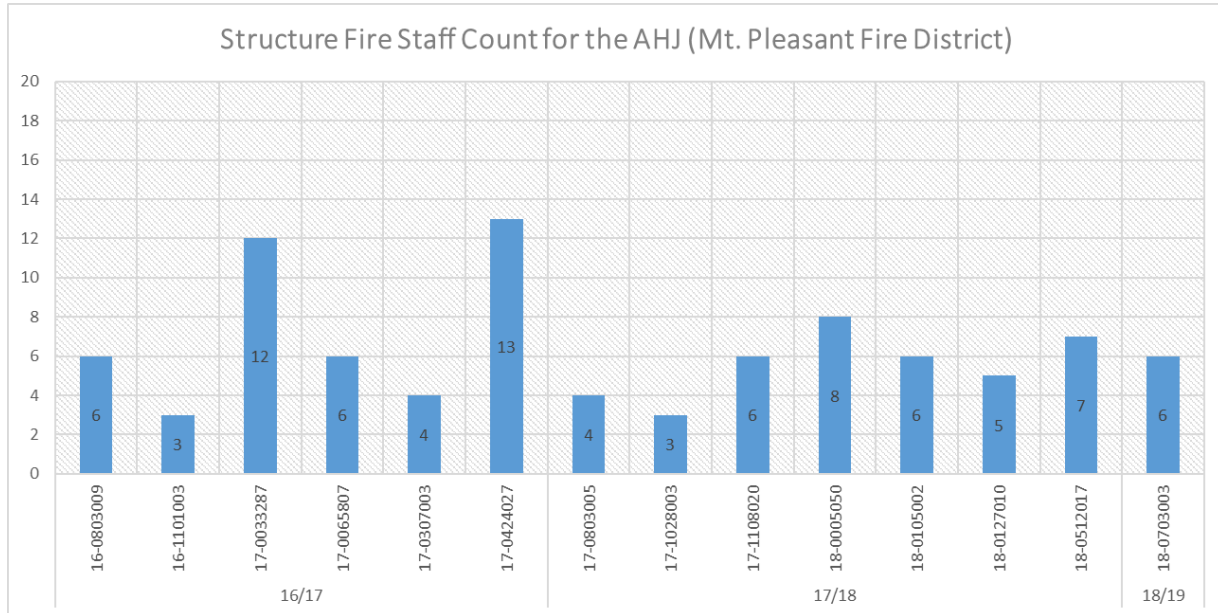
To determine the department's ability to assemble an effective response force from their own staff (separate from mutual/auto aid companies), an evaluation of staff associated with the department's fire units, which arrived, was evaluated. It should be noted the evaluation found a unit called POV (personally owned vehicle) which was assumed to collectively count the total staff which arrived by POV. This unit was used in this evaluation.

Over the 6-year period of time consisting of 28 structure fire events, the department averaged 9.11 staff members arriving these events from their department.



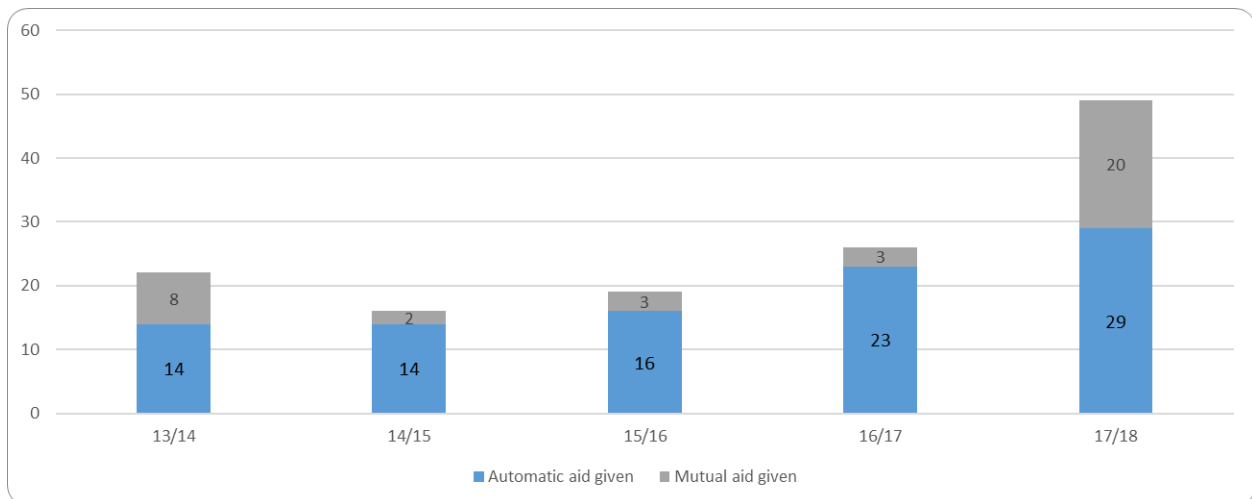
## Cabarrus County Fire Service Strategic Analysis August, 2020

Over the last three years consisting of 14 structure fire events, the department averaged 6.36 staff members arriving these events from their department.



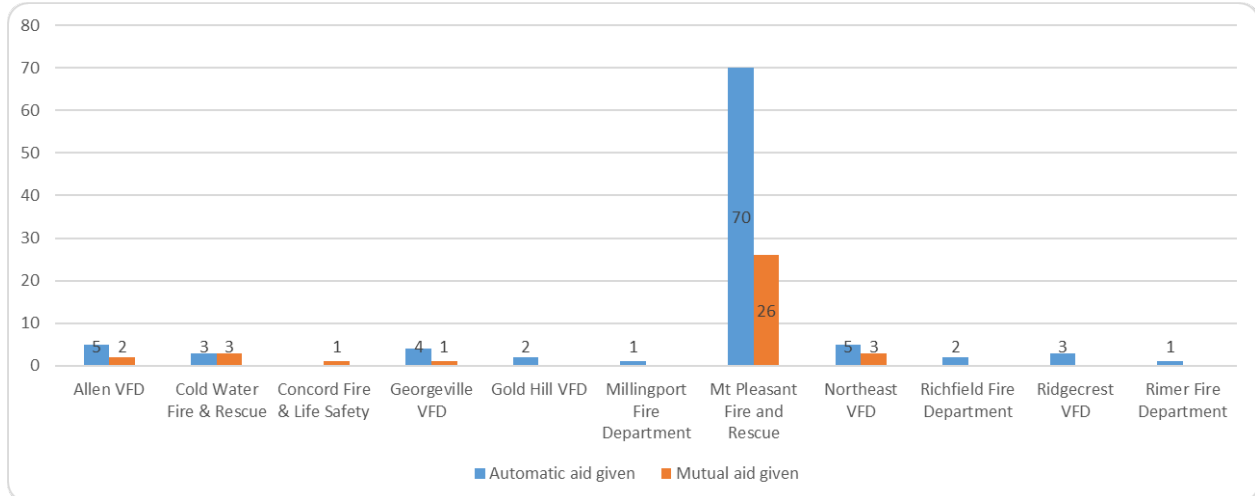
### Mutual / Auto Aid

#### Aid Given



## Cabarrus County Fire Service Strategic Analysis August, 2020

**Aid Given**, based on the data entered, Mt. Pleasant received the most aid of any other department at 96 events. Average staff sent to these aid-given events over the 6-year period was 3.93.

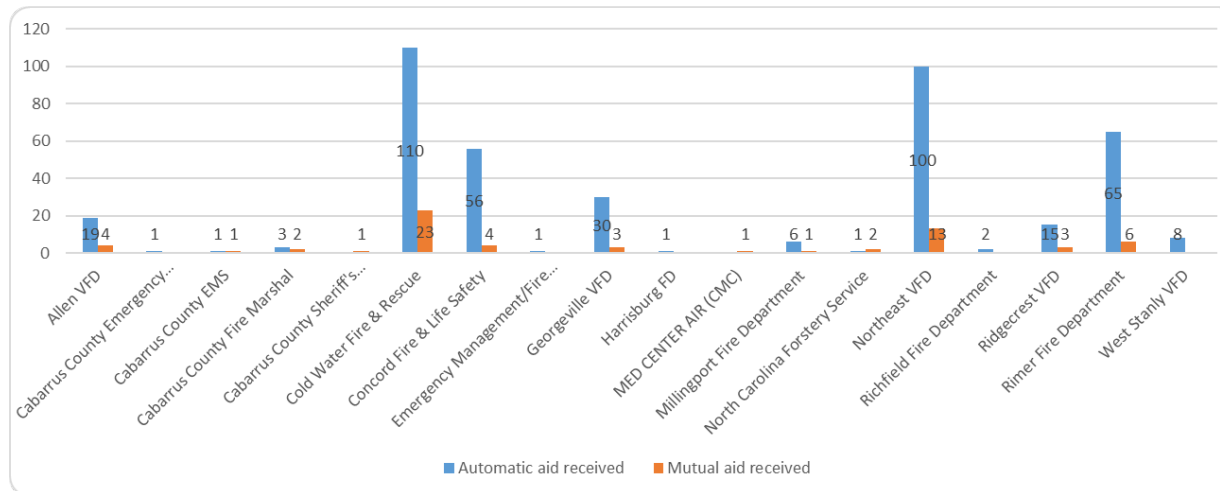
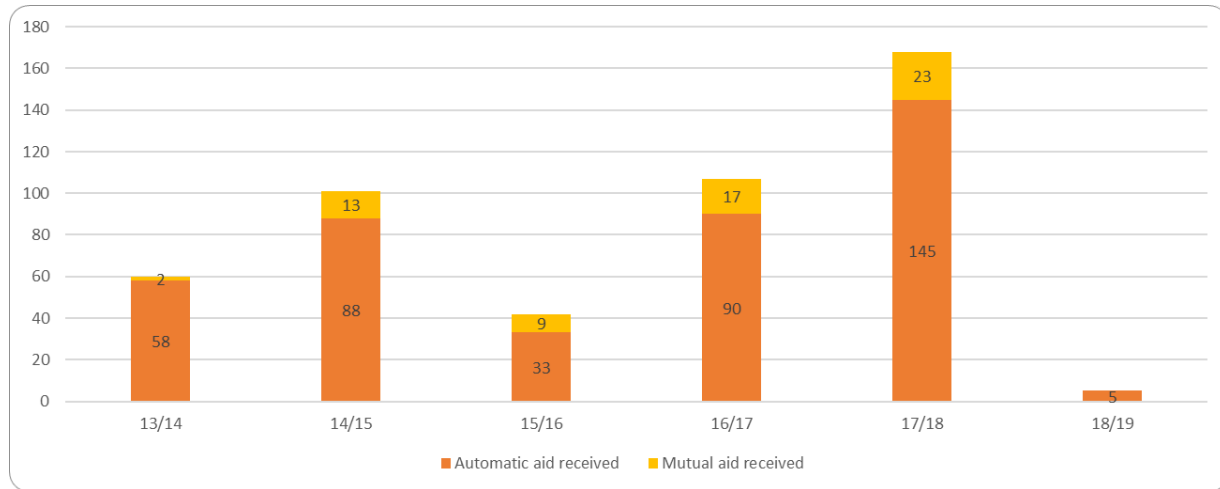


Aid by Department Name	Count	Avg Appar Cnt	Avg Staff Cnt
⊕ Mt Pleasant Fire and Rescue	96	1.40	3.93
⊕ Northeast VFD	8	1.13	2.13
⊕ Allen VFD	7	1.14	3.00
⊕ Cold Water Fire & Rescue	6	1.33	2.83
⊕ Georgeville VFD	5	1.20	4.00
⊕ Ridgecrest VFD	3	1.33	3.33
⊕ Richfield Fire Department	2	1.50	2.50
⊕ Gold Hill VFD	2	1.00	1.00
⊕ Concord Fire & Life Safety	1	3.00	8.00
⊕ Rimer Fire Department	1	1.00	1.00
⊕ Millingport Fire Department	1	1.00	3.00
<b>Grand Total</b>	<b>132</b>	<b>1.36</b>	<b>3.64</b>



# Cabarrus County Fire Service Strategic Analysis August, 2020

## Aid Received



Aid by Department Name	Count	Avg Appar Cnt	Avg Staff Cnt
* Cold Water Fire & Rescue	133	1.17	2.90
* Northeast VFD	113	1.01	1.76
* Rimer Fire Department	71	1.03	1.80
* Concord Fire & Life Safety	60	2.25	6.05
* Georgeville VFD	33	1.30	2.91
* Allen VFD	23	1.35	3.17
* Ridgecrest VFD	18	1.44	3.89
* West Stanly VFD	8	1.13	3.25
* Millingport Fire Department	7	1.00	3.00
* Cabarrus County Fire Marshal	5	1.20	1.60
* North Carolina Forestry Service	3	1.67	1.67
* Richfield Fire Department	2	1.00	2.00
* Cabarrus County EMS	2	1.50	3.00
* Cabarrus County Emergency Management	1	1.00	4.00
* Emergency Management/Fire Marshal	1	1.00	1.00
* Cabarrus County Sheriff's Department	1	2.00	2.00
* MED CENTER AIR (CMC)	1	1.00	4.00
* Harrisburg FD	1	1.00	4.00
Grand Total	483	1.28	2.90

Aid Received, with a majority in the form of Auto-Aid Received, occurred on 483 events (approx. 80 annually). Top three departments sending aid were Cold Water, Northeast and Rimer. The top 10 event types are listed below with a balance of medical and fires.





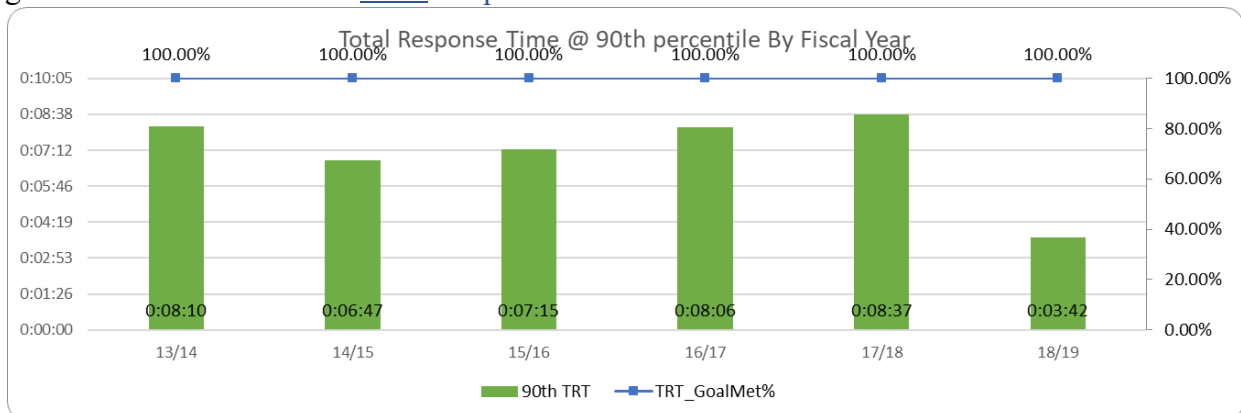
## Cabarrus County Fire Service Strategic Analysis August, 2020

Incident Type	Aid Type	Department Name	Count	Avg Appar Cnt	Avg Staff Cnt
* 700 - False alarm or false call, Other			130	1.27	2.60
* 111 - Building fire			70	1.51	4.21
* 745 - Alarm system activation, no fire - unintentional			36	1.28	2.56
* 730 - System malfunction, Other			16	1.00	1.63
* 600 - Good intent call, Other			15	1.00	3.13
* 113 - Cooking fire, confined to container			15	0.80	1.33
* 733 - Smoke detector activation due to malfunction			14	1.21	2.29
* 740 - Unintentional transmission of alarm, Other			14	0.86	1.57
* 743 - Smoke detector activation, no fire - unintentional			14	1.29	2.43
* 440 - Electrical wiring/equipment problem, Other			11	1.27	3.00

### Standard of Cover:

To establish a baseline of performance measured against the NFPA 1720 standard, a query for Structure Fires (NFIRS 111, 112, 120, 121, 122, 123) where Mutual Aid was None, Mutual Aid Received or Aid Received, was conducted. Total Response Time, inclusive of call processing, turnout and travel time of the first arriving unit are needed to evaluate against the standard of 10 minutes and 00 seconds. The current dataset evaluated was from 07/01/2013 to 06/30/2019. [A total of 28 events](#) met the criteria above.

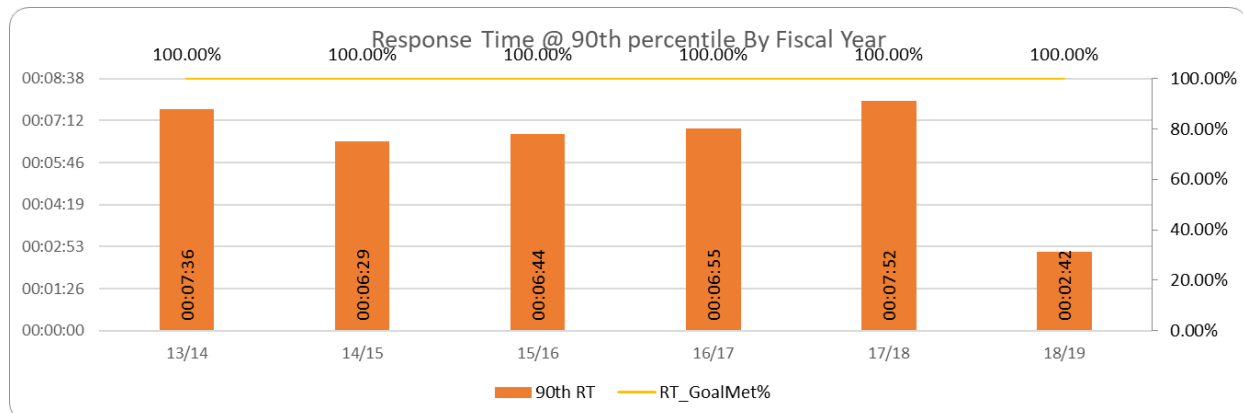
Two evaluations were done: one to evaluate the Total Response Time of the 28 events containing the call processing time and another to evaluate only the Response Time (turnout and travel time) of the first arriving unit. The NFPA 1720 standard for Total Response Time would be 10 minutes and 00 seconds. (01:00 for call processing, 01:30 for turnout and 7:30 for travel) The goal was met on all events. Total Response Time = 08:10



The chart below represents the Response Time (turnout and travel time) of all 28 events. The goal is 09 minutes and 00 seconds. (01:30 for turnout and 7:30 for travel) The goal was met on all events. Response Time = 07:08



## Cabarrus County Fire Service Strategic Analysis August, 2020



### Baseline Statement:

For the period 07/01/2013 to 06/30/2019, For 90% of all **structure fire incidents**, the first arriving unit arrived within **8 minutes and 10 seconds or less**, from time received in the 911 center to arrival. This represents **Total Response Time**. The goal of 10 minutes was met **100.00%**

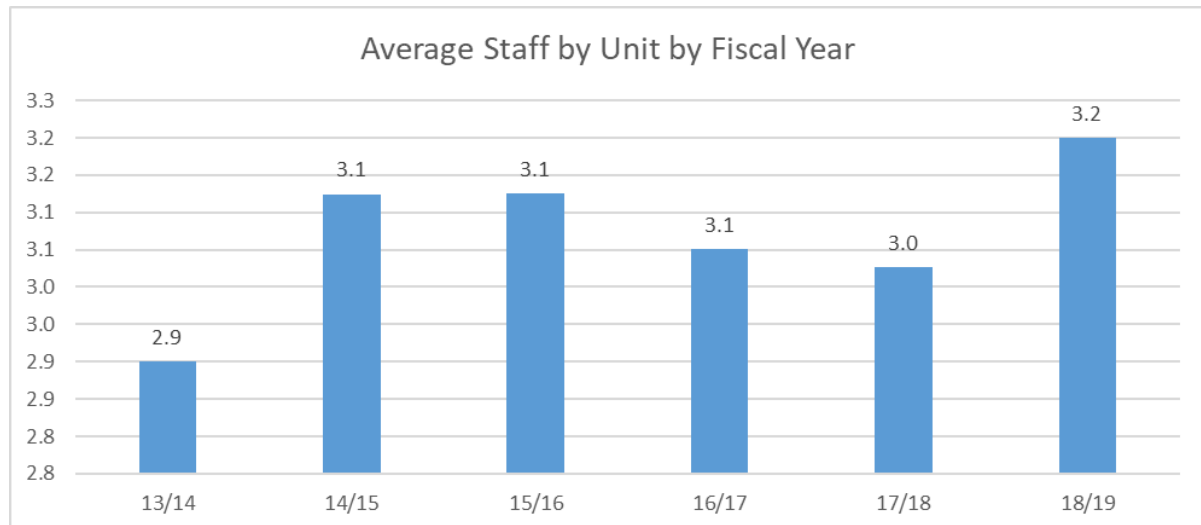
FDID 1131 - Mt. Pleasant		
Set Response Performance Goals Here		
Call Processing	Response Time	Total Response time
0:01:00	0:09:00	0:10:00
% Goals Met		
Call Processing	Response Time	Total Response Time
71.43%	100.00%	100.00%
90th Percentile Demonstrated Performance		
90th CP	90th RT	90th TRT
00:01:21	00:07:08	0:08:10
Staff and Counts per Incident		
90th Staff Count	Avg Staff Count	Incident Count
13.00	9.18	28



## Cabarrus County Fire Service Strategic Analysis August, 2020

Unit	Responses	AvgStaffCount
Engine	5,303	3.0
MPM1	1	1.0
MPE1	2,484	3.0
MPE2	2,818	3.1
<b>Grand Total</b>	<b>5,303</b>	<b>3.0</b>

**Staffing** – Based on the unit reports for apparatus, it appears the department is staffing the first arriving engine company



### Effective Response Force (ERF):

Due to the lack of information of auto/mutual aid companies, the staff on those companies and individual timestamps, the calculations of an Effective Response Force were not able to be determined.



# Cabarrus County Fire Service Strategic Analysis

## August, 2020

### 01312 – Midland Fire District

#### Fire Department Baseline Performance Report

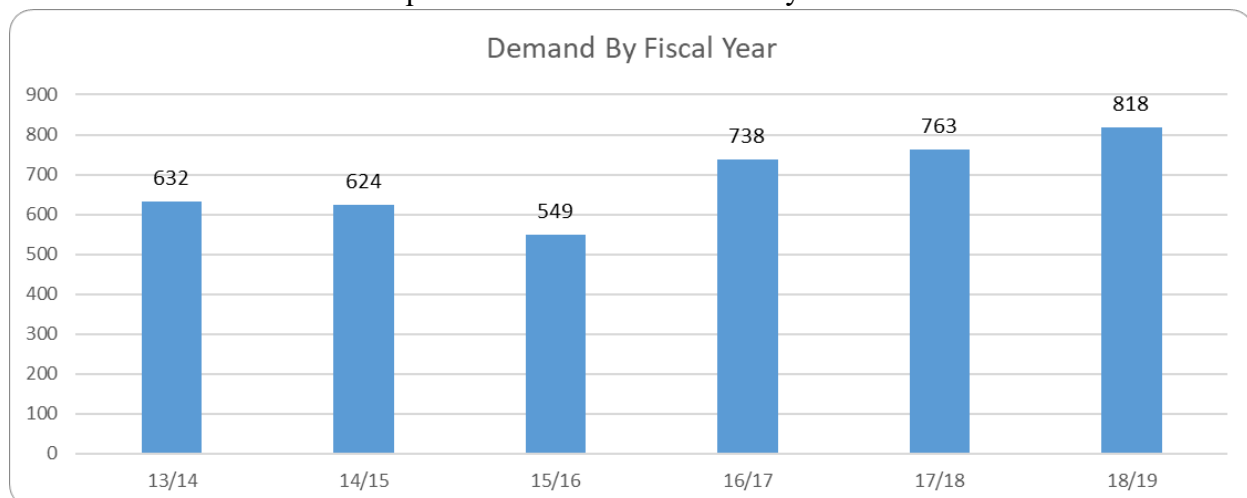
Disclaimer: The performance measures in this document are based on the data exported from the Firehouse Records Management System (RMS) as entered in the system by the end user(s) with no modifications. There is no guarantee of accuracy as it beyond the scope of this evaluation.

Multiple evaluations were conducted as seen below with the following understandings:

- Data evaluation spans from 07/01/2013 to 06/30/2019 with a focus on the last six, full, fiscal years (FY) of data; FY13/14 to FY18/19
- When referencing incidents within the Authority Having Jurisdiction (AHJ), this was determined by excluding incidents where Aid Type was auto aid given or mutual aid given.
- Errors which could affect results:
  - 69 of 4,124 were incomplete by NFIRS definition for report completion. It is uncertain what information is missing on these reports.
  - 19 of 4,654 events had a dispatch received time before the alarm time, affecting call processing evaluation
  - 99 of 4,124 events had no dispatch receive time, affecting call processing evaluation.
  - 21 fire events had a fire loss but no pre-fire value, affecting save percentages on fire events.

#### Demand for Service

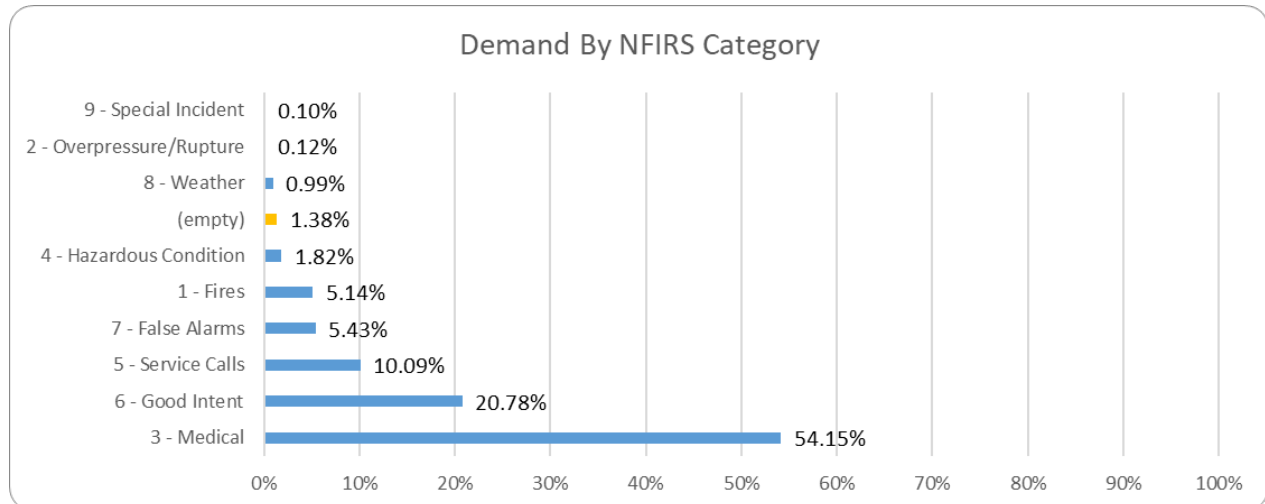
The department's demand for service for FY18/19 was 818 events, approximately 2.25 per day. Events over the entire 6 years yielded annual increases and decreases ranging from (12%) to 34%. The medical emergency contributes to 54.15% of the demand over the last 6 full years. An annual increase trend has been present since the 15/16 fiscal year.



# Cabarrus County Fire Service Strategic Analysis

## August, 2020

### Demand by NFIRS Category – 07/01/2013 to 06/30/2019



### Response Times – Events within the AHJ

Using the National Fire Protection Association as a guideline for response (NFPA 1720, Urban Zone), goals for response performance were set and evaluated against the following:

**Call Processing Time:** 01 min 00 seconds  
**Response Time:** 09 min 00 seconds (turnout - 1.5 min and travel - 7.5 min)  
**Total Response Time:** 10 minutes (Call processing time, turnout, travel)  
**Incident Types:** All

**Mutual Aid:** None, Mutual Aid Received and Auto Aid Received  
 Evaluating all events within the AHJ, defined by the Mutual Aid values, the Total Response Goal of 10:00 minutes was met 70.08%

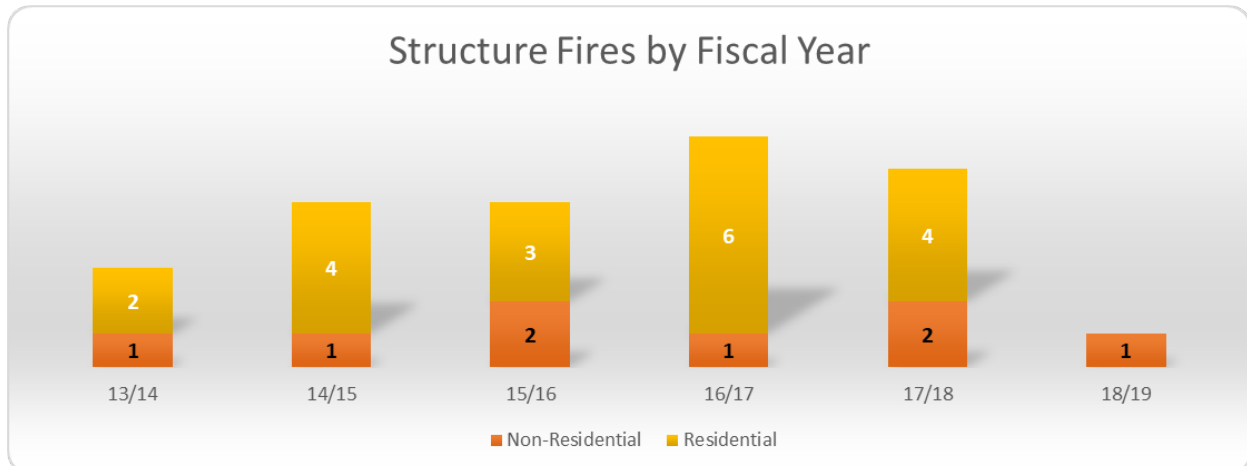
Of the 4,124 events measured here, 90% had a staff count of 7 persons or less per incident; the average was 4.25 staff count. Response Time Goal of 9 minutes for the first arriving unit was met 67.41%

FDID 01312- Midland		
Set Response Performance Goals Here		
Call Processing	Response Time	Total Response time
0:01:00	0:09:00	0:10:00
% Goals Met		
Call Processing	Response Time	Total Response Time
82.86%	67.41%	70.08%
90th Percentile Demonstrated Performance		
90th CP	90th RT	90th TRT
00:01:07	00:10:14	0:10:43
Staff and Counts per Incident		
90th Staff Count	Avg Staff Count	Incident Count
7.00	4.25	4,124



## Cabarrus County Fire Service Strategic Analysis August, 2020

### Structure Fires



Within the department's AHJ, [annual structure fires average less than 4.5](#). Over the last 6 fiscal years, 27 total structure fires have occurred with the following observations:

- [55.5%](#) of these fires were [confined to the room or origin](#).
- Average duration of an event was 1 hours, 46 minutes
- There were **no** fire fatalities, **no** civilian injuries and **no** firefighter injuries.
- The leading areas of origin were structural area, storage area, cooking area and undetermined, all four tied with 11% each
- Smoke Alarms were present 14.81%. A smoke alarm presence was undetermined (11), not present (4) or value was left blank (8).
- Cause of ignition was found to be unintentional on forty-two percent (42.86%) of the events. 25% remain under investigation.
- A first arriving [response time goal of 9 minutes was met on 62.96%](#) of events.
- Property savings could not be calculated as a summary of the 6 years as pre-incident values were not obtained on all incidents.
- \*Average incident staff count was 7.85 persons. 90% of these had a staff count of 10 or less persons. The max staff count on any incident was 20.

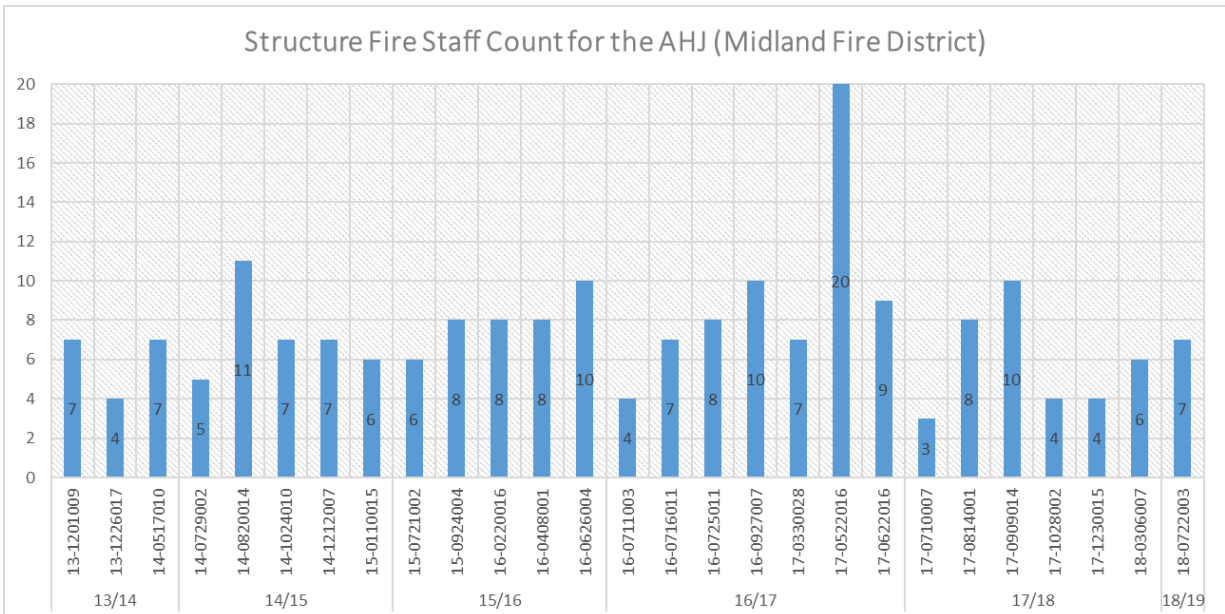
**\*Note:** Average incident counts are incident specific and could be inclusive of auto/mutual aid staff if the user chose to include those in the incident report by way of a checkbox in the report.



# Cabarrus County Fire Service Strategic Analysis

## August, 2020

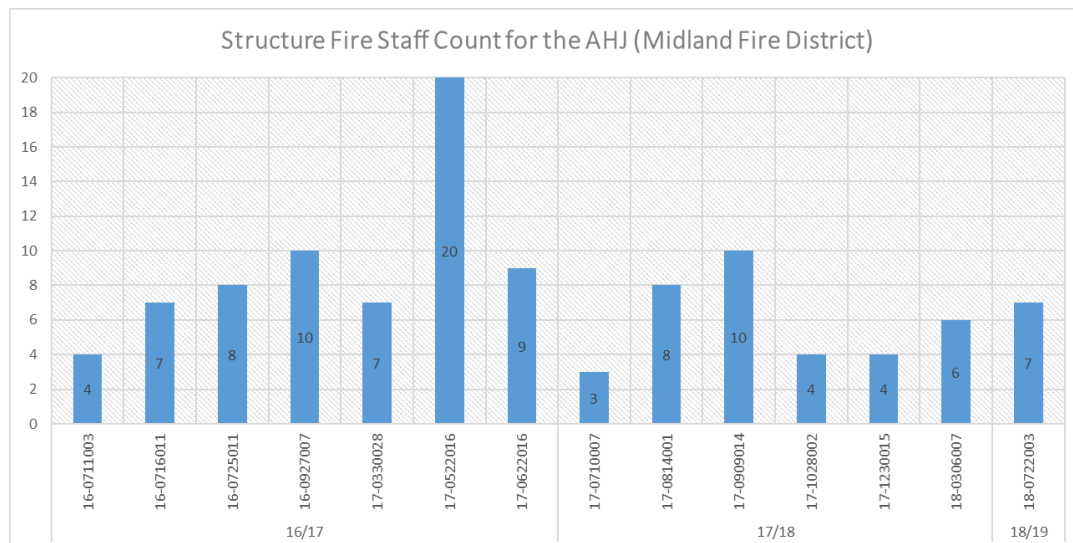
### Structure Fire Staff counts from Midland Fire District



To determine the department's ability to assemble an effective response force from their own staff (separate from mutual/auto aid companies), an evaluation of staff associated with the department's fire units, which arrived, was evaluated. It should be noted the evaluation found a unit called POV (personally owned vehicle) which was assumed to collectively count the total staff which arrived by POV. This unit was used in this evaluation.

Over the 6-year period of time consisting of 27 structure fire events, the department averaged 7.22 staff members arriving these events from their department.

Over the last three years consisting of 14 structure fire events, the department averaged 7.64 staff members arriving these events from their department.



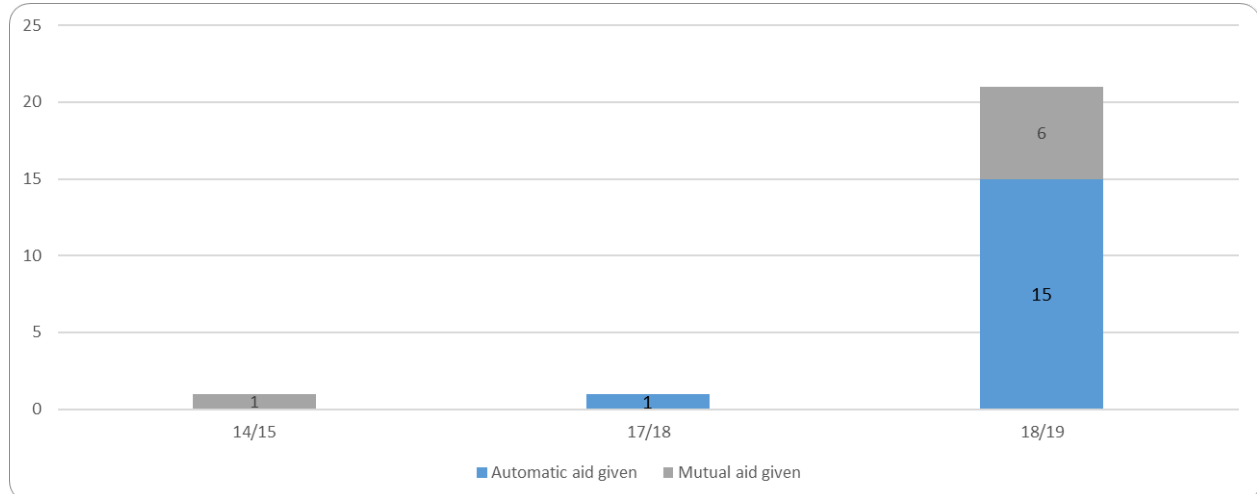


# Cabarrus County Fire Service Strategic Analysis

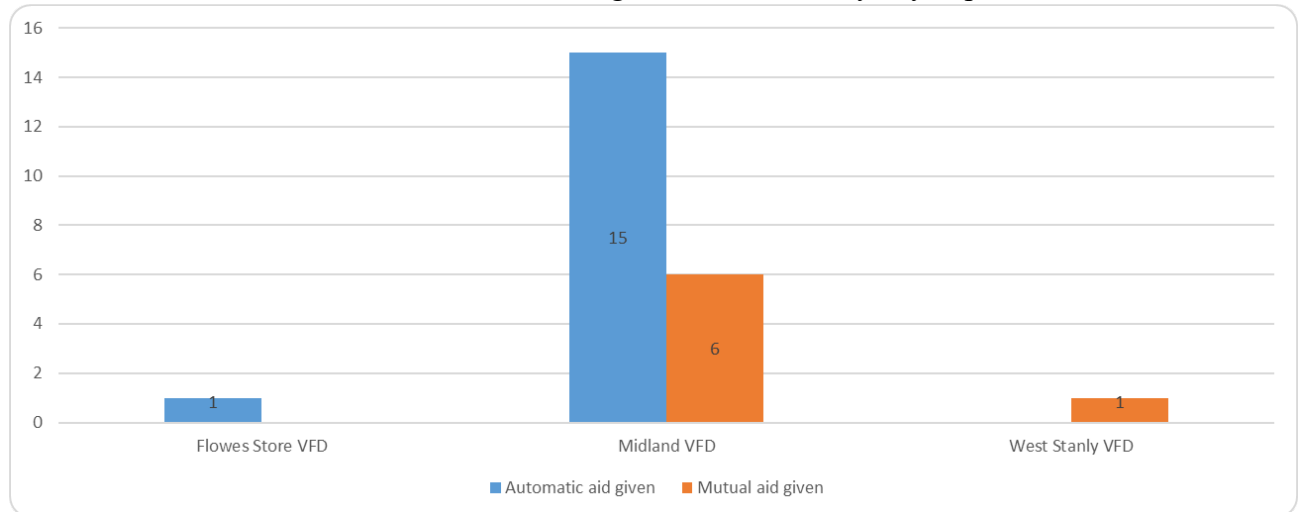
## August, 2020

### Mutual / Auto Aid

#### Aid Given



**Aid Given**, based on the data entered, Midland (this department) received the most aid of any other department at 21 events. These data errors, along with the majority of records indicating no aid given or received, indicate a misunderstanding of the aid given/received fields and make this information an unreliable evaluation of the aid given or received by any department.

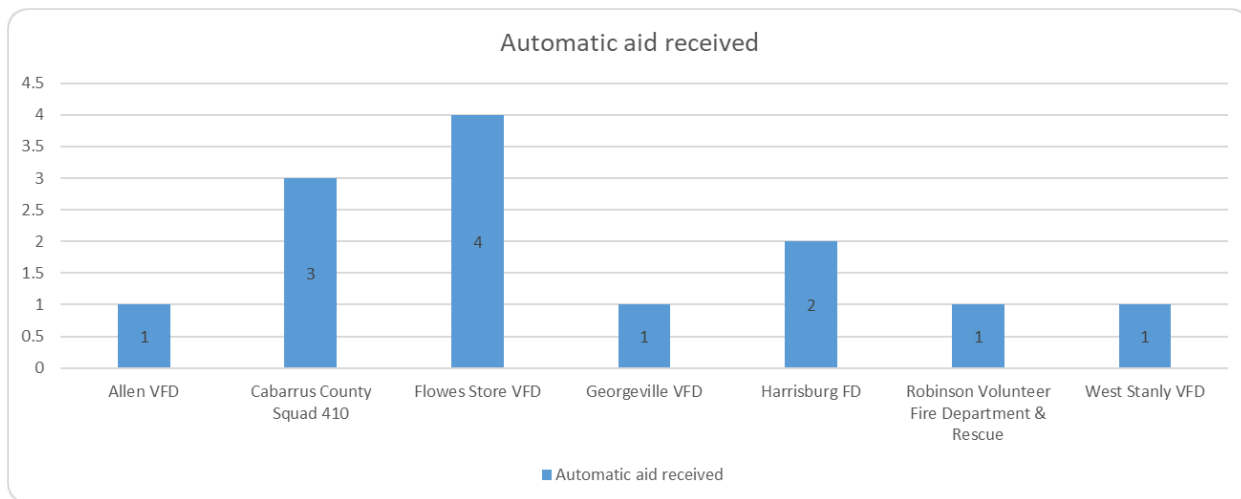
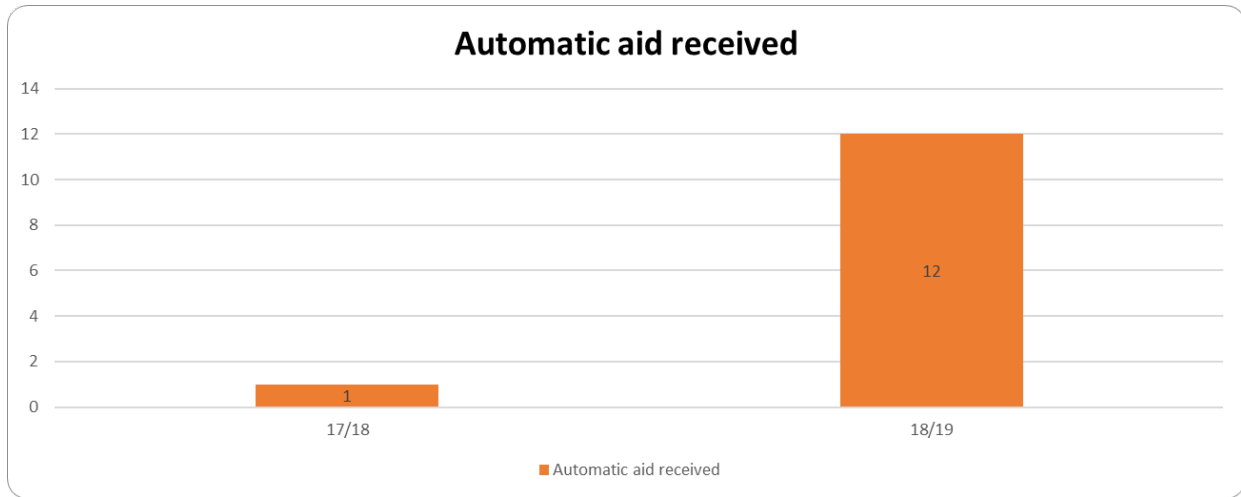


Aid by Department Name	Count	Avg Appar Cnt	Avg Staff Cnt
Midland VFD	21	1.33	2.95
West Stanly VFD	1	0.00	0.00
Flowes Store VFD	1	0.00	0.00
Grand Total	23	1.22	2.70



# Cabarrus County Fire Service Strategic Analysis August, 2020

## Aid Received



Aid by Department Name	Count	Avg Appar Cnt	Avg Staff Cnt
Flowes Store VFD	4	1.50	3.00
Cabarrus County Squad 410	3	1.00	3.00
Harrisburg FD	2	1.00	4.00
Robinson Volunteer Fire Department & Rescue	1	2.00	5.00
West Stanly VFD	1	2.00	5.00
Allen VFD	1	1.00	1.00
Georgeville VFD	1	1.00	2.00
<b>Grand Total</b>	<b>13</b>	<b>1.31</b>	<b>3.23</b>

Aid Received, based on the data, occurred only 13 times over 6 years of data.

Incident Type   Aid Type   Department Name	Count	Avg Appar Cnt	Avg Staff Cnt
118 - Trash or rubbish fire, contained	3	1.33	3.67
150 - Outside rubbish fire, Other	4	1.75	4.50
460 - Accident, potential accident, Other	1	0.00	0.00
611 - Dispatched & cancelled en route	5	1.20	2.60
<b>Grand Total</b>	<b>13</b>	<b>1.31</b>	<b>3.23</b>

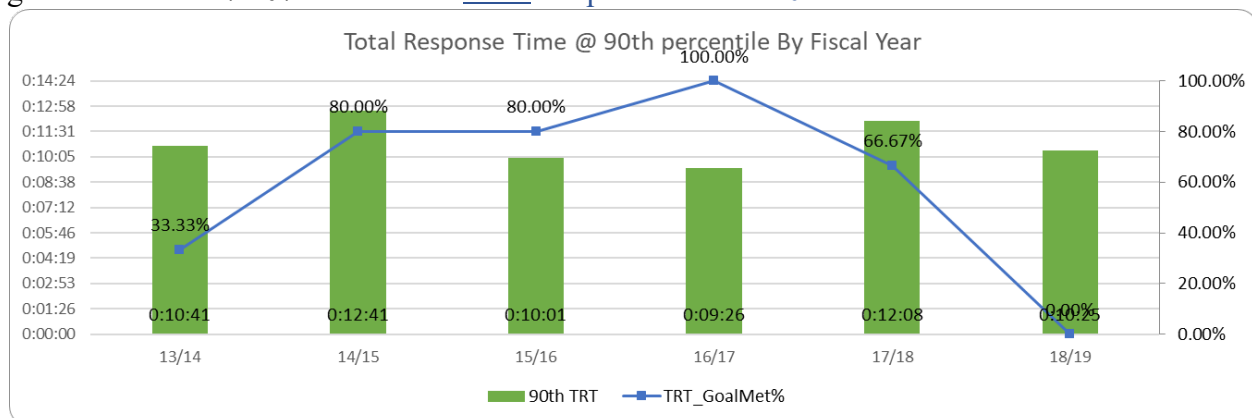


## Cabarrus County Fire Service Strategic Analysis August, 2020

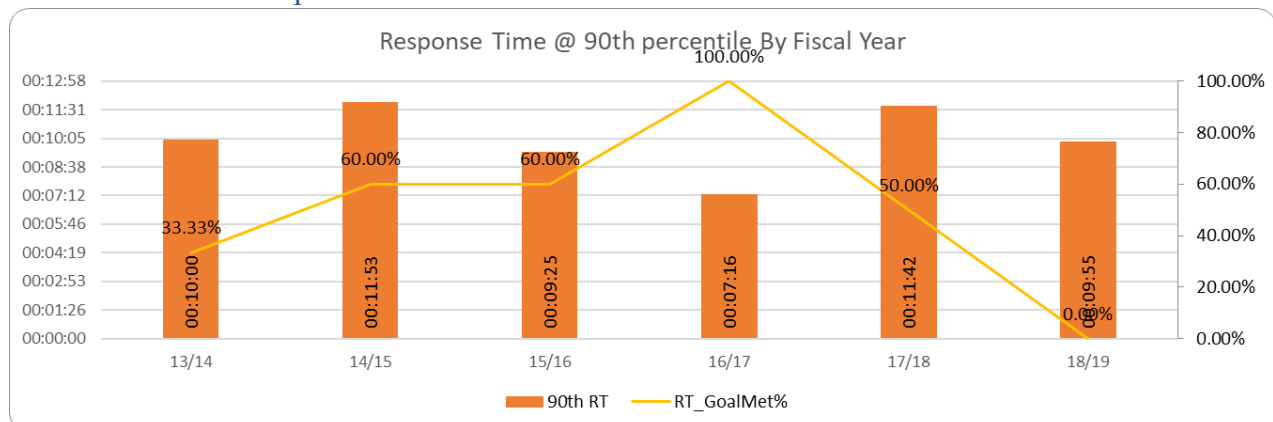
### Standard of Cover:

To establish a baseline of performance measured against the NFPA 1720 standard, a query for Structure Fires (NFIRS 111, 112, 120, 121, 122, 123) where Mutual Aid was None, Mutual Aid Received or Aid Received, was conducted. Total Response Time, inclusive of call processing, turnout and travel time of the first arriving unit are needed to evaluate against the standard of 10 minutes and 00 seconds. The current dataset evaluated was from 07/01/2013 to 06/30/2019. [A total of 27 events](#) met the criteria above.

Two evaluations were done: one to evaluate the Total Response Time of the 27 events containing the call processing time and another to evaluate only the Response Time (turnout and travel time) of the first arriving unit. The NFPA 1720 standard for Total Response Time would be 10 minutes and 00 seconds. (01:00 for call processing, 01:30 for turnout and 7:30 for travel) The goal was met on 74.07% of events. [Total Response Time = 10:41](#)



The chart below represents the Response Time (turnout and travel time) of all 27 events. The goal is 09 minutes and 00 seconds. (01:30 for turnout and 7:30 for travel) The goal was met on 62.96% of events. [Response Time = 10:00](#)



## Cabarrus County Fire Service Strategic Analysis August, 2020

### Baseline Statement:

For the period 07/01/2013 to 06/30/2019, For 90% of all **structure fire incidents**, the first arriving unit arrived within **10 minutes and 41 seconds or less**, from time received in the 911 center to arrival. This represents **Total Response Time**. The goal of 10 minutes was met **74.07%**

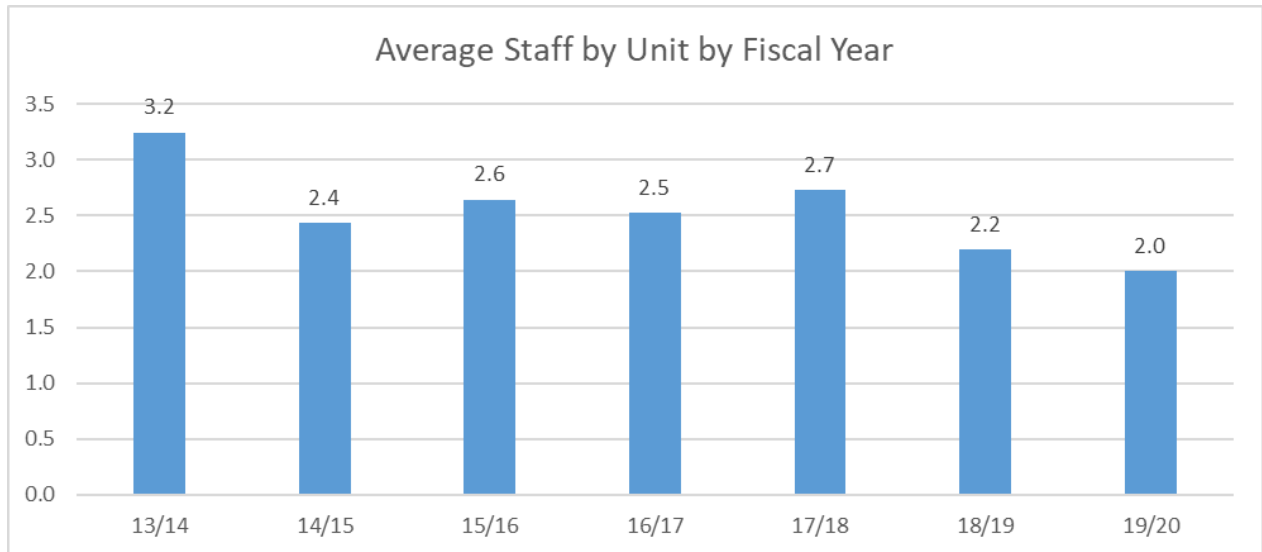
FDID 01312- Midland		
Set Response Performance Goals Here		
Call Processing	Response Time	Total Response time
0:01:00	0:09:00	0:10:00
% Goals Met		
Call Processing	Response Time	Total Response Time
77.78%	62.96%	74.07%
90th Percentile Demonstrated Performance		
90th CP	90th RT	90th TRT
00:01:11	00:10:00	0:10:41
Staff and Counts per Incident		
90th Staff Count	Avg Staff Count	Incident Count
10.00	7.85	27

Unit	Responses	AvgStaffCount
Engine	3,797	2.5
MIT2	95	1.7
MIE1	1,127	2.3
MIE2	219	2.5
MIE3	2,356	2.7
<b>Grand Total</b>	<b>3,797</b>	<b>2.5</b>

**Staffing** – Based on the unit reports for apparatus, it appears the department is staffing the first arriving engine companies with 2.5 staff members on average.



## Cabarrus County Fire Service Strategic Analysis August, 2020



### Effective Response Force (ERF):

Due to the lack of information of auto/mutual aid companies, the staff on those companies and individual timestamps, the calculations of an Effective Response Force were not able to be determined.



# Cabarrus County Fire Service Strategic Analysis

## August, 2020

### 01313 – Northeast Fire District

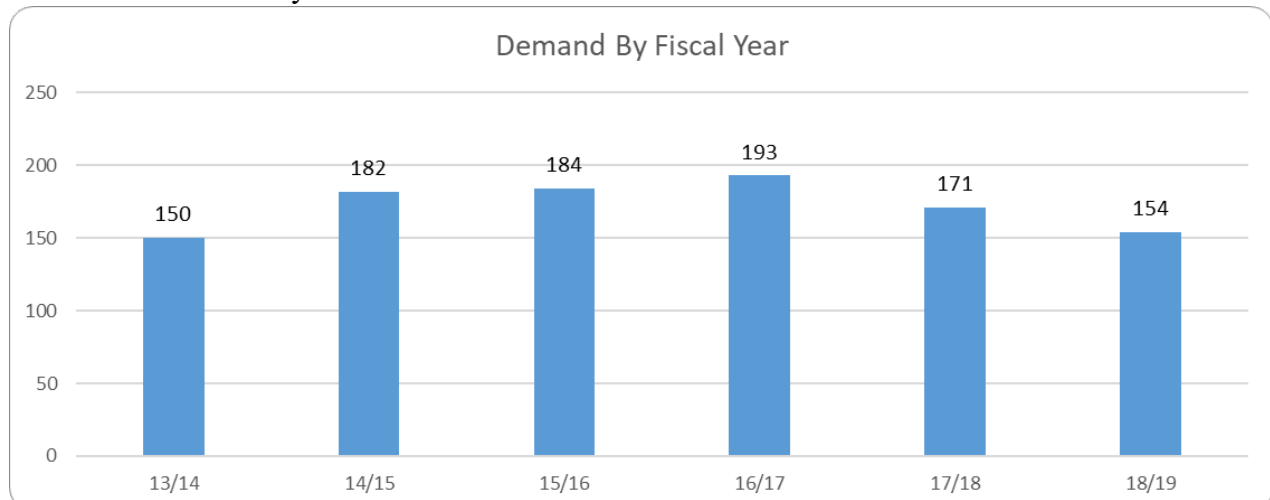
#### Fire Department Baseline Performance Report

Disclaimer: The performance measures in this document are based on the data exported from the Firehouse Records Management System (RMS) as entered in the system by the end user(s) with no modifications. There is no guarantee of accuracy as it beyond the scope of this evaluation. Multiple evaluations were conducted as seen below with the following understandings:

- Data evaluation spans from 07/01/2013 to 06/30/2019 with a focus on the last six, full, fiscal years (FY) of data; FY13/14 to FY18/19
- When referencing incidents within the Authority Having Jurisdiction (AHJ), this was determined by excluding incidents where Aid Type was auto aid given or mutual aid given.
- Errors which could affect results:
  - 67 of 1,034 were incomplete by NFIRS definition for report completion. It is uncertain what information is missing on these reports.
  - 11 of 1,034 events had no dispatch receive time, affecting call processing evaluation.
  - 1 fire events had a fire loss but no pre-fire value, affecting save percentages on fire events.

#### Demand for Service

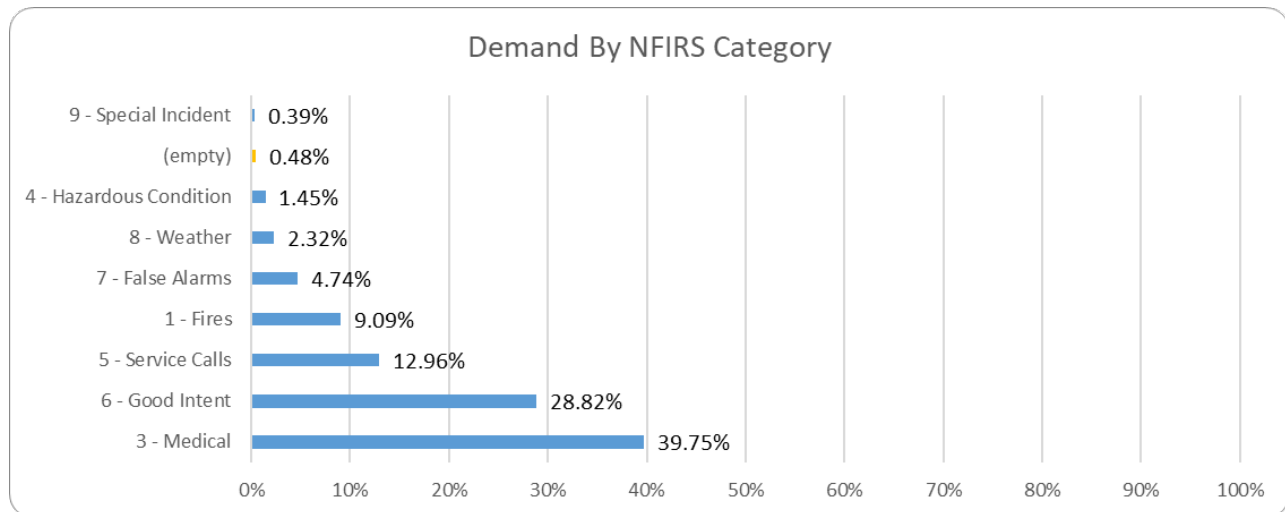
The department's demand for service for FY18/19 was 154 events, approximately 3 per week. Events over the entire 6 years yielded annual increases and decreases ranging from (11%) to 21%. The medical emergency contributes to 39.75% of the demand over the last 6 full years. An annual trend is a steady decline in incidents.



# Cabarrus County Fire Service Strategic Analysis

## August, 2020

### Demand by NFIRS Category – 07/01/2013 to 06/30/2019



### Response Times – Events within the AHJ

Using the National Fire Protection Association as a guideline for response (NFPA 1720, Urban Zone), goals for response performance were set and evaluated against the following:

**Call Processing Time:** 01 min 00 seconds  
**Response Time:** 09 min 00 seconds (turnout - 1.5 min and travel - 7.5 min)  
**Total Response Time:** 10 minutes (Call processing time, turnout, travel)  
**Incident Types:** All

**Mutual Aid:** None, Mutual Aid Received and Auto Aid Received  
 Evaluating all events within the AHJ, defined by the Mutual Aid values, the Total Response Goal of 10:00 minutes was met 58.12%  
 Of the 1,034 events measured here, 90% had a staff count of 8 persons or less per incident; the average was 4.34 staff count.  
Response Time Goal of 9 minutes for the first arriving unit was met 54.74%

FDID 11313 - Northeast		
Set Response Performance Goals Here		
Call Processing	Response Time	Total Response time
0:01:00	0:09:00	0:10:00
% Goals Met		
Call Processing	Response Time	Total Response Time
84.62%	54.74%	58.12%
90th Percentile Demonstrated Performance		
90th CP	90th RT	90th TRT
00:01:00	00:11:17	0:11:35
Staff and Counts per Incident		
90th Staff Count	Avg Staff Count	Incident Count
8.00	4.34	1,034

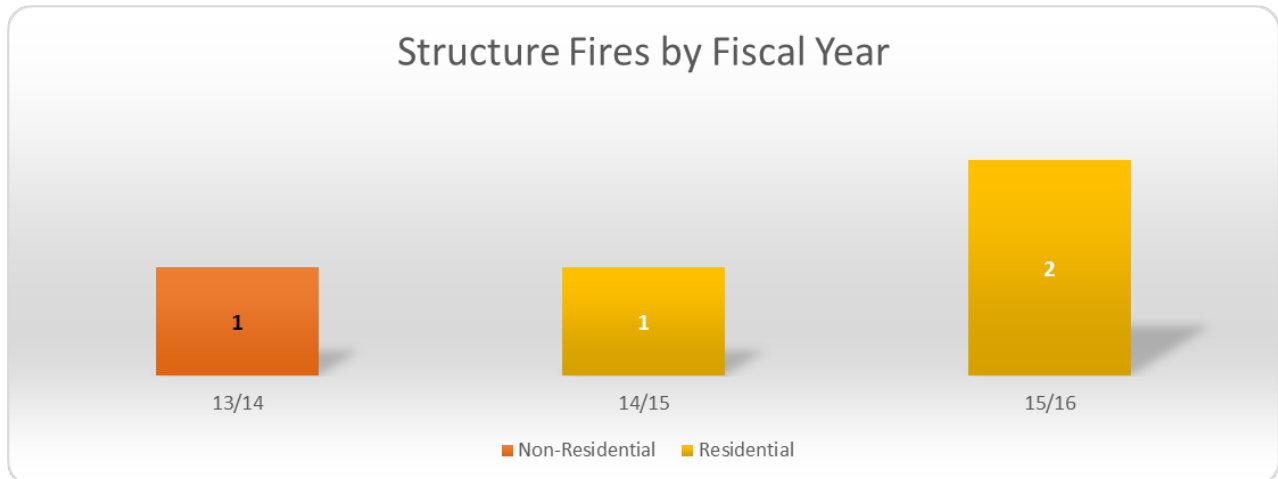




# Cabarrus County Fire Service Strategic Analysis

## August, 2020

### Structure Fires



Within the department's AHJ, [annual structure fires average less than 1](#). Over the last 6 fiscal years, 4 total structure fires have occurred with the following observations:

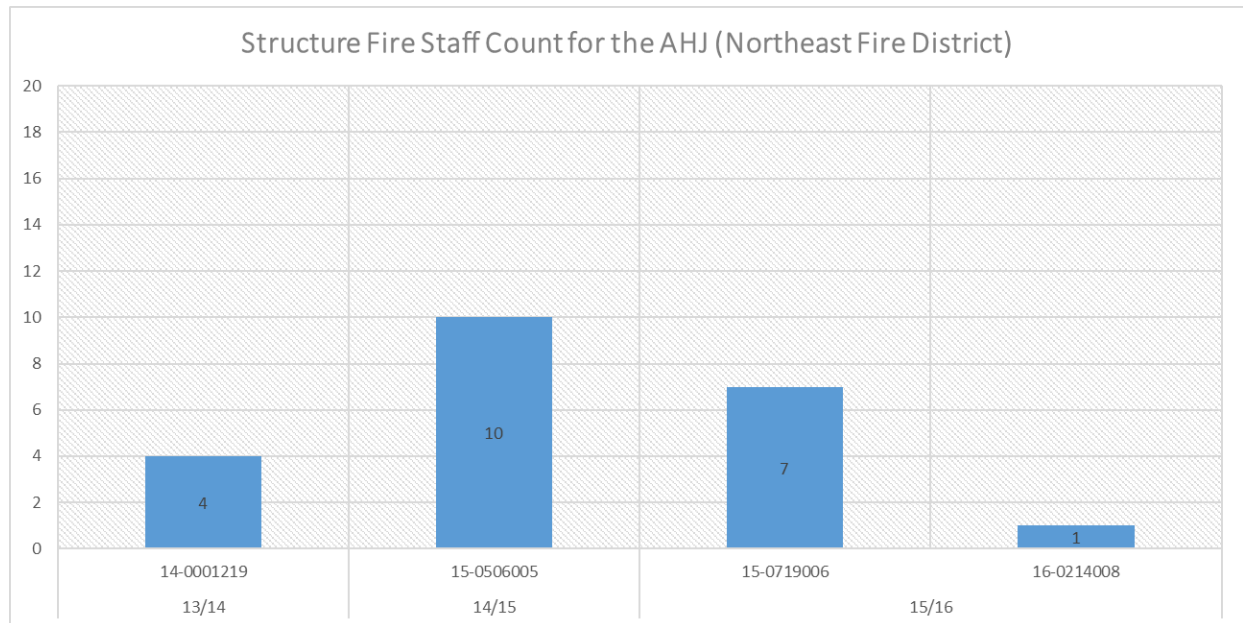
- [25%](#) of these fires were [confined to the room or origin](#).
- Average duration of an event was 5 hours, 52 minutes
- There were **no** fire fatalities, **no** civilian injuries and **no** firefighter injuries.
- The leading area of origin was listed as undetermined - 50%
- A smoke alarm presence was listed as undetermined on 3 of the 4, blank on the 4<sup>th</sup> event.
- Cause of ignition was found to be undetermined after investigation on 2 (50%), 1 under investigation and 1 listed as act of nature.
- A first arriving [response time goal of 9 minutes was met on 100% of events](#).
- Property savings could not be calculated as a summary of the 6 years as pre-incident values were not obtained on any incident.
- \*Average incident staff count was 7.25 persons. 90% of these had a staff count of 10 or less persons. The max staff count on any incident was 10.

**\*Note:** Average incident counts are incident specific and could be inclusive of auto/mutual aid staff if the user chose to include those in the incident report by way of a checkbox in the report.



## Cabarrus County Fire Service Strategic Analysis August, 2020

### Structure Fire Staff counts from Northeast Fire District



To determine the department's ability to assemble an effective response force from their own staff (separate from mutual/auto aid companies), an evaluation of staff associated with the department's fire units, which arrived, was evaluated. It should be noted the evaluation found a unit called POV (personally owned vehicle) which was assumed to collectively count the total staff which arrived by POV. This unit was used in this evaluation.

Over the 6-year period of time consisting of 4 structure fire events, the department averaged 5.5 staff members arriving these events from their department.

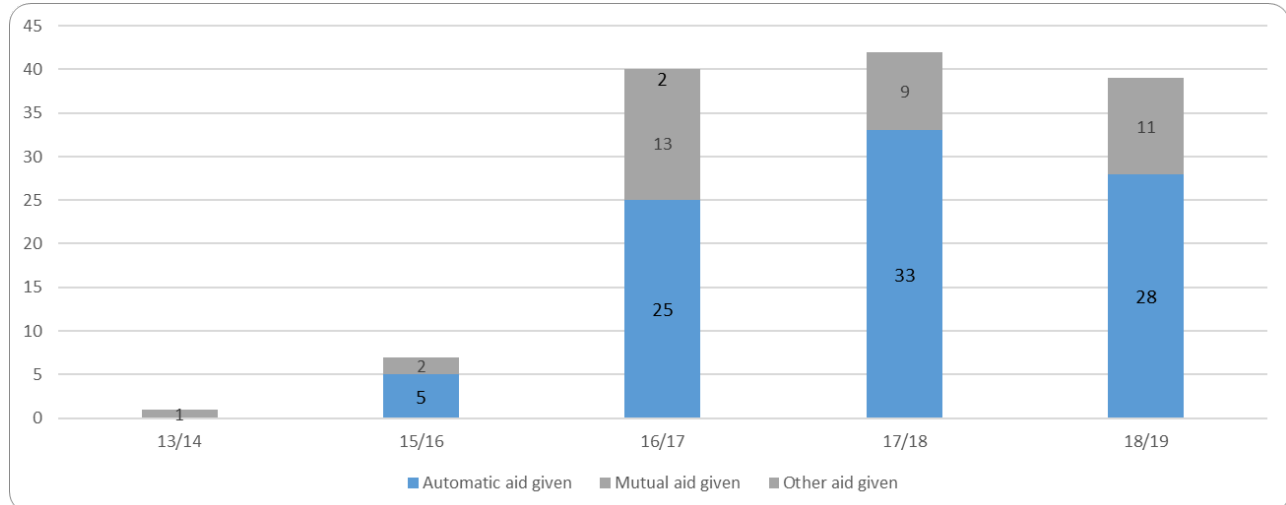


# Cabarrus County Fire Service Strategic Analysis

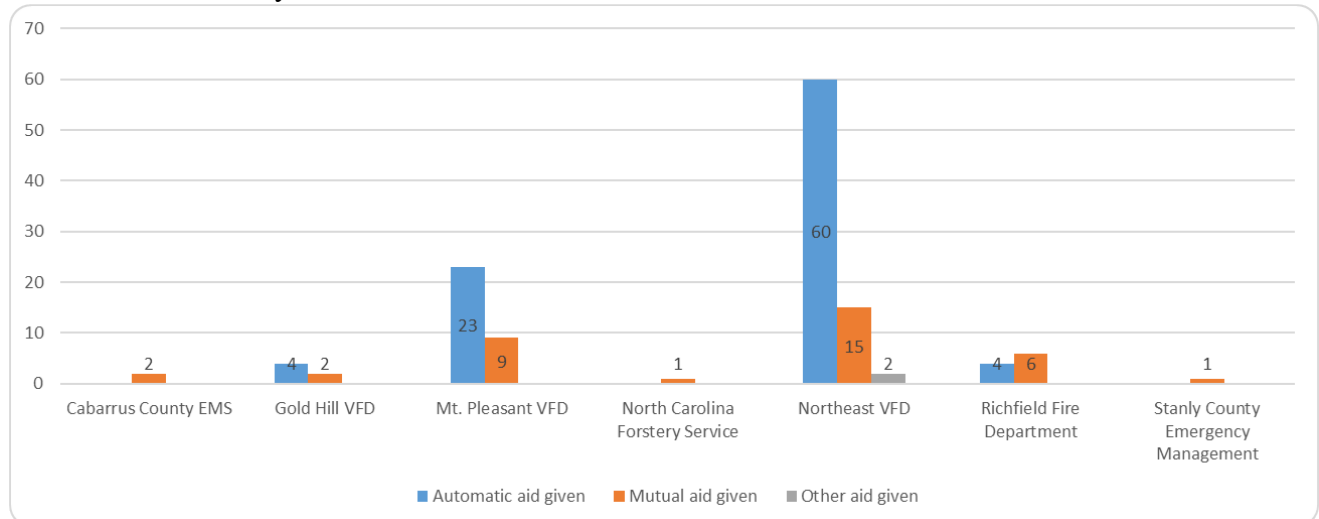
## August, 2020

### Mutual / Auto Aid

#### Aid Given



**Aid Given**, based on the data entered, Northeast received the most aid of any other department at 77 events followed by Mt. Pleasant and Richfield

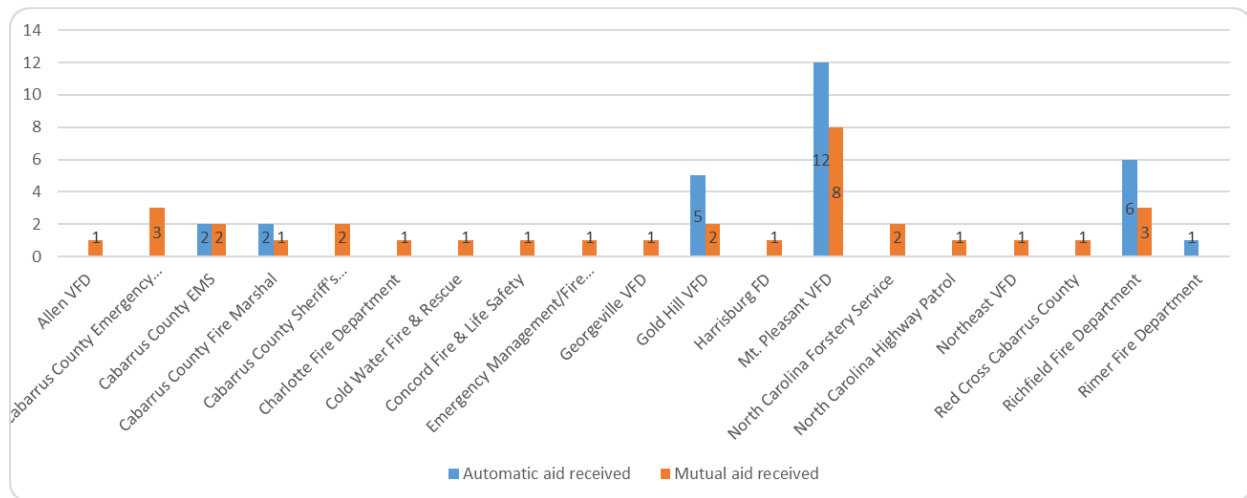
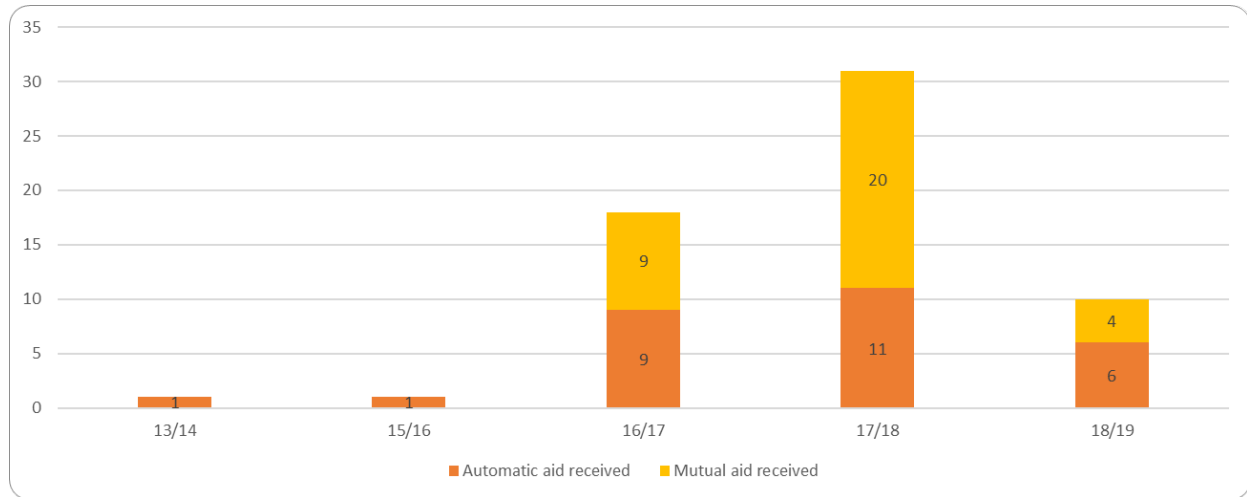


Aid by Department Name	Count	Avg Appar Cnt	Avg Staff Cnt
Northeast VFD	77	1.65	4.45
Mt. Pleasant VFD	32	1.06	3.03
Richfield Fire Department	10	0.60	0.90
Gold Hill VFD	6	0.67	1.83
Cabarrus County EMS	2	1.00	4.00
Stanly County Emergency Management	1	1.00	2.00
North Carolina Forstery Service	1	1.00	2.00
<b>Grand Total</b>	<b>129</b>	<b>1.36</b>	<b>3.66</b>



# Cabarrus County Fire Service Strategic Analysis August, 2020

## Aid Received



Aid by Department Name	Count	Avg Appar Cnt	Avg Staff Cnt
*Mt. Pleasant VFD	20	1.35	3.70
*Richfield Fire Department	9	0.89	2.78
*Gold Hill VFD	7	1.43	2.86
*Cabarrus County EMS	4	2.50	3.75
*Cabarrus County Fire Marshal	3	0.67	1.33
*Cabarrus County Emergency Management	3	1.33	2.67
*Cabarrus County Sheriff's Department	2	5.00	5.00
*North Carolina Forestry Service	2	1.00	1.50
*Allen VFD	1	1.00	4.00
*Northeast VFD	1	3.00	9.00
*Harrisburg FD	1	4.00	7.00
*Charlotte Fire Department	1	4.00	13.00
*North Carolina Highway Patrol	1	5.00	5.00
*Cold Water Fire & Rescue	1	1.00	4.00
*Red Cross Cabarrus County	1	2.00	4.00
*Concord Fire & Life Safety	1	5.00	9.00
*Rimer Fire Department	1	1.00	3.00
*Emergency Management/Fire Marshal	1	2.00	2.00
*Georgeville VFD	1	1.00	4.00
Grand Total	61	1.67	3.66

Aid Received, based on the data, was received from Mt. Pleasant and Richfield more than others. Gasoline spills generated more aid received than any other type of incident.



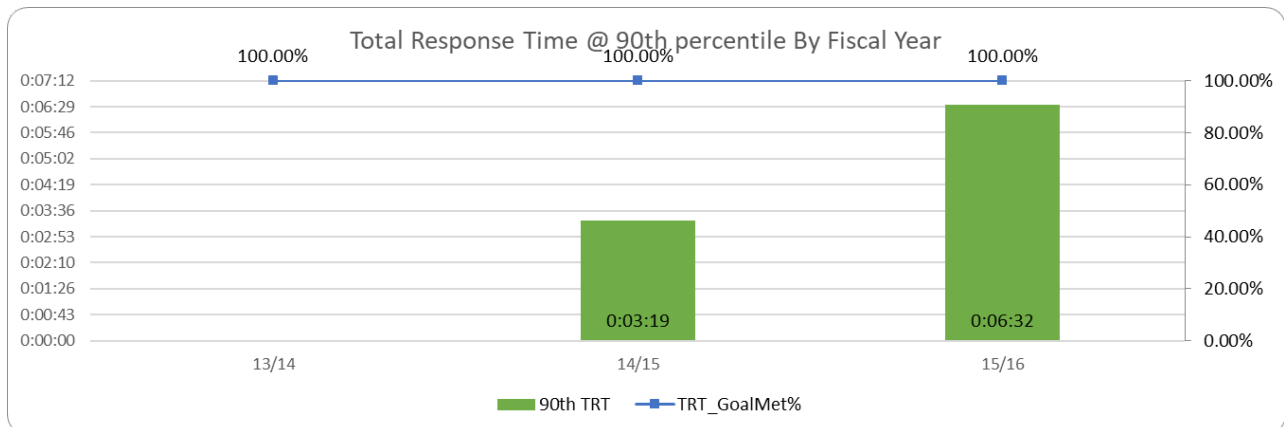
## Cabarrus County Fire Service Strategic Analysis August, 2020

Incident Type   Aid Type   Department Name	Count	Avg Appar Cnt	Avg Staff Cnt
411 - Gasoline or other flammable liquid spill	15	3.20	5.93
743 - Smoke detector activation, no fire - unintentional	6	1.00	2.50
323 - Motor vehicle/pedestrian accident (MV Ped)	5	2.00	4.80
100 - Fire, Other	4	1.50	3.25
143 - Grass fire	3	1.67	3.00
161 - Outside storage fire	3	0.00	0.00
441 - Heat from short circuit (wiring), defective/worn	3	1.67	3.00
311 - Medical assist, assist EMS crew	3	1.00	3.00
745 - Alarm system activation, no fire - unintentional	3	0.00	0.00
322 - Motor vehicle accident with injuries	3	1.67	5.00

### Standard of Cover:

To establish a baseline of performance measured against the NFPA 1720 standard, a query for Structure Fires (NFIRS 111, 112, 120, 121, 122, 123) where Mutual Aid was None, Mutual Aid Received or Aid Received, was conducted. Total Response Time, inclusive of call processing, turnout and travel time of the first arriving unit are needed to evaluate against the standard of 10 minutes and 00 seconds. The current dataset evaluated was from 07/01/2013 to 06/30/2019. A total of 4 events met the criteria above.

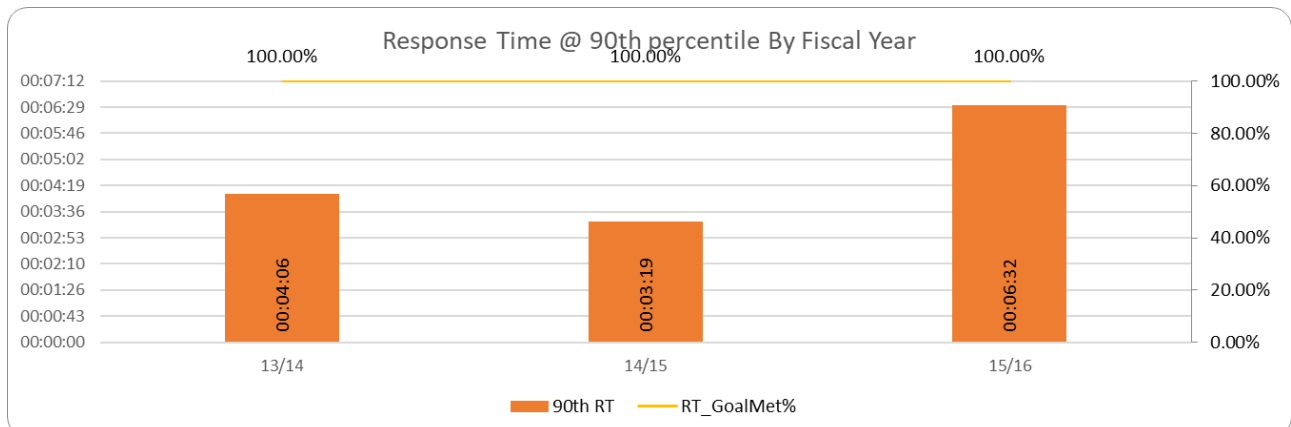
Two evaluations were done: one to evaluate the Total Response Time of the 4 events containing the call processing time and another to evaluate only the Response Time (turnout and travel time) of the first arriving unit. The NFPA 1720 standard for Total Response Time would be 10 minutes and 00 seconds. (01:00 for call processing, 01:30 for turnout and 7:30 for travel) The goal was met on 100% of events. Total Response Time = 06:32



The chart below represents the Response Time (turnout and travel time) of all 4 events. The goal is 09 minutes and 00 seconds. (01:30 for turnout and 7:30 for travel) The goal was met on 100% of events. Response Time = 06:32



## Cabarrus County Fire Service Strategic Analysis August, 2020



### Baseline Statement:

For the period 07/01/2013 to 06/30/2019, For 90% of all **structure fire incidents**, the first arriving unit arrived within **6 minutes and 32 seconds or less**, from time received in the 911 center to arrival. This represents **Total Response Time**. The goal of 10 minutes was met **100%**

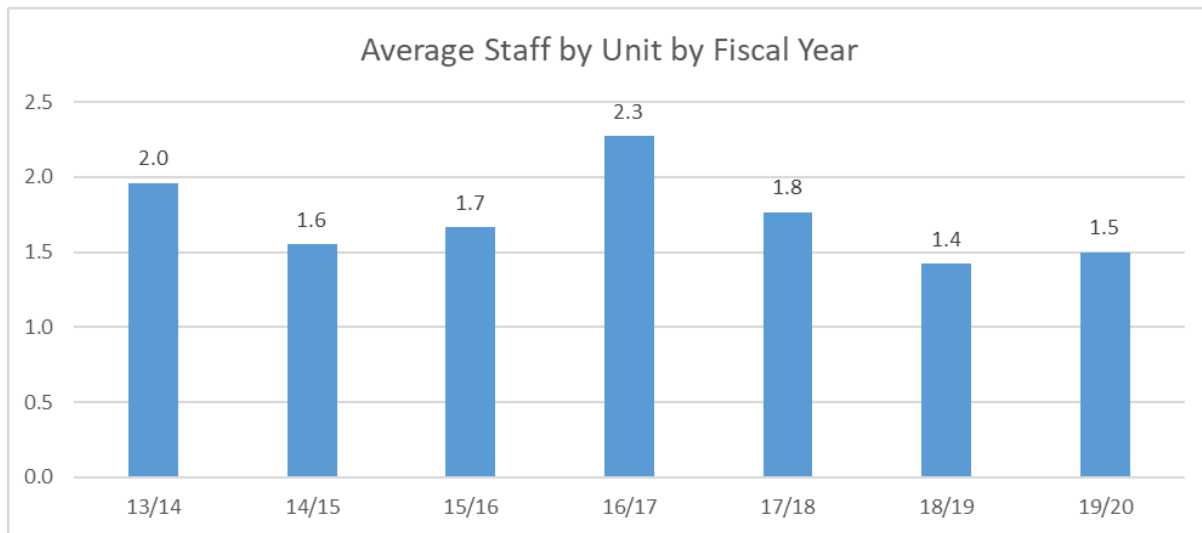
FDID 11313 - Northeast		
Set Response Performance Goals Here		
Call Processing	Response Time	Total Response time
0:01:00	0:09:00	0:10:00
% Goals Met		
Call Processing	Response Time	Total Response Time
50.00%	100.00%	100.00%
90th Percentile Demonstrated Performance		
90th CP	90th RT	90th TRT
00:01:19	00:06:32	0:06:32
Staff and Counts per Incident		
90th Staff Count	Avg Staff Count	Incident Count
10.00	7.25	4



## Cabarrus County Fire Service Strategic Analysis August, 2020

Unit	Responses	AvgStaffCount
Engine	648	1.8
NEE1	498	1.7
NEE2	150	2.0
<b>Grand Total</b>	<b>648</b>	<b>1.8</b>

**Staffing** – Based on the unit reports for apparatus, it appears the department is staffing the first arriving engine companies with 1.8 staff members on average.



### Effective Response Force (ERF):

Due to the lack of information of auto/mutual aid companies, the staff on those companies and individual timestamps, the calculations of an Effective Response Force were not able to be determined.





# Cabarrus County Fire Service Strategic Analysis

## August, 2020

### 01314 – Odell Fire District

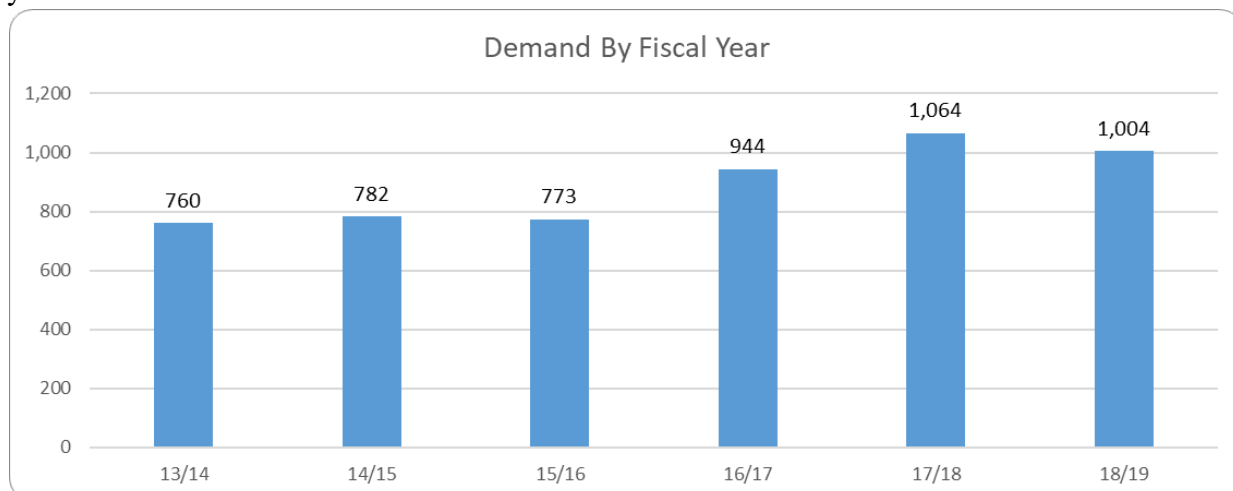
#### Fire Department Baseline Performance Report

Disclaimer: The performance measures in this document are based on the data exported from the Firehouse Records Management System (RMS) as entered in the system by the end user(s) with no modifications. There is no guarantee of accuracy as it beyond the scope of this evaluation. Multiple evaluations were conducted as seen below with the following understandings:

- Data evaluation spans from 07/01/2013 to 06/30/2019 with a focus on the last six, full, fiscal years (FY) of data; FY13/14 to FY18/19
- When referencing incidents within the Authority Having Jurisdiction (AHJ), this was determined by excluding incidents where Aid Type was auto aid given or mutual aid given.
- Errors which could affect results:
  - 61 of 5,327 were incomplete by NFIRS definition for report completion. It is uncertain what information is missing on these reports.
  - 1,603 of 5,327 events had no dispatch receive time, affecting call processing evaluation.
  - 4 of 5,327 events had dispatch receive time after the alarm time, affecting call processing evaluation.
  - 1 fire events had a fire loss but no pre-fire value, affecting save percentages on fire events.

#### Demand for Service

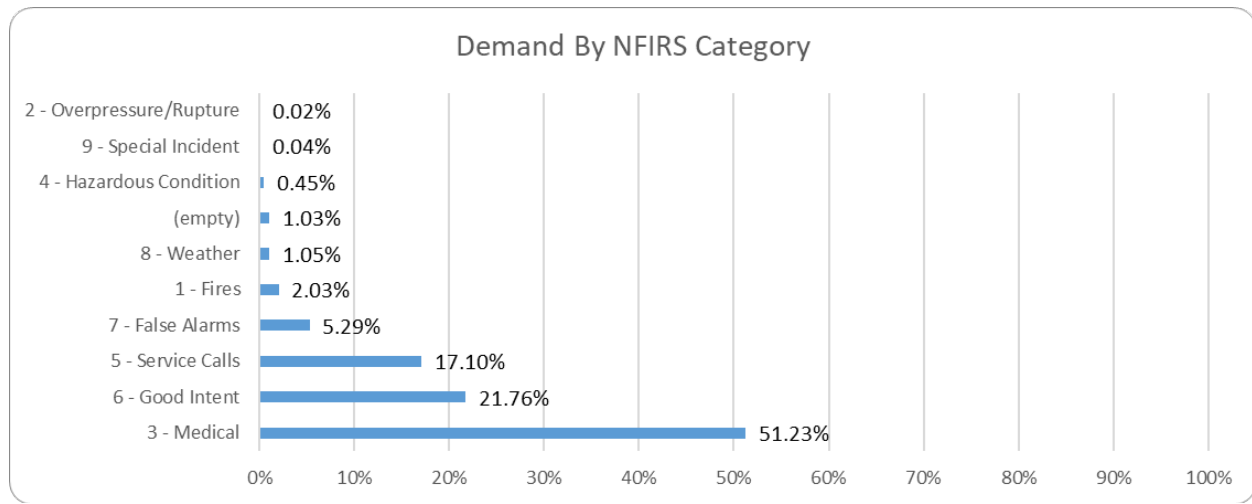
The department's demand for service for FY18/19 was 1,004 events, approximately 2.75 per day. Events over the entire 6 years yielded annual increases and decreases ranging from (5.6%) to 22.12%. The medical emergency contributes to 51.23% of the demand over the last 6 full years.



# Cabarrus County Fire Service Strategic Analysis

## August, 2020

### Demand by NFIRS Category – 07/01/2013 to 06/30/2019



### Response Times – Events within the AHJ

Using the National Fire Protection Association as a guideline for response (NFPA 1720, Urban Zone), goals for response performance were set and evaluated against the following:

**Call Processing Time:** 01 min 00 seconds  
**Response Time:** 09 min 00 seconds (turnout - 1.5 min and travel - 7.5 min)  
**Total Response Time:** 10 minutes (Call processing time, turnout, travel)  
**Incident Types:** All  
**Mutual Aid:** None, Mutual Aid Received and Auto Aid Received

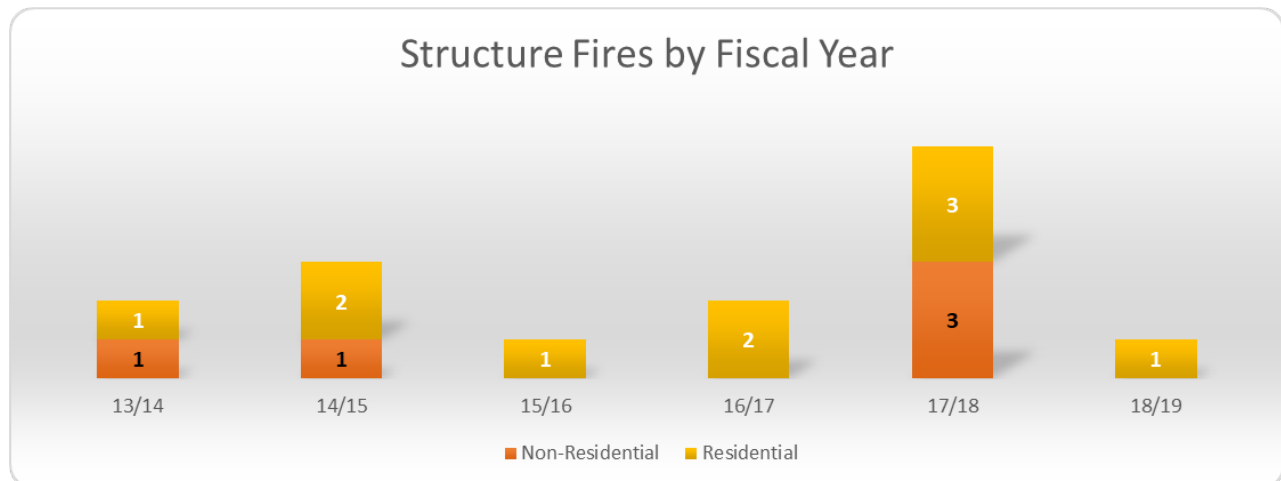
FDID 01314- Odell		
Set Response Performance Goals Here		
Call Processing	Response Time	Total Response time
0:01:00	0:09:00	0:10:00
% Goals Met		
Call Processing	Response Time	Total Response Time
84.43%	73.43%	75.80%
90th Percentile Demonstrated Performance		
90th CP	90th RT	90th TRT
00:01:11	00:09:59	0:10:37
Staff and Counts per Incident		
90th Staff Count	Avg Staff Count	Incident Count
8.00	5.30	3,545

Evaluating all events within the AHJ, defined by the Mutual Aid values, the Total Response Goal of 10:00 minutes was met 75.80%. Of the 3,545 events measured here, 90% had a staff count of 8 persons or less per incident; the average was 4.34 staff count. Response Time Goal of 9 minutes for the first arriving unit was met 73.43%



## Cabarrus County Fire Service Strategic Analysis August, 2020

### Structure Fires



Within the department's AHJ, [annual structure fires average less than 2.5](#). Over the last 6 fiscal years, 15 total structure fires have occurred with the following observations:

- [33%](#) of these fires were [confined to the room or origin](#).
- Average duration of an event was 2 hours, 29 minutes
- There were **no** fire fatalities, **no** civilian injuries and **no** firefighter injuries.
- The leading area of origin was listed as “other” or outside area - 46%
- A smoke alarm presence was listed as undetermined on 7 of the 15, blank on 3 events. One listed as present.
- Cause of ignition was found to be undetermined after investigation on 4 (26%), 6 under investigation (40%).
- A first arriving [response time goal of 9 minutes was met on 66.67% of events](#).
- Property savings over the 6 years was 93% of the pre-incident value
- \*Average incident staff count was 11 persons. 90% of these had a staff count of 14 or less persons. The max staff count on any incident was 14.

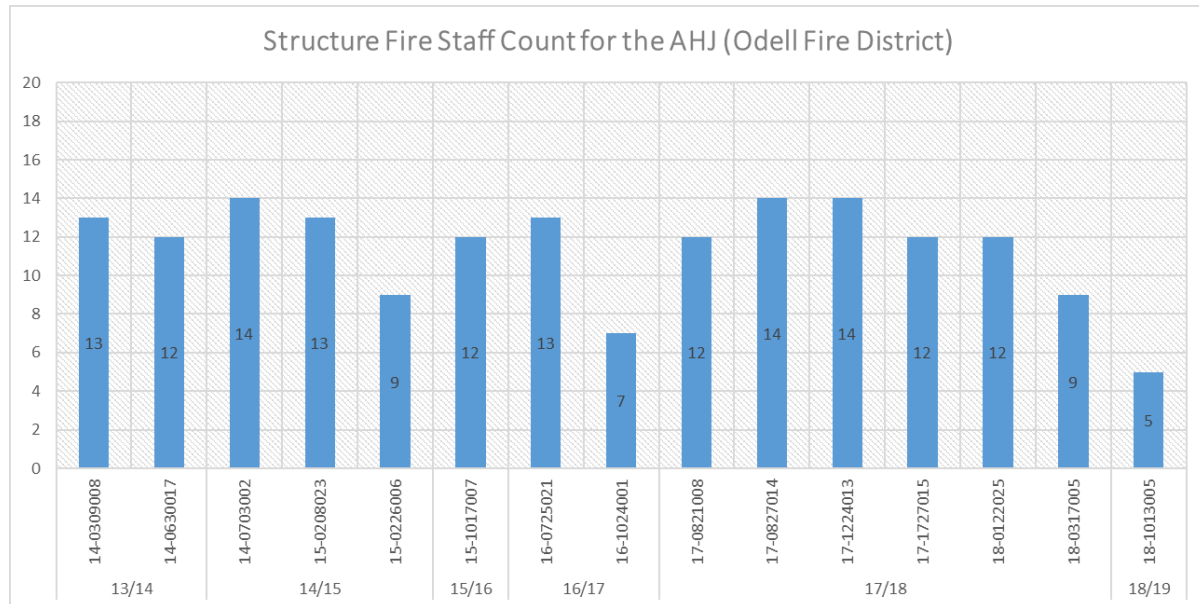
**\*Note:** Average incident counts are incident specific and could be inclusive of auto/mutual aid staff if the user chose to include those in the incident report by way of a checkbox in the report.



# Cabarrus County Fire Service Strategic Analysis

## August, 2020

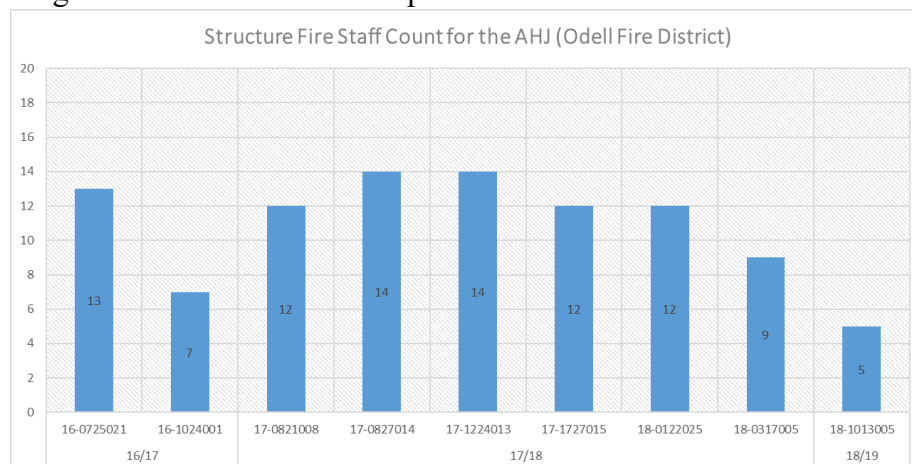
### Structure Fire Staff counts from Odell Fire District



To determine the department's ability to assemble an effective response force from their own staff (separate from mutual/auto aid companies), an evaluation of staff associated with the department's fire units, which arrived, was evaluated. It should be noted the evaluation found a unit called POV (personally owned vehicle) which was assumed to collectively count the total staff which arrived by POV. This unit was used in this evaluation.

Over the 6-year period of time consisting of 15 structure fire events, the department averaged 11.4 staff members arriving these events from their department.

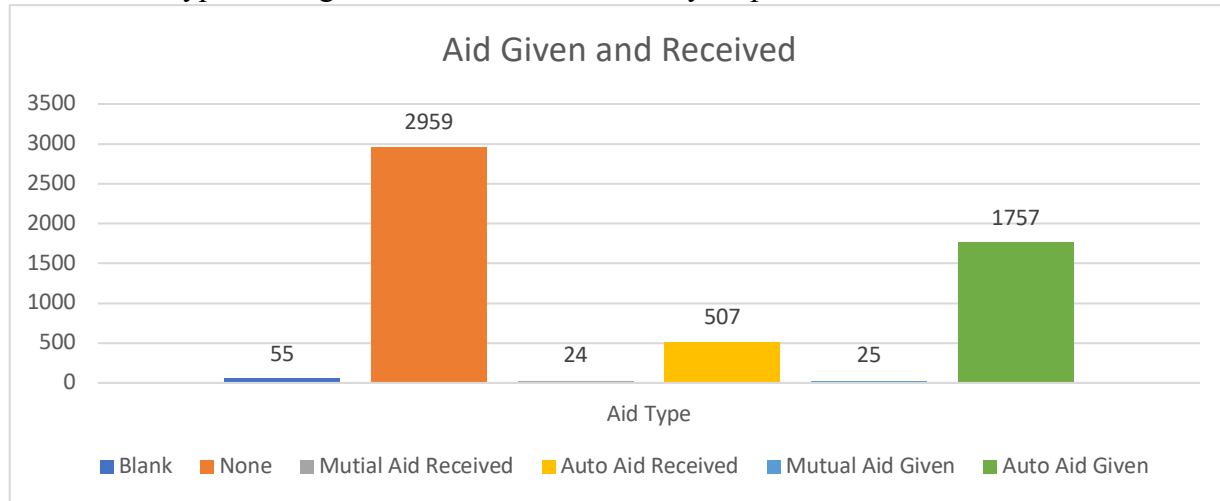
Over the last three years consisting of 9 structure fire events, the department averaged 10.89 staff members arriving these events from their department.



## Cabarrus County Fire Service Strategic Analysis August, 2020

### Mutual / Auto Aid

This department, like a couple others, have their Firehouse RMS configured to grey-out the aid section designed to capture who aid was given to, or received from. At most, we can only establish the type of aid given or received over the 6-year period.



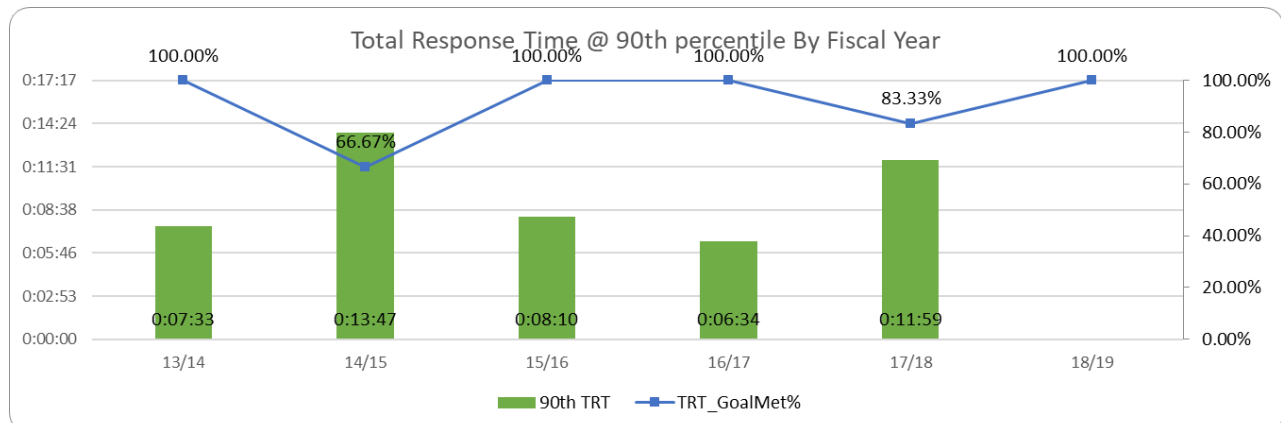
### Standard of Cover:

To establish a baseline of performance measured against the NFPA 1720 standard, a query for Structure Fires (NFIRS 111, 112, 120, 121, 122, 123) where Mutual Aid was None, Mutual Aid Received or Aid Received, was conducted. Total Response Time, inclusive of call processing, turnout and travel time of the first arriving unit are needed to evaluate against the standard of 10 minutes and 00 seconds. The current dataset evaluated was from 07/01/2013 to 06/30/2019. [A total of 15 events](#) met the criteria above.

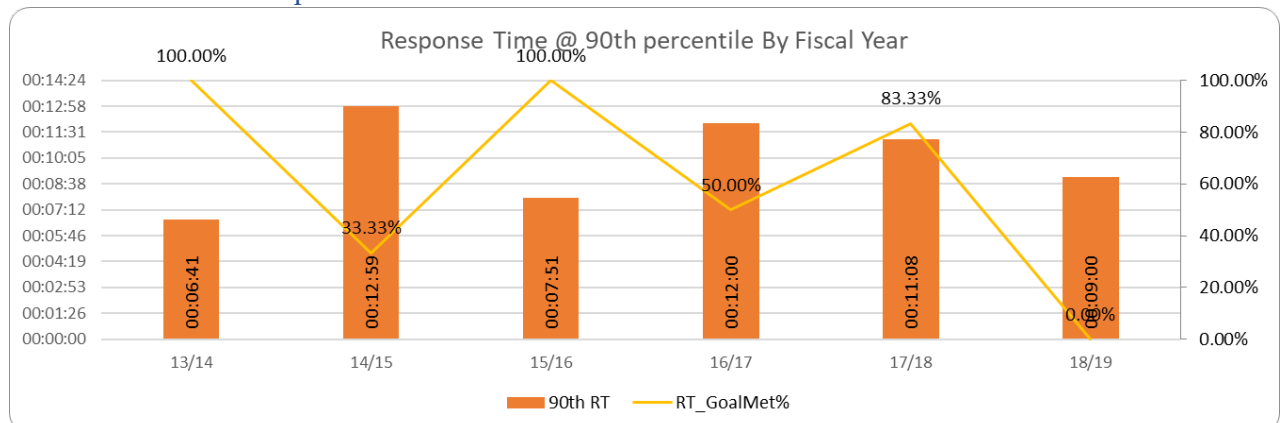
Two evaluations were done: one to evaluate the Total Response Time of the 15 events containing the call processing time and another to evaluate only the Response Time (turnout and travel time) of the first arriving unit. The NFPA 1720 standard for Total Response Time would be 10 minutes and 00 seconds. (01:00 for call processing, 01:30 for turnout and 7:30 for travel) The goal was met on 86.67% of events. Total Response Time = 11:59



## Cabarrus County Fire Service Strategic Analysis August, 2020



The chart below represents the Response Time (turnout and travel time) of all 15 events. The goal is 09 minutes and 00 seconds. (01:30 for turnout and 7:30 for travel) The goal was met on 66.67% of events. **Response Time = 12:00**



### Baseline Statement:

For the period 07/01/2013 to 06/30/2019, For 90% of all **structure fire incidents**, the first arriving unit arrived within **11 minutes and 59 seconds or less**, from time received in the 911 center to arrival. This represents **Total Response Time**. The goal of 10 minutes was met **86.67%**



# Cabarrus County Fire Service Strategic Analysis August, 2020

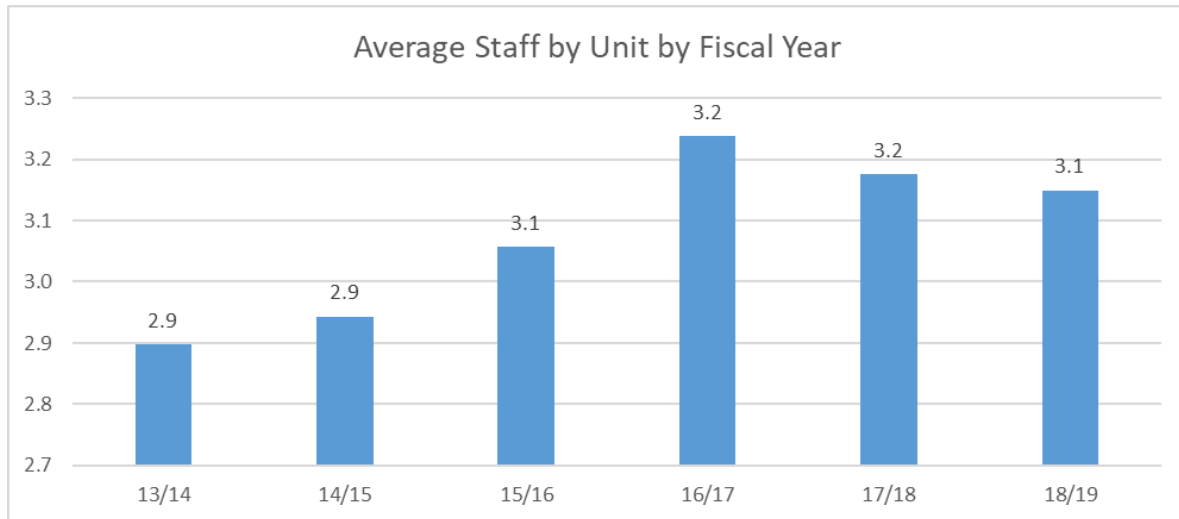
FDID 01314- Odell		
Set Response Performance Goals Here		
Call Processing	Response Time	Total Response time
0:01:00	0:09:00	0:10:00
% Goals Met		
Call Processing	Response Time	Total Response Time
60.00%	66.67%	86.67%
90th Percentile Demonstrated Performance		
90th CP	90th RT	90th TRT
00:00:52	00:12:00	0:11:59
Staff and Counts per Incident		
90th Staff Count	Avg Staff Count	Incident Count
14.00	11.40	15

Unit	Responses	AvgStaffCount
Engine	5,620	3.1
ODE2	2,277	3.0
ODT1	1	3.0
ODE1	3,342	3.1
<b>Grand Total</b>	<b>5,620</b>	<b>3.1</b>

**Staffing** – Based on the unit reports for apparatus, it appears the department is staffing the first arriving engine companies with 3.1 staff members on average.



## Cabarrus County Fire Service Strategic Analysis August, 2020



### Effective Response Force (ERF):

Due to the lack of information of auto/mutual aid companies, the staff on those companies and individual timestamps, the calculations of an Effective Response Force were not able to be determined.





# Cabarrus County Fire Service Strategic Analysis

## August, 2020

### 01317 – Rimer Fire District

#### Fire Department Baseline Performance Report

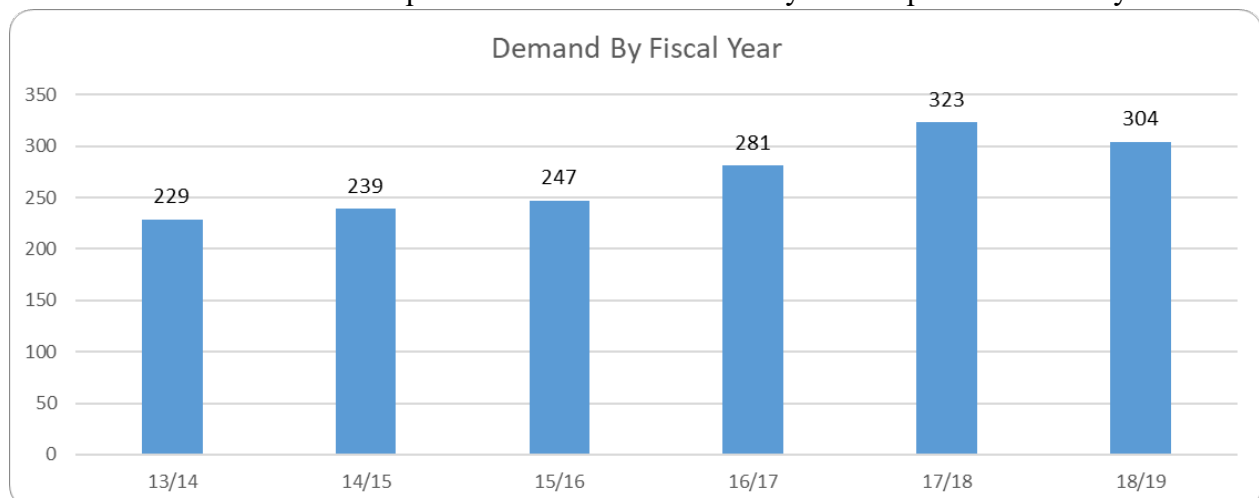
Disclaimer: The performance measures in this document are based on the data exported from the Firehouse Records Management System (RMS) as entered in the system by the end user(s) with no modifications. There is no guarantee of accuracy as it beyond the scope of this evaluation.

Multiple evaluations were conducted as seen below with the following understandings:

- Data evaluation spans from 07/01/2013 to 06/30/2019 with a focus on the last six, full, fiscal years (FY) of data; FY13/14 to FY18/19
- When referencing incidents within the Authority Having Jurisdiction (AHJ), this was determined by excluding incidents where Aid Type was auto aid given or mutual aid given.
- Errors which could affect results:
  - 97 of 1,623 were incomplete by NFIRS definition for report completion. It is uncertain what information is missing on these reports.
  - 1 of 1,623 events had a dispatch received time before the alarm time, affecting call processing evaluation
  - 79 of 1,623 events had no dispatch receive time, affecting call processing evaluation.
  - 30 fire events had a fire loss but no pre-fire value, affecting save percentages on fire events.

#### Demand for Service

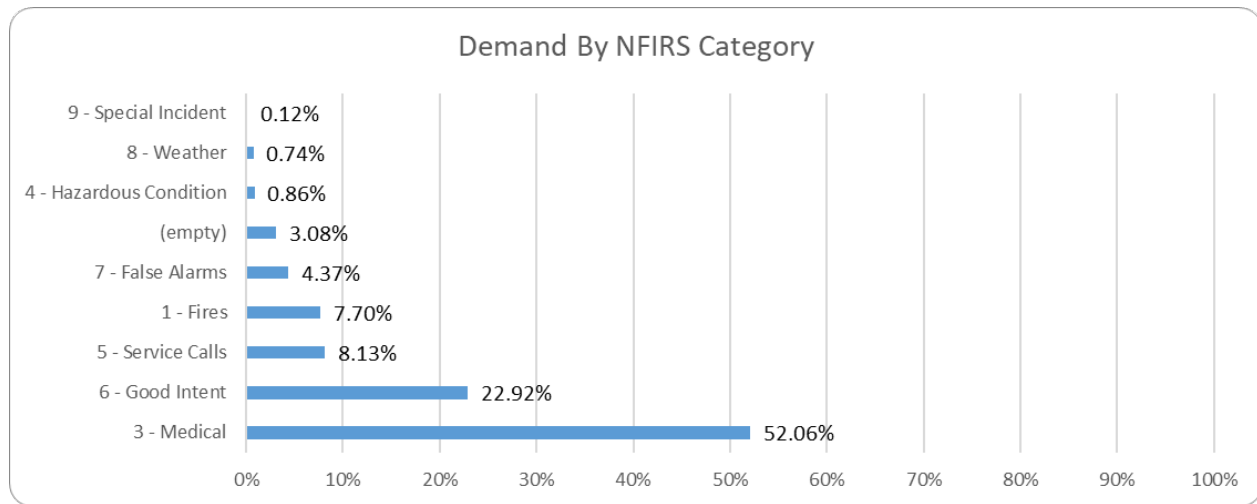
The department's demand for service for FY18/19 was 30 events, approximately 1 per day. Events over the entire 6 years yielded annual increases and decreases ranging from (6%) to 15%. The medical emergency contributes to 52.06% of the demand over the last 6 full years. An annual increase trend has been present since the 13/14 fiscal year except for the 18/19 year.



# Cabarrus County Fire Service Strategic Analysis

## August, 2020

### Demand by NFIRS Category – 07/01/2013 to 06/30/2019



### Response Times – Events within the AHJ

Using the National Fire Protection Association as a guideline for response (NFPA 1720, Urban Zone), goals for response performance were set and evaluated against the following:

**Call Processing Time:** 01 min 00 seconds  
**Response Time:** 09 min 00 seconds (turnout - 1.5 min and travel - 7.5 min)  
**Total Response Time:** 10 minutes (Call processing time, turnout, travel)  
**Incident Types:** All  
**Mutual Aid:** None, Mutual Aid Received and Auto Aid Received

FDID 01317- Rimer		
Set Response Performance Goals Here		
Call Processing	Response Time	Total Response time
0:01:00	0:09:00	0:10:00
% Goals Met		
Call Processing	Response Time	Total Response Time
86.01%	71.02%	73.17%
90th Percentile Demonstrated Performance		
90th CP	90th RT	90th TRT
00:01:09	00:11:27	0:12:08
Staff and Counts per Incident		
90th Staff Count	Avg Staff Count	Incident Count
7.00	3.79	1,301

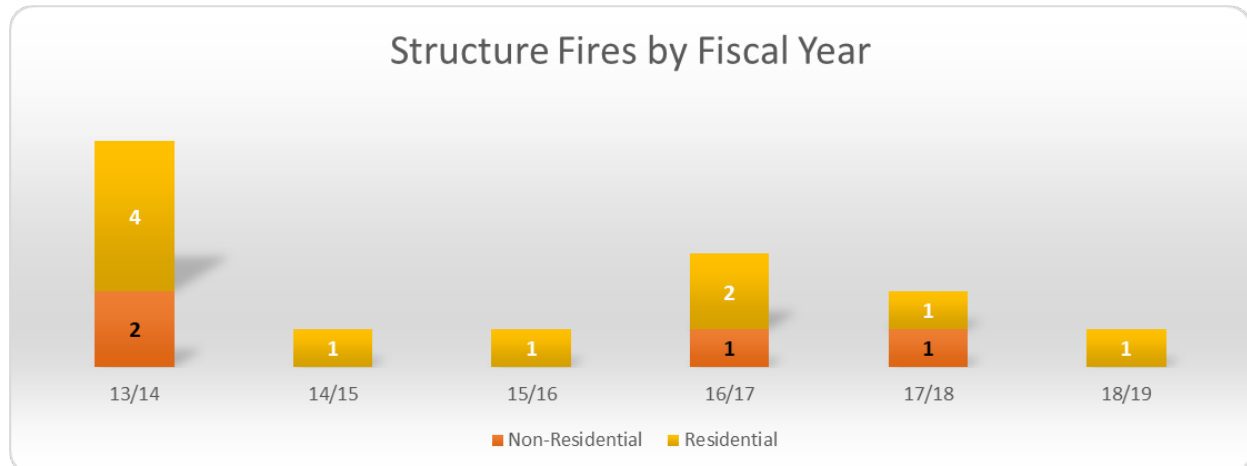
Evaluating all events within the AHJ, defined by the Mutual Aid values, the Total Response Goal of 10:00 minutes was met 73.17%

Of the 1,301 events measured here, 90% had a staff count of 7 persons or less per incident; the average was 3.79 staff count. (many were 0)  
Response Time Goal of 9 minutes for the first arriving unit was met 71.02%



## Cabarrus County Fire Service Strategic Analysis August, 2020

### Structure Fires



Within the department's AHJ, **annual structure fires average less than 2.33**. Over the last 6 fiscal years, 14 total structure fires have occurred with the following observations:

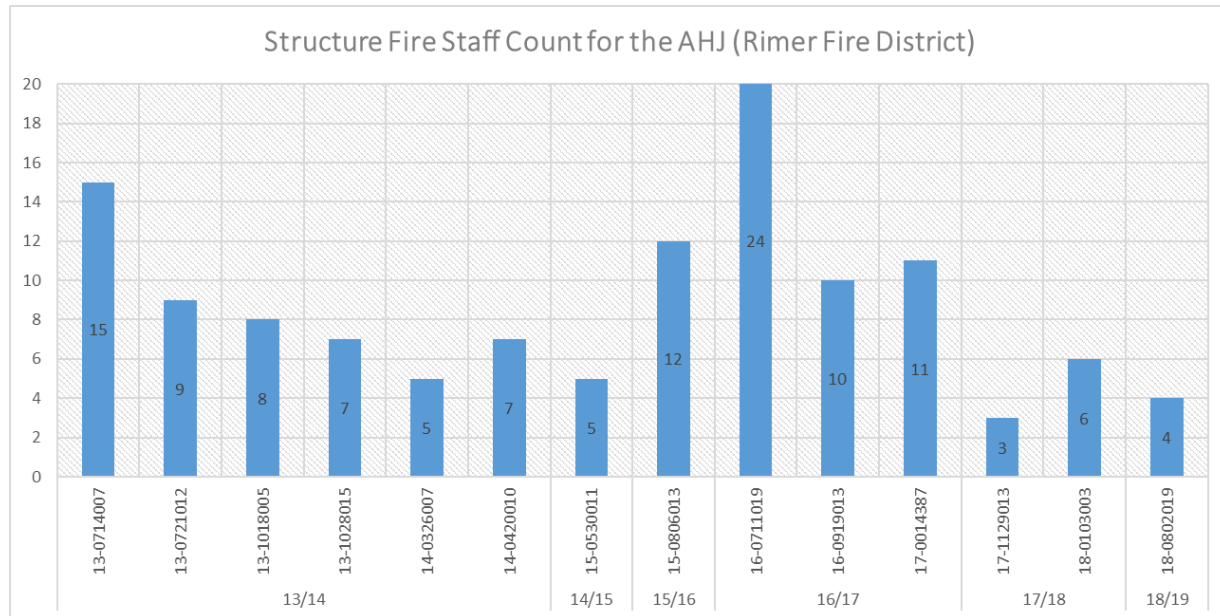
- **21.43%** of these fires were **confined to the room or origin**. (50% were left blank)
- Average duration of an event was 2 hours, 37 minutes
- There were **no** fire fatalities, **no** civilian injuries and **4** firefighter injuries.
- The leading areas of origin was the cooking area (21.43%) and the outside are, other (21.43%)
- Smoke Alarms were present 7.14%. A majority were underdetermined or blank.
- Top 2 cause of ignition was found to be failure of equipment (42.86%), act of nature (29%)
- A first arriving **response time goal of 9 minutes was met on 85.71% of events**.
- Property savings could not be calculated as a summary of the 6 years as pre-incident values were not obtained on more than half.
- \*Average **incident** staff count was 13.79 persons. 90% of these had a staff count of 15 or less persons. The max staff count on any incident was 91.

**\*Note:** Average incident counts are incident specific and could be inclusive of auto/mutual aid staff if the user chose to include those in the incident report by way of a checkbox in the report.



# Cabarrus County Fire Service Strategic Analysis August, 2020

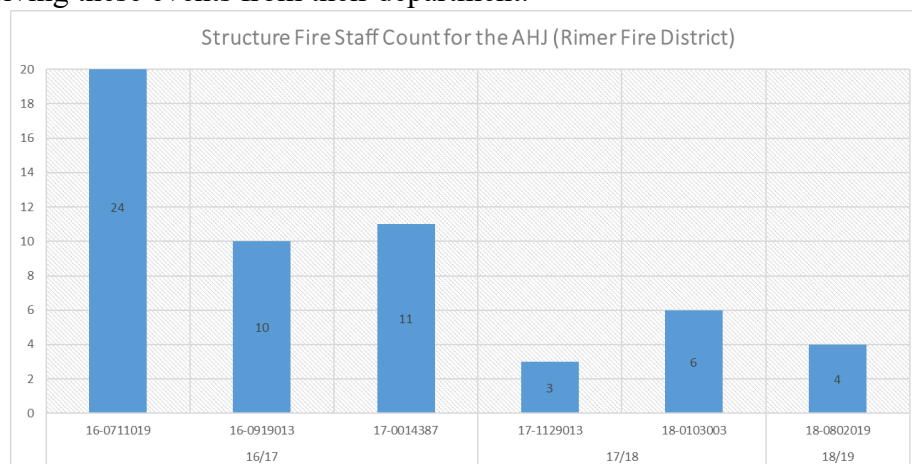
## Structure Fire Staff counts from Rimer Fire District



To determine the department's ability to assemble an effective response force from their own staff (separate from mutual/auto aid companies), an evaluation of staff associated with the department's fire units, which arrived, was evaluated. It should be noted the evaluation found a unit called POV (personally owned vehicle) which was assumed to collectively count the total staff which arrived by POV. This unit was used in this evaluation.

Over the **6-year period** of time consisting of **14 structure fire events**, the department averaged **9.0 staff members** arriving these events from their department.

Over the **last three years** consisting of **6 structure fire events**, the department averaged **9.67 staff members** arriving these events from their department.

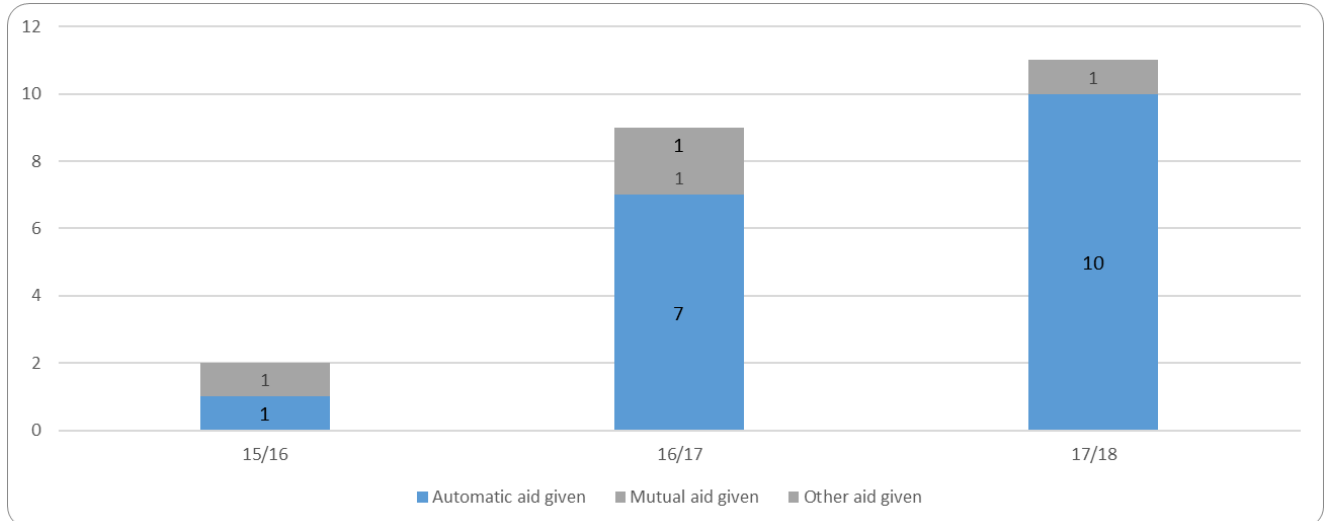


# Cabarrus County Fire Service Strategic Analysis

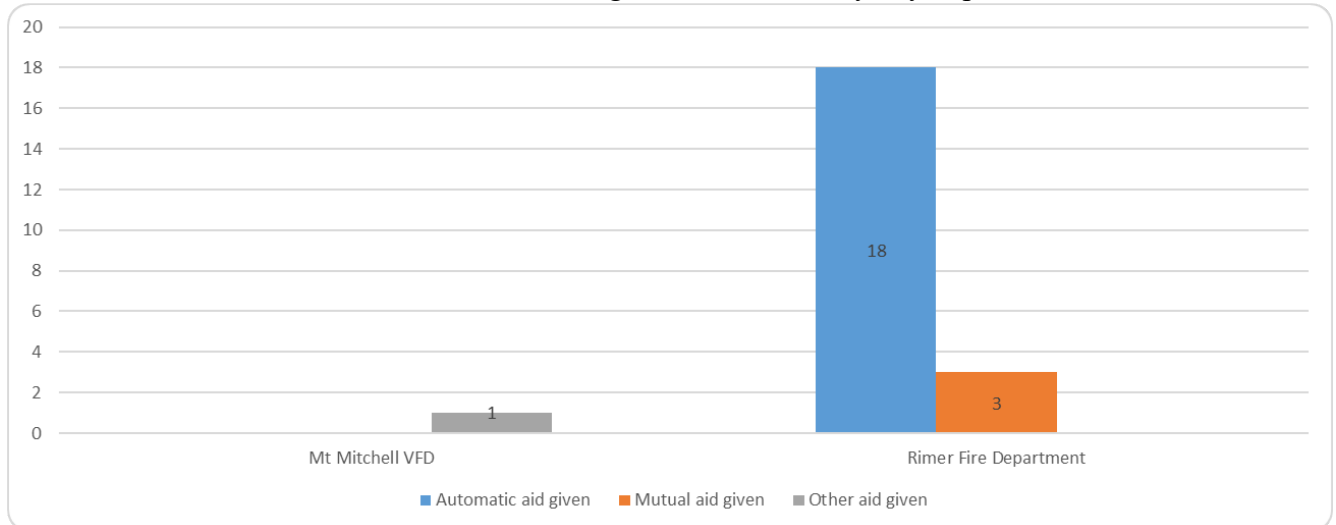
## August, 2020

### Mutual / Auto Aid

#### Aid Given



**Aid Given**, based on the data entered, Rimer (this department) received the most aid of any other department at 21 events. These data errors, along with the majority of records indicating no aid given or received, indicate a misunderstanding of the aid given/received fields and make this information an unreliable evaluation of the aid given or received by any department.

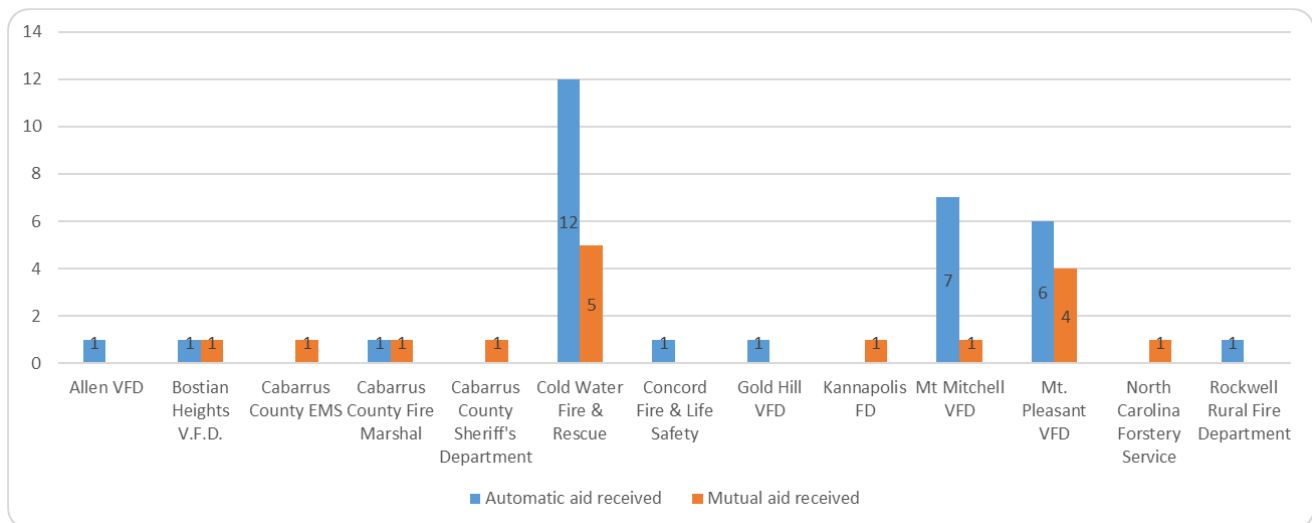
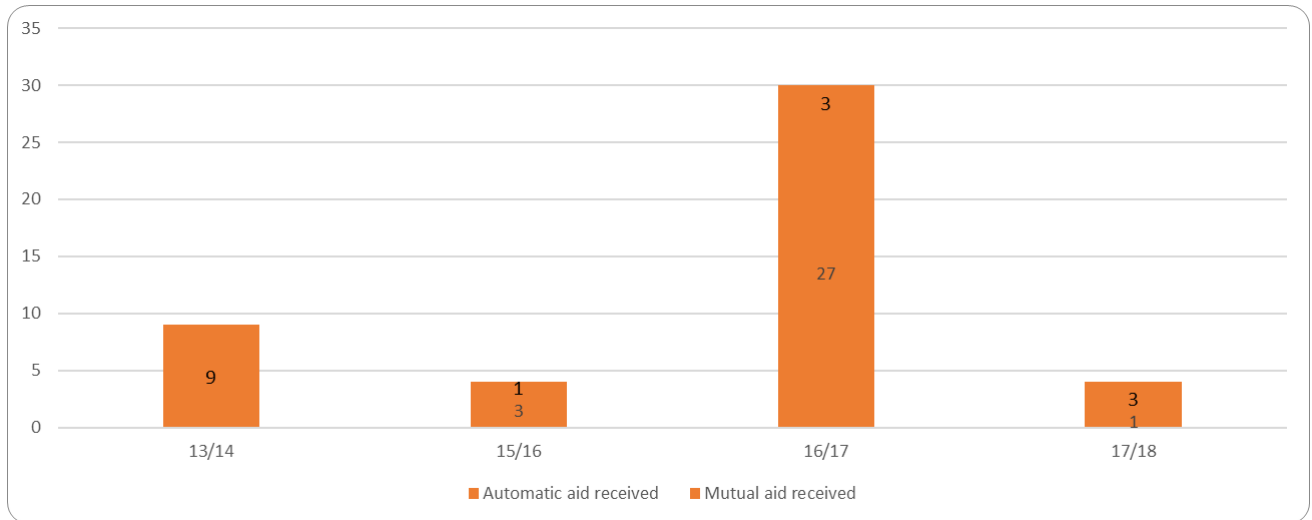


Aid by Department Name	Count	Avg Appar Cnt	Avg Staff Cnt
⊕ Rimer Fire Department	21	1.43	4.00
⊕ Mt Mitchell VFD	1	1.00	2.00
Grand Total	22	1.41	3.91



# Cabarrus County Fire Service Strategic Analysis August, 2020

## Aid Received



## Cabarrus County Fire Service Strategic Analysis August, 2020

Aid by Department Name	Count	Avg Appar Cnt	Avg Staff Cnt
Cold Water Fire & Rescue	17	1.18	4.29
Mt. Pleasant VFD	10	1.50	4.30
Mt Mitchell VFD	8	1.63	5.00
Bostian Heights V.F.D.	2	1.50	3.00
Cabarrus County Fire Marshal	2	1.50	2.00
Gold Hill VFD	1	2.00	4.00
Kannapolis FD	1	3.00	9.00
Cabarrus County EMS	1	1.00	2.00
Cabarrus County Sheriff's Department	1	0.00	2.00
North Carolina Forstery Service	1	3.00	3.00
Rockwell Rural Fire Department	1	1.00	5.00
Allen VFD	1	1.00	4.00
Concord Fire & Life Safety	1	2.00	6.00
<b>Grand Total</b>	<b>47</b>	<b>1.43</b>	<b>4.28</b>

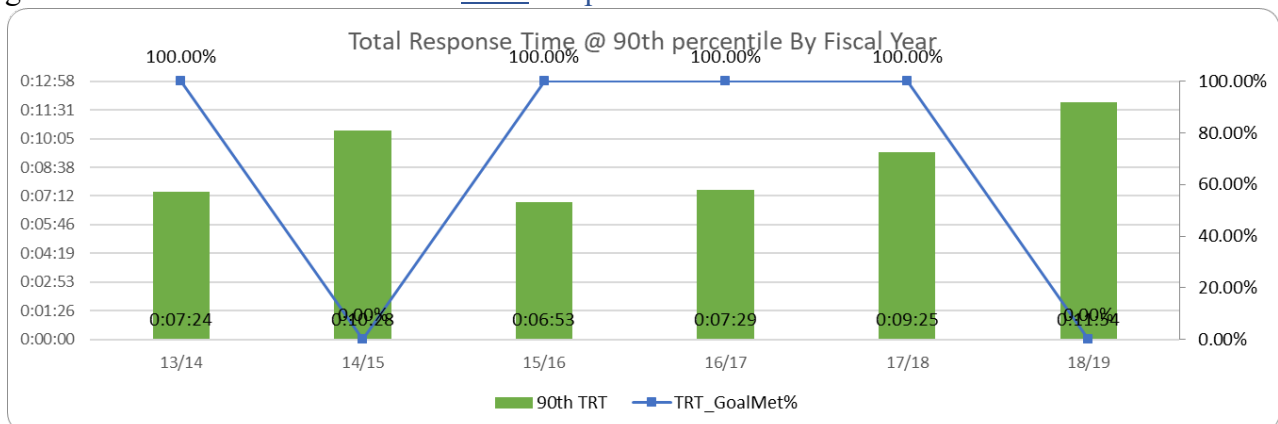
Aid Received, based on the data, occurred more from Coldwater than any other followed by Mt. Pleasant. The building fire was the incident type requiring more aid than any other

Incident Type	Aid Type	Department Name	Count	Avg Appar Cnt	Avg Staff Cnt
111 - Building fire			11	1.91	7.18
121 - Fire in mobile home used as fixed residence			9	2.00	4.00
142 - Brush or brush-and-grass mixture fire			1	2.00	4.00
150 - Outside rubbish fire, Other			2	1.50	6.50
154 - Dumpster or other outside trash receptacle fire			2	1.00	3.50
321 - EMS call, excluding vehicle accident with injury			1	1.00	5.00
322 - Motor vehicle accident with injuries			1	1.00	5.00
324 - Motor Vehicle Accident with no injuries			3	1.00	3.67
611 - Dispatched & cancelled en route			1	1.00	3.00
6112 - No response			2	0.50	1.50

### Standard of Cover:

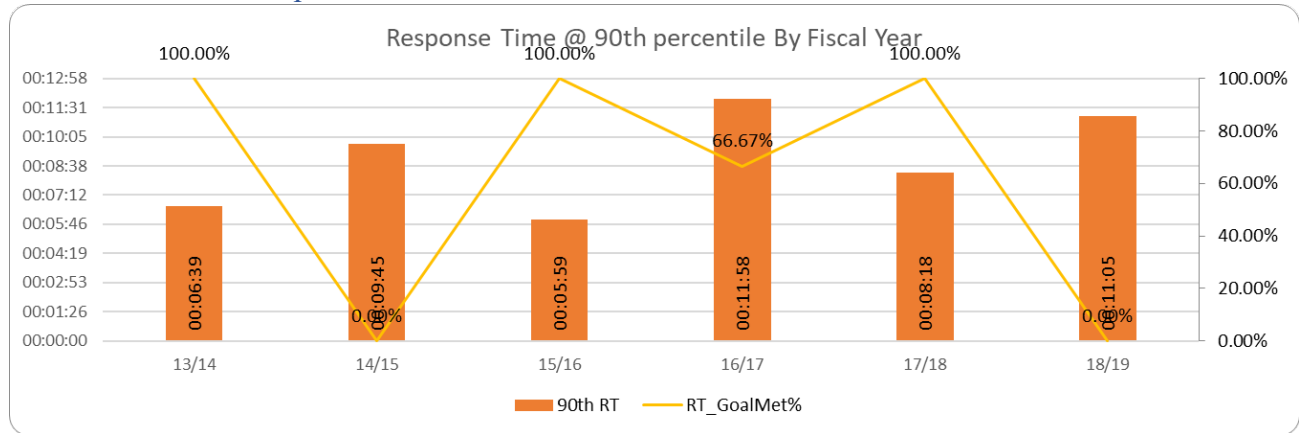
To establish a baseline of performance measured against the NFPA 1720 standard, a query for Structure Fires (NFIRS 111, 112, 120, 121, 122, 123) where Mutual Aid was None, Mutual Aid Received or Aid Received, was conducted. Total Response Time, inclusive of call processing, turnout and travel time of the first arriving unit are needed to evaluate against the standard of 10 minutes and 00 seconds. The current dataset evaluated was from 07/01/2013 to 06/30/2019. A total of 14 events met the criteria above.

Two evaluations were done: one to evaluate the Total Response Time of the 27 events containing the call processing time and another to evaluate only the Response Time (turnout and travel time) of the first arriving unit. The NFPA 1720 standard for Total Response Time would be 10 minutes and 00 seconds. (01:00 for call processing, 01:30 for turnout and 7:30 for travel) The goal was met on 85.71% of events. Total Response Time = 10:28



## Cabarrus County Fire Service Strategic Analysis August, 2020

The chart below represents the Response Time (turnout and travel time) of all 27 events. The goal is 09 minutes and 00 seconds. (01:30 for turnout and 7:30 for travel) The goal was met on 78.57% of events. **Response Time = 11:05**



### Baseline Statement:

For the period 07/01/2013 to 06/30/2019, For 90% of all **structure fire incidents**, the first arriving unit arrived within **10 minutes and 28 seconds or less**, from time received in the 911 center to arrival. This represents **Total Response Time**. The goal of 10 minutes was met **85.71%**

FDID 01317- Rimer		
Set Response Performance Goals Here		
Call Processing	Response Time	Total Response time
0:01:00	0:09:00	0:10:00
% Goals Met		
Call Processing	Response Time	Total Response Time
57.14%	78.57%	85.71%
90th Percentile Demonstrated Performance		
90th CP	90th RT	90th TRT
00:01:20	00:11:05	0:10:28
Staff and Counts per Incident		
90th Staff Count	Avg Staff Count	Incident Count
15.00	13.79	14

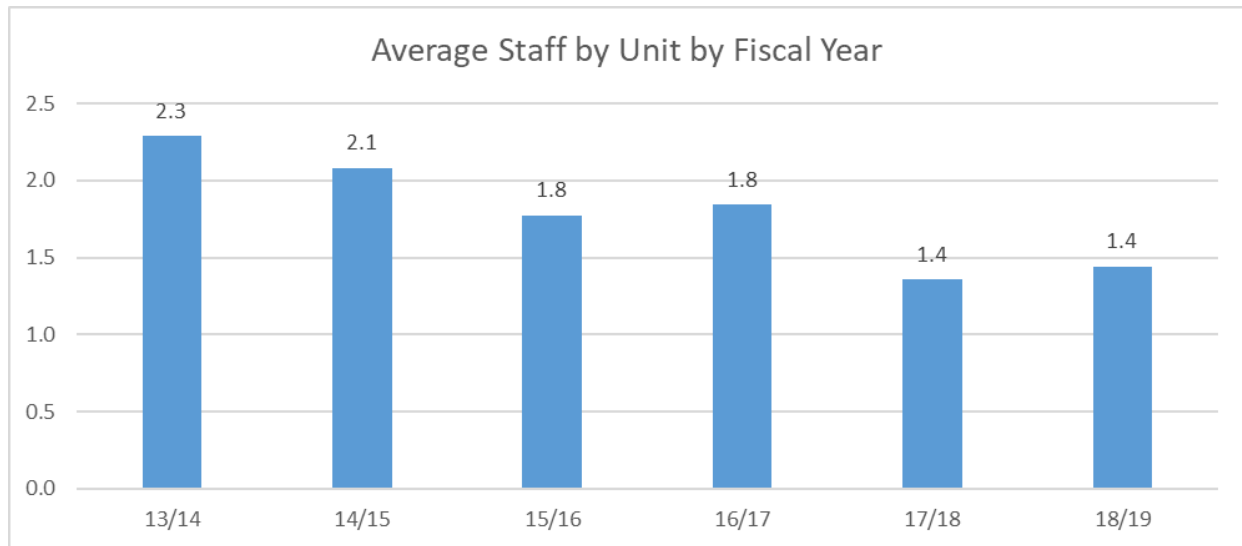




## Cabarrus County Fire Service Strategic Analysis August, 2020

Unit	Responses	AvgStaffCount
Engine	615	1.9
RME4	14	1.3
RME	11	1.5
RME2	154	1.5
RME1	436	2.0
<b>Grand Total</b>	<b>615</b>	<b>1.9</b>

**Staffing** – Based on the unit reports for apparatus, it appears the department is staffing the first arriving engine companies with 1.9 staff members on average.



### Effective Response Force (ERF):

Due to the lack of information of auto/mutual aid companies, the staff on those companies and individual timestamps, the calculations of an Effective Response Force were not able to be determined.



# Cabarrus County Fire Service Strategic Analysis

## August, 2020

### Data Summary by Chart

	Current Demand and Demonstrated Response Performance				Structure Fire Data					Engine Staffing
	FY17/18 Total Demand	FY17/18 Medical Demand	6 year Total Resp Time First Arriving All Calls within Jur	6 year Total Resp Time Goal of 10:00 met	6 year Structure Fires Count	6 year Total Resp Time Baseline for Structure First Arriving	6 year Flame Confinement to Room or Origin	Avg Staff Count per Structure Fire - 6 yr	Avg Staff Count per Structure Fire - last 3yr	6 year Avg Staff Count on Engine
01301 - Allen	896	58.41%	10:58	85.72%	28	9:58	78.57%	6.47	6.82	2.7
01302 - Coldwater	420	47.46%	9:19	74.13%	10	9:17	0.00%	15.56	14.75	2.4
01304 - Flowes	573	38.37%	10:28	58.52%	20	9:30	45.00%	10.44	8.5	2.1
01305 - Georgeville	373	47.00%	12:06	64.00%	10	16:31	40.00%	7.7	6.4	2.4
01310 - Mt. Mitchell	429	61.62%	12:44	68.69%	4	6:25	25.00%	6	6	2.8
01311 - Mt. Pleasant	902	53.37%	8:43	85.02%	28	8:10	50.00%	9.11	6.36	3
01312 - Midland	818	54.15%	10:43	70.08%	27	10:41	55.50%	7.22	7.64	2.5
01303 - Northeast	154	39.75%	11:35	58.12%	4	6:32	25.00%	5.5	5.5	1.8
01314 - Odell	1004	51.23%	10:37	75.80%	15	11:59	33.00%	11.4	10.89	3.1
01317 - Rimer	304	52.06%	12:08	73.17%	14	10:28	21.43%	9	9.67	1.9

### Data Summary by Baseline Performance

Comparative analysis between departments is complex because of the differing communities that are served and the differing modes of operation. However, it is valuable as a component of due diligence to compare performance data between departments to help articulate the level of service that is provided by each department. Below is a summary of baseline service delivery level statements based upon the data that was provided to NC Fire Chief Consulting. The information below reflects the baseline for FIRST ARRIVING UNIT ONLY as this is the data that was available for review. The much more difficult, and more important measurement for structure fires, is the assembly of an effective firefighting force, or the total number of firefighters needed to safely operate at a structure fire. This data was not able to be accurately captured.

#### Allen:

For the period 07/01/2013 to 06/30/2019, For 90% of all [structure fire incidents](#), the first arriving unit arrived within [9 minutes and 44 seconds or less](#), from time received in the 911 center to arrival. This represents [Total Response Time](#). The goal of 10 minutes was met [93.75%](#)

#### Cold Water:

For the period 07/01/2013 to 06/30/2019, For 90% of all [structure fire incidents](#), the first arriving unit arrived within [9 minutes and 17 seconds or less](#), from time received in the 911 center to arrival. This represents [Total Response Time](#). The goal of 10 minutes was met [100.00%](#)

#### Flowe's Store:

For the period 07/01/2013 to 06/30/2019, For 90% of all [structure fire incidents](#), the first arriving unit arrived within [9 minutes and 30 seconds or less](#), from time received in the 911 center to arrival. This represents [Total Response Time](#). The goal of 10 minutes was met [95.00%](#)



## **Cabarrus County Fire Service Strategic Analysis August, 2020**

### **Georgeville:**

For the period 07/01/2013 to 06/30/2019, For 90% of all **structure fire incidents**, the first arriving unit arrived within **16 minutes and 31 seconds or less**, from time received in the 911 center to arrival. This represents **Total Response Time**. The goal of 10 minutes was met **70.00%**

### **Mount Mitchell:**

For the period 07/01/2013 to 06/30/2019, For 90% of all **structure fire incidents**, the first arriving unit arrived within **6 minutes and 25 seconds or less**, from time received in the 911 center to arrival. This represents **Total Response Time**. The goal of 10 minutes was met **100.00%**

### **Mount Pleasant:**

For the period 07/01/2013 to 06/30/2019, For 90% of all **structure fire incidents**, the first arriving unit arrived within **8 minutes and 10 seconds or less**, from time received in the 911 center to arrival. This represents **Total Response Time**. The goal of 10 minutes was met **100.00%**

### **Midland:**

For the period 07/01/2013 to 06/30/2019, For 90% of all **structure fire incidents**, the first arriving unit arrived within **10 minutes and 41 seconds or less**, from time received in the 911 center to arrival. This represents **Total Response Time**. The goal of 10 minutes was met **74.07%**

### **Northeast:**

For the period 07/01/2013 to 06/30/2019, For 90% of all **structure fire incidents**, the first arriving unit arrived within **6 minutes and 32 seconds or less**, from time received in the 911 center to arrival. This represents **Total Response Time**. The goal of 10 minutes was met **100%**

### **Odell:**

For the period 07/01/2013 to 06/30/2019, For 90% of all **structure fire incidents**, the first arriving unit arrived within **11 minutes and 59 seconds or less**, from time received in the 911 center to arrival. This represents **Total Response Time**. The goal of 10 minutes was met **86.67%**

### **Rimer:**

For the period 07/01/2013 to 06/30/2019, For 90% of all **structure fire incidents**, the first arriving unit arrived within **10 minutes and 28 seconds or less**, from time received in the 911 center to arrival. This represents **Total Response Time**. The goal of 10 minutes was met **85.71%**



## **Cabarrus County Fire Service Strategic Analysis**

### **August, 2020**

#### **7. PEER REVIEW TEAM ANALYSIS – FIRE MARSHAL’S OFFICE**

The Fire Marshal’s Office (FMO) is meeting their minimum requirements for service delivery objectives, including specific programs for fire prevention inspection and code enforcement, plan review, fire investigation, and public education.

Personnel responsible for fire prevention and code enforcement activities meet the job performance requirements for the duties they perform. Personnel who perform plan reviews or field acceptance inspections meet the job performance requirements established by the State of North Carolina. All personnel conducting the investigation of the origin, cause, and circumstances of any fire, explosion, hazardous materials incident, or other hazardous condition are trained and qualified commensurate with the duties they are expected to perform.

Their records management system (RMS) has the capability to provide a means of measuring performance outcomes and trends for each program under their purview. The RMS can be improved in its data capture to support the management of the FMO by providing the leaders with data that indicate the effectiveness of the organization in its programs and procedures. This outcome is also needed with the Building Inspections software which is not being used to its full potential.

The various Zoning Officials and Cabarrus County staff provided valuable feedback as to their perspective about the current service delivery of the Fire Marshal’s Office in Cabarrus County. They answered our questions about what they saw as strengths, gaps, missed opportunities, and threats. Collectively, the interviews conducted identified the following aspects about the Fire Marshal’s Office in Cabarrus County as:

**Strengths:** Experienced and well-trained staff, Pride and dedication of staff members in performing their assigned tasks, Strong interpersonal relationships with other county departments and local jurisdictions involved with their service deliveries, Training and education programs to ensure that competency is maintained to execute all responsibilities effectively, efficiently, and safely, Career ladder for employees in the Assistant Fire Marshal rank, and emergency management needs supported by the FMO staff.

**Gaps:** The defined workload exceeds employee availability. The published FMO job descriptions should be revised to include those “Fire Marshal Staff Other Duties” that are outlined in the Appendix. FMO staff supporting Emergency Management (EM) incident operations affect staffing availability, occupancy vacancy and change of uses communicated to the appropriate zoning official, youth fire setter educational programs based on the community risk reduction (CRR) plan.



## **Cabarrus County Fire Service Strategic Analysis**

### **August, 2020**

**Missed Opportunities:** Squad operations are not fully developed to support FMO objectives, such as more involvement in Community Risk Reduction (CRR) hazards identification or mitigation planning and their delivery of public fire and injury education programs. Some FMO functions are within the scope of duties that can be performed by the Squad, The employee career ladder needs additional steps to support succession planning, The work being performed is not being fully captured in the data documentation methods or records management systems, Monthly activity reports should be shared with all affected staff and jurisdictions, Educational programs should be developed based on the CRR plan for all identified risks, There are opportunities for the utilization of firefighters from various departments to participate in specific fire prevention activities such as delivering public education to school children.

**Threats:** Employee turnover and loss of experienced personnel, Lack of written policies and standard operating guidelines for all supported programs, Use of staffing as additional EM staff is not sustainable if FMO service delivery is concurrently expected, Data analysis of expected future workload is not available from partner Zoning jurisdictions.

NFPA Standard 1790 contains minimum requirements relating to the organization and deployment of fire prevention inspection and code enforcement, plan review, investigation, and public education operations and can be used as a guide for improving operations. Annex B and C of the standard contains tools to measure the staffing needed for operations and developing a CRR plan through a Community Risk Assessment (CRA). A CRA should be undertaken to determine and establish the CRR plan and programs to eliminate, reduce, and mitigate risks.



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### **A. Observations and Recommendations**

The peer review of the Cabarrus County Fire Marshal's Office considered the minimum requirements relating to the organization and deployment of fire prevention inspection and code enforcement, plan review, investigation, and public education operations as found in *NFPA 1730 – 2019; Standard on Organization and Deployment of Fire Prevention Inspection and Code Enforcement, Plan Review, Investigation, and Public Education Operations*. These requirements address functions and objectives of Fire Marshal's Office (FMO) in service delivery, capability, and resources and specifically their following eight program areas were evaluated:

1. FMO Organization and Staffing
2. Succession Planning and Career Development
3. Periodic Fire Inspections
4. Plans Review
5. New Construction Inspections
6. Fees and Charges
7. Fire Investigations
8. Public Education and Community Risk Reduction

Under existing ordinances, these programs are delivered to the unincorporated areas of Cabarrus County as well as the municipalities of the Town of Mount Pleasant, Town of Midland, and the portion of the Town of Locust located within Cabarrus County.

Telephone interviews were conducted by the peer review assessment team of Asst. Chief Wayne Hamilton (Ret) and Asst. Chief Frank Blackley (Ret) with the following stakeholders:

Cabarrus County – Fire Marshal Steve Langer  
Cabarrus County – Asst. Fire Marshal Doug Steele  
Cabarrus County – Asst. Fire Marshal Matthew Hopkins  
Mt. Pleasant Zoning - Erin Burris  
Town of Midland Zoning – Cassie Watts  
Town of Locust Zoning– Scott Efried  
Cabarrus County Building Inspections – Todd Culp  
Cabarrus County Zoning – Susie Morris

A site visit was not possible due to the pandemic emergency in North Carolina and this review was performed remotely through document reviews and interviews.



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### **Program Areas**

#### **FMO Organization**

The organization of fire code enforcement should be based on the needs and ability to meet established goals of the Fire Marshal's Office to provide a safe environment in the community. Goals and their accompanying objectives provide a pathway for management to develop work plans that will guide an organization. This section reviews the organization and staffing of the Cabarrus County Fire Marshal's Office (FMO). The following sections provide an analysis of services offered and recommendations to improve its operations.

#### *Policies and procedures*

To manage an effective Fire Marshal's Office there needs to be policies and procedures that provide guidance for daily operations. If not established, there may be unequal or inconsistent enforcement leading to confusion both in the organization and to the external customer. Policies and procedures are designed to follow regulations, assist with daily decision making, and simplify internal and external processes.

Currently, there are few written policies for the FMO except for fire investigations and those adopted by the county for all employees. Policies specific to the FMO should include fire inspections and plan reviews. Policies for inspections should include examples of basic violations and proper procedures for collecting data and entering in the records management system (RMS). Because contract services are provided to other local governments in Cabarrus County, policies should be implemented as set forth in interlocal agreements to ensure all requirements are met.

#### *Record Management System*

The ability of the FMO to collect data provides a method to measure performance and determine if goals are being met based on established policies. This data can be used to create outcome measures to determine effectiveness of the FMO.

Cabarrus County FMO recently began using Image Trend as their RMS to track their daily activities. Minimal data from their previous RMS has been migrated to Image Trend to provide a history of activities completed by staff. Each new occupancy record must have all information related to the building entered into the new system that was not transferred from the old system.

Image Trend is a cloud-based solution that allows fire inspectors to use the software in the field with the use of laptops/tablets and an internet connection. This permits the inspector to enter information on site and email the customer the inspection report when it has been





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completed. It also provides an opportunity to update contact and building information. Data collected on the building can be used for analysis to determine if problems exist in certain types of occupancies. This provides an opportunity to develop specific educational program to address the issue(s).

#### *Staffing*

To effectively manage daily functions of the FMO, sufficient staffing should be provided to meet the goals of the division. As with any organization there are various tasks necessary to meet service delivery expectations. Daily activities may include fire inspections and investigations, travel time to reach a destination, generating reports, receiving and making phone calls, entering data in the RMS, and researching code requirements. These activities may be affected by the time an employee spends away from the job for vacation, holidays, sickness, training, FMLA, or other approved leave, thus if not adequately staffed these functions may not be completed or are delayed which impacts customer service.

The Cabarrus County FMO is staffed by the fire marshal and three assistant fire marshals. The fire marshal also manages the County's staffing squad along with multiple County Emergency Management duties and responsibilities. This position serves as the County Emergency Management Coordinator in the absence of the director by delegation of authority and is next in line of succession for departmental leadership in the county's emergency plans and procedures. The fire marshal also serves as the EOC Manager or in any of the command staff positions, such as County Operational Section Chief in the Emergency Operations Center. The fire marshal serves on various local and state committees and boards as assigned by the director or elected and appointed officials and also serves in roles as appointed by professional associations. Involvement in these areas are valuable to professional career development and growth as well as organizational succession planning.

A staffing analysis was performed and indicated a shortage in hours based on the reported workload. Data provided includes a large number of hours for annual and compensated leave, and holidays which reduces the time available for day-to-day duties. Additional time away from the office includes time when an employee is sick or at training. The data from the below figure provided by the FMO is a breakdown of hours spent annually on core services. Although the number of hours paid for FMO staff in a year is 8,320, only 6,760 were considered after deducting for allowable sick leave, comp time, annual leave, and training time for the employees. Thus, the total available staff hours for four employees are 3,757.5. Compared to the annual workload of 5,156 there is a shortage of almost 1,400 hours needed to properly staff the FMO.





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Estimates of staff unavailability was based on the four FMO personnel using their allowable time off at their maximum accrual rates. NFPA 1730, The Standard on Organization and Deployment of Fire Prevention Inspection and Code Enforcement, Plan Review, Investigation, and Public Education Operations provides a best practice formula for determining how average personnel availability should be calculated in its Appendix C. In estimating the staffing availability, it is assumed that the time afforded the employee can be used. This practice provides a conservative staffing availability model versus using a historical model of time actually taken. This model takes into account the following when staffing is unavailable to perform their assigned duties such as:

1. Holiday leave
2. Jury duty
3. Military leave
4. Annual leave/vacation/compensatory time
5. Training
6. Sick leave

As an example to just item #4 – annual leave – 22 days (10 vacation and 12 holiday) per year at 8 hours per day = 176 hours plus 240 compensatory hours = 416 hours of unavailability per non-exempt staff member.

Use of compensatory time off in lieu of paying overtime introduces the possibility of additional reduced staffing periods, so this practice is usually discouraged. Organizations should be wary of the messages being sent to employees regarding overtime pay. Awarding compensatory time rather than paying overtime can be adversely interpreted related to the value of the work being provided. An additional disadvantage for the organization with compensatory time is that it is often paid out at a higher rate of pay than which it was earned for the same number of hours.



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Figure: Annual Workload

	Number of Tasks	Hours *	Total Task Hours	Commute Time	Other **	Total Time
Plan review/New construction inspections	258	4.5	1161	83	60	1304
Fire Investigations	47	5	235	94	82	411
Fire Prevention/Public Education Programs	48	2.5	120	48	25	193
Periodic Fire Inspections	964	2.5	2410	289	144	2843
Fireground Support	103	3	309	50	46	405
<b>Total Hours</b>						<b>5156</b>

The FMO's Record Management System (RMS) provides a mechanism to track all functions performed by staff. Review of data from 2015-19 reveals inconsistencies. Based on the above figure the hours for plan reviews and new construction inspections annually is approximately 1,304 hours, but data from the RMS is considerably lower. The county provides compensation time for hours worked to reduce overtime expenses for employees. This time reduces the availability of employees to complete their daily tasks, thus impacting services.

### Succession Planning and Career Development

The ability to provide a continuity of service when employees leave an organization is necessary. Without proper succession planning it becomes difficult to provide the same level of service and it should be a goal for every organization to prepare employees for future promotions as older employees leave. This may include not only recruiting and developing staff to replace current employees, but cross-train them for other roles. Losing a seasoned employee will place an organization at a disadvantage from the loss of knowledge and relationships developed during their years of service. The current plan to accommodate this loss is that the workload would be divided between employees and administrative responsibilities would be done by department head. This would be done for up to 12 weeks. After that time has elapsed, the county's policy allows hiring for the position if a hardship and work is not being completed.

During a recent review of staffing by Cabarrus County in 2018, the FMO implemented two levels of assistant fire marshals to provide a minimal career ladder. The annual budget provides funding for training for staff to attend the North Carolina Fire Prevention School and International



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Association of Arson Investigators annual training conference. These training opportunities provide continuing education for staff on code changes and fire investigation practices. Other training is provided through annual continuing education to meet North Carolina Office of State Fire Marshal requirements for code officials.

#### **Periodic Fire Inspections**

Timely and thorough periodic inspections, when combined with effective fire code enforcement programs, can reduce the incidence of accidental fires or unintentional injuries. This element of peer review evaluated the organization and deployment of fire and life safety resources for periodic fire prevention inspection and code enforcement activities in existing occupancies.

Fire prevention inspection and code enforcement services, including department personnel, equipment, and all support and resources, are structured to meet organizational objectives. Fire prevention inspection and code enforcement are conducted to ensure compliance with adopted county ordinances, state fire code, and referenced standards.

Existing occupancy fire prevention and code enforcement inspection frequencies are specified as annual inspections for all occupancy types and exceed the inspection schedule specified in section 106 of the NC State Fire Code. While this is admirable, it does take away time from other functions such as Public Fire Education and Community Risk Reduction.

#### **Plans Review**

The purpose of this section of the peer review was to evaluate the organization and deployment of the FMO as it relates to plan review for emergency vehicle access, water supply, new construction, change of occupancy use, renovations, change or addition of fire and life safety systems, and associated acceptance field inspections. The site plans review process through the various municipal Zoning Departments varies. Some use a formal Technical Review Committee (TRC) process while others are staff driven with simple email or phone call approvals.

Plan review data for permitted construction projects is collected within the Accela reporting software used by the Buildings Inspection Department. Plan review tracking is performed within this software package, which is separate from the other FMO RMS.

With multiple processes of review, it is difficult to estimate if the following elements are being evaluated and properly documented within the either Accela software or the FMO RMS.



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### **Minimum Plan Review Elements (MPRE)**

- a. Initial Impact Review (Feasibility Study; Can it be done?) Usually captured in the TRC process.
- b. Water Supply and Fire Flow
- c. Emergency Vehicle Access
- d. Construction Documents Review
- e. Fire Protections Systems Review
- f. Specific Occupancy Requirements
- g. Hazardous Materials and Processes
- h. Life Safety Systems Review
- i. Operational Permits or Other AHJ Requirements

### New Construction Inspections

The purpose of this section of the peer review was to evaluate the organization and deployment of FMO personnel and resources assigned to new construction inspections. Field inspection of emergency vehicle access, water supply, new construction, change of occupancy use, renovations, and change or addition of fire and life safety systems are to be completed to ensure installation according to plans and proper operability, proper coverage of devices, and functionality to ensure fire fighter and occupant safety and structure protection.

Data is collected within the reporting software used by the Buildings Inspection Department.

### Fees and Charges

The ability to collect fees provides a method to recover costs for services delivered for fire inspection and plan review services. A recent study of fees and charges by the FMO was approved and are now in effect as of January 1, 2020. These fees were updated and now align with the City of Concord Fire Department for permits and plan reviews. The fees are based on the occupancy type and other factors such as occupant load or square footage for the building.

The additional fees implemented in 2020 provide a source of revenue that can be analyzed over the next year to determine how much is collected. It is estimated by the FMO that approximately \$25,000 will be collected in 2020. These funds could be used to further enhance the FMO during FY 2022 with additional staffing.



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### Fire Investigations

The purpose of this section of the peer review was to evaluate the organization and deployment of FMO personnel and resources assigned to fire investigation activities as it relates to the origin, cause, and circumstances of any fire, explosion, hazardous materials incident, or other hazardous condition. Timely, competent, and thorough fire investigations identify the causes of fires and help public fire educators prepare programs that could impact behavior toward fire prevention as well as successfully bring to justice those involved in criminal activity. In addition, fire investigators can determine fire behavior characteristics and evaluate the effects of fire prevention practices to assist the FMO become more effective. The fire investigation program was evaluated to determine whether they are appropriate, effective, and efficient. The evaluation included the formative, process, impact, and outcome phases.

The FMO has a standard operating guideline (SOG) for staffing levels during fire scene examination. The FMO investigates the origin, cause, and circumstances of any fire, explosion, hazardous materials incident, or other hazardous condition that occurs in its legal jurisdiction. Where the FMO does not have the authority or jurisdiction to investigate criminal matters, and when evidence of criminal activity is detected or suspected, the FMO notifies the appropriate law enforcement agency.

The FMO has the authority to take custody of or cause custody to be taken of all physical evidence related to the cause of a fire, explosion, hazardous materials incident, or other hazardous condition in accordance with laws, policies, and procedures. The FMO has a SOG for the collection, examination, testing, preservation, and storage of evidence.

It was less clear if policies exist on other aspects of fire investigations such as scene documentation and criminal act follow-ups. Since incendiary fire are referred to other law enforcement agencies, their case management policies should be integrated into FMO operations and policies.

### Public Education and Community Risk Reduction

Community Risk Reduction (CRR) can be defined as, “The identification and prioritization of risks followed by the integrated application of resources to improve public safety and reduce increasing call volumes.”

As part of the overall risk reduction program a risk assessment should be completed. The goal of the assessment is to determine the highest risk in the community. The risk(s) may vary from one portion of the county to another; thus, a single program may not be the best approach. Reviewing incident data and gathering information from responding personnel will become the basis of a CRR program.



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The below figure is a basic methodology offered by Vision 20/20 to identify and analyze risks within a community. Vision 20/20's website ([www.strategicfire.org](http://www.strategicfire.org)) provides substantial information on how to create and implement a community risk reduction plan.

#### **The Community Risk Assessment Process**



The goal is to incorporate emergency operations with prevention efforts at the fire station level. The station level approach is preferred because risks can vary within a station's response area. Simply put, CRR is examining problems and developing prevention or mitigation strategies to reduce the hazards. An important aspect within CRR is to manage data to clearly define and focus on problems and issues specific to Cabarrus County. In order to gain the most benefit from the data that is being collected, Cabarrus County should operate one records management system that will allow the Fire Marshal's Office to analyze the needs and issues and create appropriate CRR plans and strategies down to the station level.

The Cabarrus County FMO provides public education for businesses on request. The office schedules annual training for nursing homes to meet their licensing requirements. The fire marshal provides training for the Cabarrus County School's Public Safety Academy and squad personnel participate with fire departments when requested.

It is recommended that Cabarrus County develop a CRR plan based on data collected by the FMO to mitigate or prevent risks from occurring. The plan(s) should be developed for each fire station to address the specific risks in those districts.



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### Peer Review Team Strategic Recommendations:

The peer review team developed a series of approximately 18 strategic recommendations for the FMO based upon the information provided and analysis of the data provided coupled with the professional experience and expertise of the peer review team members. These strategic recommendations are intended to enhance and improve the outcomes of the FMO and the County of Cabarrus.

#### **1. FMO Organization and Staffing**

- a. The peer review recommends several organization improvements designed to enhance the overall efficiencies and customer service in the FMO. All formal organizations need to provide guidance for day-to-day activities with policies and procedures to provide consistency. This is especially true for fire code enforcement. It is recommended that the FMO develop a policies and procedures manual for employees to follow for consistent enforcement and provide direction for new employees. Without this guidance mistakes will occur and affect both internal and external customer service.**
- b. The FMO has a new records management system (RMS) that should be utilized to track each activity (inspections, plan reviews, meetings, public education, etc.) performed by its employees. Without proper tracking it is difficult to determine when workload outpaces the ability of employees to complete assigned tasks. It is recommended that all activities of the FMO be entered into the RMS and a monthly report be created to determine if assigned tasks are completed. This will allow the FMO to establish goals and outcome measures for its employees.**
- c. During the peer review it has become evident that additional staffing is needed based on the current workload. The current fire marshal is managing both the FMO and staffing squad and is assigned other tasks relating to emergency management that have been amplified during the pandemic. A more thorough analysis should be conducted when all activities are entered in the RMS to determine actual workload and how compensated time off affects service delivery. The period from July through December should provide sufficient data to determine staffing needs in the FMO for the FY 2022 budget process. A Deputy Fire Marshal position may be appropriate to add to the staffing complement for Cabarrus County. Other North Carolina counties, as a best practice, use the “Deputy” Fire Marshal designation because it empowers the Deputy Fire Marshal to have the same powers and authority as the Fire Marshal when necessary relative to inspections and investigations.**





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- d. The Fire Marshal is also performing duties not specified within the job description as outlined in the Appendix. Additionally, the supervisory span of control is exceeded, and this position is supervising too many staff members to be effective at evaluating and training personnel – especially with the staffing squad. A new Fire Operations Chief position could be used to address this need for the staffing squad component of the need. This position is also recommended under the Squad Operations section of this report.**
- e. Data entry for inspections should incorporate all time associated with the activity such as commuting from the office to the site. Plan reviews should include code research, phone calls, and data entry. It is recommended to develop a policy to track all daily activities in the RMS for consistency. Without this information it is difficult to determine when additional staff is needed to perform all functions currently provided.**

## **2. Succession Planning and Career Development**

- a. The ability to prepare employees for future promotions is an important goal for an organization. Currently, the fire marshal oversees two divisions and does not have a designated employee to perform his functions if out of work for an extended period of time. It is recommended that Cabarrus County develop a succession plan that includes career development goals for the FMO. This process can occur concurrently with the recommended staff workload analysis.**
- b. The job descriptions provided do not reflect the significant time investment and programs assigned for Emergency Management functions for Asst. Fire Marshal I and II, as outlined in the Appendix. It is recommended these functions be assigned to a new Deputy Fire Marshal position or create an additional step within the Assistant Fire Marshal career ladder.**
- c. Some duties that are firefighting based, such as SCBA fit testing equipment maintenance, should be transferred to the Squad Captains.**
- d. Career ladders are valuable succession planning tools as staff train to advance within the pay grades they also are better prepared to advance within the overall organization and fill expected or unexpected vacancies. This ability is critical to maintaining continuity of operations across the FMO organization. The career ladder in place should be expanded to meet this objective.**





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### **3. Periodic Fire Inspections**

- a. Existing occupancy fire prevention and code enforcement inspection frequencies are specified as annual inspections. It is recommended a pilot program be instituted to see if this approach is data driven. Fire losses, violations, and complaints would be tracked to see if the annual schedule is justified versus the state mandated schedule which allows some biennial and triannual inspections. This sampling of selected occupancies would take several years to assess but could justify using available staff hours on other critical programs.**
- b. Re-inspections of nonlife safety violations could be performed through a mail-in self certification program, which is used in many jurisdictions across the nation. Again, this could be implemented on limited occupancy types as a pilot program to measure compliance effectiveness. The goal is to gain compliance and effectively use limited staffing.**
- c. Inspection results are needed to be shared in a consistent method with the affected Zoning departments when properties undergo a change of occupancy or become vacant.**

### **4. Plans Review**

- a. Data collection is not consistent across jurisdictions on site plan reviews. Using the TRC model in all jurisdictions will avoid inconsistencies in fire code application and information sharing.**

### **5. New Construction Inspections**

- a. The Acela software program used for Building Inspections is capable of being built out to capture all the required fire code inspections and acceptance testing. It is recommended that this software be utilized to its full potential for this data capture.**

### **6. Fees and Charges**

- a. No specific recommendations, other than review the dollar amount of fees charged and collected to determine they could help offset additional staffing or program needs.**



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### **7. Fire Investigations**

- a. Weekly on call rotations are used to maintain a roster of investigators needed for response. There is a need to develop an investigation case management SOG in addition to the response SOG, as cases may cross over into additional time periods and jurisdictions.**

### **8. Public Education and Community Risk Reduction (CRR)**

- a. The ability to provide public fire and life safety education in the community should be a goal of the FMO. The requests could include how to use a fire extinguisher or provide a fire truck display. Each of these requests require staff time to either conduct the training or coordinate the event. The primary goal of public education is to prevent or mitigate an incident.**
- b. It is recommended that a risk assessment be conducted to determine where the highest risks are in the service area and create individual risk reduction plans to prevent or mitigate the problems. Development of CRR plans at the station level will allow the programs to be data and occupancy specific. Monthly reviews of fire losses and fire causes will develop data driven CRR programs.**
- c. The need for specific programs in Public Schools also should be community driven and a partnership should be developed with the County School system.**
- d. The FMO expressed a need for juvenile fire-setters intervention program. Fire cause data will justify the need to establish the program.**

### **9. Other Programs**

- a. During our interview, the FMO expressed interest to be more involved with other programs and activities such as:**
  - i. Fire Scene Safety Officer**
  - ii. Rapid Intervention Teams**
  - iii. Fireground accountability methods****All three of these programs can be explored as possible additions to the Squad program and placed under the supervision of the Squad Captains and/or the Fire Operations Chief as recommended.**



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### **FMO Summary of Key Priority Recommendations**

- **A comprehensive set of FMO divisional policies and Standard Operating Guidelines are needed.**
- **The existing career ladder should be expanded to reflecting actual job duties and organizational expectations.**
- **Comprehensive data collection is needed in all aspects of job performance and work activities.**
- **There is no redundant staffing as shown in the workload analysis, therefore continuity of operations cannot be assured without either additional staffing methodology or workload or work duties reduction. An additional Deputy Fire Marshal position is recommended as soon as conditions will allow.**



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## **8. PEER REVIEW TEAM ANALYSIS – SQUAD OPERATIONS**

Cabarrus County Government is utilizing a supplemental staffing unit to support fire and emergency operations with contracting private, non-profit corporation and municipal fire department operations throughout Cabarrus County. This supplemental staffing program is supported by the Cabarrus County General Fund and consistent with the approach that several North Carolina counties have taken who do not desire to provide all fire services internally. In recent years, the supplemental staffing program for the Squad (recognized as Squad 410) has adjusted to provide four firefighters as minimum staffing to respond in a pickup truck anywhere that is needed within Cabarrus County. This model is utilized as an efficient use of public funds because the personnel can serve a large geographic area. However, it is noted that this crew is supplemental to the first responding contracting fire departments and is intended and equipped as such. This unit is not designed or intended to provide services beyond staffing and support services for contracting fire departments.

County Governments in North Carolina can provide fire protection internally. However, most counties contract for fire protection services with municipalities or private, non-profit fire departments. Due to the significant decline in volunteer firefighters coupled with the growth that many areas of North Carolina is experiencing, more counties are needing to further support fire protection services beyond simply issuing contracts to non-profit corporations. The need to provide an effective firefighting force in Cabarrus County is as prevalent as it is in many other areas of North Carolina and the United States. Cabarrus County's use of the Squad to help support contracting fire departments to ensure that a safe number of qualified firefighters are on the scene of working structure fires should remain a priority of Cabarrus County Government.

The peer review team evaluated the current Squad operation and developed a set of six specific recommendations that involved both short-term and long-term needs. These recommendations included areas related to developing and improving the squad operation, designating a lead person to be responsible for the Squad operations, expanding the FTE associated with the shift squad to 15 qualified firefighters, evaluating another physical location for the Squad to operate out of, evaluating the Squad's current response vehicle and making associated funding adjustments to the program as it matures.



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### **A. Observations and Recommendations**

A team of experienced subject matter experts met to discuss the squad operation for Cabarrus County. Materials such as the district lay out, heat maps of locations of incidents, county response protocol and incident data were reviewed. Comparative analysis was conducted with similar squad systems operating in Forsyth and Guilford Counties.

Foundational framework for the review of the squad operation is based upon Cabarrus County striving to meet the national industry standard for response and deployment, which is the current National Fire Protection Association 1720 Standard – Standard for the Organization and Deployment of Fire Suppression, Emergency Medical Operations, and Special Operations to the Public by Volunteer Fire Departments. This standard establishes that typical residential structure fires require a minimum of 17 capable firefighters to effectively work the incident, with a turn out time of 6 minutes or less and a travel time of 8 minutes or 80 percent or more of incidents reported. An effective firefighting force is required to assemble in order to safely conduct fireground operations. In settings like Cabarrus County, it is difficult to accurately measure effective firefighting force because firefighters respond in multiple methods and with different departments and times for turnout, travel and arrival are not captured completely. Although NFPA 1720 is not legally mandated, it is recognized as the industry standard for the volunteer fire service in the United States. There are federal requirements related to staffing that are applicable to establishing a sufficient number of firefighters at an active structure fire in order to conduct rescue operations in an environment that is immediately dangerous to life and health (IDLH). This set of requirements is typically referred to as “Two-in/Two-out” requirements.

The current “Squad 410” operation is Cabarrus County Government’s methodology to assist contracting fire departments throughout Cabarrus County with firefighter staffing. The unit operates with four (4) trained firefighters on a 7/24/365 basis and supplements firefighter staffing that is provided by contracting private non-profit corporation fire departments and municipal fire departments through the use of volunteer, part-time and career firefighters. There are currently 12 Full-Time Equivalent (FTE) personnel providing this function for Cabarrus County. Approximately four (4) part-time firefighters supplement the career firefighters in this program for minimum daily staffing. The personnel operate out of a ¾ ton pickup truck and they are physically based at Cabarrus County EMS Station 2. The vehicle assigned to the crew is housed under a metal shed and the firefighter’s living space is on the second floor of the EMS station. The crews operate on the fire service FLSA 7(k) 24-hour schedule with an average of 56-hour work weeks, or 212 hours in a 28-day work cycle.

The need for such supplemental staffing assistance has grown in recent years with the constant and significant loss of volunteers as North Carolina has grown and urbanized. Furthermore, the growth produces higher numbers of emergency responses necessary for local governments to provide. County governments are faced with several choices to fill the gap created by the



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changing dynamics of fewer volunteers and increasing demands, hazards and risks. These are outlined as follows:

- Many counties increase the fire tax rates either through service districts or through rural fire tax districts (though restrictions apply to these type fire districts). In recent years, counties have experienced significant increases in fire tax rates in order to address the quickly expanding costs of providing fire protection, primarily driven by spiraling personnel costs.
- One North Carolina county – New Hanover – has taken the option of providing fire protection as a functioning county fire department and moving away from the private, non-profit provider model. However, funding for the department is still primarily through the service district.
- One other North Carolina county – Onslow – provides firefighters as county employees assigned to work in private, non-profit fire department stations. Funding is partially provided by the adoption of Article 46 – a voter approved supplemental sales tax of one fourth of one percent.
- Some counties supplement the private, non-profit fire departments with staffing squads that provide a contingent of firefighters to support responding fire departments countywide, or regionally. Funding for this model is through the County General Fund. This is the model that Cabarrus County is currently using.

The supplemental staffing model that Cabarrus County is currently utilizing is recognized as a best practice in North Carolina. It is recognized as an effective step towards strengthening the overall county fire protection response system while enabling the contracting fire departments to maintain their autonomy and manage their operation, especially with the use of the County General Fund. It is recognized that one of the weakest links in the Cabarrus County fire protection service delivery system – and many other counties – is staffing. This Squad 410 program is in place to bolster staffing. The concept is sometimes referred to as a “flying squad” indicating that they cover a large area and go where most needed at any particular time. The primary driving reason for success of the model is the efficiency. A supplemental staffing unit covers a large geographic area and can supplement closer responding firefighters for significant incidents, yet the crew typically does not respond to less severe minor calls, as local private, non-profit fire departments can often handle those type calls without additional staffing assistance. Two North Carolina counties that have been using this model for many years experienced some initial resistance to the model in the early years followed by acceptance and embracing of the staffing supplement component of the overall fire protection service delivery system. In both of those counties, the program has been expanded as the county has grown. It is typical that the personnel on the staffing squad also provide support functions for contracting fire departments such as fit testing for self-contained breathing apparatus, ladder testing for regulatory compliance, pump testing for insurance rating compliance, etc. These additional duties and responsibilities provide added value to contracting private, non-profit fire departments during non-emergency periods of time and reduce the required operating costs of those contracting fire departments.



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Feedback provided as part of this report reflected some displeasure with the current Squad. Many of the comments reflect a lack of communication regarding the purpose and building collaboration with the squad in perceptions at the firefighter level. In the counties that have implemented similar staffing support models, the Squad is found to allow volunteers to focus on response rather than some of the other workload that the Squad could pick up for them. The other counties have found that the subsequent, logical expansion of workload allows for less pressure to be placed on a diminishing volunteer team that is found in almost every area of the state and nation. In other areas, the Squad allows for non-fireground interactions between career and volunteer staff and reduces the adverse impacts on the overall service delivery system.

Providing the staffing supplement with County General Fund dollars necessitates that the assistance can be provided to all residents of the County and not only those persons in unincorporated areas of the county. This aspect has not been a challenge in other North Carolina counties that utilize this model. As an example, in Guilford County, one of the two county squad units operates a rescue truck and they fill in within the City of Greensboro when necessary to provide service, such as when the city's heavy rescue is on another call or is out of service for some reason.

A complication with the staffing supplement squad can be that they are not permitted to operate fire apparatus that is owned, operated and insured by the private, non-profit corporation fire departments. The team understood this to also be a challenge in Cabarrus County. However, the intent of the staffing supplement program is to focus on staffing and not to bring essential fire apparatus to the scene of emergency incidents. Options with insurers could be identified for this option if so desired; however, it would not be recommended that contracting fire departments become dependent upon the staffing squad for primary response duties. Their focus should stay at the macro (or countywide) level and not the micro level so that they focus on the staffing component of fire service operations. It is noted that there could be times that it would helpful to positive outcomes to have the squad personnel capable of operating fire apparatus in special situations when asked to do so by the contracting private, non-profit corporation fire departments.

The team reviewed the current Cabarrus County model and developed several observations and recommendations.

- **Continue to develop and improve the Squad operation for Cabarrus County.** In the short-term, collaborate with fire chiefs in the county to determine the “ancillary duties” that the Squad personnel could be most helpful to them with, recognizing that there may be a baseline across the county and then some contracting fire departments may need more assistance than others. In the long-term, other counties have experienced the value in locating two squads in the county so that areas can be more effectively served geographically. Some planning for this need in future years should begin being addressed.





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- **As soon as conditions allow, the Squad and County Government would benefit from a designated lead person to be responsible for the Squad operations emphasizing communication and building strong working relationships with all of the contracting fire departments in Cabarrus County as well as training.** A dual focus of managing the Squad personnel as well as building relationships with contracting fire departments is essential. Observations of the team is that the current county staff does not have the work hours needed to have the level of interaction and direction needed for the current squad program and that the overall fire protection service delivery system could benefit from a higher level of communication with contracting fire departments, with specific attention on enhancing the services of the Squad in order to get the very most effectiveness and efficiency from the program. Some counties implement this type role as an Operations Chief. They would have the responsibility of managing and leading the Squad, but also provide overall focus and attention to the fire protection delivery system with the contracting fire departments. Wake County effectively utilizes the Operations Chief in this capacity. An illustrative job description for Fire Operations Chief from Guilford County is provided for in the Appendix of this document.

There was significant feedback in the firefighter survey as well as feedback in the citizen survey related to Squad 410. Most comments about the squad were negative and reflected issues with communication and the role of the Squad. The team recognizes the Squad program as a best practice model for County governments who desire to continue to primarily rely on private, non-profit corporation fire departments to provide fire protection services in the unincorporated areas. However, there is an obvious gap in the current program that needs attention with improved communication, inclusion and outreach as well as emphasis on continually strengthening the capabilities and expertise of the Squad members. This position should prioritize communication and building strong working relationships with all of the contracting fire departments in Cabarrus County. Additional time, attention and resources are needed to build the bridges with this program in order to change and build upon the perceptions that were articulated in the feedback.

The team reviewed and discussed best practices for the Squad as well. There are valuable support functions that other counties have found most beneficial that should be continued or implemented. Those include pump testing, fit testing, ladder testing, hose testing, base inspection issues, assistance with fire investigation, specialty rescue, etc.

- **In the longer-term, when conditions allow, the current Squad should be expanded to fifteen (15) personnel.** This is consistent with industry standard in the North Carolina fire service recognizing that additional full time equivalent (FTE) personnel are needed in order to maintain minimum daily staffing of four persons per day. Typically, to maintain minimum four person staffing on three shifts requires 15 certified firefighters. Currently, the program utilizes part-time personnel to fill this void. However, in the long-term, there are advantages to utilizing the full-time personnel in this capacity for continuity of





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operations, relationships with personnel and stronger tactical capability between crew members when on emergency scenes or incidents. There is an ISO advantage for the fire departments that utilize the Squad through automatic aid through dispatch on the first initial alarm with no delays. Hence, maintaining four persons on the Squad at all times provides supplement to the fire departments that can assist with on-scene staffing. Some contracting Cabarrus County Departments report that utilizing a Squad member to go in with EMS on medical emergency calls enables them to get the first due, primary engine back in service much more quickly.

- **The station location for the Squad should be evaluated.** While it has been functional, it lacks some of the space needs that are essential for 7/24/365 operation and the responding equipment is not housed in a heated space. Examples include area to train and additional square feet needs. An analysis through the GIS portion of this project has determined that if there were one Squad, it could be more effectively located to the east of the current location based upon the incidents that the Squad historically responds to. In the short-term, if there were an opportunity to partner or collaborate with an existing fire department or county facility to provide an overall better environment for the squad, especially if geographically closer to the locations specified on the heat maps, that would be desirable. Longer-term, consideration should be given to determining two optimal locations where future fire stations would be built in the county whereas Cabarrus County Government could partner or collaborate with a private, non-profit fire department or municipal government to include adequate space for the Squad operation from the design up. Models of such collaboration abundantly exist in North Carolina with EMS. Some do exist between two separate fire departments – such as with the Town of Morrisville and the Town of Cary, where two separate fire departments operate under the same roof, providing an efficient operation for taxpayers. If Cabarrus County were in on the initial design, it would be typical that Cabarrus County would pay for their portion of the capital expenditures as well as possibly a monthly cost for utilities. Multiple examples of these agreements are available, such as one between the City of Greensboro and Guilford County on Fire Station 59 and Fire Station 63.
- **The Squad's response vehicle should be re-evaluated when conditions will allow.** Cabarrus County's Squad is intentionally designed and intended to serve as a supplement staffing unit and the team supports that continued operation. This initiative is not designed to be a front-line response fire apparatus and the team supports that position. However, as a staffing unit, the team is tasked to perform critical fire suppression duties that require them to work in immediately dangerous to life and health (IDLH) environments and the tools and the equipment that they use must be fully maintained, checked and working properly. As an example, tools and equipment used as a part of a rescue intervention team (RIT) must have the confidence of the Squad personnel and if they have not checked the equipment, the Squad members may not have assurance that the equipment is in the proper condition. Some of this equipment will need to be carried on the response vehicle for the Squad. Adequate space for the Squad's equipment is



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needed. Comparatively, other counties have seen a transition from using a ¾ ton pickup truck (F-250) to a heavier truck (Such as an F-550) with a service body to be the next step forward in the progression of the program. Other counties have found that keeping the Squads operating in a rescue or service type truck is effective and keeps the roles and responsibilities of the supplemental staffing crews cleaner and clearer.

- Comparatively, Cabarrus County's Squad program operating on a 24-hour basis is relatively new. **However, attention will need to be given to making appropriate budget and funding adjustments to the program to reflect enough resources to provide the essential personal protective equipment and needed firefighting tools and equipment.** This norming of resource allocation is a natural component of the operating cycle of any new, or in this case expanded program. Examples are technology and AVL.



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#### **9. PEER REVIEW TEAM ANALYSIS – RECRUITMENT & RETENTION**

Volunteerism across North Carolina and the United States has been diminishing in all sectors. However, one of the most heavily impacted services affected by the loss of volunteers has been the fire service. Loss of volunteer firefighters is a top tier issue and concern in the North Carolina fire service today. Cabarrus County is no exception to this trend. In review of rosters from 2012 compared to rosters in 2020, data shows that the total numbers of firefighters has actually increased overall, with one significant exception – Mount Mitchell which reports 18 fewer firefighters in 2020 than in 2012. However, a closer review of the rosters in 2012 will indicate that approximately 40% of persons on the rosters are career firefighters at the department hosting the roster, or at a municipal fire department in the region. This factor should be considered when evaluating the overall fire protection service delivery system response strength, especially during storms and crisis situations. While data from 2012 did not evaluate the contrast of career versus volunteer firefighters on the rosters, all indicators demonstrate that the actual number of volunteer firefighters is decreasing. This trend is concerning to the Fire Chiefs in the county. While much of the loss of volunteers is indicative of changes and adjustments in the larger overall society, there are specific strategies that Cabarrus County Government and contracting fire departments can engage to mitigate this trend and minimize adverse impacts.

We analyzed trend lines for number of firefighters responding to structure fires between fiscal year 13/14 and fiscal year 18/19. During those six years, there is an approximate 25% decrease in the number of firefighters responding to structure fire calls. It is projected that the trend line will continue for that decrease in firefighters responding, while at the same time growth is occurring in the county, the number of emergency calls for service is increasing and the hazards and complexity is increasing. Collectively, this is a very concerning trend. To address the need additional career staffing will be needed. However, additional efforts are also needed to support and bolster the volunteer programs throughout Cabarrus County.

The subject matter expert team analyzed the programs currently in place in Cabarrus County and developed a series of both short-term and long-term strategies that could be effective to utilize in Cabarrus County. Short-term recommendations include strategies around training, community outreach, utilizing volunteers for non-traditional roles, family involvement, use of committees and continued involvement with the Concord High School firefighter program. Longer-term strategies include engaging a volunteer coordinator, recognition programs and further developing junior and live-in programs.

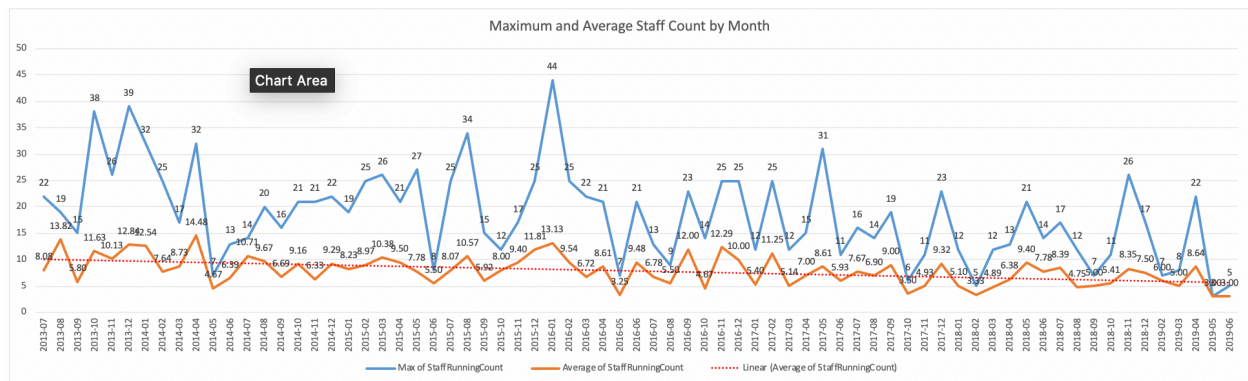
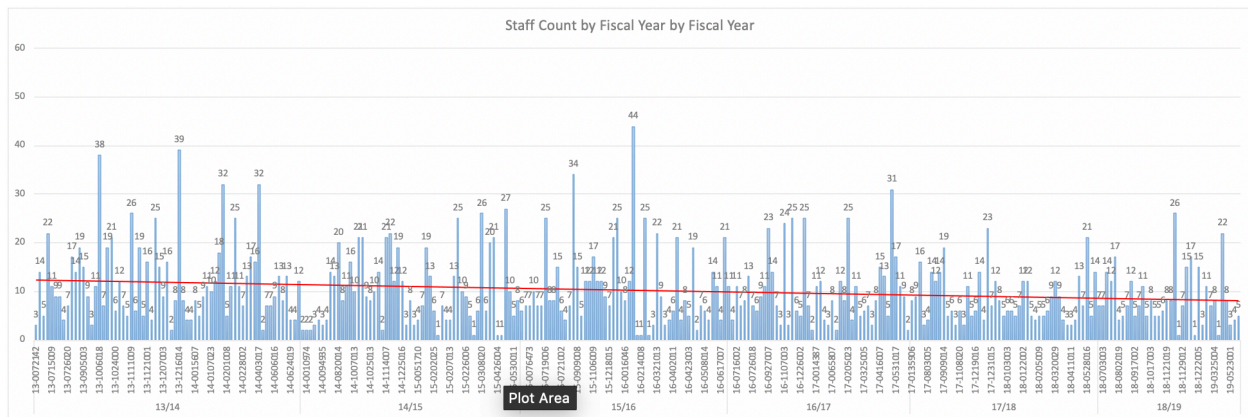
While no known volunteer fire department has found a single strategy to counteract declining volunteerism, there are many departments that find that implementing multiple strategies can have a positive effect on sustaining volunteerism. Therefore, utilizing multiple approaches is recommended by the peer review team.



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## A. Observations and Recommendations

The data below represents the trend line of the number of firefighters responding to structure fires in Cabarrus County between FY 13-14 and FY 18-19 reflecting an approximate 25% decrease. Due to the limitations of the data and the quality of data, the team is not able to determine the specific number change with accuracy. However, it is clear that the trend line is decreasing at an alarming rate. Only one structure fire incident during this time period was removed due to an anomaly.



Cabarrus County is currently utilizing a web site on how to become a volunteer countywide. Also, the county staff is integrally involved in the Concord High School Fire Academy program, which is well known and respected across the state. The county also utilizes a public safety day for outreach. Some areas of the county, such as Northeast, have a very limited pool of people to pull from to serve as volunteers. Other areas of Cabarrus County, such as Odell, include a more transient community. Some contracting fire departments in Cabarrus County provide pay-per-call or small stipend for stand-by to offset fuel costs, the Verizon incentive plan and the \$10/per month membership into the North Carolina Firefighters and Rescue Squad Worker's Pension Fund. The County fire service has embraced a junior firefighter standard across the departments



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in the county. Overall, each individual contracting fire department manages their own recruitment and retention efforts currently and are supported with County staff when requested.

From the efforts noted above, there have been a number of volunteers that have become part of the Cabarrus County system in the past two years. Some departments, such as Northeast, have found success in retaining volunteers once they get on board with the fire department. Some of the success that they have experienced in knowing what motivates their firefighters and understanding their needs. In addition, they provide an annual recognition program at Christmas.

Regardless of the efforts across Cabarrus County, the landscape of volunteers is changing. In 2020, contracting private, non-profit fire departments in Cabarrus County have certified to the State of North Carolina that 427 persons meet the state's minimum requirements to be recognized as firefighters and have been placed on the individual fire department's rosters. Of those 427 total firefighters on the roster, approximately 40% of those persons are presented as career firefighters, with the remaining 60% representing volunteer only firefighters, or 253 persons.

It is important to note that of the 40% of career firefighters, those firefighters may be career firefighters at the fire department that they are on the roster at, or they could be a career firefighter in another jurisdiction, such as the City of Concord or the City of Charlotte. This is an important factor for Cabarrus County Government to consider as these persons may or may not be available to serve in Cabarrus County in the event of major emergency situations such as significant adverse weather events, large incidents or during the pandemic. The career firefighters who serve in other jurisdictions are very apt to be called into their primary career firefighter work with the city and not be available. Also, it would be typical that this group would also be working one-third of all calendar days on duty in the municipal department and not available to respond locally. Hence, there are less than 427 firefighters immediately available from the contracting fire departments in Cabarrus County at any given time.

Maintaining strong automatic aid agreements within Cabarrus County and solidifying mutual aid agreements with neighboring counties is a critical element of the necessary strength and sustainability to operate the fire protection service delivery system in Cabarrus County.

When comparing rosters from 2012 to 2020, the overall number of persons on the rosters has increased by 47 firefighters collectively across Cabarrus County. Overall, the numbers of firefighters certified by the fire departments in Cabarrus County has remained steady to positive. However, we do not have comparative data to demonstrate career representation distinctions from 2012 of how many persons were solely volunteer versus firefighters that were career firefighters. From the qualitative feedback that the assessment team received, the number of volunteers has decreased in this 8-year period and the number of career personnel has overall increased. A particular note of concern when comparing 2012 and 2020 is the Mount Mitchell





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Fire Department. The number of firefighters on their roster in 2020 verses 2012 has decreased by 55% in the past eight years, or by 18 firefighters.

NC FIRE CHIEF CONSULTING					
CABARRUS COUNTY ROSTER INFORMATION					
<u>Contracting Department</u>	<u>Total Firefighters On 2020 Roster</u>	<u>Number of Career Firefighters</u>	<u>Percentage</u>	<u>Total Firefighters on 2012 Roster</u>	<u>Roster Difference from 2012 to 2020</u>
Allen	49	13	27	33	16
Coldwater	37	18	49	36	1
Flowe's Store	33	11	33	38	5
Georgeville	38	11	29	26	12
Midland	71	30	42	40	31
Mount Mitchell	22	1	5	40	-18
Mount Pleasant	54	32	59	49	5
Northeast	32	12	38	32	0
Odell	61	36	59	60	-1
Rimer	30	10	33	34	-4
<b>Totals</b>	<b>427</b>	<b>174</b>	<b>40.75</b>	<b>388</b>	<b>47</b>
			<i>Collective Average</i>		

The subject matter expert team developed a number of strategies that are being recommended to the Cabarrus County Fire Service for both firefighter recruitment and retention of current firefighters. These recommendations were divided into both short-term and long-term initiatives.

### Short-Term Initiatives:

#### 1. Training Opportunities

The Team recommends **representatives from as many Cabarrus County fire departments as possible attend the NC Association of Fire Chiefs upcoming “Leadership in Retention and Recruitment” class** instructed by Tracey Mosley and Spencer Cheatham. These classes will be offered in the Western, Piedmont, and Eastern parts of NC this calendar year free of charge. In addition, the Team recommends that Cabarrus fire departments take full advantage of certification/new recruit academies at local community college by sending members (fee waived for NC firefighters). Other important training opportunities at low to no cost training available to Cabarrus firefighters include:

- a. NC OSFM
- b. NC/SC National Fire Academy weekends
- c. Local NC Community Colleges
- d. NC Firefighters Association Annual State Conference
- e. IAFC National Recruitment Coordinator Network



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### 2. Designate New Firefighter Training Nights

Fire departments find that **designating a training night each month for new members** is an effective practice to help them acclimate to the fire service. The team would recommend Cabarrus County utilize this approach.

### 3. Include Leadership Training in County Association Meetings

An important part of retention is developing strong leadership within the fire service. It is recommended that the **Firefighter's Association incorporate leadership training and speakers into their meetings periodically as conditions will allow**. Including motivational speakers is often beneficial as well. It is suggested to provide food when conditions allow as that typically increases attendance. Also, the Team recommends **inviting key representatives from the Sheriff's Office and Communications as well as the community college(s) to these sessions**. The NC Association of Fire Chiefs has offered to come speak at a meeting related to recruitment and retention efforts for Cabarrus County.

### 4. Use of Social Media

Social media, such as Facebook, Instagram and Twitter can be effective recruitment tools for many fire departments. It is also a powerful tool to help communities know what their fire department is doing. Some of the Cabarrus County fire departments are effectively using social media with people following their activities. The Team recommends that **Cabarrus County fire departments take advantage of social media to share fire department information**, which will assist with volunteer recruitment and retention.

### 5. Participate in Community Events

The Team recommends that **Cabarrus County fire departments participate in local festivals and/or host events at the fire stations for members and community outreach**. These are important opportunities to interact with the community and identify potential volunteers. Open houses are also an effective means of outreach to get people and families to the fire stations to learn more about being volunteer firefighters.

### 6. Sign Boards/Frequency

The Team recommends **installing sign boards in front of fire stations to advertise the need for volunteers**. Furthermore, designating times that volunteers are brought into the department may be beneficial such as twice per year or quarterly. Applications can be constantly accepted and personnel brought in together for improved training and coordination.



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#### 7. Interest Cards/Flyers

**Develop interest cards and flyers with department specific information to give to interested volunteers.** These can be distributed in a variety of methods to help get the word out. Information should have methods to make personal contact and the persons responsible for getting back to interested volunteers should do so on a timely basis. Another effective means of distribution may be flyers attached to pizza delivery boxes in a partnership with pizza restaurants who are able to attach a flyer to the pizza box. The same can be used at fire department fundraisers where barbecue or chicken may be served – attach a flyer to every plate soliciting volunteers to help.

Recruitment materials are available from the North Carolina Association of Fire Chiefs to help with recruitment, marketing and branding. These materials include tri-folds, brochures, 8.5 x 11 handouts and 11 x 17 handouts. They are designed for volunteer fire departments to take to a local print shop and have their own logo and information applied to the marketing items.

#### 8. Ride-Along Program

**Consider starting a countywide ride along program for interested volunteers and dispatchers.** This can be an effective tool to help attract volunteers. Appropriate release forms and procedures for ride-alongs are recommended for this program as well. It was noted that seeking interest in middle school age youth is important to make them aware of the fire service and see if an intrinsic interest is there. Associated with that effort is the North Carolina Office of State Fire Marshal Youth Camp that Cabarrus County could further engage with.

#### 9. Utilize Volunteers for Non-Traditional Roles

While interior firefighting requires great strength, stamina and endurance, many fire departments across the state and country have found great success in **recruiting persons to perform non-traditional roles in the fire department, such as someone from banking to help with financial matters, teachers to help instruct fire and injury prevention classes, or diesel mechanics to help maintain fire apparatus.** As a part of the infrastructure, non-traditional roles are essential in providing fire and rescue service delivery to the communities within Cabarrus County to support front-line firefighters.

#### 10. Family Involvement

One of the proven methods of increasing volunteerism is **involving the entire family in fire department events.** The Team understands that this is happening in some fire departments in Cabarrus County already. However, more is encouraged. Examples of successful ventures include “Pictures with Santa” events bringing in kids and pets. Some fire departments have also found it effective to have a volunteer provide child care services at the station on training nights so that volunteers can bring their small children to stay in the child care so that the parents can participate in training exercises and





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evolutions. These events not only involve families, but also help attract people in the community to become volunteer firefighters. All outreach programs benefit from having materials to hand out to help others learn more about their fire department.

#### **11. Engage Committees**

The Team recommends **establishing a recruitment committee within the Cabarrus County Firefighter's Association to focus on these efforts on an ongoing basis and provide important dialogue and connectivity across the county.** This effort needs to be dynamic and change with conditions.

#### **12. High School Program**

It is recommended that **Cabarrus County continue to partner and collaborate with the existing high school Firefighter 1 and 2 certification program.** There are scores of successful high school firefighter programs across North Carolina and in most areas, the programs have enhanced recruitment of volunteer firefighters.

#### **Longer-Term Initiatives:**

#### **13. Volunteerism Coordinator**

There could be great value in **Cabarrus County engaging a single person to lead the volunteerism recruitment within the County.** This could be a part-time person and could potentially be funded through a federal SAFER grant. Having a single point of contact to follow up on persons who are interested in serving as a firefighter has been proven beneficial in counties like Cabarrus. Being able to return calls quickly and help connect interested persons with the best fit agency or fire department in the county could strengthen the number of volunteers available to serve. There is also a great value in having someone to consistently follow up with people who have interest to make sure that there is a positive match. Diversity can also be bolstered through this effort. Consistent focus on demographics on groups that are being sought as volunteers has helped with recruitment in other areas. Knowing what motivates and emphasizing those features helps as well.

#### **14. Recognition Programs**

**Holding firefighter recognition programs such as annual banquets and honoring firefighters that have retired from serving the community are important elements of successful retention programs.** Involving retirees provides many benefits. Implementing incentive programs can also be valuable with firefighter retention. An example the Team discussed was the use of "Training Bucks" that can be earned throughout the year to purchase a small gift during the holidays.



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#### **15. Junior Firefighter Programs/Live-In Programs**

The team recommends considering **establishing some junior firefighter programs within Cabarrus County**. Cabarrus could gain from other counties that have successfully instituted Junior firefighter programs within the state. Demonstrating how the fire service can be meaningful to the community and to spur interest in firefighting as a career can help support volunteerism. Often associated with the junior programs are firefighter live in programs. These programs work by allowing firefighters to live in the fire station in turn for responding to emergency calls at designated times as a volunteer. These programs work most effectively with college age members and could be beneficial to Cabarrus County, with nearby UNC-Charlotte, which provides a bachelor's degree in Fire Protection Engineering. There are several examples in North Carolina of successful live in programs, such as Pinecroft-Sedgefield Fire Department in Guilford County and Wrightsville Beach in New Hanover County. Also, there is a web site of [www.fdlivein.com](http://www.fdlivein.com) that offers the ability to promote live in programs. Some North Carolina fire departments participate in this program.

Note that a package of materials related to better understanding and strengthening the volunteer response system is included in the Appendix of this document.



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#### **10. PEER REVIEW TEAM ANALYSIS – TAX DISTRICTS & FUNDING**

Insurance districts hold importance for Cabarrus County Government in order to obtain the lowest insurance ratings possible for residents of Cabarrus County. Those insurance districts should also reflect the closest station response. Cabarrus County effectively utilizes countywide automatic aid between fire departments, which enables areas between five and six road miles from a fire station to obtain the most basic of insurance ratings (class 9). Ratings for Cabarrus County range from Class 1 (the highest level for public protection) to Class 9 (the lowest recognized level) with insurance districts rated at Class 3,4,5 and 6 in between. Most North Carolina Counties strive to support all areas reaching Class 6 or better because of the positive impact for homeowners. Currently, three Cabarrus Districts are above Class 6 and are all at Class 9 (Georgeville, Northeast Cabarrus and Rimer). The peer review team recommends Cabarrus County place a focus on improving the insurance ratings for these three districts in order to achieve the greatest positive impact for the property owners paying property insurance. It is important to note that the insurance rating system is based upon 50% credit from the fire department itself, 40% related to water supply and 10% associated with emergency communications systems.

Funding of county fire protection systems is a very complicated process in North Carolina. Cabarrus County currently utilizes rural fire tax districts that were established last century. This approach is not unusual. However, many North Carolina counties are moving away from rural fire tax districts primarily due to expanding costs to provide fire protection and urbanization. Typically, the rural fire tax districts do not provide county governments modification ability. However, Cabarrus County is fortunate to have the authority and ability to make modifications to rural fire tax districts due to a local legislative bill specifically for Cabarrus County.

Currently, Cabarrus County taxes sixteen (16) separate rural fire tax districts between a low of \$.06 per \$100 valuation (Cold Water) and a high of \$.15 per \$100 valuation (Harrisburg Rural), with a mean average of \$.0975 per \$100 valuation. Cabarrus County's mean average is slightly lower than a statewide average of \$.10 per \$100 for rural fire tax districts. The associated annual funding appropriation from these rural fire tax districts ranges from a low of \$11,073 (Richfield) to a high of \$1,124,899 (Harrisburg Rural). The mean average annual appropriation is \$355,785. In addition to the funding from the rural fire tax districts, there is also annual funding from local sales tax distribution. In order to optimize insurance premiums for taxpayers, Cabarrus County should ensure that the closest responding fire station serves the persons and property in the unincorporated areas of Cabarrus County. Coupled with that effort should be a focus on reducing/improving the insurance ratings wherever possible. There are several areas of Cabarrus County where residents are in a Class 9, or minimally protected area. Urbanizing counties across North Carolina are striving to include as many areas as possible into Class 6 or better rated areas.



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North Carolina State Statutes enable several methods to provide funding for fire protection. Currently, Cabarrus County is utilizing a small amount of funding from the County General Fund and providing most of the funding through rural fire tax districts enabled by Chapter 69 of the State Statutes. The peer review team recommends that long-term, Cabarrus County move towards regional or unified fire protection service districts as enabled by Chapter 153A. Counties across North Carolina have found that the service district model provides a more sustainable model for funding and provides funding to more equitably balance service across all the unincorporated areas of the County. The rural fire district model can provide resources for areas with tax bases, but does not provide well for more rural areas. The great accelerator is the need for staffing. Traditionally, fire departments in both suburban and rural areas have relied on volunteers, but with the number of people willing to volunteer now and in the foreseeable future, more resources are going to be needed for staffing, and that need impacts all unincorporated areas of Cabarrus County.

The team recommends a collaborative approach to this service district model by including municipalities that desire to be a part of the service district in the early planning. Those participating municipalities should be considered partners moving forward. Also, the team recommends that the Board of Commissioners establish a fire commission, comprised of elected leaders, fire service leaders and citizens to make recommendations to the Board of Commissioners on funding distribution related to the recommended service district. This advisory board would focus on the policy and service delivery enhancement for the overall service district.

In addition, the team recommends that as the service district model is implemented that adjustments be made to response areas to ensure the closest station response and that areas where overlap occurs be re-evaluated to determine the overall best allocation of resources.

Furthermore, as Cabarrus County moves towards a service district model, that the agreement between Cabarrus County and contracting private, non-profit corporations be re-evaluated in order to bring the contract up to best practice in North Carolina. Using the service district model can enable some creative provisions in the contract such establishing base funding based upon the property value that is protected by each contracting fire department, incentive funds for achieving improved ISO ratings, one-time grant funds to help with initiatives that will improve service delivery and other creative ideas. There is not a need for contracting fire departments to experience a disconnect between the value of the property they protect (the risk) and the funding that is received for protecting those risks. A funding distribution model can be constructed that will provide equity and balance to the contracting fire departments.

Current Cabarrus County General Fund dollars that are supplementing the contracting private, non-profit fire departments would not be necessary for those departments operating within the service district. However, the team recommends utilizing those funds to strengthen the countywide staffing squad that serves the entire county as staffing is projected to continue to be one of the greatest needs in the foreseeable future.



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### **A. Observations and Recommendations**

#### **Insurance Rating Considerations:**

The Cabarrus County Board of Commissioners may designate fire insurance districts for any unincorporated areas of the county (and municipalities that allow the county to designate). These designated fire insurance districts must meet the parameters set forth by the State of North Carolina such as mileage from a recognized fire station and other technical requirements. The insurance district and the response district for a fire department should be one in the same – which fire department primarily responds to each property in the insurance district. Once the Board of Commissioners approves fire insurance district boundaries, the maps must be reviewed and approved by the North Carolina Department of Insurance – Office of State Fire Marshal.

Additional detail on Insurance Districts is provided as follows:

*A county is authorized to establish fire insurance districts within its unincorporated territories, with the approval of the Office of the State Fire Marshal housed within the North Carolina Department of Insurance. The primary purpose of insurance districts, as their name suggests, is to delineate the fire protection coverage afforded to particular properties for purposes of determining whether those properties may be covered by fire insurance and at what cost. The North Carolina Commissioner of Insurance/State Fire Marshal is responsible for rating departments that serve areas with populations of 100,000 or less. A private corporation, the Insurance Services Office, Inc. (ISO), rates departments that serve more populous areas. Insurance ratings are based on the staffing levels and apparatus of the fire department itself as well as on the applicable emergency response communication system and available water supply. A fire department that serves the properties within an insurance district is rated on a scale of 1 to 10, with 10 effectively constituting no fire protection for purposes of setting insurance rates. Thus, the minimum insurance grade for departments rated by the Commissioner of Insurance is 9. A “S” is added after the Class 9 to indicate state approved – hence “9S”. In order for a county insurance district to qualify for a 9S rating, its boundaries may be no more than six road miles from the fire station and the fire station that serves those properties must meet certain requirements. Some fire departments receive a split rating—providing a lower (better) insurance rating to properties in the insurance district that are located within one thousand feet of a fire hydrant.*

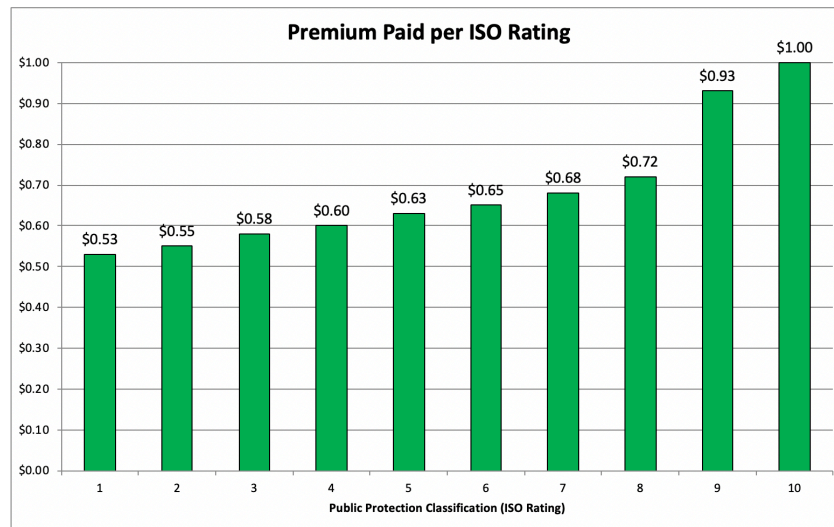
*The “E” rating added to rural districts represents that the area between 5 and 6 miles is included in an insurance district. This area must have automatic aid dispatched and cannot earn a rating better than ISO Class 9.*



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At any time, the Cabarrus County Board of Commissioners could modify the fire insurance district boundaries within the guidelines established by the state and submit those revisions for approval. From the time that the changes are submitted until property owners are able to recognize benefits from those changes is typically 90-120 days.

Insurance ratings indicate the fire department's ability to suppress fire and minimize losses. The ratings provide a structure of needs analysis based upon the community that is served. The better the insurance rating, typically the less property insurance the owner pays. This comparative chart below illustrates how the ratings can affect insurance premiums. In North Carolina, most homeowners see reductions in premiums between Class 10 and Class 6. Commercial properties recognize savings all the way to Class 1. Also, complementary to the improvement in ratings would be the historical reduction of loss due to fire as illustrated below. It is very typical that counties in North Carolina desire to achieve an insurance rating of Class 6 or better in unincorporated areas of the county.



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### Insurance Rating Recommendation for Consideration:

**As an industry best practice, Insurance Districts should reflect a closest station response. Some natural geographic boundaries can alter that some, but generally insurance districts should reflect the closest station response. NC Fire Chief Consulting will provide mapping of those proposed closest station response areas as a part of this project.**

### Current Fire Insurance Ratings in Cabarrus County – by order and base district:

- Class 1: Concord (Concord Rural and Jackson Park)  
Kannapolis (Kannapolis Rural)
- Class 3: Cold Water
- Class 4: Harrisburg  
Flowe's Store
- Class 5: Allen  
Midland  
Mount Pleasant (Mount Pleasant Rural)  
Mount Mitchell
- Class 6: Odell
- Class 9: Georgeville  
Northeast Cabarrus  
Rimer



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**Prioritization should be placed on conducting an ISO analysis of the Georgeville, Northeast Cabarrus and Rimer fire districts to determine methodologies that they could utilize to lower the ISO rating for the respective districts. Property owners would greatly benefit from improvements in these three districts in particular.**

### Current Funding Models and Allocation:

The current taxing structure is in place for contracting fire departments in Cabarrus County utilizing the rural fire tax districts using ad valorem rates per \$100 valuation:

\$.15	Harrisburg Rural
\$.14	Jackson Park, Concord Rural
\$.127	Northeast
\$.118	Mount Pleasant
\$.10	Midland, Kannapolis Rural
\$.092	Georgeville
\$.088	Rimer
\$.0826	Mount Mitchell
\$.08	Gold Hill
\$.075	Allen
\$.07	Flowe's Store, Richfield
\$.068	Odell
\$.06	Cold Water

Primary funding is through the Cabarrus County ad valorem property tax. The adopted FY 20-21 budget allocation is as follows:





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FIRE DISTRICT FUND REVENUES AND EXPENDITURES BY DISTRICT AND SOURCE						
	FY19	FY20	FY20	FY21	RECOMMENDED	PERCENT
	ACTUAL	ADOPTED	AMENDED	RECOMMENDED	CHANGE	CHANGE
<b>REVENUES</b>						
Property Tax	\$ 4,773,745	\$ 5,121,439	\$ 5,284,939	\$ 5,692,557	\$ 571,118	10.71%
<b>TOTAL</b>	<b>\$4,773,745</b>	<b>\$5,121,439</b>	<b>\$5,284,939</b>	<b>\$5,692,557</b>	<b>\$571,118</b>	<b>13.25%</b>
<b>EXPENDITURES</b>						
Allen	\$ 387,203	\$ 393,999	\$ 398,999	\$ 445,827	\$ 51,828	1.93%
Cold Water	202,195	204,169	214,169	230,919	26,750	3.28%
Concord Rural	41,969	41,471	43,471	50,227	8,756	-1.87%
Flowe's Store	341,943	385,723	392,723	424,589	38,866	26.12%
Georgeville	235,837	242,679	249,679	266,791	24,112	6.54%
Gold Hill VFD	38,162	37,828	39,828	39,555	1,727	5.69%
Harrisburg	984,428	991,774	1,021,774	1,124,899	133,125	3.54%
Jackson Park	186,233	192,882	202,882	231,467	38,585	2.51%
Kannapolis Rural	184,855	189,158	194,158	216,319	27,161	2.29%
Midland	572,896	794,943	834,943	820,779	25,836	69.99%
Mt. Mitchell	89,081	89,031	90,031	99,345	10,314	2.46%
Mt. Pleasant Rural	428,452	498,800	513,800	541,988	43,188	18.66%
Northeast-Cabarrus	160,040	159,438	169,438	181,060	21,622	3.26%
Odell	692,983	710,947	725,947	804,537	93,590	3.58%
Richfield-Misenheimer	10,639	9,940	10,940	11,073	1,133	8.53%
Rimer	177,151	178,657	182,157	203,182	24,525	4.63%
<b>TOTAL</b>	<b>\$4,734,067</b>	<b>\$5,121,439</b>	<b>\$5,284,939</b>	<b>\$5,692,557</b>	<b>\$571,118</b>	<b>13.25%</b>

In addition to the ad valorem funding, fire districts also share in the local sales tax revenue as permitted by North Carolina General Statutes. Collectively, an approximate annual amount of \$1,286,632 (FY 20) is distributed across the sixteen rural fire tax districts, with a low of \$2,900 (Richfield) to a high of \$265,815 (Harrisburg).

Furthermore, some municipalities also provide funding to the fire departments that also contract with Cabarrus County. Those amounts vary beyond department and municipality.

Last, contracting fire departments may receive donations, conduct fundraisers and may receive state and/or federal grants and private grants as components of their funding sources.



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### Funding Considerations:

Cabarrus County currently utilizes rural fire tax districts as the primary source of funding to support the fire protection service delivery system in the unincorporated areas of Cabarrus County. While the rural fire tax districts are a viable method of funding essential, core fire protection services, many North Carolina counties have determined that these rural fire tax districts are not sustainable to produce the revenue necessary to provide fire protection services into the future. During the past 40 or more years, most counties making changes to the funding model for fire protection have transitioned away from rural fire districts (N.C.G.S. Chapter 69) to fire protection service districts (N.C.G.S. Chapter 153A).

### Statutory Funding Alternatives:

#### Alternatives:

- Using General Fund appropriation
- Establishing rural fire protection districts (NCGS 69)
- Establishing a Single County Fire and Rescue Service District (NCGS 153A)
- Establishing Regional County Fire and Rescue Service Districts (NCGS 153A)
- Use of Article 46 to supplement funding fire protection services in combination with one or more of the other methods outlined in this section.

Data evaluated indicates that if the level of services expected to be provided by contracting fire departments remained unchanged, significant additional revenue will be needed in the coming years to support the system that is in place today. As a major policy decision, the Board of Commissioners will need to make some critical determinations as to what funding “vehicle” that they desire to use moving forward.

Fire departments greatest needs are and will be for personnel due to the system transition of volunteer to part-time career firefighters.

North Carolina General Statutes do not mandate that county governments provide fire protection. Furthermore, state law does not dictate that there is a duty of equal service to all properties or citizens within a County or a special district. That means that a local government may choose to provide a higher level of fire services in some areas than in others. The authority for any unit of local government to use a revenue raising mechanism to fund an activity must derive specifically from the General Assembly. Counties are authorized to delineate one or more areas (districts) and levy an additional property tax on properties located within the districts to fund the fire services provided in the districts. At least to some extent, this power allows counties to target their taxing power in the same manner as if they were imposing user fees – raising revenue to fund fire services from those who directly benefit from those services.



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However, if a county does choose to provide public fire protection services, North Carolina General Statutes enable a variety of options for Cabarrus County to provide funding for fire and rescue services. These include:

#### **a. Using General Fund appropriation**

Counties may use a portion of the revenue generated from its general property tax levy to fund fire protection services countywide. Although Cabarrus County utilizes this model at \$30,000 annually to nine (9) fire departments currently, we are not aware of any larger North Carolina county that is solely funding fire protection through General Fund appropriation. However, most counties are funding fire marshal operations, countywide fire inspection, fire training and education programs and often countywide emergency response communications systems through the General Fund appropriation.

Any county Board of Commissioners may fund countywide fire protection as a component of the overall property tax rate per \$100 in assessed valuation. This method gives the Board great discretion as to how those funds are allocated. Alternatively, the Board may adopt a series of property tax rates, the proceeds from which are earmarked for specific services, such as \$0.20 per \$100 valuation for Sheriff services and \$0.15 per \$100 valuation for fire services, etc. There is less flexibility under this method and would require more budget amendment. There can also be a hybrid of both of the two methods, with a General Fund tax rate and a specified tax rate.

Generally, the total of all property tax rates may not exceed \$1.50 per \$100 assessed valuation of property in the county. An exception to this requires a voter referendum.

PROS of using the general property tax revenue to provide fire services is that the property tax provides a relatively stable stream of revenue and the county's governing board has a good deal of flexibility in allocating this revenue to provide different types and levels of services in different response area. The County Board of Commissioner is clearly and wholly responsible for funding and tax rate decisions.

CONS of this approach is that the tax is levied on all (non-exempted or non-excluded) properties within the county. Because fire services typically are not provided equally across a county's territorial boundaries (such as within municipalities) the result is that some taxpayers pay for fire services that they do not receive, or may receive reduced services or duplicative services.

#### **b. Establishing rural fire protection districts (NCGS 69)**

Fire services are among a handful of purposes for which the General Assembly has authorized counties to establish special tax districts to provide funding. A county may establish one or more special tax districts. One type of special tax district is a rural fire protection district. It is used to raise revenue only from those citizens who directly



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benefit (or most directly benefit) from fire services provided by the county, with revenue specifically earmarked to fund the fire services provided within that district. These were used throughout North Carolina beginning in the 1950s and were relied upon through the 1960s and early 1970s.

Establishing rural fire protection districts is complicated. The county must receive a petition signed by at least 35 percent of the resident freeholders living within the proposed district and must be outside of municipal boundaries. The tax office must verify the freeholder status, or life estate interest in real property, within the proposed district. The person signing must both own property AND live in the proposed district. Nonresident property owners do not count towards the 35% requirement. Once the Board of Commissioners receives a valid petition, they must call for an election within the proposed district of whether the county may levy a special property tax to fund fire services within the district. The enabling legislation for this method caps the maximum rate at \$0.15 per \$100 assessed valuation of taxable property. However, the local Board of Commissioners can cap the rate at less than that amount when they set it up. Throughout North Carolina, these rural fire protection districts were most often set up with a cap of \$0.10 per \$100. If they were formed before June 9, 1959, the maximum rate was \$0.10 by statute.

Once a rural fire protection district is established, making changes to that district involves complex, detailed and statutorily prescribed methods be followed. Certain changes involve petitions from 35% of the resident freeholders, calling for election. To abolish a rural fire protection district, the Board of County Commissioners must receive a petition from 15% of the resident freeholders and call for an election. Because of the complexity of these rural fire protection districts, the State Board of Elections does not report record of a County creating a rural fire protection in the last several decades.

Making changes to the rural fire tax districts is much more cumbersome and complex for most counties. Fortunately for Cabarrus County, you have a local bill (N.C.G.A. Session 2005, Session Law 2006-1 - Senate Bill 386) that was passed enabling the Cabarrus County Board of Commissioners to make modifications to the rural fire tax districts as they deem necessary. This provision provides more options for Cabarrus County than many other North Carolina counties have.

PROS of establishing rural fire protection districts are that the majority of taxpayers must vote to enact a tax upon themselves.

CONS of this approach are the complex prescriptive measures that accompany the structure and the inability to adjust the areas as conditions change within the county and as the needs and hazards change. There is also concern about the sustainability of funding long term under this system as well as the inability to look at the entire service



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delivery system rather than individual areas. There is a cap of the amount that can be charged under this model as well. Also, municipalities are not permitted to be a part of a rural fire protection service district.

#### *Rural Fire Protection Districts (G.S. Ch. 69, Art. 3A)*

*Until around the mid-1900s, counties typically did not furnish fire services in their unincorporated territories. Instead, property owners were left to secure their own fire protection. Over time, rural areas became increasingly subject to urban-type development, resulting in pressure on county governments to provide and fund fire protection services in these areas. In recognition of this change, the General Assembly granted counties the authority to establish rural fire protection districts for the purpose of levying a special property tax (rural district tax) to fund the fire services provided in each district.*

*A county's governing board may not simply establish a rural fire protection district. It must first receive a petition signed by at least 35 percent of the resident freeholders living within the proposed district. (Although not statutorily defined, the term "resident freeholder" is best understood to require that individuals both have an ownership interest in real property in the proposed district and live in the proposed district.)*

*Once a county board of commissioners receives a valid petition, it must call an election within the proposed district on whether or not to establish the district and levy the rural district tax. The statute sets the maximum tax rate at \$0.15 per \$100 in assessed property valuation in the district. Counties may not accept a petition or hold a referendum that calls for a different maximum rate limit, even if it is lower than \$0.15 per \$100 valuation. (The previous maximum limit was \$0.10 per \$100 valuation and some districts are still subject to this limit.)*

*If a majority of voters participating in the referendum approve the ballot issue, the county board(s) of commissioners may establish the rural fire tax district. By statute, the county board(s) of commissioners are responsible for setting the rural fire tax district tax rate each year (**G.S. 69-25.4**) and determining how services are provided in the district (**G.S. 69-25.5**).*

*The county board(s) of commissioners are not required to levy the rural district tax. Instead, the board is instructed to "levy and collect [the rural district tax] in such amount as it may deem necessary..." **G.S. 69-25.4**. With one exception, the rural district tax applies to all real and personal property in the district that is subject to the county's general property tax(es). The proceeds from the rural district tax must be used to fund fire services that are provided in the district. There are a number of options for service provision. The county may establish a county fire department to serve properties in the district. This option usually is cost prohibitive, though. Instead, the district's governing board typically contracts with one or more volunteer fire departments or municipal fire*



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*departments to provide the fire services (at least the fire prevention and suppression services).*

*Confusion often arises as to who controls the district—the district’s governing board, the county board(s) of commissioners or the fire department’s governing board. The practical answer is that all three have some degree of control. The county board(s) of commissioners sets the tax rate and determines how services will be provided in the district. The district’s governing board enters into contracts with the fire department to procure the services for the district. The fire department is a contracting agent of the district. As such, its degree of control over service provision is dictated by the contract’s terms. Note, however, that subject to any existing contractual agreements, a county’s board of commissioners may change service providers or the nature of the services that are being provided at any time. A volunteer or municipal fire department does not have a statutory right to continue to serve a particular district, even if the fire department has incurred significant expense (or even borrowed money) to fund operating or capital expenses to serve the district.*

*There are fairly detailed (and, at times onerous) processes to modify an existing rural fire protection district. See [G.S. 69-25.11](#). And, in order to abolish a rural fire protection district altogether, the county must receive a petition from at least 15 percent of the resident freeholders in the district and then hold a successful referendum authorizing the abolishment. [G.S. 69-25.10](#). The county board(s) of commissioners may effectively abolish a district without going through this statutory process, though. Because the commissioners determine the rural district tax rate, a county board could simply choose not to levy the tax in any given fiscal year.*

#### **c. Establishing a Single County Fire and Rescue Service District (NCGS 153A)**

North Carolina General Statutes enable Counties to establish a special tax district to fund fire protection and rescue services as a county service district. Fire and Rescue services is one of a handful of authorized services, facilities or functions that a special district can be established to serve the people of the county.

These districts are under the control of the Board of County Commissioners. This district has no independent authority and is established and maintained by the county. It is much easier to establish a fire or rescue service district than to create a rural fire protection district and this has been the predominant method of funding that counties have used since the mid 1970s.





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The Board of County Commissioners may create one or more fire and rescue service districts without receiving a petition or holding a referendum. The Board must find:

1. that there is a demonstrable need for providing one or more of the services in the district,
2. that it is impossible or impracticable to provide the services on a countywide basis,
3. that it is economically feasible to provide the proposed services in the district without unreasonable or burdensome annual tax levies, and
4. that there is a demonstrable demand for the proposed services by persons residing in the proposed district.

The Board of Commissioners must consider a number of factors, including

- Resident or seasonal population,
- Population density in the proposed district,
- Appraised value of property subject to taxation,
- Present tax rates of the county and any municipalities or other special districts in which the proposed district is located,
- Ability of the proposed district to sustain the additional taxes necessary to support the proposed district.

Once the Board of County Commissioners makes the appropriate findings, it must hold a public hearing on the proposed creation of the service district. At least four weeks before the public hearing, a written report must be made available for public inspection. This report must include a map of the proposed district, a statement that the proposed district meets the required standards and a plan for providing the fire and rescue services to the district. After it holds the public hearing, the Board may adopt a resolution establishing the district and it must take effect at the beginning of a fiscal year.

A municipality may be included within a county fire and rescue service district if the elected officials of that municipality adopts a resolution agreeing to the inclusion. That agreement basically waives the authority of the municipality to provide fire protection and defers that responsibility to the Board of County Commissioners. The Board of County Commissioners controls the tax rate and the contract. However, a municipality can supplement additional funds from their municipal general fund to support fire and rescue services within the municipal jurisdiction if they so choose to do so. They would not be required to do so.

The service district would have a tax rate set by the Board of Commissioners for each fiscal year. The tax rate applies to all real and personal property that is subject to the county's ad valorem property taxes. Property owners in a service district do not have the option of opting out of paying the tax, even if they procure their own fire protection.



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There is no cap on the tax rate for a service district, it is just subject to the general aggregate property tax limit of \$1.50 on each \$100 valuation that may be collectively charged by the County. That means that the special district tax rate, when combined with the county's general ad valorem property tax rates may not exceed \$1.50, unless the portion of the rate in excess of the limitation is submitted and approved by a majority of the qualified voters of the district. The Commissioners could self-impose a cap rate for a service district, but it is not required by North Carolina General Statute.

Revenues from this service district tax must be specifically earmarked to finance fire and rescue services within the district. Service district tax proceeds may not be diverted to any other purpose, even if a service district is abolished. Should the county appropriate any other funds into the service district funds, they must be used for purposes that the service district has been set up for once they are appropriated.

In providing services, North Carolina General Statutes rely upon the Board of County Commissioners to determine what methods are best to engage or employ to deliver the services. A county must provide, maintain, or let contracts for the services for which the residents of the district are being taxed within one year of approval. The county is free to establish and maintain a county fire, ambulance or rescue department to provide the services within its service districts, or it may contract with one or more municipal or volunteer fire departments to furnish these services, or both. The county has a good deal of flexibility in how it allocates the service district tax revenue to procure services for the district.

The relationship between the Board of County Commissioners and any private non-profit fire department (volunteer or combination) or municipality fire department is on a contract basis using this model. The Commissioners retain legal control over setting the service district tax rate each year and the Commissioners determine what fire services are provided within the service district and by whom. The Commissioners may change service providers or the nature of the services that are being provided at any time. The private non-profit or municipal fire department does not have a statutory right to continue to serve a particular district, even if the fire department has incurred significant expense or borrowed money to fund operating or capital expenses to serve the district.

Changes can be made to the service district without undue difficulty through a public hearing, with a two-week notice given and a report prepared. The Commissioners may add territory to an existing fire or rescue service district if the area is contiguous to the district, with at least one eighth of the area's aggregate external boundary touching the district's boundary if the Commissioners determines that the area needs the services provided in the district. The Commissioners can also extend the service district if they receive a petition signed by 100% of the real property owners of an area requesting inclusion into the district. All changes made are effective at the beginning of the next fiscal year.





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Regarding consolidations of service districts, the Commissioners may consolidate two or more service districts if the districts are contiguous and the services provided in each of the districts are substantially the same or there is a need to increase services in one of the districts to the level provided in the other district or districts. Again, notice given at least two weeks ahead of the public hearing with a report issued and effective the next fiscal year.

If a special service district is established, again all of the revenue generated must go to the provision of fire protection services within the district. However, as a matter of practice, it is appropriate that those funds can help support county government general operations such as human resources, legal, administration, tax collection, etc. as is appropriate. As an example, should the County employ firefighters to serve in the district, the pro-rata cost per full time equivalent (FTE) employee for support functions could be paid to the County General Fund.

In addition, depending upon the County's sales tax distribution method, the special fire and rescue service district may have the ability to share in a portion of the proceeds of sales tax revenue to help provide services within the special district. As an example, more than 25% of the district tax revenue for New Hanover County Fire Rescue is generated from sales tax.

In the event that the Cabarrus County Board of Commissioners desired to model the long-term vision for the provision of these services as a consolidated or unified system, such as New Hanover County, Moore County, Cumberland County or others, the single service district model would provide the Board and/or future Boards with the most latitude in making changes to the system to best meet the needs of the residents of the County at that time.

PROS of the single service district model is that it provides the optimum flexibility for the County and provides that flexibility long term in a sustainable way. It is a model where the Commissioners are in full control of the decisions of the system and modifications to the system can be made as conditions change with reasonable measures. It will allow for service provision now and will enable strategic planning long term as the Commissioners deem necessary. Municipalities can or cannot be a part of the service district as they choose. Municipalities are not prevented from adding more resources for fire and rescue services if they deem that necessary for serving and protecting their community.

CONS of the single service district model is that it focuses on the entire service delivery system for the county and is not perceived as community focused as other models. Just as the provision of most local government services, such as public health, education and others serve the entire county, the single fire and rescue service district would serve the



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entire county (municipality individually dependent). There will most likely be a perceived loss of control by some of the community fire departments that established themselves decades ago through much sweat equity and personal sacrifice.

A review of service district tax rates across the state will reflect that an average rate is approximately \$.10/\$100 valuation. Some counties that have successfully implemented a single service district have taken the approach to set a rate the first year and incrementally increase the rate a half cent each year until the revenues reach what is needed to adequately support the fire service. This methodology has helped the transition between use of general fund dollars and special service district revenues to lessen the impact on the taxpayer.

#### County Fire Service Districts ([G.S. Ch. 153A, Art. 16](#))

*The second type of district that a county may establish to fund fire protection and rescue services is a county service district. A county is authorized to define one or more areas within the county to establish a service district to “finance, provide, or maintain” one or more of a specific list of authorized services, facilities or functions “in addition to or to a greater extent than those financed, provided or maintained for the entire county . . . .”*

*[G.S. 153A-301](#). This authority stems from an effort by the General Assembly in the mid-1970s to make municipal-type services more widely available to county residents. Among the authorized services for which service districts may be created are “fire protection” and “ambulance and rescue” services. [G.S. 153A-301\(a\)\(2\) and \(7\)](#). Unlike a rural fire protection district, a county service district is not a municipal corporation and has no independent authority. It is established and maintained by the county, under the control of the county board of commissioners.*

*It is much easier to establish a fire service district than to create a rural fire protection district. A county board simply must find that: (1) there is a demonstrable need for providing one or more of the services in the district; (2) it is impossible or impracticable to provide the services on a countywide basis; (3) it is economically feasible to provide the proposed services in the district without unreasonable or burdensome annual tax levies; and (4) there is a demonstrable demand for the proposed services by persons residing in the proposed district. [G.S. 153A-302\(a1\)](#). In making its determination, the board must consider a number of factors, including the resident or seasonal population and population density in the proposed district; the appraised value of property subject to taxation in the proposed district; the present tax rates of the county and any municipalities or other special districts in which the proposed district is located and the ability of the proposed district to sustain the additional taxes necessary to support the proposed district. [G.S. 153A-301\(a\)](#). After the board makes the appropriate findings, it must hold a public hearing on the proposed creation of the service district. [G.S. 153A-302\(c\)](#).*



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*Once a service district is created, the county board of commissioners may, but is not required to, levy an annual property tax within the district in addition to the property tax or taxes it levies throughout the county (service district tax). [G.S. 153A-307](#). The service district tax applies to all real and personal property in the district that is subject to the county's general property tax(es). Unlike the rural fire protection district tax, generally there is no specific maximum tax rate limitation for service district taxes. Such taxes are subject to the general aggregate property tax limit of \$1.50 per \$100 valuation. That means that the district tax, when combined with the county's general property tax rate(s) and any other service district tax rates, may not exceed \$1.50 per \$100 valuation, unless the district's voters have approved the portion of the rate in excess of this limitation. (Under certain circumstances, a county board of commissioners may restrict itself to a lower maximum allowable service district tax rate.)*

*Revenue generated from the service district tax is specifically earmarked to finance the fire services provided in the district. [G.S. 153A-305](#). As with the revenue generated from a rural fire protection district tax, a county has much flexibility in expending the service district tax proceeds to fund these services. Many counties contract with one or more volunteer or municipal fire departments to furnish at least some of the services. The fire departments are contracting agents of the county. And, subject to any existing contractual terms, a board of county commissioners may change service providers, the nature of the services that are being provided, and the amount appropriated to fund these services at any time.*

*In order to modify or abolish a county fire service district, a county's board of commissioners must follow detailed statutory provisions, although most are not as detailed as those governing rural fire protection districts. For example, unless the county has outstanding bonds or notes issued to finance projects in a district, a county's board may abolish the district by simply adopting a resolution and holding a public hearing. [G.S. 153A-306](#).*

#### **d. Establishing Regional County Fire and Rescue Service Districts (NCGS 153A)**

All of the same constructive and prescriptive measures of the single fire and rescue service district apply to establishing two or more service districts. Other than the written plans accurately reflecting the proposal, the process would be identical. Should the Commissioners determine that the people of Cabarrus County could be better served by multiple service districts, that is also a highly viable option.

Fire and rescue service provision is not required to be uniform throughout the County. The County may establish multiple service districts to provide fire or rescue services in different areas of the county. Each district may have the same tax rate and support the same level of services, or each may have different rates to fund different types or amounts of services.



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Separate service districts could be established based upon geographical boundaries, such as rivers or major roads or they may be separate for the hazards or risks that may be present to serve and protect. For example, should there be a centralized commercial or industrial area, a different level of service may be needed for that region as opposed to another region that was comprised almost entirely of single-family residential structures. As a mixed rural and urban county, there may also be some special considerations that would impact the Commissioners' decision to establish regional fire and rescue service districts as opposed to a single service district.

PROS with multiple service districts in a regional format include that there is generally a greater sense of community and individualism that can be retained with departments that service like areas and that jointly respond together and train together. This model can also often facilitate the provider fire departments working together collaboratively on their own without being directed to do so. When the funding is for the region, often firefighters and Fire Chiefs will discover efficiencies and improvements in service delivery and be able to implement some of those rather quickly. In some cases, mergers and consolidations between private non-profit fire departments occur, facilities may be shared between separate agencies, innovative training programs emerge or fire equipment may be reduced because there is less need for duplication between agencies. Also, if multiple regional service districts were established initially, they could be consolidated in the future by the Commissioners when conditions warranted without an arduous process.

CONS for this model are that less overall system flexibility is provided. While the funding structure for a regional service district is stronger than an individual district, it is restricted to the property value within that region. Separate service districts also may have separate tax rates set, which can bring disparity. In many cases, the regional service districts would be less sustainable than the countywide single service district.

- e. Use of Article 46 to supplement funding fire protection services in combination with one or more of the other methods outlined in this section.

Cabarrus County is already using Article 46 for purposes other than providing fire protection. Therefore, this funding method at the current time would not be valid. However, looking ahead in future years, there may be other options or alternatives similar to Article 46 that the Cabarrus County Board of Commissioners may want to consider adopting a resolution calling for a referendum for voter approval of the use of one quarter percent (0.25%) local sales and use tax to support fire and rescue services.

The North Carolina General Assembly has enacted Article 46 of Chapter 105 of the North Carolina General Statutes, otherwise known as the "One-Quarter Cent County Sales and Use Tax Act", which authorizes counties to levy a one-quarter (0.25%) percent sales and use tax. In order to conduct this levy, the Board of County Commissioners



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must conduct an advisory referendum in accordance with the provisions of North Carolina General Statute 163-287 and place it on a voter ballot.

The one quarter of one cent sales tax provision does not apply to the purchase of gasoline or unprepared food (groceries). It is intended to lessen the tax burden on property owners because non-residents pay sales tax.

Other North Carolina counties who have considered this option for fire and rescue services, or other public safety services have found it to be an alternative revenue source. In North Carolina, approximately thirty (30) of our 100 counties have been successful to date in implementing the one quarter percent sales tax revenue source.

As a matter of best practice, one North Carolina county conducted a recent analysis and demonstrated that the one quarter cent sales tax generated two times more revenue than one penny on the property tax rate. As some examples, a purchase of \$100 would generate \$0.25. A purchase of \$300 would generate \$.075. A purchase of \$500 would generate \$1.25.

Onslow County uses the Article 46 funds to help fund their fire protection system. That county directly employs 47 career firefighters placed in individual fire departments throughout the county, including municipalities. Article 46 funds help defray those costs.

PROS of this alternative funding source is that it can help support fire and rescue services that are used by all of the people of Cabarrus County, both property owners and non-property owners – all of which need and use fire and rescue services. It has been successful in almost one third of North Carolina's counties and is recognized as an innovative method to supplement fire protection costs, especially countywide services. It has been found to be sustainable as well.

CONS include that this methodology will only generate funds as a supplement and will not fully support the costs of providing fire and rescue services. Therefore, another method (or methods) would have to be used in conjunction with Article 46. This method requires that the Commissioners call for a referendum and that the voters approve this plan. Due to this element, this funding would most likely not be available for some time, even if approved by the voters due to the election cycle. There may be an argument that this additional sales tax could be a negative aspect for tourism and other economic reasons. Respectfully, it would ultimately require a majority of voters to agree that this referendum was needed to support fire and rescue services in Cabarrus County.



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### **Long-Term, Sustainable Funding Recommendation for Consideration:**

As a North Carolina local government best practice, the team recommends that **Cabarrus County create a countywide fire and rescue service district (or create a few regional service districts) in accordance with state statutes.** This approach has been taken by many North Carolina counties.

**The Cabarrus County Board of Commissioners should seriously consider the single service district model as the primary choice to advance, improve and strengthen the fire protection service delivery system in Cabarrus County in the most sustainable way.** It is the overall most sustainable, long-term, comprehensive and most flexible of the options available to the Commissioners within the confines of North Carolina General Statutes. Costs to provide services are increasing, especially due to staffing needs, significant capital expenses and the cost of fire equipment escalates each year. For these reasons and others, the overall strongest funding source available to the county would be the single fire and rescue service district model, maybe in combination with other funding strategies. Illustrative best practices models include New Hanover County, Wake County, Moore County, Cumberland County, Cleveland County and others. There are many variables about how this system is administered. Should the Commissioners choose this option, additional work will be needed to more clearly define the methods that the Commissioners wish to engage to make this system operationally effective and efficient, such as the use of a fire commission.

Under this model, all areas of the county would be re-evaluated to ensure that the closest resources for providing fire and rescue services are being dispatched to emergency incidents. This determination is a part of the study being provided by NC Fire Chief Consulting utilizing geographic information system (GIS) analysis and determine optimum response districts for all provider fire departments.

As noted earlier, there is a specific process that must be followed in accordance with North Carolina General Statutes related to creating a service district. Many of the components of these statutory requirements will be provided as part of the work of this study by NC Fire Chief Consulting. Making changes to service districts is comparatively simple and can be made by the Board of County Commissioners by complying with the associated state statutes. Nevertheless, most counties that we work with across North Carolina have made a conscious decision to move away from rural fire tax districts when they are no longer best meeting the needs in serving and protecting the people in the county.

The primary reason for the shift is that it provides more options and flexibility in providing fire and rescue services in a contemporary environment. Just as rural fire tax districts are complicated to create, they are complicated to change or modify. Of course, other counties do not have the local bill that Cabarrus has to work with. With the cost of providing fire and rescue services dramatically increasing across North Carolina as we urbanize, many counties are shifting from rural fire tax districts to fire protection service districts. The greatest driver of





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costs in providing fire protection services in the coming years will be providing adequate staffing. Many counties across our state are experiencing significant challenges in recruiting and retaining volunteer firefighters and in some cases part-time and career personnel.

Another key reason many counties convert from rural fire districts to service districts is the urbanization of North Carolina and the service district model allows for resource distribution across the county or a region of the county and resources are not only provided to areas of growth and taxable property, enabling fire protection to function more like every other component of local government, such as schools, libraries, jails, etc.

Distribution of funding from a fire protection service district takes various methods in North Carolina. However, those recognized as best practices factor in the amount of property value and/or hazard in the district to keep the funding equitable to what is necessary to protect. As examples, Cumberland County provides each contracting fire department with what revenue is collected in their former rural fire district, which is based upon the property values that they protect. They use a \$.10/\$100 valuation as the base for each department. The rate for their service district is currently set at \$.15/\$100 valuation, so Cumberland County Government utilizes the remaining \$.05 for incentives, to support medical first responder services, grants and system enhancements such as radio equipment and medical physicals for firefighters. Wake County and Moore County use a dynamic fund distribution system based upon a multi-prong formula. Wake County takes that a step further and factors in “cost share” methodology with contracting fire departments that provide services for both a municipality and county. This methodology enables equity in the separate funding streams.

#### Consideration of Municipalities into a County-wide service district:

Should the Cabarrus County Board of Commissioners decide to move forward with a unified, countywide fire protection service district, **a determination will need to be made by each municipality within Cabarrus County whether or not they choose to opt in or opt out of the service district.** State statutes allow each municipality to make the choice to participate or not within their respective jurisdiction. Should a municipality decide that they do want to join the service district, the municipality will need to adopt a resolution. All participants of the service district would need to pay the same property tax rate, regardless if the property is located outside of a municipality or within a municipality that chooses to participate. Many counties find that smaller municipalities choose to become part of the countywide fire protection service district. The Cabarrus County Board of Commissioners would set the ad valorem tax rate for any property within the service district.



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#### General Fund Appropriation:

Some rural North Carolina counties provide supplemental funding to contracting fire departments from the county General Fund. However, this trend has changed in recent years. In some cases, such as Bertie or Jackson counties, there may not be a service district or rural fire tax district models to utilize. However, most counties choose to use funding vehicles other than the county General Fund when possible to help balance equity between contributions coming from both municipal and unincorporated areas of the county.

The funding structure provided by a fire protection service district should be adequate to provide the resources necessary to operate within the unincorporated areas of Cabarrus County. With such a structure in place, it should not be necessary to continue providing a General Fund appropriation to the contracting fire departments. However, it is appropriate to fund the staffing squad with General Fund dollars as long as they are available to any fire department who requests the resource within Cabarrus County, regardless of being within a municipality or not.

Currently, Cabarrus County provides \$30,000 annually to nine (9) contracting fire departments to offset their staffing expenses, totaling \$270,000 annually. (Also \$15,000 is provided annually to two out of county fire departments to respond into Cabarrus County.) Departments receiving the staffing supplement funding from the General Fund are Allen, Cold Water, Flowe's Store, Georgeville, Midland, Mount Mitchell, North East, Odell and Rimer. The following districts do not receive the staffing supplement from the County General Fund: Concord, Harrisburg, Kannapolis and Mount Pleasant. The two out of county departments receiving one-half of the appropriation are Gold Hill and Richfield.

#### Use of General Fund Monies post a County-wide Service District:

This General Fund subsidy would not be necessary with the implementation of a countywide fire protection service district. Post implementation of a countywide service district, those same General Fund dollars could have a more positive impact on service delivery by directing those towards strengthening supplemental staffing through expansion of the existing staffing squad program.

Should the Cabarrus County Board of Commissioners decide to pursue implementing a countywide fire protection service district, **supplemental funding that is currently going to contracting fire departments within Cabarrus County should be re-diverted to support the staffing squad program to serve all of Cabarrus County.** Adequate operational funding should come from the county-wide service district(s).





# **Cabarrus County Fire Service Strategic Analysis**

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### **11. SUPPORT DOCUMENTS**

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# **Cabarrus County Fire Service Strategic Analysis**

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### **B. Support Documents**

#### **APPENDIX A – FIRE SERVICE ASSESSMENT TEAM** **MEMBERS**

- **Greg Grayson, Fire Chief (ret), City of Greensboro, EnviroSafe**

Greg Grayson has more than 38 years of progressive experience in the North Carolina fire and rescue service. His experience includes beginning public service as a volunteer firefighter and ascending the career ranks to become the Fire Marshal/Fire Rescue Director for Wake County, North Carolina. In the following seventeen years, he served as the fire chief for three North Carolina urban cities – Burlington, Asheville and Greensboro. In these executive leadership capacities, he was responsible for comprehensive fire and rescue operations, prevention programs, training and career development, emergency management functions and specialized regional response teams. In Burlington, he effectively led positive organizational change and implemented an innovative reserve firefighter program. In Asheville, he commanded significant re-engineering throughout the fire department and led Asheville to become an accredited agency. In Greensboro, he led the department to maintaining both accreditation and ISO “Class1” status and navigated the department through difficult fiscal years and challenging large-scale emergencies. In 2015, his long-term, dedicated public service to the people of North Carolina was recognized by the Governor through the prestigious “Order of the Long Leaf Pine”, the state’s highest honor that can be awarded to a citizen.

Upon retiring from local government service, Chief Grayson was appointed by the State Fire Marshal in 2015 to proactively serve as the state’s first and only public fire service management consultant, providing high level technical assistance to county and municipal managers - enabling them to better strengthen their jurisdiction’s fire protection service delivery systems. He also managed statewide fire service advancement initiatives and led the Office of State Fire Marshal’s Technical Services program.

Beyond extensive experience, Chief Grayson holds a Master of Public Administration, bachelor and associate in fire protection. He holds numerous professional credentials including Chief Fire Officer (CFO), MIFireE from the Institution of Fire Protection Engineers and multiple other fire service certifications, including being North Carolina’s first Advanced Firefighter. He is one of very few, if not the only, Fire Chief in the United States to also hold the Senior Professional in Human Resources (SPHR) and SHRM-SCP credentials. He is active in the North Carolina Association of Fire Chiefs and the IAFC Metropolitan Fire Chiefs organizations and continues to serve as a volunteer firefighter in his home community.



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- **Mike Varnell, Fire Chief (ret), City of Rocky Mount, NC**

Mike Varnell has thirty years of experience in the North Carolina and United States fire service. His experience runs the gamut in the municipal fire service by serving in positions from firefighter to fire chief. Early in his career (1993) Varnell earned a commendation from Governor James B. Hunt for saving four children from a burning house. In 1996, he was recognized by the NC Jaycees as one of the “Five Most Outstanding Public Servants” in North Carolina. As his career progressed with Rocky Mount Fire Department, he was instrumental in leading the department through four successful international fire accreditation processes from 2003 to 2018. In 2016, under his leadership the department was only one of two in the nation to receive the coveted “Heart Safe Community Award” from the International Association of Fire Chiefs.

Chief Varnell is a graduate of the United States Fire Administration National Fire Academy’s Executive Fire Officer Program and the NC Association of Fire Chief’s Executive Development Program. Varnell holds a master’s degree in Executive Fire Service Leadership, a bachelor’s degree in business administration, and an associate degree in fire protection technology. He is credentialed by the Center for Public Safety Excellence and carries the “Chief Fire Officer” designation. He currently serves as a peer assessor for Commission on Fire Accreditation International and travels across the country evaluating fire departments for industry best practices. He has served on the International Association of Fire Chiefs’ Professional Development-Higher Education Committee and represented Region 4 on the NC Emergency Management Domestic Preparedness committee. He holds numerous certifications in the fields of administration, emergency management, and the fire service. He is a member of the International Association of Fire Chiefs, the NC Accreditation Support Consortium, and the NC Association of Fire Chiefs.

Since he retired from local government in April of 2019, he continues to teach Fire Protection Law, NC Local Government Finance, and Emergency Management classes at the college level. He is active in his community by volunteering on the Board of Directors for Meals on Wheels, Allocations Impact Team for United Way, and Cancer Care Ministry at his home church Englewood Baptist.

- **David Bullins, Fire Chief (ret), City of Statesville and Mitchell Comm. College**

David Bullins has served the NC fire service since 1982. His career started as a volunteer in the rural Piedmont area and ended as a career municipal fire chief in the foothills of the state. Chief Bullins served the Summerfield Fire Department as a volunteer and was the first paid firefighter on their roster. His career continued with the City of Greensboro Fire Department where he rose through the ranks serving as firefighter, captain, battalion chief, and planning & research officer. Part of his career with Greensboro Fire Department was that of Training Officer. Chief Bullins was appointed to the position of Fire Chief for the City of Statesville in 2007. After retiring in 2014 from the fire service, he continued his training and education goals by serving as the Fire and Emergency Management Department Chair at Guilford Technical Community College. He now serves as the Director of Public Safety for Mitchell



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Community College in Statesville, N.C. and teaches fire technology and emergency management throughout the state. Chief Bullins has a master's degree from Oklahoma State University in Fire & Emergency Management Administration, a bachelor's degree the University of Cincinnati in Fire & Safety Engineering Technology, and associate of applied science degree from Guilford Technical Community College. He also is a graduate of the National Fire Academy Executive Fire Officer Program and is designated as a Chief Fire Officer (CFOD) from the Center for Public Safety and Excellence.

- **Wes Greene, Fire Chief (ret), Town of Mooresville, NC**

Wes Greene served as the Fire Chief for the Town of Mooresville and the Town of Mount Airy, North Carolina. Previous to serving as a Fire Chief, Chief Greene served with the City of Winston Salem Fire Department. Chief Greene also served as Senior Safety Officer for the National Parks Service post his retirement in Mooresville. He has served in multiple leadership capacities in North Carolina's Fire Service including the North Carolina Association of Fire Chiefs and the North Carolina State Firefighters Association.

- **Robert McNally, Beacon GIS**

A GIS Analyst/Planner with niche specialty and ground experience for Fire, Rescue, EMS, Public Safety, Emergency Management, and Homeland Security projects, Robert owns Beacon GIS, a first responder planning services firm. Robert brings 20 years of public safety experience as a responder, manager, and trainer. He has been awarded twice for his service to the community. He graduated magna cum laude with bachelor's degree in Public Administration, securing an honor scholarship while in the midst of his education. Robert also has a graduate degree in Urban and Regional Planning from the University of North Carolina at Charlotte. Robert McNally has spoken at several conferences on the subject of public safety and homeland security and Beacon GIS has been involved in over 180 projects for emergency services of various sizes across the United States & Canada.

- **Todd Tuttle, Battalion Chief, City of Greensboro, NC**

Chief Tuttle is a 30-year fire service veteran who also served as a paramedic. He currently manages intricate records management systems for the City of Greensboro Fire Department, which is an accredited, ISO Class 1 city. Chief Tuttle is recognized throughout the state and nation as a technical expert on FireHouse records management systems as well as data analysis.

- **Tommy Millikan, Fleet Maintenance Supervisor, City of Greensboro, NC**

Tommy has forty years of experience in large fleet experience and over thirty-seven years with the City of Greensboro Fire Department. He currently serves as the Maintenance Supervisor for Greensboro Fire and has held many mechanical and emergency response apparatus certifications throughout his career.



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- **Chief Frank Blackley, Assistant Chief (r), City of Wilmington, NC**

Chief Blackley recently retired as an Assistant Chief from the Wilmington, NC Fire Department after 35 years of service. He was previously Fire Marshal during which time he served two terms as president of the NC Fire Marshals Association. He was assigned as the Operations Chief for three years prior to his last position over Support Services where he supervised the training, fire and life safety, logistics, fleet maintenance divisions, and managed the department's annual budget. He previously work for Wrightsville Beach Fire Department and New Hanover County Fire Rescue. In recent years he has taught nationally for Vision 20/20 and is one of their technical advisors for Community Risk Reduction. He is an adjunct instructor for the National Fire Academy and assisted in development of a class on community risk reduction at the station level and. He was heavily involved with the department's accreditation process and understands the need for accurate data. He is a graduate of the National Fire Academy's Executive Fire Officer's Program and has a Master's in Public Administration with a concentration in Urban and Regional Policy and Planning from UNC Wilmington.

- **Chief Wayne Hamilton, Assistant Chief (r), City of Asheville, NC**

Chief Wayne Hamilton recently retired as Assistant Chief of the Asheville Fire Department with over 27 years of public service there coupled with previous local government experience with Buncombe County. He holds a degree in Architecture from NC State University and holds professional credentials as a Fire Marshal from the Center for Public Safety Excellence and is a certified Fire Investigator as recognized by the International Association of Arson Investigators. He is also a certified Fire Protection Specialist, Building Plans Examiner, Fire Plans Examiner, Mechanical Plans Examiner and a certified Fire Investigator Instructor. Chief Hamilton currently serves as the fire service representative on the North Carolina Building Code Council.



# Cabarrus County Fire Service Strategic Analysis August, 2020

## APPENDIX B – FIRE MARSHAL DOCUMENTS

<https://strategicfire.org/wp-content/uploads/2016/04/Community-Risk-Assessment-Guide-v1.5.pdf>

<https://strategicfire.org/wp-content/uploads/2019/07/Outcome-Measures-Guide-04.25.19.pdf>

### NFPA 1730 Staffing Analysis Worksheet

#### Staffing Availability in hours

Annual hours at 100% availability     \_\_6,760\_\_     Example: 40 hours/week x 52 weeks/year = 2080 hours

Annual leave and holiday     (-)     \_\_1,500\_\_     Example: 22(10 Vac./12 Holiday) days x 8 hours/day = 176 hours

Estimated sick leave usage     (-)     \_\_768\_\_     Example: 10 days @ 8 hours/day = 80 hours

Annual training     (-)     \_\_317\_\_     Example: 10 days @ 8 hours/day = 80 hours

Uncertainty factor     (-)     Avg. 10%     Example: Weather delays, office time, etc.

**Total available hours per person** 939.375

**Number of available staff**     \_\_4\_\_ x available hours 939.375 = **Total available staff hours 3,757.5**

#### Annual Tasks/Workload

##### Plan review/New construction inspections

Number of tasks	Avg. Time/Task*	Commute Time	Other Time**	Total Time
258	4.5*258 = 1,161	83 hours	60 hours	1,304

##### Fire Investigations

Number of tasks	Avg. Time/Task*	Commute Time	Other Time**	Total Time
47	5*47= 235	94	82	411

##### Fire Prevention/Public Education Programs

Number of tasks	Avg. Time/Task*	Commute Time	Other Time**	Total Time
48	2.5* 48 = 120 hrs	48 hours	25 hours	193

##### Periodic Fire Inspections

Number of tasks	Avg. Time/Task*	Commute Time	Other Time**	Total Time
964	2.5*964= 2410	.30*964= 289	144	2843

##### Fire Ground Support

Number of tasks	Avg. Time/Task*	Commute Time	Other Time**	Total Time
103	3*103=309	50	46	405

\* Includes preparation, administrative duties, research, follow-ups, and reports.

\*\*Includes personnel functions, interruptions, cleaning, and maintenance.

Annual Task Time Hours
<b>5,156</b>

Annual Task Time Hours	minus	Total Available Staff Hours	= Hours remaining (+) or hours needed (-)
5,156		3,757.5	-1,398.5





# **Cabarrus County Fire Service Strategic Analysis**

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### **Fire Marshal Staff Other Duties**

#### **Specific to Fire Marshal Position**

- Serve on Cabarrus County school system District Safety Committee
- Serve on Public Safety Academy Board for school system
- Serve on EM Curriculum Advisory Board for Rowan Cabarrus Community College.
- Serve on county Active Shooter Safety committee
- Sign monthly payment approval for Fire Department Staff Grant.
- Serve as co-chair for the Cabarrus County Fire Services Board (CCFSB). This is our quarterly meeting with all the fire chiefs and or board presidents. I prepare the agenda for each meeting.
- Serve on the NCEM Association Legislative Committee.
- Serve as Rural Fire representative on Domestic Preparedness Region 7 committee (DPR7)
- Incident reporting software “Image Trend” system administrator. Only one other staff member has had the training. Assist fire department utilizing the system with generating reports, trouble shoot errors, sending reports to the state for each department, building forms and worksheets etc.
- Manage Fire Services Division that covers Squad 410 (12 full time staff) and Fire Marshal Staff (3 full time staff). Also several part-time firefighter staff.
- Coordinate information needed for fire department budget forms to be completed at budget time and provide forms to departments.
- Review Fire Department Budgets, and financial audits prior to Board of Commissioners budget work sessions in each year.
- Serve as the Emergency Management Coordinator in his absence. Serve as the EOC Manager on opposite shift as the EM Director for multiple operational events or as the Operations Section Chief, Logistic Section Chief otherwise.
- Manage Damage Assessment program, training, and access.
- Responsible for ensuring departments meet contract requirements.
- Assist with re-write of various plans such as Emergency Operations Plan, McGuire Response Plan.
- Assist with Local Emergency Planning Committee

#### **Fire Marshal’s Staff**

- Special Event coordination to include scheduling meetings with all public safety partners, event staff, property owners, IAP development, site inspections.
- Host county for McGuire Nuclear Plant. Staff provide annual training for all of Kannapolis Fire staff, Kannapolis Police, Cabarrus EMS, Cabarrus Department of Human Services, Concord fire Hazmat Team.





## **Cabarrus County Fire Service Strategic Analysis**

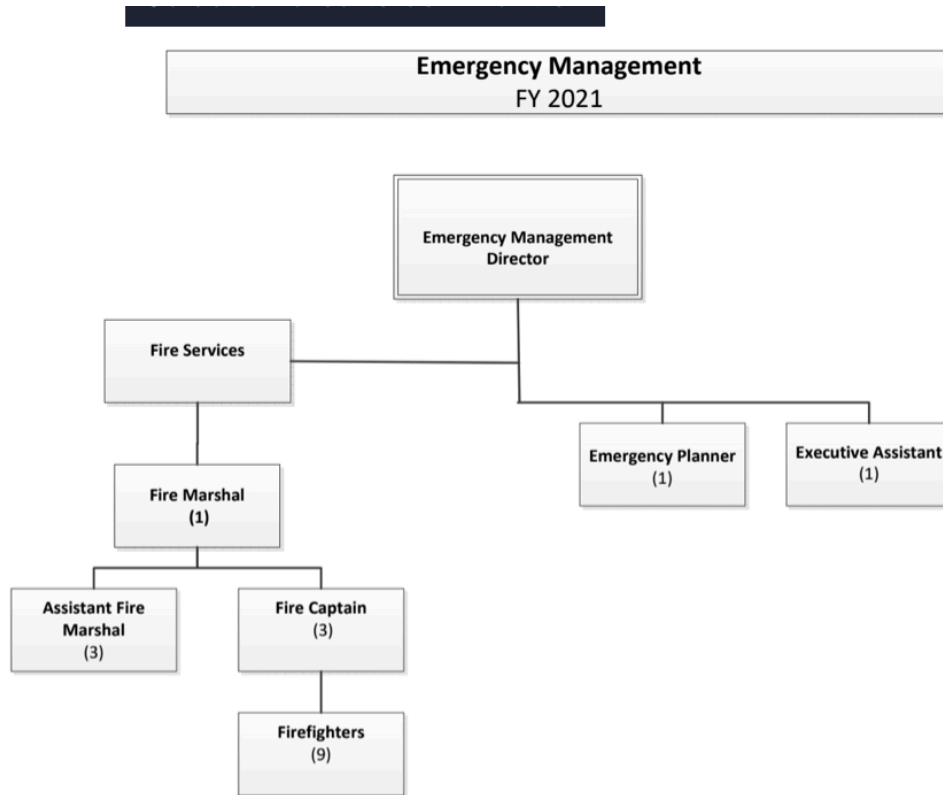
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- Attend McGuire Task Force meetings, maintain all radiological equipment. Equipment inventory and maintenance done annually.
- Schedule and deliver 6 EM trailers for maintenance each year.
- Participate in Technical Plan Review Committee meetings with towns
- Maintain Fit-testing equipment for the county. Schedule and deliver equipment to fire departments. Provide training on use of equipment as needed.
- Maintain scheduling of Fire Safety House for fire departments.
- Conduct Damage Assessments during storm/ disaster events.
- Staff Concord EOC as EM representative during race events
- Assist in EOC during events as needed.
- Assist fire departments with ISO activities and inspections
- Help facilitate Ergo Metrics testing and agility testing for Squad 410 new hires.
- Provide logistical support for Manpower Unit program. Staff coordinates quotes for gear, measuring for gear and purchase as well as equipment for Fire Marshal's Office.
- Maintain and print accountability id tags for departments.
- Serve on executive board for Cabarrus Fire and Life Safety Bowl. All donations from businesses to help fund this annual event is run through an account setup under our department budget. We pay all invoices for vendors and supplies for this event.
- Coordinate the Cabarrus County Land Search Team and run operations to support law enforcement during missing person calls.
- Attend Cabarrus County Firefighter's Association meetings.
- Serve on County Safety committee
- Provide Fire Prevention training to Cabarrus County departments.
- Assist Fire Departments with drills



# Cabarrus County Fire Service Strategic Analysis August, 2020

## Cabarrus County Fire Marshal Office Organizational Chart



# Cabarrus County Fire Service Strategic Analysis August, 2020

## APPENDIX C – SQUAD OPERATIONS DOCUMENTS

### Squad 410 Inventory

<b>Radio &amp; Computer</b>	<b>HSN Monitor :</b>	<b>LDH Wrench:</b>
<b>Mobile Radio:</b>	<b>Pull Out Tray</b>	<b>Hydrant Wrench:</b>
<b>410A Portable Radio:</b>	<b>Rescue Helmets (4):</b>	<b>Pullout Tray Drawer</b>
<b>410B Portable Radio:</b>	<b>Thermal Imaging Camera:</b>	<b>Accountability Board:</b>
<b>410C Portable Radio:</b>	<b>Portable Radio Charger:</b>	<b>Digital Camera:</b>
<b>410D Portable Radio:</b>	<b>APX 6000 Battery:</b>	<b>Smoke Detector:</b>
<b>Remote Speaker Mics (4):</b>	<b>Oil Dry:</b>	<b>N95 Masks:</b>
<b>Laptop:</b>	<b>Search Rope:</b>	<b>Ear Plugs:</b>
<b>Modem:</b>	<b>Hand Tools</b>	<b>Chainsaw Wrench:</b>
<b>Power Inverter:</b>	<b>Axe:</b>	<b>Spare Chainsaw Chain:</b>
<b>CAB Miscellaneous</b>	<b>ProBar:</b>	<b>TruFuel:</b>
<b>Big Easy Lock Out Kit:</b>	<b>Sledge Hammer:</b>	<b>Bar Oil:</b>
<b>Fuel Card:</b>	<b>Bolt Cutter:</b>	<b>Roadside Assist</b>
<b>Ambulance Pran Card:</b>	<b>New York Hook:</b>	<b>Jumper Cables:</b>
<b>Traffic Vest (4):</b>	<b>Sheetrock Hook:</b>	<b>Tow Strap:</b>
<b>Safety Glasses:</b>	<b>Talon Hook:</b>	<b>eDraulic</b>
<b>Clipboard:</b>	<b>GlasMaster:</b>	<b>eDraulic Combi Tool:</b>
<b>Street Map:</b>	<b>Forestry Tools</b>	<b>eDraulic Battery:</b>
<b>Medical Gloves:</b>	<b>Forestry Rake:</b>	<b>eDraulic Charger:</b>
<b>N95 Masks (8 Minimum):</b>	<b>Lighting</b>	<b>Spare eDraulic Battery:</b>
<b>Surgical Masks (8 Minimum):</b>	<b>Vulcan Handlight:</b>	<b>Chainsaw</b>
<b>Titan Mover:</b>	<b>Survivor Handlight:</b>	<b>Chainsaw:</b>
<b>Auto Pulse:</b>	<b>Extinguisher</b>	<b>Chainsaw Chaps:</b>
<b>Auto Pulse Battery:</b>	<b>ABC Extinguisher:</b>	<b>SCBA</b>
<b>Surgical Gowns:</b>	<b>Water Can:</b>	<b>SCBA Airpack:</b>
<b>Air Quality Monitoring</b>	<b>Hydrant Bag</b>	<b>SCBA Airpack:</b>
<b>4 Gas Monitor:</b>	<b>Spanner Wrench:</b>	<b>SCBA Airpack:</b>
<b>Radiation Monitor:</b>		<b>SCBA Airpack:</b>
	<b>SCBA Spare Cylinder:</b>	
	<b>SCBA Spare Cylinder:</b>	
	<b>SCBA Spare Cylinder:</b>	
	<b>SCBA Spare Cylinder:</b>	
	<b>SCBA Masks (4):</b>	
	<b>RIT Bag:</b>	
	<b>Water Rescue</b>	
	<b>PFD:</b>	
	<b>Throw Bag:</b>	
	<b>Knife:</b>	
	<b>Whistle:</b>	
	<b>Seatbelt Cutter / Window Punch:</b>	



**Cabarrus County Fire Service Strategic Analysis**  
**August, 2020**

**Illustrative Example of Job Description for Fire Operations Chief**  
**from Guilford County, NC**

**Fire Operations Chief**

**Salary**

\$60,131.00 - \$72,758.00 Annually

**Location**

1002 Meadowood Greensboro, NC

**Job Type**

Full Time

**Department**

Emergency Services

**Job Number**

01965

**Description**

**A skills assessment will be administered during the interview process.**

**General Statement of Duties:**

This position is responsible for the overall fire operations division including daily and ongoing functions of the Fire support units, Hazardous Materials Team, Fire Training Division, and all related personnel. Operations include training program oversight, field response, and compliance with all applicable guidelines and standards. This position will also work closely with other emergency service and county fire agencies to coordinate interagency operations and interactions.

**Distinguishing Features of the Class:**

An employee in this class works closely with the fire support crews and Hazardous Materials Response Team internally while working with allied agencies and fire district personnel externally. The individual is responsible for decisions related to overall management and supervision of assigned operations. The employee assists the County Fire Departments with coordination of hazardous material incident mitigation, field response, multi-agency coordination, and resource management. This individual coordinates Guilford County Emergency Services involvement of field delivery for public education in conjunction with fire district resources and the Fire Marshal's Office. This position also provides support of field response on natural disasters / fire and medical emergencies using nationally recognized standards. In addition, this position has a critical role in the Fire Division's Continuity of Operations Plan (COOP).



# **Cabarrus County Fire Service Strategic Analysis**

## **August, 2020**

### **Examples of Duties**

#### **DUTIES OF RESPONSIBILITIES**

##### **Essential Duties and Task:**

- Provides daily oversight and direction of fire support units and hazmat units to ensure continuity of operations between shifts and personnel.
- Coordinates dissemination of daily shift assignments and task based upon mission request from ES Fire Administration and fire districts.
- Coordinates operations and response of on-call hazmat personnel.
- Supports NIMS compliance in field response of GCES units during interagency and allied agency command and control structure as needed.
- Oversees the Fire Training Division through the Fire Training Supervisor and verifies coordination of specialized training for fire support personnel, hazardous material team personnel, and county fire personnel in accordance with local, state, & federal standards.
- Provides input to the Fire Marshal for policy review and development.
- Monitors resource allocation and equipment needs; provide input for budgetary issues related to resource management.
- Maintains proper records management systems encompassing all regulatory programs and processes related to response, training, and medical monitoring.
- Conducts annual performance evaluations; maintain discipline and division standards as necessary for efficient, professional operations.
- Coordinates response of field units for planned events, special call out emergencies, and daily response.
- Ensures proper resource management during operations with allied agencies. Verifies minimum staffing levels of fire support units.
- Monitors equipment maintenance programs to ensure proper daily, weekly, and annual performance.
- Monitors periodic testing and calibrations of hazardous material meters and sensors to verify all units are within acceptable tolerances for operational readiness. Coordinates annual calibration program of all county fire districts radiological monitoring equipment. Verify coordination of SCBA testing and ladder testing for all county fire districts.
- Ensures compliance with medical monitoring programs. Coordinates on-scene medical monitoring and annual evaluations as required by regulatory guidance and standards.
- Provides representation of GC Fire Operations to all related committees and meetings as needed and other duties as assigned.



# **Cabarrus County Fire Service Strategic Analysis**

## **August, 2020**

### **RECRUITMENT STANDARDS**

#### **Required Knowledge, Skills, and abilities**

##### **Knowledge of:**

- Knowledge of principles and practice of organization, administration, and personnel management involving fire, rescue, medical, and hazardous materials operations.
- Considerable knowledge of fire, rescue, and hazardous materials operations.
- Knowledge of NFPA standards especially NFPA 471, 472, & 1500.
- Knowledge of regulatory guidance of OSHA, CFR 1910.120, SARA Tier II reporting and information as it relates to daily and on scene operations.
- Knowledge of computer software programs necessary to accurately maintain response reports, training records, and maintenance records. Programs include but not limited to Microsoft Office suit, Firehouse, Telestaff, Kronos, and Financial software.
- Knowledge of fire management, service delivery trends and technical training based upon current identified best practices as designated in professional journals and publications.
- Knowledge of North Carolina Department of Insurance (NC DOI), Office of State Fire Marshal (OSFM), National Fire Protection Association (NFPA), Office of Emergency Medical Services (OEMS), Occupation Safety & Health Administration (OSHA), Department of Health & Human Services (DHHS), Federal Emergency Management Agency (FEMA), and other consensus and regulatory agencies and standards.
- Ability to prioritize and coordinate service delivery, improvement plans, and projects based upon departmental objectives and budgetary allocations.
- Ability to manage personnel and resources.
- Ability to forecast both short and long range needs.
- Ability to type and navigate computer software.
- Ability to interpret technical documents.
- Ability to operate computer and office software and technology.

### **Typical Qualifications**

#### **Minimum Qualifications:**

Graduation from an accredited college or university with a bachelor's degree with a major in Fire Protection Technology, Fire Science, or a related field and five years of paid experience in the fire service with at least two years in a supervisory role; OR an Associate's degree and seven years of paid experience in the fire service with at least two years in a supervisory role; OR High School diploma or GED and nine years of paid experience in the fire service with at least two years in a supervisory role.

***3 years of volunteer experience in the fire service is equivalent to one year of paid experience.***



# **Cabarrus County Fire Service Strategic Analysis**

## **August, 2020**

The Fire Operations Chief must be a resident of Guilford County or live within five (5) miles or ten (10) minutes of the Guilford County line as this is considered an "On-call" position.

### **Special Requirements:**

Possess a valid NC Class B driving license, NC Firefighter certification, NC Hazardous Materials Operations certification, and a NC Emergency Medical Technician certification.

Within 12 months of employment complete NC Chief's 101 course and within 24 months obtain NC Technical Rescue – General certification, NC Fire Instructor II certification, and NC Officer II certification.

### **Preferred Qualifications**

Twelve or more years of paid experience in fire service

## **Supplemental Information**

### **Working Conditions:**

This position will be assigned to a 40-hour work week but may be subject to 24 hours on call in addition to attending evening and/or weekend classes, meetings, and events. This employee may be requested to work when needed including nights, weekends, and holidays, and must be able to perform work in all environments (day, night, cold, heat, rain, ice, snow, etc.). At times the employee will have to work in dangerous and hostile situations in rural and urban locations. The employee must be able to perform sedentary work exerting up to 50 pounds of force occasionally and/or a negligible amount of force frequently or constantly to lift objects, climb terrain or uneven ground, climb stairwells and ladders, crawl in tight or cramped spaces, and work in various environments.

### **Physical and Mental Demands:**

An employee in this position must be able to physically perform the basic life operational functions of reaching, walking, fingering, talking, hearing, and repetitive motions. The employee must possess the visual acuity and mental concentration to work with data and figures, supervise and direct field operations, and apply technical standards and regulations with limited to no supervision.

### **Driving is Essential**

Driving is an essential requirement of this position whether driving a County owned or personal vehicle to conduct county business. Motor Vehicle Reports may be verified for valid driver's license and that the driving record is compatible with the county's driving criteria.

If a personal vehicle is operated for county business proper insurance is maintained as per Guilford County's vehicle use policy.





## **Cabarrus County Fire Service Strategic Analysis**

### **August, 2020**

**Special Note:** This generic class description gives an overview of the job class, its essential job functions, and recommended job requirements. However, for each individual position assigned to this class, there is available a completed job description with physical abilities checklist which can be reviewed before initiating a selection process. They can provide additional detailed information on which to base various personnel actions and can assist management in making legal defensible personnel decisions.



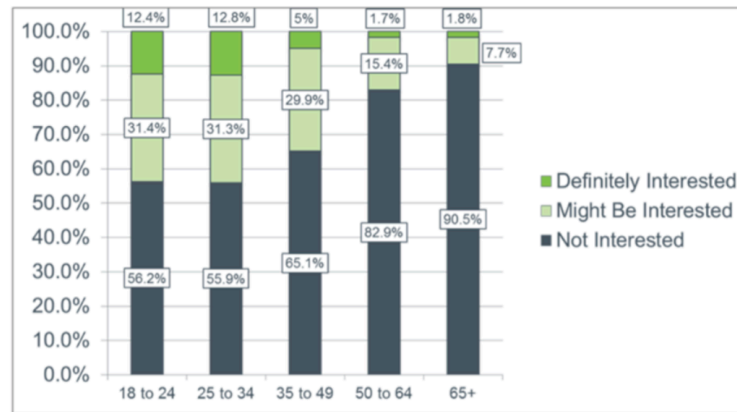
# Cabarrus County Fire Service Strategic Analysis August, 2020

## APPENDIX D – RECRUITMENT AND RETENTION DOCUMENTS

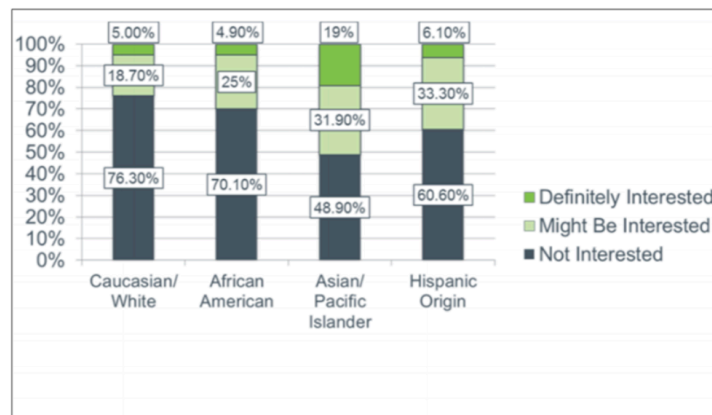
### NVFC Guidance

The National Volunteer Fire Council (NVFC) provides many resources for volunteer fire departments related to recruiting and retaining volunteers. The following points are specifically selected for Cabarrus County fire service leaders to review.

### Age of Potential Volunteers



### Ethnicity of Potential Volunteers



# Cabarrus County Fire Service Strategic Analysis

## August, 2020

### Women in the Fire Service

- 5.2% of women responded that they are definitely interested in volunteering as a first responder
- 21.6% of women responded that they might be interested in volunteering as a first responder
- Many women were also interested in volunteering to assist departments in non-operational roles



Helps new recruits commit to training or stay in training	Makes committing to training or completing it difficult
<ul style="list-style-type: none"><li>• Camaraderie and support from <b>training with supportive peers</b>.</li><li>• Flexibility and convenience of <b>online</b> training and testing</li><li>• <b>Surveys of participants</b> to generate ongoing improvements</li><li>• <b>Other innovations</b> (boot camp, drill of the month, local biz tours, co-training with other depts., etc.)</li></ul>	<ul style="list-style-type: none"><li>• Can be very time consuming</li><li>• Can be boring</li></ul>

### Focus on the Universal Themes That Minimize Fear and Anxiety!

#### Minimize

- Fear of safety
- Inadequacy (maybe I can't do this)
- Overwhelmed (this takes too much time)

#### Promote

- Camaraderie
- Meaning/relevance
- Accomplishment
- Pride

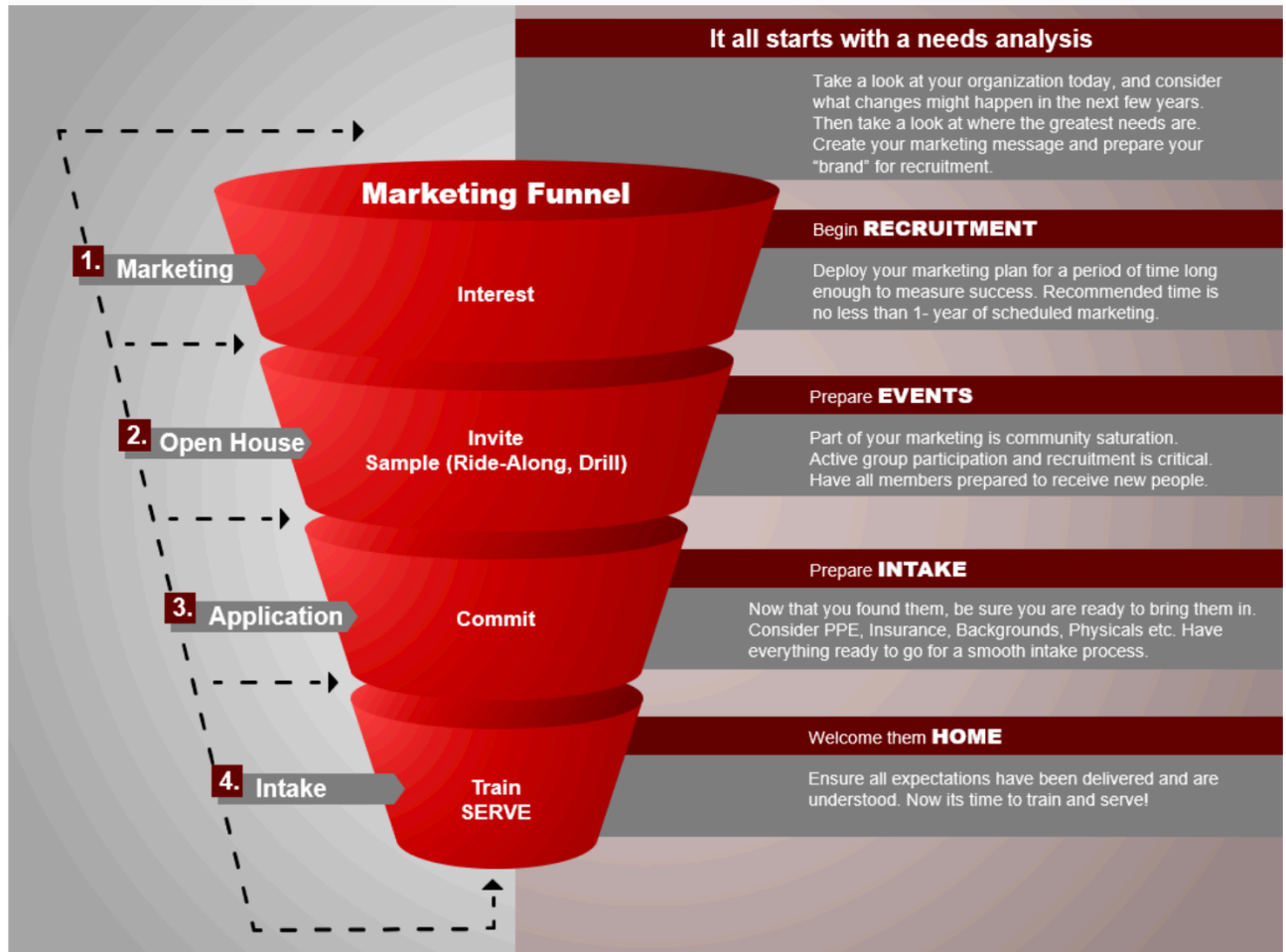


# Cabarrus County Fire Service Strategic Analysis

## August, 2020

### A Multistep Process

Finding and recruiting potential volunteers is a multistep process that requires dedication, follow-up, and follow through.



# Cabarrus County Fire Service Strategic Analysis

## August, 2020

### Concerns and Fears of Potential Volunteers

In general, those who are interested have not applied due to:

- Thinking they do not have the physical attributes of a volunteer firefighter
- Not able to be fully committed to the job
- Not having the right skill set
- Not having enough information about the job expectations and application process

Individuals' main fears included:

- Not being able to save a life
- Not being able to prevent destruction
- Not being able to perform under pressure
- Not knowing how they might react to trauma or violence
- Becoming sick or ill due to exposure (Cancer)
- Concerned they will respond to someone they know

### How Can We Address the Concerns?

What makes it easier?	What makes it harder?
Family and friends within the department	Isolation
Mentorship through doubts, difficulties	Unmet expectations
Sense of belonging	Frustration with leadership
Flexibility in training schedule	Missing out on family and friend experiences
Personal commitment to others as part of a "new class"	Lack of support from family or employer
Consistent, fair, transparent leadership	
Respect from the community	



# Cabarrus County Fire Service Strategic Analysis

## August, 2020

### Common Reasons Community Members Do Not Volunteer:

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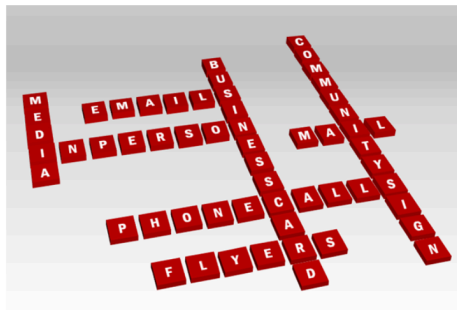
- Not enough time (juggling family, work, other volunteer activities)
- Poor leadership in the department
- They were not asked to volunteer
- Perceived work (either too challenging or not challenging enough)
- Too much cost associated with volunteering
- They were taken advantage of (guilt)
- Poor image of the organization
- Attitudes of existing personnel to newcomers (cliques)
- Fear of lawsuits

### How to Invite Recruits

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Invite new recruits through:

- Personal conversations
- Emails
- Phone calls
- Customized flyers or mail pieces
- Business cards
- Information packets
- Social media
- Community signs



### Follow Up!

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- Application process
- Follow-up calls
- Tracking
- Introduction and integration

Potential recruits will appreciate a streamline application process and quick, professional follow-up



# **Cabarrus County Fire Service Strategic Analysis**

## **August, 2020**

### **Illustrative Volunteer Job Description**

West Barnstable Fire Department  
Position Description

#### **CALL/VOLUNTEER FIREFIGHTER**

##### **GENERAL PURPOSE**

Protects life and property by performing firefighting, emergency medical services, hazardous materials mitigation, rescue, public education and fire prevention duties. Maintains fire, EMS and rescue equipment, apparatus and facilities.

Firefighters are hired through the established hiring process and must successfully complete an initial training period as a Firefighter - Trainee. These are paid on-call or volunteer positions. Firefighters have the responsibility for the protection of life and property from the hazards of fire, accident, illness, or other hazardous environments.

All department members holding this position shall be ranked as and known as "Firefighter".

##### **SUPERVISION RECEIVED:**

Works under the supervision of a Company Officer (Captain or Lieutenant), Senior Private, Group Leader or another firefighter in accordance with department procedures.

##### **SUPERVISION EXERCISED:**

None (generally), except that firefighters may be assigned as a task leader for specific projects or may have command responsibilities in accordance with the National Incident Management System (NIMS), the Barnstable County Mutual Aid System and department policies.

##### **ESSENTIAL EMERGENCY RESPONSE DUTIES AND RESPONSIBILITIES:**

###### **Universal:**

Be a team player, as firefighting and EMS is a team effort. Work smoothly and professionally with others.

Be ready (properly trained, properly equipped) to respond to and mitigate all types of emergency incidents.

Maintain a comprehensive working knowledge of West Barnstable including, but not limited to streets, geography, buildings, suppression systems and target hazards.





# **Cabarrus County Fire Service Strategic Analysis**

## **August, 2020**

Handle stressful situations, and be able to function calmly, coolly and collectedly under all types of stressful emergencies. Maintain composure at all times.

Get along well with diverse personalities. Establish and maintain professional working relations with coworkers and personnel from partner agencies.

Communicate with patients, the public and others with empathy and respect.

Create and maintain a positive and cooperative working environment.

Exercise sound judgement.

Analyze and interpret difficult and complex patient care, fires, rescues, hazmat and other emergency situations that may arise.

Anticipate problems and take action to prevent or correct them.

Understand and follow federal law, state law, local law and department procedures. Follow orders and policies.

Remember and apply training, concepts, knowledge and principles.

### **Fire Suppression:**

Performs firefighting activities including, laying hose, and performing fire combat, containment and extinguishment tasks.

Performs emergency medical services activities to his or her level of training and certification (EMT, Intermediate, Paramedic or First Responder).

Performs salvage operations such as throwing salvage covers, sweeping water, and removal of debris.

Responds to fire alarms and extinguishes and controls fires as a member of a team under the supervision of an officer.

Selects, drags, lifts and carries hose and nozzle depending on the type of fire, and correctly applies a stream of water or foam solution onto the fire.

Positions and climbs ladders to gain access to upper levels of buildings or assist individuals out of a burning structure.

Creates openings in buildings for ventilation or entrance using appropriate and available power tools.



# **Cabarrus County Fire Service Strategic Analysis**

## **August, 2020**

Uses power tools (electrical, gasoline and hydraulic powered) to cut or force entry into vehicles and buildings.

Protects property from smoke and water damage using positive pressure ventilation, salvage covers, smoke ejectors.

Wears appropriate protective clothing and equipment, including self-contained breathing apparatus.

Able to communicate with two-way communications systems.

Coordinates response, resources, updates and status with the dispatcher in accordance with department policies, the Barnstable County Mutual Aid System, the Barnstable County CMED System and the policies of the Barnstable County Sheriff's Office Dispatch Center.

Drives and operates fire apparatus in a safe and professional manner in accordance with all department policies, federal law, state law and local law.

### **Emergency Medical Services:**

Provides basic and advanced life support to their level of licensure/certification to patients in a pre-hospital setting in accordance with the Massachusetts Statewide Treatment Protocols, federal, state and local laws, regulations and standards.

Assesses the nature and extent of injury or illness to establish and prioritize medical procedures to be followed.

Rescuing and extricating patients/victims of accidents, sudden illness or entrapment using appropriate rescue and medical techniques and tools.

Treating patients at the scene of their injury or illness and en route to the hospital.

Communicating face-to-face, by radio, by telephone and in writing, with professional medical personnel and treatment facilities to obtain instructions regarding patient treatment, and to arrange reception and transfer of patients to the appropriate medical facility.

Completing patient care reports, insurance forms, evaluation forms and all other forms and reports in a competent, accurate and timely manner.

Maintains order at scenes including, but not limited to, restraint or family and friends.



# **Cabarrus County Fire Service Strategic Analysis**

## **August, 2020**

Protects the privacy of all patient information in accordance with the department's privacy policy, federal law and state law, and in accordance with the general principles of professionalism as a health care provider.

Drives an ambulance or first response vehicle in a safe and professional manner in accordance with all department policies, federal law, state law and local law.

Maintains all EMS related licenses and certifications.

### **Hazmat:**

Provides hazardous materials mitigation at the Hazmat Operations Level.

### **PERIPHERAL STAFF DUTIES:**

Participates in fire drills, attends classes in firefighting, rescue, EMS, hazardous materials and related subjects.

Attends regular and assigned training sessions to maintain and upgrade firefighting, rescue and EMS skills.

Participates in the inspection of buildings, hydrants, static water sources, and other structures and systems in fire prevention programs. Participates in preplanning of buildings and hazards as assigned.

Maintains fire equipment, EMS equipment, rescue equipment, apparatus and facilities.

Performs minor repairs to departmental equipment.

Checking, restocking, inventorying and cleaning of apparatus.

Performs general maintenance work in the upkeep of fire & rescue facilities; cleans and washes walls and floors; cares for grounds around station; makes minor repairs, washes and dries fire hose; washes, cleans, polishes, maintains and tests apparatus and equipment.

Presents programs to the community of safety, first aid, accident & illness prevention and fire prevention.

Maintains basic working knowledge of a Windows computer, and be able to enter data into a computer and communicate with the department by email.



# **Cabarrus County Fire Service Strategic Analysis**

## **August, 2020**

### **MINIMUM REQUIREMENTS:**

#### **Educations & Experience:**

- A. Graduation from high school or GED equivalent with no specialized training.
- B. Successful completion of department training.
- C. Must possess and maintain a valid Massachusetts Driver's License without a record of suspension or revocation in any state.
- D. No felony convictions.
- E. No misdemeanor convictions within the past seven years.
- F. Ability to read and write the English language.
- G. Must live within a reasonable distance of the West Barnstable Fire Headquarters (5 road miles or closer is preferred).

#### **Necessary Knowledge, Skills and Abilities:**

- A. Working knowledge of emergency vehicle operation and defensive driving.
- B. Minimum EMS training to the First Responder Level (EMT-Basic or higher is preferred).
- C. Massachusetts or National Certification at the Firefighter II level.
- D. Ability to operate the department's tools and equipment; ability to apply standard firefighting, EMS, rescue and hazardous materials and fire prevention techniques; Ability to perform strenuous or peak physical effort during an emergency, training or station maintenance activities for prolonged periods of time under conditions of extreme heights, intense heat, cold or smoke; ability to act effectively in emergency and stressful situations; ability to follow verbal and written instructions; ability to communicate effectively orally and in writing; ability to establish and maintain effective working relationships with other fire department members, other agencies and the general public; ability to meet the special requirements listed below.

#### **Special Requirements:**



# **Cabarrus County Fire Service Strategic Analysis**

## **August, 2020**

- A. Ability to maintain a minimum department drill and department meeting attendance record of at least 55%.
- B. Ability to participate in the Department Group/Company Coverage system as assigned by the Chief.
- C. Authorized to drive R-293 and P-290 to emergency incidents (Driving all of the department's apparatus is preferred).

### **TOOLS AND EQUIPMENT USED**

Emergency medical equipment at his/her level of training and certification, fire apparatus, fire pumps, hoses and nozzles, generators, power saws and other standard power equipment, electric & hydraulic extrication tools, air compressors, self-contained breathing apparatus, ladders, radios, pagers, personal computer, telephone, and hand tools.

### **PHYSICAL DEMANDS**

The physical demands described here are representative of those a firefighter encounters while performing the essential functions of this job. Reasonable accommodations will be made to enable individuals with disabilities to perform the essential functions. (It is the responsibility of the firefighter to inform the department of any disabilities that might require accommodations.)

Work is performed primarily in office, vehicle and outdoor settings, in all weather conditions, including temperature extremes, wet and humid conditions, during storms and during night and day. Work is often performed in emergency and stressful situations. Individual is exposed to hazards associated with fighting fires, rendering emergency medical assistance, high voltage, vibrations, and mitigation of hazardous materials, including smoke, noxious odors, fumes and airborne particles, toxic chemicals, biological hazards, contagious and infectious disease, solvents, oils, and maritime hazards.

While performing the duties of this job, the firefighter is frequently required to stand, walk, use hands to finger, handle or operate objects, tools or controls; and reach with hands and arms. The firefighter is occasionally required to sit, climb or balance; stoop, kneel, crouch or crawl; talk or hear; and taste or smell.

The firefighter must frequently lift and or move up to 20 pounds and occasionally lift and/or move 100 pounds or more. Specific vision abilities required by this job include close vision, distant vision, color vision, peripheral vision, depth perception and the ability to adjust focus.



# **Cabarrus County Fire Service Strategic Analysis**

## **August, 2020**

The firefighter occasionally works near moving mechanical parts and in high, precarious places, as well as below grade. The firefighter occasionally works in confined spaces. The noise level in the work environment is usually quiet in office settings, and very loud at an emergency scene.

The firefighter must be able to maintain balance and strength in awkward positions.

The firefighter must be able to speak clearly and loudly in English.

### **SELECTION GUIDELINES**

Successful completion of department training and satisfactory performance review by the Chief are necessary to be promoted from Firefighter-Trainee to Firefighter.

The examples of duties are intended only as an illustration of the various types of work performed. The omission of specific statements of duties does not exclude them from the position if the work is similar, related or a logical assignment to the position.

This job description does not constitute an employment contract between the West Barnstable Fire District/West Barnstable Fire Department and the firefighter, and is subject to change by the department as the needs of the department and the requirements of the job change.

Approved: \_\_\_\_\_  
Joseph V. Maruca, Fire Chief

Effective Date: November 21, 2016



**Cabarrus County Fire Service Strategic Analysis**  
**August, 2020**

**APPENDIX E – TAX DISTRICTS AND FUNDING DOCUMENTS**

**NFPA 1710 SUMMARY/HIGHLIGHTS AND  
NFPA 1720 COMPARISON**

**NFPA 1710**

**Fireground Staffing Levels for Career Fire Departments**

NFPA 1710 provides the minimum requirements relating to the organization and deployment of fire suppression operations, emergency medical operations, and special operations to the public by career fire departments.

For the 2016 edition of the standard, subsection 5.2.4 on fire department service deployment was revised to include three new occupancies, along with the appropriate response staffing levels for each. The minimum staffing level for each occupancy is listed below. *(For the full breakdown of staffing requirements by position, refer to the subsections specific to each occupancy in 5.2.4.)*

**Single-Family Dwelling — minimum of 16 members (17 if aerial device is used)**

The initial full alarm assignment to a structure fire in a typical 2000 ft<sup>2</sup> (186 m<sup>2</sup>), two-story, single-family dwelling without a basement and with no exposures must provide for a minimum of 14 members (15 if an aerial device is used).

**Open-Air Strip Mall — minimum of 27 members (28 if aerial device is used)**

The initial full alarm assignment to a structure fire in a typical open-air strip shopping center ranging from 13,000 ft<sup>2</sup> to 196,000 ft<sup>2</sup> (1203 m<sup>2</sup> to 18,209 m<sup>2</sup>) in size must provide for a minimum of 27 members (28 if an aerial device is used).

**Garden-Style Apartment — minimum of 27 members (28 if aerial device is used)**

The initial full alarm assignment to a structure fire in a typical 1200 ft<sup>2</sup> (111 m<sup>2</sup>) apartment within a three-story, garden-style apartment building must provide for a minimum of 27 members (28 if an aerial device is used).

**High-Rise — minimum of 42 members (43 if building equipped with fire pump)**

The initial full alarm assignment to a fire in a building with the highest floor greater than 75 ft (23 m) above the lowest level of fire department vehicle access must provide for a minimum of 42 members (43 if the building is equipped with a fire pump).

**Other:** Fire departments that respond to fires in occupancies that present hazards greater than those found in 5.2.4 shall deploy additional resources as described in 5.2.4.5 on the initial alarm.





## **Cabarrus County Fire Service Strategic Analysis**

### **August, 2020**

NOTE: Even though fire ground staffing levels have changed, NFPA 1710 continues to require that engine companies be staffed with a minimum of 4 on-duty members, as stated in subsection 5.2.3. In addition, paragraph 5.2.2.2.1 requires that the fire department identify minimum company staffing levels as necessary to meet the deployment criteria required in 5.2.4 to ensure that a sufficient number of members are assigned, on duty, and available to safely and effectively respond with each company.

Material used in this summary is taken from the 2016 edition of NFPA 1710, *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments*. This reprinted material is not the complete and official position of the NFPA or its Technical Committees on the referenced subject, which is represented solely by the standard in its entirety. That standard can be accessed online at [www.nfpa.org](http://www.nfpa.org).



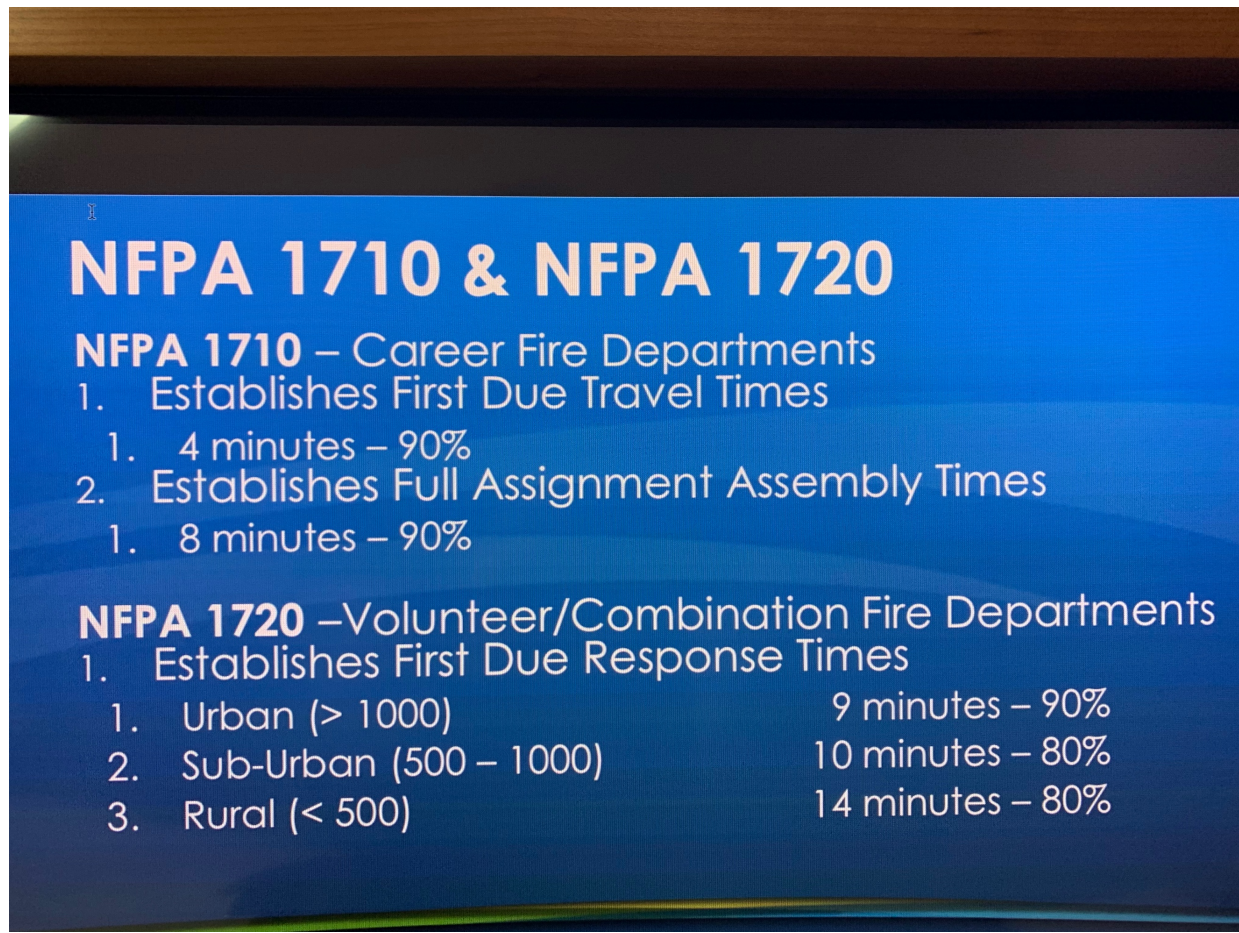
# Cabarrus County Fire Service Strategic Analysis

## August, 2020

### NFPA 1720

#### Fireground Staffing Levels for Volunteer Fire Departments

Conversely, NFPA 1720 is the standard recognized for primarily volunteer fire departments. Below are some comparisons between the 1710 and 1720 standards. Additional information is available to Cabarrus County on NFPA 1720 through an industry evaluation rating document.



**NFPA 1710 & NFPA 1720**

**NFPA 1710 – Career Fire Departments**

1. Establishes First Due Travel Times
  1. 4 minutes – 90%
2. Establishes Full Assignment Assembly Times
  1. 8 minutes – 90%

**NFPA 1720 – Volunteer/Combination Fire Departments**

1. Establishes First Due Response Times

1. Urban (> 1000)	9 minutes – 90%
2. Sub-Urban (500 – 1000)	10 minutes – 80%
3. Rural (< 500)	14 minutes – 80%





# Cabarrus County Fire Service Strategic Analysis August, 2020

NFPA 1710 VERSUS NFPA 1720	
NFPA 1710	NFPA 1720
Substantially all career departments	Volunteer department: having volunteer personnel comprising 85% or greater of membership Combination department: having less than 85% majority of either career or volunteer membership
Companies shall be staffed with a minimum of four on-duty members	Staffing shall ensure a sufficient number of members to operate safely and effectively
80 second turnout time for fire 60 second turnout time for EMS	Where stations are staffed, 90 seconds for fire and 60 seconds for EMS – 90% of the time
240 seconds or less travel time for first arriving engine company at a fire suppression incident	Assembly times: Urban Zone >1000 density – 7.5 minutes @ 90% Suburban 500-1000 density – 8.5 minutes @ 80% Rural <500 density – 12.5 minutes @ 80%
480 second or less travel time for initial full alarm assignment at fire suppression incident*	Staff assembled at above travel times: Urban Zone – 15 members @ 90% Suburban Zone – 10 members @ 80% Rural Zone – 6 members @ 80% Initial fire attack shall commence within 2 minutes 90% of the time from assembly of necessary resources.
240 seconds or less travel time for responder with AED to EMS incident	Not addressed

\* For high-rise, 610 seconds or less travel time for the deployment of the initial first alarm assignment.



# Cabarrus County Fire Service Strategic Analysis

## August, 2020

### NORTH CAROLINA COUNTY MANAGER GUIDANCE ON DEVELOPING FIRE AND RESCUE SERVICE DELIVERY LEVELS



#### *Performance Modeling for Typical Residential Structure Fire Response Assistance to Local Jurisdictions in Establishing Their Desired Level of Service*

##### **BACKGROUND:**

Inputs influence outcomes. Within the effective delivery of fire and rescue services, response time elements are directly proportional to expected outcomes. In recent years, significant scientific research has substantiated the correlation of response times and number of trained firefighters necessary on the scene of structure fires to produce positive outcomes. Each local jurisdiction is encouraged to identify what specific hazards and risks exist in their individual communities. Also, local jurisdictions can evaluate their fire and rescue level of service or standard of cover for each type of service that they provide. From this collective information, progressive jurisdictions can effectively set a positive course for continuous improvement.

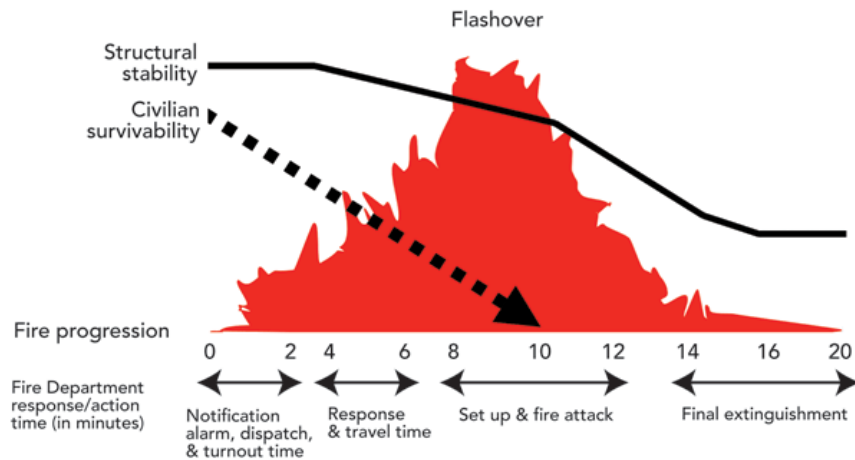
In order to strengthen fire protection service delivery systems and to empower local jurisdictions to more clearly determine what the appropriate level of response may be for their individual community's level of risk and clearly stated desired outcomes, the following illustrative models are offered to establish some basic, **minimal** framework for response to typical residential structure fires within a North Carolina rated fire insurance district.

Using dynamic indicators, these illustrative models are presented with the optimum desired outcome of confining and containing a typical (<2,000 square feet), occupied, residential structure fire to the room or area of origin when fire hydrants are available. Aligning North Carolina's growth patterns with national consensus standards and fire service industry best practices provided the foundation for these models. Also, it is important to note that times identified recognize total response time, beginning when the citizen first dials 9-1-1. These models for typical residential structures are **only** guidelines for evaluation and solely designed as a tool for use by local jurisdictions. Models for fire response to properties with higher risks demand more thorough analysis, more robust resources and stronger performance measures.

Graphic Source: Fire Engineering



## Cabarrus County Fire Service Strategic Analysis August, 2020



### **TYPICAL CASCADE OF EVENTS FOR A STRUCTURE FIRE:**

#### **Pre-Response:**

Recognition of fire

Notification call made to 9-1-1

#### **Total Response Time (measurable):**

Receipt of call and dispatch of fire department(s) = approx. 60-90 seconds (NFPA)

Firefighter acknowledgement and fire equipment rolling adds 80+ seconds (NFPA)

Travel time – adds approximately 141 seconds per road mile (ISO)

Arrival at the fire scene

#### **Post-Response:**

Accessing, locating the fire, and taking necessary mitigating actions

### **TYPICAL RESIDENTIAL MODEL - FIRST ARRIVING FIRE APPARATUS:**

For 90% of all typical residential structure fire incidents, at least one initial arriving fire apparatus and assembling at least four (4) adequately trained firefighters should arrive within (determined locally) minutes total response time and be prepared to take immediate action in accordance with department protocols.

### **Approximate Range of Credible Response Time Within State Rated Fire Insurance Districts**

Area	Density per Sq. Mile	Fire Station	Prevalent ISO Rating	Total Response Time
URBAN	>2,000 people	within 2 miles	1-3	5-8 minutes
NON-URBAN	500-1999 people	within 4 miles	4-6	7-12 minutes
RURAL	<500 people	within 6 miles	6-9	12-17 minutes





## Cabarrus County Fire Service Strategic Analysis August, 2020

### **TYPICAL RESIDENTIAL MODEL - ARRIVAL OF EFFECTIVE RESPONSE FORCE:**

For 90% of all typical residential structure fire incidents, an effective force of at least seventeen (17) adequately trained firefighters (*including automatic aid responses*) should arrive within (determined locally) minutes total response time. The effective response force should be capable of establishing command, appointing a site safety officer, providing an uninterrupted water supply, advancing an attack line and back up line for fire control, complying with the OSHA requirements of two-in and two-out, completing forcible entry, searching and rescuing at-risk victims, ventilating the structure, controlling utilities, and performing salvage and overhaul. These operations are done in accordance with department standard operating protocols while providing for the safety of responders and the general public.

### **Approximate Range of Credible Response Time Within State Rated Fire Insurance Districts**

<u>Area</u>	<u>Density per Sq. Mile</u>	<u>Fire Station</u>	<u>Prevalent ISO Rating</u>	<u>Total Response</u>
URBAN	>2,000 people	within 2 miles	1-3	5-10 minutes
NON-URBAN	500-1999 people	within 4 miles	4-6	9-19 minutes
RURAL	<500 people	within 6 miles	6-9	19-29 minutes



# **Cabarrus County Fire Service Strategic Analysis**

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### **ISO RATING SYSTEM OVERVIEW and CABARRUS COUNTY FIRE DEPARTMENT RATINGS**

Insurance Services Office, Inc. (ISO) is an independent company that provides information to insurance companies, municipalities and fire departments. Their statistical data offers a relationship between quality fire protection and the ability to limit fire losses. By classifying communities' ability to suppress fires, ISO helps the communities evaluate their public fire-protection services and in turn helps secure lower fire insurance premiums for communities with better public protection. ISO provides a third-party critical review of municipal fire departments.

ISO provides information to insurance companies about fire protection in communities. ISO collects information on a community's public fire protection and analyzes the data using the Fire Suppression Rating Schedule (FSRS). They then assign a Public Protection Classification (PPC) from 1 to 10. Class 1 represents exemplary public protection, and Class 10 indicates that the area's fire-suppression program doesn't meet ISO's minimum criteria.

The three primary areas that are examined by ISO are:

- 1) Fire alarm and communication systems (the number of telephone lines available, the dispatching system and staffing of the dispatch center),
- 2) the Fire Department (equipment, staffing, training and geographic distribution), and
- 3) the water supply system (condition, hydrants and availability).

Ten (10) percent of the overall grading is based on how well the fire department receives fire alarms and dispatches its fire-fighting resources.

*3 points – Emergency Reporting*

*4 points – Telecommunicators*

*5 points – Dispatch Circuits*

Fifty (50) percent of the overall grading is based on the number of engine and ladder companies and the amount of water a community needs to fight a fire. ISO reviews the distribution of fire companies throughout the area and checks that the fire department tests its pumps regularly and inventories each engine company's nozzles, hoses, breathing apparatus, and other equipment.

ISO also reviews the fire-company records to determine:

- type and extent of training provided to fire-company personnel
- number of people who participate in training
- firefighter response to emergencies
- maintenance and testing of the fire department's equipment

*6 points – Engine Company equipment*

*.5 point – Reserve Engine(s)*

*3 points – Pump Capacity*

*4 points – Ladder and Service Company equipment*

*.5 point – Reserve Ladder/Service unit(s)*





## **Cabarrus County Fire Service Strategic Analysis August, 2020**

- 10 points – Deployment Analysis*
- 15 points – Staffing of the Fire Department*
- 9 points – Training of the Fire Department*
- 2 points – Operational considerations and procedures*

Forty (40) percent of the grading is based on the community's water supply. This part of the survey focuses on whether the community has sufficient water supply for fire suppression beyond daily maximum consumption.

- 30 points – Capacity and Distribution of Water*
- 7 points – Hydrant Inspection and Condition*
- 3 points – Size type and Installation of Hydrants*

Last, up to 5.5 bonus points can be added for community risk reduction efforts, such as through fire prevention activities.

- 2.2 points – Fire Prevention Code Adoption and Enforcement*
- 2.2 points – Public Fire Safety Education*
- 1.1 points – Fire Investigations*

In addition to the safety benefits, the ISO rating has the potential for financial benefits as well with the reduction of business and homeowner's insurance premiums. Insurance companies utilize the PPC to determine the premiums that individuals pay on their homes and commercial buildings. Generally, the lower the PPC classification, the lower the insurance premium.

*(Illustrative examples follow on the next page)*



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### Example Illustrations of ISO Rating Impact on Annual Insurance Premiums:

<u>Rating</u>	<u>\$90K Home Avg.</u>	<u>\$275K Business Avg.</u>	<u>\$275K Restaurant Avg.</u>
10	694.14	6,903	2,505
9	547.27	5,867	2,331
8	506.95	5,341	2,033
7	454.36	5,278	1,997
6	367.59	5,015	1,964
<b>5</b>	<b>367.59</b>	<b>4,764</b>	<b>1,915</b>
4	367.59	4,527	1,857
3	367.59	4,165	1,830
2	367.59	4,040	1,808
1	367.59	3,900	1,783

### Example Illustration of Commercial Building Protection Class Annual Insurance Premium Multipliers, separated by construction classification:

<u>Rating</u>	<u>Frame, Non-Combustible</u>	<u>Masonry, Non-Combustible</u>
10	1.98	1.98
9	1.42	1.37
8	1.30	1.27
7	1.18	1.17
6	1.06	1.05
<b>5</b>	<b>1.00</b>	<b>1.00</b>
<b>4</b>	0.98	0.98
3	0.91	0.91
2	0.88	0.89
1	0.85	0.86



# Cabarrus County Fire Service Strategic Analysis

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### List of Active Fire Departments in All Regions

Cabarrus County

FDID	Department Name	County	Gov	Insp	RFID	Districts Served	Size	Rated
01301	Allen Volunteer Fire Department, Inc.	Cabarrus	R	02/09/2017	02080	Allen	5	5/9S
01302	Cold Water Volunteer Fire Department,	Cabarrus	R	07/16/2019	02083	Cold Water	6	3/9E
01303	Concord Fire Department	Cabarrus	M	06/01/2018	00190	Concord	5	1
					10323	Concord Rural	5	1/9E
					02089	Jackson Park	5	1/9E
01304	Flowe's Store Volunteer Fire Department,	Cabarrus	R	12/28/2018	02085	Flowe's Store	6	4/9E
01305	Georgeville Volunteer Fire Department,	Cabarrus	R	02/09/2017	02087	Georgeville	5	9S
01306	Harrisburg Fire Department	Cabarrus	M/R	02/09/2017	02086	Harrisburg	5	4
01309	Kannapolis Fire Department	Cabarrus	M	02/09/2017	00425	Kannapolis		1/9S
					02110	Kannapolis Rural	5	1/9S
01312	Midland Volunteer Fire and Rescue, Inc.	Cabarrus	R	02/09/2017	02092	Midland	6	5/9E
01311	Mount Pleasant Fire And Rescue	Cabarrus	M	07/18/2017	02098	M P R	6	5/9E
					00579	Mount Pleasant		4
01310	Mt. Mitchell Volunteer Fire Department,	Cabarrus	R	12/06/2016	02095	Mount Mitchell	6	5/9E
01313	North East Cabarrus Volunteer Fire	Cabarrus	R	02/09/2017	02103	Northeast Cabarrus	6	9E
01314	Odell Volunteer Fire Department, Inc.	Cabarrus	R	02/09/2017	02101	Odell	6	6/9E
01317	Rimer Volunteer Fire Department and	Cabarrus	R	02/09/2017	02107	Rimer	6	9E



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**ILLUSTRATIVE BEST PRACTICES EXAMPLE OF  
A MODERN COUNTY FIRE PROTECTION CONTRACT IN  
NORTH CAROLINA  
CUMBERLAND COUNTY**

**STATE OF NORTH CAROLINA  
COUNTY OF CUMBERLAND**

THIS AGREEMENT, made and entered into this the \_\_\_\_ day of, \_\_\_\_\_, 2019, by and between CUMBERLAND COUNTY, hereinafter referred to as the “County”, and the Fire Department Name, Inc. hereinafter referred to as the “Fire Department”;

RECITALS:

- A. WHEREAS, North Carolina General Statutes §69-25.5 provides that the board of county commissioners may provide for fire protection in a fire protection service district by contracting with any incorporated nonprofit volunteer or community fire department; and
- B. WHEREAS, North Carolina General Statutes §153A-233 additionally provides that a county may contract for fire-fighting or prevention services with one or more incorporated volunteer fire departments, and may for these purposes appropriate funds not otherwise limited as to use by law;
- C. WHEREAS, the Fire Department Name, Inc. agrees to contract with Cumberland County to provide fire protection and emergency services; and
- D. WHEREAS, North Carolina General Statutes §159-13 et seq. provides that the county budget ordinance may be in any form that the Board of County Commissioners of any County deems most efficient in enabling it to make the fiscal policy decision embodied therein and provides for a fund for each special district whose taxes are collected by the county; and
- E. WHEREAS, the Fire Department is a North Carolina nonprofit corporation organized and authorized to furnish fire protection services and other services authorized by its charter to the citizens; and



## **Cabarrus County Fire Service Strategic Analysis**

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- F. WHEREAS, the District Name Fire Insurance and Response District(s) of Cumberland County have boundaries defined by the most current description on file maintained by the Cumberland County Geographic Information Services in the County Manager's Office; and
- G. WHEREAS, the Fire Department has secured equipment, land and buildings for the operation of Fire Station(s); and
- H. WHEREAS, Cumberland County presently levies and collects a special service district tax and is responsible for appropriating the funds derived there from for fire protection and emergency services in Cumberland County; and
- I. WHEREAS, the County and Fire Department desire to enter into this Agreement for the Fire Department to furnish fire protection and emergency services for and within the described District.

### **AGREEMENT**

#### **SECTION 1. USE AND AMOUNT OF SERVICE TAX LEVIED**

Cumberland County agrees to make funds available for equipment, facilities and/or personnel to the Fire Department Name, Inc. of Cumberland County, from the proceeds of the tax levied from the special fire protection service tax district. The amount of such service tax levy shall be determined by the Board of the County Commissioners from year to year. The County will collect the funds from the special tax as may be levied as provided by law. For each fiscal year, the funds provided from the service tax district shall be based on the needs projected in the budget request jointly submitted by the Fire Department and the County staff to the County Commissioners and as approved by and deemed necessary by the County Commissioners for furnishing fire protection and emergency services within the District.

Special fire district tax funds levied and collected by the County and paid to the Fire Department by the County shall be used solely for fire department operations, fire protection and emergency services in areas of response as dispatched and to meet the standards established by this Agreement.

Cumberland County will collect funds from the special service district established in Cumberland County then subsequently establish base funding for each contracting fire department calculated upon a projection of approximately the amount equivalent of \$.10/\$100 valuation will generate within the identified fire district. Funding beyond that base amount may be available at the sole discretion of the Cumberland County Board of Commissioners as determined and approved each fiscal year.



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### **SECTION 2. ACCOUNT MAINTAINED FOR RECEIPTS FROM SERVICE TAX**

A separate account shall be maintained by the County for the receipts from the special tax levied for the service tax district. Out of this account:

- 2.1. The County will pay for specifically designated services that are outlined specifically in this agreement as approved by the Board of County Commissioners.
- 2.2. The County will pay the approved total appropriations for the Fire Department as taxes are collected in monthly payments to said Fire Department during the following month, provided that prior to and as a condition of payment, the Fire Department has submitted proper budget documents to the Cumberland County Manager, or their designee, and the Board of Commissioners has reviewed and approved said funding.

### **SECTION 3. SERVICE TAX REVENUES IN EXCESS OF APPROPRIATIONS**

Any fire protection service tax district revenues collected annually in excess of the approved base funding amount shall be maintained in the separate account established by the County. The Cumberland County Board of County Commissioners shall issue final approval of distribution consistent with North Carolina General Statutes.

### **SECTION 4. SERVICES FURNISHED BY THE COUNTY**

The County shall furnish the following services to the contracting Fire Department for the term of this Agreement:

- 4.1. Fire cause and determination investigation services through the Cumberland County Sheriff's Office, and
- 4.2. Periodic Fire Inspections performed by staff of the Cumberland County Emergency Services Department in compliance with the North Carolina State Building Code – Fire Prevention, adopted appendix sections and associated state administrative code addressing frequency of periodic inspections. The County will confer with the department's Fire Chief where the Fire Chief is the Authority Having Jurisdiction (AHJ).
- 4.3. New construction fire inspections consistent with the North Carolina State Building Code – Fire Prevention. Furthermore, the County will confer with the department's Fire Chief where the Fire Chief is the Authority Having Jurisdiction (AHJ).
- 4.4. Inform the Fire Chief of the affected jurisdiction of economic development incentives that are granted within the jurisdiction of the contracting fire department.



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4.5. Comply with national consensus standards for emergency communications, such as but not limited to NFPA 1221 – Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems. The County is to determine realistic goals and performance measures then produce periodic performance reports related to the County's actual compliance with national standards and provide such reports to contracting Fire Departments and/or the Cumberland County Fire Chief's Association upon request. It is noted that emergency communications systems comprise approximately ten (10) percent of the public fire protection classification rating issued by the Insurance Services Office (ISO).

4.6. Assistance on emergency incidents by Cumberland County Emergency Services Staff as resources are readily available to assist.

#### **SECTION 5. SERVICES FURNISHED BY FIRE DEPARTMENT**

The Fire Department will furnish fire protection and other emergency services as approved by the County Board of Commissioners or as contracted for by the Board of Commissioners and shall provide the necessary equipment, personnel and those things necessary for furnishing such protection in the designated District. The services shall be in accordance with minimum standards set forth in this Agreement and all future amendments adopted in accordance with this Agreement. The Fire Department shall furnish said fire protection without charge to all persons and property located in the designated District in an efficient and workmanlike manner. This provision shall not prohibit the Fire Department from entering into contracts with the Federal, State or local governments, or utility companies for the provision of fire protection services exceeding the scope of this Agreement for a fee. This requirement shall not prohibit the Fire Department from billing for certain services, including but not limited to hazardous materials mitigation responses and or responses to motor vehicle accidents, based on a fee schedule or other cost recovery program, provided that such fee schedule has been approved by the Cumberland County Board of Commissioners. Furthermore, this shall not prohibit the Fire Department from requesting reimbursement for specialized incidents.

#### **SECTION 6. HOLD HARMLESS AGREEMENT**

**THE FIRE DEPARTMENT SHALL INDEMNIFY AND SAVE HARMLESS THE COUNTY FROM ANY AND ALL LIABILITY AND EXPENSES INCLUDING ATTORNEY'S FEES, COURT COSTS, AND OTHER COSTS INCURRED BY THE COUNTY WHICH ARE CAUSED BY THE NEGLIGENCE OR WILLFUL MISCONDUCT OF THE FIRE DEPARTMENT, ITS AGENTS, OR EMPLOYEES, UP TO THE LIMITS OF INSURANCE SPECIFIED HEREIN; PROVIDED THAT SUCH LIABILITY ARISES OUT OF ACTS FOR WHICH ANY DEFENSE OF GOVERNMENTAL, STATUTORY, OR COMMON LAW IMMUNITY IS NOT AVAILABLE. THE INDEMNIFICATION PROVIDED FOR HEREIN SHALL NOT BE CONSTRUED AS A WAIVER OF ANY APPLICABLE DEFENSE OF**





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**GOVERNMENTAL, STATUTORY, OR COMMON LAW IMMUNITY, AND SHALL NOT PREVENT THE FIRE DEPARTMENT FROM ASSERTING ANY DEFENSE OF SUCH IMMUNITY; PROVIDED THAT IF A COURT OF COMPETENT JURISDICTION DETERMINES THAT NO SUCH IMMUNITY APPLIES, THEN THE INDEMNITY PROVIDED FOR HEREIN SHALL APPLY.**

### **SECTION 7. INSURANCE**

The Fire Department shall obtain and keep in force during the term of this agreement the following minimum insurance coverage:

- a. Worker's Compensation – at the statutory limits in compliance with applicable State and Federal laws. The Contractor shall ensure that any subcontractors also have workers compensation coverage at the statutory limits.
- b. Employer's Liability - with minimum limits of \$1,000,000 each accident/\$1,000,000 disease each employee/\$1,000,000 disease policy limit.
- c. Commercial General Liability - covering all operations performed by the Contractor with a minimum limit of \$1,000,000 per occurrence with a \$3,000,000 aggregate.
- d. Professional Health Care Liability - covering the Contractor's acts, errors, or omissions in the rendering of or failure to render professional health care services with a minimum limit of \$1,000,000 per occurrence with a \$3,000,000 aggregate.
- e. Business Automobile Liability - covering all owned, non-owned, and hired vehicles used in performance of the contract. The minimum combined single limit per occurrence shall be \$1,000,000 and shall include uninsured/underinsured motorist coverage per NCGS 20-279.21.
- f. Excess or Umbrella Liability – shall extend an additional \$1,000,000 limit / \$3,000,000 aggregate over the underlying commercial general liability, professional health care liability, and business auto liability insurance. Any additional insured under any policy of the underlying insurance will automatically be an additional insured under this insurance.

The Fire Department shall provide the County with certificates of insurance evidencing the above amounts. The liability certificates shall name Cumberland County as additional insured under the policies. The certificates shall provide that policies shall not be canceled or changed until thirty



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(30) days written notice has been given to the County. All insurance shall be procured from reputable insurers authorized to do business in North Carolina.

Providing and maintaining adequate insurance coverage is a material obligation of the Fire Department and is of the essence of this Agreement. The Fire Department may meet its requirements of maintaining specified coverage and limits by demonstrating to the County that there is in force insurance with equivalent coverage and limits that will offer at least the same protection to the County. The Fire Department shall at all times comply with the terms of such insurance policies, and all requirements of the insurer under any such insurance policies, except as they may conflict with existing North Carolina laws or this Agreement. The limits of coverage under each insurance policy maintained by the Fire Department shall not be interpreted as limiting the Fire Department's liability and obligations under the Agreement.

#### **SECTION 8. AUDITS**

**THE FIRE DEPARTMENT AGREES TO PRESENT TO CUMBERLAND COUNTY AN ANNUAL AUDIT AND ACCOMPANYING MANAGEMENT LETTER PREPARED ACCORDING TO GENERALLY ACCEPTED ACCOUNTING PRINCIPLES (GAAP) AND GENERALLY ACCEPTED AUDITING STANDARDS BY AN INDEPENDENT CERTIFIED PUBLIC ACCOUNTANT FOR THE PRECEDING FISCAL YEAR NO LATER THAN 5:00 PM ON THE LAST WORKING DAY OF DECEMBER OF THE CURRENT FISCAL YEAR. THE FIRE DEPARTMENT IS RESPONSIBLE FOR MAKING A GOOD FAITH EFFORT TO SUBMIT THEIR DATA TO THE CPA IN ACCORDANCE WITH THIS TIMELINE.**

The financial records and data as outlined by Cumberland County shall be presented to the Cumberland County Manager, or specified designee, in the manner and condition described therein.

In the event that the audit or management letter reveals a reportable and/or material issue(s) with regard to compliance with generally accepted accounting principles, the Fire Department shall provide a written statement that contains an explanation of such issue and an action plan (with implementation timeline) for resolving each such issue, and shall provide periodic reports to Cumberland County on progress made in resolution of each issue. If resolution of such issues requires professional advice on the part of that Fire Department's (or Cumberland County's) auditor, the Fire Department shall bear the full cost of such advice.

#### **SECTION 9. COUNTY INSPECTION OF BOOKS OF ALL PUBLIC FUNDS**

**CUMBERLAND COUNTY MAY INSPECT THE FINANCIAL BOOKS AND RECORDS OF THE FIRE DEPARTMENT AT REASONABLE TIMES DURING REGULAR BUSINESS HOURS OF THE COUNTY WITH AT LEAST SEVEN (7) BUSINESS DAYS NOTICE. THE FIRE DEPARTMENT AGREES THAT IT WILL SUPPLY SUCH**



## **Cabarrus County Fire Service Strategic Analysis August, 2020**

**FINANCIAL BOOKS, RECORDS, AND INFORMATION OR VERIFICATION AS MAY BE REASONABLY REQUESTED BY CUMBERLAND COUNTY. THE FIRE DEPARTMENT SHALL MAINTAIN AN ACCURATE ACCOUNTING SYSTEM WHICH PROVIDES ADEQUATE DOCUMENTATION OF ALL OF ITS RECEIPTS AND DISBURSEMENTS INCLUDING, BUT NOT LIMITED TO, THOSE RELATED TO THE EXPENDITURE OF FUNDS SUBJECT TO THIS AGREEMENT. GENERALLY, THOROUGH INSPECTION OF BOOKS AND RECORDS BY AUDITORS WILL OCCUR WITH THERE IS NO CLEAN AUDIT OR THERE IS A FAILURE TO FOLLOW RULES AND PROCEDURES. THIS PROCESS WILL BE THE SAME AS WITH ANY OUTSIDE AGENCY THAT RECEIVES PUBLIC FUNDING FROM CUMBERLAND COUNTY.**

### **SECTION 10. FIRE DEPARTMENT FINANCIAL MISMANAGEMENT**

**THE FIRE DEPARTMENT AGREES THAT IF ITS FINANCIAL RECORDS ARE JUDGED TO BE UN-AUDITABLE FOR PURPOSES OF AUDIT OR ESTABLISHMENT OF A BUDGET BY CUMBERLAND COUNTY'S DIRECTOR OF FINANCE, OR IF A REGULAR OR SPECIAL AUDIT BY A CERTIFIED PUBLIC ACCOUNTANT REVEALS COMPETENT EVIDENCE OF RECKLESS OR WILLFUL FINANCIAL MISMANAGEMENT PRACTICES OR INTENTIONAL OR CRIMINAL WRONGDOING, THE FIRE DEPARTMENT'S BOARD OF DIRECTORS WILL NOTIFY CUMBERLAND COUNTY, AT WHICH TIME, THE COUNTY AND BOARD OF DIRECTORS WILL JOINTLY NAME AN INDEPENDENT, THIRD-PARTY TRUSTEE WHO WILL ASSUME RESPONSIBILITY FOR MANAGEMENT AND FINANCIAL DECISION-MAKING FOR THE FIRE DEPARTMENT UNTIL SUCH TIME AS CUMBERLAND COUNTY AND THE FIRE DEPARTMENT'S BOARD OF DIRECTORS AGREE THAT THE FIRE DEPARTMENT'S FINANCES HAVE BEEN STABILIZED TO THE EXTENT REQUIRED TO SATISFY THE FINANCIAL MANAGEMENT PROVISIONS OF THIS AGREEMENT. IN THE EVENT THAT THE FIRE DEPARTMENT SERVES MULTIPLE LOCAL GOVERNMENTS, CUMBERLAND COUNTY WILL SEEK REASONABLE AGREEMENT FROM THE OTHER IMPACTED LOCAL GOVERNMENT UNITS REGARDING THE DESIGNATION OF THE INDEPENDENT THIRD-PARTY TRUSTEE.**

Further, with reasonable notice, the Cumberland County Manager shall be entitled to use Internal County Audit staff to audit the financial records and operations of the Fire Department at Cumberland County's discretion at any time of their choosing.



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### **SECTION 11. FIRE DEPARTMENT FAILURE OF PERFORMANCE**

#### **11.1 NON-COMPLIANCE BY FIRE DEPARTMENT**

If Cumberland County has a reasonable belief that the Fire Department has violated any provision of this Agreement, Cumberland County will provide the Fire Department written notice of the possible noncompliance and initiate an audit to verify compliance. If the County determines that the Fire Department has failed to render the fire protection and services as provided in this Agreement or has otherwise operated in a manner that violates the provisions of this Agreement, then Cumberland County shall give the Fire Department ninety (90) days advance written notice that the funds allocated are subject to suspension and shall additionally provide a list of the improvements needed for compliance. If during the said ninety (90) day period, the Fire Department makes improvements satisfactory to Cumberland County, no suspension shall occur. During the ninety (90) day period, the Fire Department is not relieved of their responsibility to provide fire protection and emergency services in a manner otherwise consistent with the terms of this Agreement. If after the ninety (90) period, the Fire Department has failed to make satisfactory improvements to comply with this Agreement, then Cumberland County may suspend any or all of the monthly payment of funds allocated to the Fire Department pursuant to this Agreement.

#### **11.2 AUTHORITY TO MAINTAIN DELIVERY OF SERVICES**

In the event that the Fire Department's Board of Directors determines that the Fire Department is unable to reliably deliver the services described herein, for reasons including, but not limited to, resignation or withdrawal of volunteer, part-time or full-time members or other withdrawal or loss of ability to deliver services, the Fire Department's Board of Directors shall immediately so notify the Cumberland County Manager, or designee, at which time the Fire Department authorizes the County or its agents to suspend the monthly payment to the Fire Department and to use such Department facilities and equipment as are necessary to maintain the delivery of fire services in the Fire Department's primary service area (to the extent the Fire Department exercises operational control and/or ownership interest over such facilities and equipment), so that an interruption of the Fire Department's ability to deliver fire services will not interfere with the standards of fire protection service provided for in this Agreement.

Should such use become necessary, upon the request of the Fire Department, the Cumberland County Board of County Commissioners and the Fire Department's Board of Directors will jointly select an independent third-party trustee who will regularly evaluate the County's use of such Fire Department facilities, equipment and resources on behalf of the Fire Department. During the time that the Fire Department is unable to provide services, the Board of Directors of the Fire Department shall fully cooperate with Cumberland County. Cumberland County shall determine if the Fire Department is able to resume delivery of reliable service. In the event that the Fire Department serves multiple local governments, Cumberland County will seek reasonable agreement from the other impacted local government units regarding the designation of the independent third-party trustee.



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### **SECTION 12. BOARD OF DIRECTOR MEETINGS AND PUBLIC RECORDS**

Because of the Fire Department's extensive reliance on public funds for its operations, the public has a continuing interest in the Fire Department's decision-making processes and decisions regarding the spending of those funds. To ensure public trust, the Fire Department agrees that its Board of Directors' meetings will be open to the public in accordance with North Carolina General Statutes.

- a. The Fire Department shall hold at least one annual meeting of the Board of Directors. This meeting must be advertised by circulation and/or electronically consistent with North Carolina General Statutes.
- b. To ensure the ability of the public to attend Board of Director meetings, the Fire Department agrees to provide public notice of such meetings. The Fire Department and Cumberland County agree that public notice of a Board of Directors meeting called in the midst of a disaster or emergency as declared by any County or municipality that the department serves or the State of North Carolina to make decisions required to respond to that disaster or emergency is not practical, and, therefore, not required.
- c. To ensure the ability of the public to review the Fire Department's decision-making processes and spending decisions, the Fire Department agrees to take minutes of all meetings that would enable a person not in attendance to have a reasonable understanding of what happened, and to make minutes of those meetings available to the public by the time of the Fire Department Board of Directors' next meeting.
- d. Notwithstanding the Fire Department's reliance on public funds, there are matters on which the Board of Directors must act that are non-public in nature. Cumberland County and the Fire Department agree that, in the course of a public meeting, the Fire Department Board of Directors may decide to close the meeting under the following circumstances:
  1. To consult with an attorney (to preserve attorney-client privilege) for an actual claim, judicial action, mediation, arbitration, etc. (does not include closing a meeting for "legal advice" or general legal information);
  2. To discuss purchase, exchange or lease of real property;
  3. To discuss the terms of an actual or proposed employment contract;
  4. To deal with personnel matters concerning a member and/or employee (does not include general personnel policy discussion/action);
  5. To request (or hear a report on) an investigation of alleged criminal misconduct directly concerning the Fire Department, a member or employee;
  6. To make decisions on matters other than those that directly or indirectly involve public funds.
- e. The Fire Department agrees that it will keep minutes of such closed sessions in the form of a general account of the closed session so that a person not in attendance would have a



## **Cabarrus County Fire Service Strategic Analysis**

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reasonable understanding of what transpired. Minutes or an account of a closed session conducted in compliance with North Carolina General Statutes may be withheld from public inspection so long as public inspection would frustrate the purpose of a closed session.

- f. Cumberland County and the Fire Department further agree that a "meeting" exists for purposes of this section when a majority of Board members get together physically, or via conference call or other electronic means for the purpose of transacting business, and that a social gathering of Board of Directors members at which business is not (and will not be) transacted is not a "meeting" for purposes of this section.

### **SECTION 13. LIQUIDATION OR DISSOLUTION OR MERGER**

**IN THE EVENT OF A LIQUIDATION OR DISSOLUTION OF THE FIRE DEPARTMENT PURSUANT TO CESSATION OF SERVICE OR ACTION BY THE FIRE DEPARTMENT'S BOARD OF DIRECTORS, ALL EQUIPMENT AND ASSETS OWNED BY THE FIRE DEPARTMENT AND NOT OTHERWISE REQUIRED FOR RETIREMENT OF LAWFUL DEBT WILL BE DISTRIBUTED IN ACCORDANCE WITH THE FIRE DEPARTMENT'S CHARTER AND THE NORTH CAROLINA NON-PROFIT CORPORATIONS ACT.**

In the event of a merger between the Fire Department and another entity, all assets purchased by the Fire Department prior to the establishment of the Fire Protection Service Tax District will remain the property of the Fire Department; and all assets purchased by the Fire Department after the establishment of the Fire Protection Service Tax District will be distributed in accordance with this Agreement.

**IT IS THE RESPONSIBILITY OF THE DEPARTMENT TO UPDATE ITS CHARTER WITH THE NORTH CAROLINA SECRETARY OF STATE TO ENSURE THAT IT IS OPERATING WITHIN THE GUIDANCE SET FORTH IN THIS AGREEMENT. FURTHERMORE, IT IS THE RESPONSIBILITY OF THE FIRE DEPARTMENT TO MAINTAIN ADEQUATE RECORDS THAT WOULD PROVIDE GUIDANCE OF PROPORTIONAL DISTRIBUTION OF ASSETS SHOULD THE FIRE DEPARTMENT SERVE MULTIPLE LOCAL GOVERNMENTS.**

Special funds such as Local Firefighter's Relief Funds and funds earned through donations and local fundraising shall be distributed in accordance with North Carolina State Law governing such funds.





# **Cabarrus County Fire Service Strategic Analysis**

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### **SECTION 14. BULK PURCHASING**

**CUMBERLAND COUNTY AND THE FIRE DEPARTMENT MUTUALLY ACKNOWLEDGE THE IMPORTANCE OF PRUDENT USE OF TAX DOLLARS. WHENEVER POSSIBLE, THE FIRE DEPARTMENT AGREES TO USE BULK PURCHASING CONDUCTED BETWEEN LOCAL FIRE DEPARTMENTS AND/OR PUBLIC SAFETY AGENCIES INCLUDING CUMBERLAND COUNTY GOVERNMENT. FURTHERMORE, FIRE DEPARTMENTS AGREE TO USE GOVERNMENT PURCHASING ORGANIZATIONS, SUCH AS THE HOUSTON-GALVESTON AREA COUNCIL (HGAC), WESTERN FIRE CHIEFS GPO AND OTHER SIMILAR OPPORTUNITIES AS WELL AS PIGGYBACKING ON BIDS CONSISTENT WITH NORTH CAROLINA GENERAL STATUTES. CUMBERLAND COUNTY AGREES THAT ITS PURCHASING STAFF WILL PROVIDE TECHNICAL ASSISTANCE AND GUIDANCE TO THE FIRE DEPARTMENT AS REQUESTED TO THE BEST OF THEIR ABILITY.**

### **SECTION 15. TRAINING LEVEL**

**THE FIRE DEPARTMENT AGREES TO COMPLY WITH ALL CURRENTLY ADOPTED STANDARD OPERATING PROCEDURES (SOPS) OR SIMILAR ISSUED BY THE CUMBERLAND COUNTY FIRE CHIEF'S ASSOCIATION RELATED TO INITIAL AND ANNUAL FIREFIGHTER AND FIRE OFFICER TRAINING REQUIREMENTS. IT IS THE DESIRE OF CUMBERLAND COUNTY THAT ALL FIREFIGHTERS IN THE COUNTY OPERATE IN A SYSTEMATIC METHOD AND FOLLOW BEST PRACTICES AS WELL AS INDUSTRY RESEARCH AND STANDARDS TO THE GREATEST EXTENT POSSIBLE AND PRACTICAL. SHOULD THE FIRE DEPARTMENT NOT BE ABLE TO MEET ANY OF THESE ADOPTED SOPS, THE FIRE DEPARTMENT HAS THE RESPONSIBILITY OF NOTIFYING CUMBERLAND COUNTY IN WRITING AND IMMEDIATELY DEVELOPING AN IMPROVEMENT PLAN WITH A TIMELINE TO GAIN COMPLIANCE.**

### **SECTION 16. SPECIALIZED RESCUE SERVICES**

Fire Departments may choose to participate in specialized rescue services. Specialized rescue services will be provided only when the County issues a certificate of need and designates the fire department to be a provider agency. Participation is voluntary, however, each participating department must comply with existing state statutes and with the eligibility criteria established by the North Carolina Association of Rescue and Emergency Medical Services, Inc. Fire Departments choosing to provide specialized rescue services shall adopt guidelines that address the appropriate functions. Examples of specialized rescue services include:

- ✓ Agricultural Rescue (2012 v2)
- ✓ Ambulance Rescue Provider (2012 v2)





## **Cabarrus County Fire Service Strategic Analysis**

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- ✓ Confined Space Rescue (2012 v2)
- ✓ Heavy Rescue (2012 v2)
- ✓ High Angle Rescue (2012 v2)
- ✓ Light Rescue (2012 v2)
- ✓ Medical Responder (2012 v2)
- ✓ Medium Rescue (2012 v2)
- ✓ Rescue Resource Provider (2012 v2)
- ✓ Structural Collapse Rescue (2012 v2)
- ✓ Trench Rescue (2012 v2)
- ✓ Water Rescue - Dive Rescue (2012 v2)
- ✓ Water Rescue - Surface Water Rescue (2012 v2)
- ✓ Water Rescue - Swiftwater Rescue (2012 v2)
- ✓ Wilderness Land Search & Rescue (2012 v2)

The Fire Department must obtain a certificate of need from Cumberland County prior to initiating any specialized rescue service programs. Approval from Cumberland County is needed if county tax dollars are required for the implementation and operation of any specialized rescue services. Likewise, the Fire Department must obtain approval or acknowledgement from Cumberland County to end or stop providing the specialized rescue service.

Once Cumberland County issues a certificate of need for specialized rescue services to a Fire Department, the Fire Department must fully comply with all current requirements for that specialized rescue service as defined and officially approved by the State of North Carolina and/or the North Carolina Association of Rescue and EMS, Inc.

#### **SECTION 17. INSURANCE SERVICES OFFICE, INC. RATING**

The Fire Department shall make a good faith effort to maintain its current rating, or better, with the North Carolina Department of Insurance, and Insurance Services Office, Inc., as well as its present nonprofit corporation status pursuant to Chapter 55A of the North Carolina General Statutes. The Fire Department shall continuously comply with all applicable laws, ordinances and regulations. The bylaws of the Fire Department shall have reasonable provisions enabling citizens to participate in the affairs of the Fire Department. Cases in which a fire department loses or receives a worsened rating will be examined by the Cumberland County Manager, or designee, who will make a report to the Board of County Commissioners containing recommendations for corrective action.

The affected Fire Department shall immediately present the Board of County Commissioners with a written corrective action plan and agrees to implement said plan after its completion and approval subject to availability of funds as approved by the Board of Commissioners.

Cumberland County Government desires that all geographic areas of the County be rated at least at an ISO Class “5”.



# **Cabarrus County Fire Service Strategic Analysis**

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### **SECTION 18. STANDARDS OF PERFORMANCE**

The Fire Department shall furnish fire protection and emergency services in a professional, efficient and workmanlike manner, in particular so as to meet the requirements of and comply with rules and regulations of the North Carolina Department of Insurance, Insurance Services Office, Inc., Article 11, Chapter 153A of the North Carolina General Statutes, Article 14, Chapter 160A of the North Carolina General Statutes, and other pertinent federal, state and County laws, regulations and standards. The Fire Department agrees to participate jointly with the County in development and implementation of countywide fire service system performance standards and make adjustments as necessary.

#### **18.1 Staffing and Deployment Reporting**

Cumberland County Government desires that fire services throughout the County be in compliance with the national consensus standard for volunteer and primarily volunteer combination fire departments – NFPA 1720 – Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations and Special Operations to the Public by Volunteer Fire Departments.

Upon request from the County, each contracting fire department shall report their actual performance against the NFPA 1720 standard in writing to the Cumberland County Manager, or designee, upon request. If not meeting this standard, the fire department shall submit an improvement plan outlining specific steps that they are taking to gain compliance with this standard and a timeline for correction. The Fire Department will submit this report within thirty (30) calendar days of a request by the County.

This performance report should include the following comparative information of the fire department against the national consensus standard at a minimum:

- a. For Urban Areas (more than 1,000 people per square mile) the first due response of at least four firefighters shall arrive in a total response time of 9 minutes or less 90% of the time.
- b. For Suburban Areas (between 500 and 1000 people per square mile) the first due response of at least four firefighters shall arrive in a total response time of 10 minutes or less 80% of the time.
- c. For Rural Areas (less than 500 people per square mile) the first due response of at least four firefighters shall arrive in a total response time of 14 minutes or less 80% of the time.



## Cabarrus County Fire Service Strategic Analysis

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- d. In areas equipped with fire hydrants, a minimum of fifteen (15) adequately trained firefighters is essential for a full assignment to a reported structure fire of a typical residential home of 2,000 square feet or larger.

Dependent upon the area protected, each contracting fire department will be expected to report their demonstrated performance in the following manner:

For 80% of all typical residential structure fire incidents, at least one initial arriving fire apparatus along with at least four (4) adequately trained firefighters (*including automatic aid responses*) arrived within \_\_\_\_\_ **minutes** total response time and was prepared to take immediate action in accordance with department protocols.

For 80% of all typical residential structure fire incidents in areas equipped with fire hydrants, an effective force of at least fifteen (15) adequately trained firefighters (*including automatic aid responses*) arrived within \_\_\_\_\_ **minutes** total response time. The effective response force was capable of establishing command, appointing a site safety officer, providing an uninterrupted water supply, advancing an attack line and back up line for fire control, complying with the OSHA requirements of two-in and two-out, completing forcible entry, searching and rescuing at-risk victims, ventilating the structure, controlling utilities, and performing salvage and overhaul. These operations were completed in accordance with department standard operating protocols while providing for the safety of responders and the general public.

#### 18.2 Turn Out Time

If within two minutes after initial dispatch, a unit has not checked en-route, dispatch will re-alert and add an additional out of district station in order to assure an emergency response.

#### 18.3 Response Time

To encourage the safe operation of emergency vehicles, response time is not addressed in this Agreement. It is understood that ISO recognizes that each road mile of travel from a fire station represents approximately 141 seconds.

#### 18.4 Medical Certification of Personnel

The Fire Department shall have in place a program to ensure the wearing of respiratory protection meets the expectations of the Respiratory Protection Standard, 29 CFR 1910.134. Fire Departments are expected to participate in the county respiratory pulmonary function test annually for firefighters that are sent into immediately dangerous to life and health (IDLH) environments.

#### 18.5 Background Checks

The Fire Department shall have a policy to conduct background checks on members/employees. Any member of the Fire Department should have a background check conducted by the Cumberland County Sheriff's Office or the Provost Marshal. The Fire Department shall have a policy to conduct drug testing on members/employees.



## **Cabarrus County Fire Service Strategic Analysis**

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#### **18.6 Automatic and Mutual Aid**

The General Assembly of North Carolina enacted into law an act to authorize automatic aid assistance between fire departments whereby full authority may be exercised by fire departments to send firefighters and apparatus beyond the territorial limits which they normally serve, codified as Chapter 58, Section 83-1, of the General Statutes of North Carolina. The County has written automatic aid protocols which is maintained and utilized by the Cumberland County Communications Center and is utilized on all structure fires where they simultaneously dispatch the automatic aid departments. The purpose of this agreement is to provide each of the parties through their mutual cooperation, a pre-determined plan; as agreed upon in dispatch protocol, by which each of them render aid to the other in case of any incident. It is deemed to be in the public interest for the department to provide automatic aid assistance in order to increase fire defenses and to assure proper fire control, as well as providing reserves needed to assure the community of adequate protection.

- a. To activate automatic mutual aid, due to conflagration, holocaust, civil disorder or natural disaster, upon notification that an emergency does, in fact, exist and that aid is needed, the County will dispatch available apparatus equipment and manpower into action to assist the needed party.
- b. It shall be the responsibility of the officer of the fire department of the responding party that all personnel responding to the assistance are responsible persons and that the conduct and actions of said personnel shall be the responsibility of the party sending assistance.
- c. The party responding to the automatic aid under the terms of this agreement shall assume all liability and responsibility for damage to its own apparatus and/or equipment. The party responding shall also assume all liability and responsibility for any damage caused by its own apparatus while responding to or returning from a specific location.
- d. Each party to this agreement shall assume all costs of salaries, wages, bonuses or other compensation for its own personnel that responds for duty under the terms of this agreement and shall also assume all cost involving the use of apparatus, equipment, tools used specifically in response to the request for aid and shall make no charge for such use to the party requesting assistance.
- e. When fire department personnel respond pursuant to the agreement, the jurisdiction, authority, rights, privileges, and immunities including coverage under workers compensation laws shall be extended to department personnel during the entire incident until completion.
- f. When any party contained in this agreement is providing automatic aid to another party, it is agreed to respond with a minimum of one piece of fire apparatus capable of carrying a minimum of 750 gallons of water.

*\*Note – It is recognized that automatic aid and mutual aid occurring outside Cumberland County is not covered by this Agreement.*



## **Cabarrus County Fire Service Strategic Analysis**

### **August, 2020**

#### **18.7 Incident Reporting**

The Fire Department shall participate, comply and submit 100% in the National Fire Incident Reporting System (NFIRS) system with the North Carolina Department of Insurance/Office of the State Fire Marshal.

#### **18.8 Fire Prevention and Public Education**

The Fire Department shall have an annual Fire Prevention and Public Education plan as well as a Community Risk Reduction plan concurrent with the respective needs of their jurisdiction as determined by the Fire Department. The Fire Department shall have a goal of reaching at least 25% of the total population of their fire district each calendar year.

*\*Note – Community Risk Reduction is a priority consistent with the NC Response Rating Schedule.*

#### **18.9 North Carolina Motor Vehicle Laws**

The Fire Department shall promote that members/employees as a representative of the Fire Department comply with all applicable motor vehicle laws. If a member/employee is cited for a motor vehicle violation, this shall not negate this Agreement. Disciplinary action shall be at the discretion of the individual Fire Department. However, the Fire Department shall have standard operating guidelines, or equivalent, that clearly address this issue for all members/employees.

#### **18.10 Budget**

The Fire Department shall cooperatively participate in the annual budgeting process as detailed by Cumberland County.

#### **18.11 Fire Investigation**

The Fire Department shall attempt to determine the origin and cause of all fires within their respective jurisdiction. Assistance may be requested from the Cumberland County Sheriff's Office.

#### **18.12 Disposal of Surplus Equipment**

The Fire Department shall establish a written process for the Fire Department to dispose of surplus equipment. This process should address first offering resources to other departments within Cumberland County said Fire Department's serviceable surplus equipment, prior to offering to others. If the Fire Department services multiple local government units, the plan should reflect a responsible and equitable method of managing this surplus equipment.

#### **18.13 Training**

The Fire Department shall have an annual training plan to ensure appropriate training is conducted for new and existing members/employees, including communications and MAYDAY training. In addition, the Fire Department should establish a training plan for all departmental ranking officers to provide periodic instruction in management and leadership. This plan must be in compliance with the policies adopted by the Cumberland County Fire Chief's Association and should address the level of training to a standard, leadership training with Emergency Management, involvement



## **Cabarrus County Fire Service Strategic Analysis**

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of communications center employees, training annually of all fire department employees and volunteers, and use of NFPA 1410 benchmarks.

#### **18.14 Standard Operating Procedures, (SOPs), General Operating Guidelines (GOGs)**

The Fire Department shall adopt all SOPs/GOGs approved by the Cumberland County Fire Chiefs Association and adhere to agreed upon operating policies, such as with Emergency Communications radio systems.

### **SECTION 19. RELATIONSHIP OF PARTIES**

The Department, including any officer, employee, or agent of the Department is an independent contractor of the County and none of these shall be considered employees of the County. The relationship between the parties shall be limited to the performance of this Agreement in accordance with its terms. The County and the Fire Department agree that the Fire Department shall operate and act as an independent contractor in accordance with the standards set forth herein, and the County shall not be responsible for any of the Fire Department's acts or omissions. Neither the Department, any officer, employee, or agent of the Department shall be deemed an officer, employees, or agent of the County. No liability for benefits, such as worker's compensation, pension rights, or other provisions shall arise out of or accrue to any party, its officers, agents, or employees as a result of this Agreement or performance thereof.

### **SECTION 20. TERM OF AGREEMENT**

The term of this agreement shall be for a maximum five (5) year period, beginning on July 1, 2019 and ending on June 30, 2024, unless earlier terminated by either party in accordance with Section 24 of this agreement. This term is subject to the continued legal existence of the District(s) and the Fire Department.

### **SECTION 21. NON-ASSIGNABILITY**

This agreement may not be transferred, assigned, or subcontracted by the Fire Department without the written consent of the County.

### **SECTION 22. TERMINATION**

This Agreement may be terminated by either party with cause upon advance written notice to the other party, served upon the other party by certified mail at least ninety (90) days prior to termination.

### **SECTION 23. NO WAIVER**

Failure of the County to enforce any of the provisions of this Agreement at any time, or to request performance by the Fire Department pursuant to any of the provisions of this Agreement at any time shall in no way be construed as a waiver of such provisions, nor in any way affect the



## **Cabarrus County Fire Service Strategic Analysis**

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validity of this Agreement, or any part thereof, or the right of the County to enforce each and every provision. In the event that there is disagreement between representatives of the County and the Department as to the meaning and/or applicability of any section of the Agreement, the County and the Fire Department shall endeavor in good faith to mediate the disagreement, and agree to select and share the cost (if any) of the services of a trained community mediator to mediate the disagreement. However, nothing herein shall be construed to prevent either party from seeking legal or equitable relief in a court of competent jurisdiction. The Cumberland County Board of County Commissioners will have ultimate authority over this Agreement.

#### **SECTION 24. AMENDMENTS**

Any amendment to this Agreement shall be made in writing and signed by both parties in order to be effective. All Agreement amendments shall become part of this Agreement and be listed as clearly identified Appendix documents.

#### **SECTION 25. NO THIRD-PARTY BENEFICIARIES**

This Agreement is not intended for the benefit of any third party. The rights and obligations contained herein belong exclusively to the parties hereto, and shall not confer any rights or remedies upon any person or entity other than the parties hereto.

#### **SECTION 26. ENTIRE AGREEMENT**

The terms and provisions herein contained constitute the entire agreement by and between the County and the Fire Department and shall supersede all previous communications, representation or agreement, either oral or written between the parties hereto with respect to the subject matter hereof; except, that this paragraph shall not be construed to supersede any existing and applicable Mutual Aid Agreements.

#### **SECTION 27. NOTICES**

All notices, reports, records, or other communications which are required or permitted to be given to the parties under the terms of this Agreement shall be sufficient in all respects if given in writing and delivered in person, by confirmed facsimile transmission, by overnight courier, or by registered or certified mail, postage prepaid, return receipt requested, to the receiving party at the following address:

If to Cumberland County:

Cumberland County Manager's Office  
E. Maurice Braswell Cumberland County Courthouse  
117 Dick Street  
Fayetteville, North Carolina 28301





# **Cabarrus County Fire Service Strategic Analysis**

## **August, 2020**

If to Fire Department:

Fire Department Name Here

Board President Here

Address Here

City Here

Email:

Telephone:

### **SECTION 28. GOVERNING LAW**

The Parties acknowledge that North Carolina law shall govern this Agreement.

### **SECTION 29. SEVERABILITY**

If any provision of this Agreement shall be determined to be unenforceable by a court of competent jurisdiction, such determination will not affect any other provision of this Agreement.

### **SECTION 30. COUNTERPARTS**

This Agreement may be executed in several counterparts, each of which shall be deemed an original.

### **SECTION 31. NO WAIVER OF SOVEREIGN IMMUNITY**

The County and the Fire Department agree that nothing herein shall be construed to mandate purchase of insurance by the County pursuant to N.C.G.S. 153A-435; or to be inconsistent with Cumberland County's "Resolution Regarding Limited Waiver of Sovereign Immunity" enacted October 6, 2003; or to in any other way waive the County's defense of sovereign or governmental immunity from any cause of action alleged or brought against the County for any reason if otherwise available as a matter of law.

### **SECTION 32. VERIFICATION OF EMPLOYEE WORK AUTHORIZATION**

To ensure compliance with the E-Verify requirements of the General Statutes of North Carolina, all contractors, including any subcontractors employed by the contract(s), by submitting a bid, proposal or any other response, or by providing any material, equipment, supplies, services, etc, attest and affirm that they are aware and in full compliance with Article 2 of Chapter 64, (NCGS 64-26(a)) relating to the E-Verify requirements.



# **Cabarrus County Fire Service Strategic Analysis**

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### **SECTION 33. EFFECTIVE DATE OF AGREEMENT**

The effective date of this Agreement shall be the date upon which Cumberland County executes this agreement. This date shall be reflected in the first paragraph of this Agreement. The terms and conditions of this Agreement shall apply to the entire Term as set forth in Section 22 or as amended by the parties.

### **SECTION 34. ADDENDUMS**

The County may add specific addendums to this agreement that are for specific services or conditions unique to an individual fire department or district. Those addendums operate under the auspices of this “umbrella” contract. Examples of addendums include, but are not limited to:

- Low Wealth Fire Department Staffing Supplements
- Specialty Rescue Services
- Matching Grant Funding

IN TESTIMONY WHEREOF, the County has caused this instrument to be executed by the Cumberland County Manager, and the Fire Department has caused this instrument to be signed in its name by its President, attested by its Secretary, and its corporate seal hereto affixed, all by authorization of its Board of Directors duly given.

This the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

CUMBERLAND COUNTY

BY: \_\_\_\_\_  
Amy Cannon, or designee  
Cumberland County Manager

This instrument has been pre-audited in the manner required by the Local Government Budget and Fiscal Control Act.

\_\_\_\_\_  
Finance Director or designee

This person is responsible for monitoring the Agreement performance requirement is:

Fire Department Name Here

BY: \_\_\_\_\_

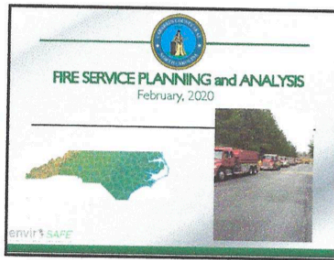
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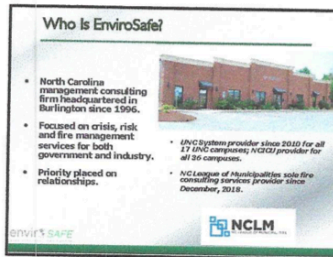
# Cabarrus County Fire Service Strategic Analysis August, 2020

## APPENDIX F – OTHER DOCUMENTS

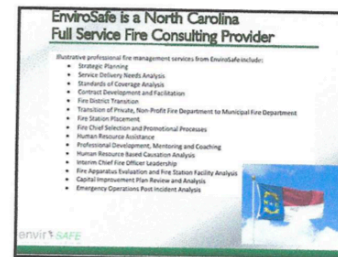
### Fire Chief Presentation



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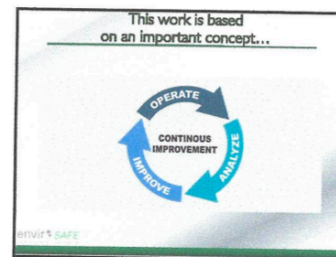
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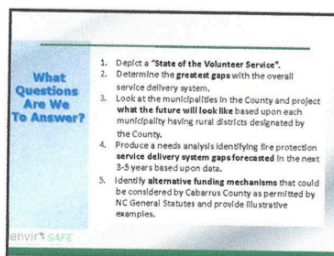
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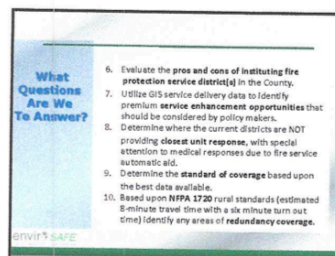
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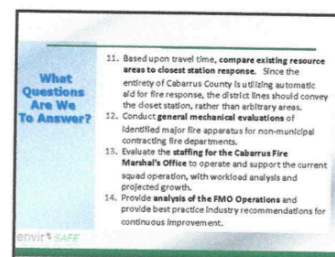
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# Cabarrus County Fire Service Strategic Analysis

## August, 2020

**What Questions Are We To Answer?**

- 15. Evaluate the current fire protection provider contract and provide recommendations for consideration in order to bring the document in closer alignment with North Carolina fire service best practices.
- 16. Evaluate the current staffing grant system used by the County.



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**How Are We Going To Accomplish Our Work?**

- Geographic Information System (GIS) Analysis:
  - Develop current system base maps
  - Drive time maps – gaps and redundancy
  - Mileage maps – gaps and redundancy
  - Closest station area
  - Squad from EMS 2 coverage effectiveness
  - Service demand municipal expansion
  - Effect of planned municipal expansion
  - System design modifications
  - Risk based upon parcel land use
  - Effective firefighting force by apparatus

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**How Are We Going To Accomplish Our Work?**

- Stakeholder Feedback:
  - SWOT Analysis with Fire Chiefs (tonight)
  - Firefighter Survey
  - Public Perception Survey
  - Management and Elected Officials



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**How Are We Going To Accomplish Our Work?**

- Mechanical Evaluation of Apparatus:
  - Rating current mechanical condition of apparatus.
  - Provide individual reports and recommendations.
  - First visits are planned on-site for March 12 and 13 as well as March 19 and 20.



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**How Are We Going To Accomplish Our Work?**

- Statistical Analysis:
  - Export Firehouse data into Excel for each of ten individual databases
  - Calculate the 90<sup>th</sup> percentiles (1710) of performance – and 80<sup>th</sup> percent when needed (1720)



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**How Are We Going To Accomplish Our Work?**

- Peer Review:
  - Conduct a high-level needs analysis.
  - Assemble a peer review team of Fire Chiefs including Cabarrus County Fire Chief representatives.
  - Collect, review and analyze data and info.
  - Hold a one-day, on-site assessment.
  - Best practice research.
  - Develop observations and recommendations report.

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**How Will We Report The Outcomes?**

- Draft the Report for County Staff on or before June 30, 2020.
- Present findings to the County Fire Chiefs.
- Provide a presentation to the Cabarrus County Commissioners.



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**Next Steps:**

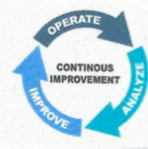
1. Connect with Cabarrus County staff if you would be willing to be a Fire Chief representative for the peer review team.
2. Assist with the fire apparatus evaluations in March.
3. Encourage your personnel to participate in the upcoming surveys.
4. Collaborate with us to help strengthen the overall fire and rescue service delivery system in Cabarrus County.

CABARRUS COUNTY  
America Thrives Here

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Again, all of this work is based on an important concept...



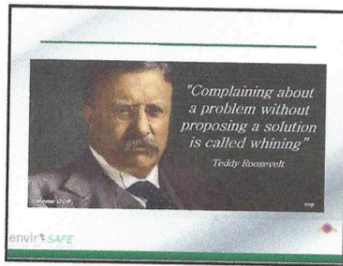
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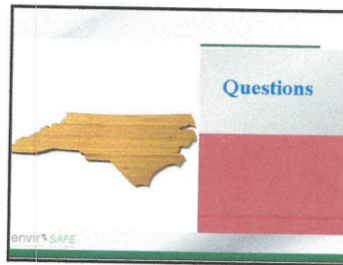


# Cabarrus County Fire Service Strategic Analysis

## August, 2020



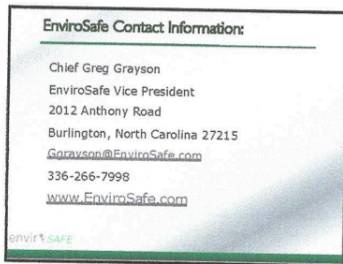
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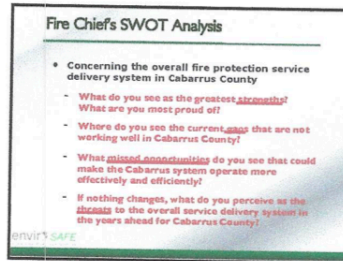
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# **Cabarrus County Fire Service Strategic Analysis**

## **August, 2020**

### Project Notes:

## **CABARRUS COUNTY STRATEGIC PLANNING PROJECT MONTHLY UPDATE CONFERENCE CALL AGENDA**

**March 30, 2020 - 10:00-10:40**

*1-575-629-0146, PIN 970167108#*

Attendance: Cabarrus County – Steve Langer  
EnviroSafe – Greg Grayson, Mike Varnell, David Bullins, Wes Greene, Wayne Hamilton, Frank Blackley, Robert McNally  
Todd Tuttle was not in attendance

### Updates:

1. Dropbox Document Review
  - a. 2020 Scope of Work
  - b. Apparatus Evaluation
  - c. GIS Maps with file
  - d. Chiefs SWOT Feedback
  - e. NFPA 1730 Staffing Worksheet
  - f. Opening Presentation
  - g. Revised Overview
2. Apparatus Assessment – Wes Greene
  - a. Complete – most in the good category – 70%
3. GIS Analysis – Robert McNally
  - a. About 80% complete with tasks
  - b. Service demands missing – need Tuttle information
  - c. First alarm assembly for structure fire
    - i. Varies district to district and zone
    - ii. Some do have municipal responding into rural areas
    - iii. Can export run cards for each zone with GIS file (Mr. Langer)
    - iv. Need to get city future station locations planned and what kind of apparatus would go into those stations (Mr. Langer)
  - d. Squad average response time actual data to provide (Mr. Langer)
  - e. Closest response station addressed through peer review team
    - i. Important to Flowes Store considering a station location
4. Data Analysis – Todd Tuttle
  - a. Not yet able to make contact with IT
  - b. Continuing to work on this aspect



## **Cabarrus County Fire Service Strategic Analysis August, 2020**

- c. Alternative plan is Chief Tuttle working through Mr. Langer for data
- 5. Fire Marshal Office Review – Wayne Hamilton
  - a. Virtual session scheduled for March 31, 2020
  - b. Understanding of county and municipal relationships
    - i. Towns not looking to add costs at this time
  - c. Need for position between Fire Marshal and Squad due to expanded duties and responsibilities – Nuclear planning, training, other EM needs
  - d. Looking at economic growth with county and towns
- 6. Stakeholder Feedback
  - a. Scheduled to distribute and collect feedback to conduct in April
    - i. Move to end of April at this point
    - ii. Check back in mid-April for further direction/decision
- 7. Peer Review
  - a. Navigation around COVID-19
    - i. Virtual work by component over the next 60 days
    - ii. Physical interactive meeting as soon as conditions allow
    - iii. Agreeable to proceed – understanding that project completion will be post June 30 due to pandemic situation
- 8. Additional Items to Discuss
- 9. Next Monthly Conference Call
  - a. April 30, 2020 – 10am – COVID-19 Dependent
    - i. Meeting notice sent





**Cabarrus County Fire Service Strategic Analysis**  
**August, 2020**

**CABARRUS COUNTY FIRE MARSHAL OFFICE REVIEW**  
**March 31, 2020 - 09:00-11:30**

**Attendance:** Cabarrus County – Steve Langer  
EnviroSafe – Greg Grayson, Wayne Hamilton, Frank Blackley

**Squad Involvement**

- Does not conduct any code compliance activities
- Assists with fire investigations
- Performs hydrant flows
- Performs public education events

**Data Management**

- Cabarrus used FireHouse until July 2019
- Transitioned to Image Trend Elite afterwards
- Currently working on getting all FP data into Image Trend

**NFPA 1730**

- Workload Analysis
- Last year, the county conducted a fee study to create a baseline
- It was a year-long process, dedicated many hours
- FM Langer to provide the analysis from the fee study

**Planning and Zoning Processes**

- Plans Review – FMO conducts about 120 plans review annually
- Staff attends planning meetings several times per month
- Serves Towns of Midland, Mt. Pleasant and Locust by contract
- There are similar processes between different jurisdictions
- Some towns still do paper submissions
- The county ordinance is enforceable in the contracting Towns
- New construction info is shared with contracting fire departments
  - Email to the Fire Chiefs
  - Meet with the Fire Chiefs when needed
  - Examples of issues are turning radius problems
  - Discuss new projects at quarterly fire chief meetings

**SOGs**

- No specific written standards are currently in place
- Protocol is for fire investigations to be complete within 2 weeks
- Cabarrus County has a standard of plan review completion within 2 weeks



# **Cabarrus County Fire Service Strategic Analysis**

## **August, 2020**

### **Total Occupancies**

Occupancies are loaded in Image Trend  
There is still access to occupancies in FireHouse  
Cabarrus can export in FireHouse  
Chief Blackley has already obtained an export of occupancies in FireHouse

### **Foster Homes**

Workload is approximately 30 per year, using an on-line process  
Fees are paid on-line

### **Fire Education Programs**

Approximately 42 activities per year  
Fire Extinguisher training is provided for day care facilities  
Approximately 10 years ago, Cabarrus purchased a simulator prop  
Fire Extinguisher training is also provided for county schools staff  
Fire Extinguisher training for County Government – General Services as well  
Total hours involved in fire education programs are tracked  
There is no student education in school programs in place currently  
Cabarrus participates in the Fire Safety Bowl and collects Cabarrus funds  
There is a desire to expand fire education involvement and services  
There is involvement currently with Safe Kids programs  
Cabarrus has no child safety seat technicians on staff currently  
All Cabarrus staff have some level of fire safety educator certifications

### **Pre-Incident Planning**

Staff works with contracting fire departments on pre-planning  
FireHouse started in 2008 and ended up in separate databases  
However, what is inspected is shared from Cabarrus County  
Image Trend has loaded the occupancies  
Chief Blackley to send a separate query request for Image Trend data  
Cabarrus uses the occupancy ID related to the fire district

### **Fire Investigations**

Unincorporated areas and municipal areas under contract are served  
Service by call or request to other municipalities in the County  
Approximately 60 calls for service annually now  
Previously ran about 120 calls annually  
Positions were lost in the Great Recession and illegal burns omitted  
Illegal burns now only when they are habitual/reoccurring  
On-call for fire investigations is on a week by week basis – Monday till Monday  
Three staff members share the week by week on call  
Cabarrus now has an on-call incentive pay of \$50/week for those staff  
Fire Marshal Langer is the backup for all three and assists when needed



## **Cabarrus County Fire Service Strategic Analysis**

### **August, 2020**

However, he also has a heavy workload with EM duties/responsibilities  
The current model is working overall  
The primary investigator goes out initially and others assist as needed/required  
On large incidents, at least two investigators are on scene for safety necessity  
Fire Marshal Langer to provide the municipal contract document  
For Law Enforcement support, the LEO provider in all of the contracting municipalities is the Sheriff  
If a set fire is suspected, the Cabarrus fire investigator has Patrol make the notification to Sheriff CID. An on-call detective calls the fire investigator on scene to see if an immediate presence is necessary.  
Evidence is collected and secured in the Sheriff's evidence storage  
Cabarrus is interested in pursuing the Task Force concept  
Cabarrus has new Sheriff leadership and that may support the Task Force  
There have been discussions about a Task Force with Concord  
Consultant report will reflect best practices with the Task Force model  
Regarding investigator certification, Cabarrus is working towards CFI  
All but one staff have the CFI – that one remaining staff is close  
Staff is interested in evidence certification

#### **Periodic inspections**

Cabarrus staff is currently getting re-inspections done  
750 occupancies within the county jurisdiction currently  
Staff is conducting approximately 1,100 inspections/reinspections annually  
Workload challenge comes from other aspects of county responsibilities other than through the periodic inspections.  
County Commissioners have been pushing more emphasis on contracting fire departments in recent years requiring more work and attention in that area.  
Contracting FD inspections for ISO  
Support services for Image Trend for the FDs  
Fit Testing services for the FDs  
Cabarrus staff managing special operations functions such as land search  
Cabarrus staff also managing special events for the county – IAPs  
10-15 such special events annually  
Fire Marshal Langer to provide a list of duties and responsibilities of the Fire Marshal's Office including Emergency Management functions of his staff of four persons.  
There has been County Government admin support to maintain the annual inspection schedule in lieu of the minimum state mandated inspection schedule.  
There are challenges trying to compare fire inspection productivity to building inspection productivity – not apples to apples.  
Individual inspections of a large building versus one stop with multiple inspections being completed.



# **Cabarrus County Fire Service Strategic Analysis**

## **August, 2020**

### **Squad Management**

The squad/manpower unit demands much attention and time  
Started 3 years ago with 5 staff on Monday-Friday schedule  
Now 7/24/365 with 12 FTE and 7 part-time staff  
Timesheets, evaluations, hiring, etc.  
There is no-one between FM Langer and the three shift Captains on Squad  
In 2018, there was a request for a Deputy Fire Marshal position  
County Management preferred a career ladder model be used  
All staff can obtain the Assistant Fire Marshal Level II rank  
No requests are in place for FY 20-21 due to work/outcome from this study

### **Administrative Staff**

One person provides services for the entire office  
Duties include FM and EM functions  
Person also serves as the finance section chief during EOC operations  
Person is also responsible for Cabarrus County Government COOP planning

### **Fees and Fines**

Prior to 2020, there was a \$150 fee for plans review initially  
There are fines that can be issued, however those funds go to public schools  
New fee schedule went into effect January 1, 2020  
There are now fees for both plans reviews and inspections  
In FY 18-19, revenues from fees were approximately \$14K total  
Projected for FY 19-20, the revenues from fees are anticipated at \$18K  
Reinspection fees are charged and retained by Cabarrus County Government  
Uses Image Trend to show re-inspections required  
County does place a fee on alarm holders as well  
Has been using the CryWolf program  
However, Not a lot of success with annual fees and penalties  
FM Langer to provide a copy of the FY 19-20 current fee schedule  
Cabarrus has not yet used third-party agencies to assist with regulatory code compliance of fire protection system maintenance, but interested

### **Assignments**

Inspection districts are devised by fire districts  
No separate GIS layer is identified

### **Future Growth**

Midland area is growing with hazards – ethanol, Corning  
Water supply in the Midland area is not strong

### **Next Step Documents**

Fire Marshal Langer to provide organization chart, job descriptions



**Cabarrus County Fire Service Strategic Analysis**  
**August, 2020**

**CABARRUS COUNTY FIRE MARSHAL OFFICE REVIEW**  
**Thursday - April 23, 2020 - 09:45-10:15**

**Attendance:** Cabarrus County – Steve Langer  
EnviroSafe – Greg Grayson, Wayne Hamilton, Frank Blackley

**Responses from Mr. Langer**

Dropped files

- Investigation SOG
- Job Descriptions
- CAD Code Types
- Run Cards
- Fee Study – 2 files
  - Activities
  - All fees
  - Image Trend
- Town Agreements
- Plan Review Information

Others in Motion

- Fire District Zones
- Working on Rosters
- Planning contacts
- Kannapolis, Concord and Midland Information for GIS
- Org Chart
- Duties and Activities for FMO Staff
- Working fire protocol

**Remaining Informational Needs**

- Any remaining SOGs on processes, if any
- Complete what can be done on the NFPA form
  - Using it as a tool to establish baseline work and project future work

**Next Steps**

- SME Document Review
- Municipal Contacts
  
- Stakeholder feedback
  - Grayson to verify language with PhD



## **Cabarrus County Fire Service Strategic Analysis August, 2020**

Establish available time from Cabarrus Staff for some other Review Teams

Recruitment and Retention is ready to go

Squad Operations is ready to go

The FMO Peer Review Team will establish a follow up meeting in the coming weeks.



# **Cabarrus County Fire Service Strategic Analysis August, 2020**

## **CABARRUS COUNTY STRATEGIC PLANNING PROJECT MONTHLY UPDATE WORKING NOTES**

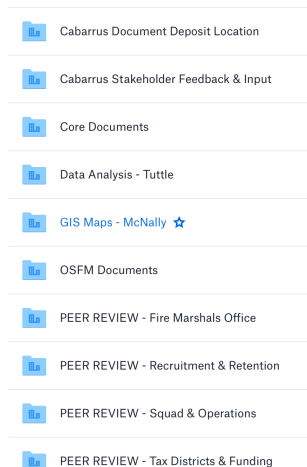
**April 30, 2020 - 10:00-10:55**

*1-415-943-3829, PIN 605156221#*

**Attendance:** Cabarrus County – Steve Langer  
EnviroSafe – Greg Grayson, Mike Varnell, David Bullins, Wes Greene,  
Wayne Hamilton, Robert McNally, Todd Tuttle

**Updates:**

**1. Dropbox Document Review**



**2. Apparatus Assessment Finalization – Mike Varnell**

- b. Cabarrus desires consolidated report
- c. DRAFT to go to Dropbox for review

**3. GIS Analysis – Robert McNally**

- d. Rosters are complete
- e. Data collection in progress with Cabarrus
  - i. Municipal future station locations
  - ii. Squad with average response times to adjust speed parameter – out of Image Trend – SQ410 – they switched over to Image Trend in FDID 1300 – Fire Marshal Office
  - iii. May need follow up on run cards to verify
- f. Looking at pivot table data from Chief Tuttle





# **Cabarrus County Fire Service Strategic Analysis**

## **August, 2020**

4. Data Analysis – Todd Tuttle
  - g. All ten fire departments pivot tables and analyzation complete
    - i. Powerful tool for analyzation
  - h. Summary document example provided for review
    - i. Cabarrus report to generally follow the Wake Forest model
    - ii. Mutual aid and automatic aid received to keep it on a department by department basis
  - i. Individual department review is needed for comparative analysis
  - j. Need credentials to get into FDID 1300
  - k. Chief Tuttle and Mr. Langer to review data together – Excel 2016 needed with power pivot extension
    - i. Cabarrus using the latest version of Office
    - ii. Cabarrus to engage their IT staff as well for operations
      1. Discuss how to integrate newer data from Image Trend for future or associated use
5. Fire Marshal Office Review – Wayne Hamilton
  - l. Team developing recommendations now
  - m. Staffing work sheet on 1730 staff analysis needed
  - n. Need to talk more about fire investigations, career development and succession planning – potentially speak with staff on Zoom
  - o. Discussion with building officials went well
    - i. Need to connect again with Suzie Morris
6. Stakeholder Feedback – Greg Grayson
  - p. Industrial/Organizational Psychologist review being completed this week, will need re-concurrence from Cabarrus County
  - q. Public survey should go out in early May
  - r. Firefighter survey to go out as well
7. Peer Review Teams Proposal
  - s. All Groups
    - i. Steve Langer
    - ii. Greg Grayson
  - t. Fire Marshal's Office
    - i. Wayne Hamilton
    - ii. Frank Blackley
  - u. Squad and Operations
    - i. David Bullins
    - ii. Stephen Thomas, Guilford
    - iii. Gary Styers, Forsyth



# **Cabarrus County Fire Service Strategic Analysis**

## **August, 2020**

- iv. Cabarrus TBA
  - v. Recruitment/Retention
    - i. Wes Greene
    - ii. Tracy Mosley - NCAFC
    - iii. Wayne Bailey – OSFM
    - iv. Spencer Cheatham - IAFC
    - v. Cabarrus TBA
  - w. Tax Districts and Funding
    - i. Mike Varnell
    - ii. Tracy Jackson, Asst. County Manager Cumberland
    - iii. Bryan Phillips, Moore County Emergency Services
    - iv. Perry Davis, Cleveland County Fire Marshal
    - v. Cabarrus TBA
  - x. Need Available Dates to meet
    - i. Time and day to meet the consensus of the group
8. Additional Items to Discuss
9. Next Monthly Conference Call  
Friday, May 29, 2020 – 10am – COVID-19 Dependent



**Cabarrus County Fire Service Strategic Analysis**  
**August, 2020**

**CABARRUS COUNTY STRATEGIC PLANNING PROJECT**  
**MONTHLY UPDATE WORKING NOTES**

May 29, 2020 - 10:00-10:30

*Via Zoom*

Attendance: Cabarrus County – Steve Langer  
EnviroSafe – Greg Grayson, Mike Varnell, Wes Greene, Wayne Hamilton,  
Frank Blackley, Robert McNally

Updates:

1. GIS Analysis – Robert McNally
  - y. Working on Effective Firefighting Force
  - z. Developing written analysis
  - aa. Cabarrus asked for map analysis of distance of 5 road miles from any current or short-term projected municipal fire stations.
    - i. Will require Cabarrus County to provide the hydrant layer
    - ii. Mr. Langer agreed to make the necessary connections to enable that layer connectivity.
  - bb. Rosters are complete
  - cc. Data collection in progress with Cabarrus
    - i. Municipal future station locations
    - ii. Squad with average response times to adjust speed parameter – out of Image Trend – SQ410 – they switched over to Image Trend in FDID 1300 – Fire Marshal Office
    - iii. May need follow up on run cards to verify
  - dd. Looking at pivot table data from Chief Tuttle

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  - ee. All ten fire departments pivot tables and analyzation complete
    - i. Powerful tool for analyzation
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    - ii. Mutual aid and automatic aid received to keep it on a department by department basis
  - gg. Individual department review is needed for comparative analysis
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  - ii. Chief Tuttle and Mr. Langer to review data together – Excel 2016 needed with power pivot extension
    - i. Cabarrus using the latest version of Office
    - ii. Cabarrus to engage their IT staff as well for operations



## **Cabarrus County Fire Service Strategic Analysis**

### **August, 2020**

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  - jj. Team developing recommendations now
  - kk. Staffing work sheet on 1730 staff analysis needed
  - ll. Need to talk more about fire investigations, career development and succession planning – potentially speak with staff on Zoom
  - mm. Discussion with building officials went well
    - i. Need to connect again with Suzie Morris
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  - qq. All Groups
    - i. Steve Langer
    - ii. Greg Grayson
  - rr. Fire Marshal's Office
    - i. Wayne Hamilton
    - ii. Frank Blackley
  - ss. Squad and Operations
    - i. David Bullins
    - ii. Stephen Thomas, Guilford
    - iii. Gary Styers, Forsyth
    - iv. Cabarrus TBA
  - tt. Recruitment/Retention
    - i. Wes Greene
    - ii. Tracy Mosley - NCAFC
    - iii. Wayne Bailey – OSFM
    - iv. Spencer Cheatham - IAFC
    - v. Cabarrus TBA
  - uu. Tax Districts and Funding
    - i. Mike Varnell
    - ii. Tracy Jackson, Asst. County Manager Cumberland
    - iii. Bryan Phillips, Moore County Emergency Services



## **Cabarrus County Fire Service Strategic Analysis August, 2020**

- iv. Perry Davis, Cleveland County Fire Marshal
- v. Cabarrus TBA
- vv. Need Available Dates to meet
  - i. Time and day to meet the consensus of the group
- 6. Additional Items to Discuss
- 7. Next Monthly Conference Call
- ww. Friday, May 29, 2020 – 10am – COVID-19 Dependent



# **Cabarrus County Fire Service Strategic Analysis August, 2020**

## **CABARRUS COUNTY STRATEGIC PLAN PEER REVIEW GROUP AGENDA MODERNIZING FUNDING**

**June 17, 2020 – 09:00am – 11:00am**

<https://us02web.zoom.us/j/83542442979?pwd=VUpQdHYyUVhEVEhHQm9Bc3N0dDRCQT09>

1. Welcome to Group
  - Cabarrus County Leaders
    - Fire Marshal Langer, Chief Jake Williams, Cabarrus Finance Staff
  - Subject Matter Experts
    - Cumberland ACM Tracy Jackson, Cleveland EM Director Perry Davis
2. Overview of the Cabarrus County Project
  - GIS Analysis
  - Stakeholder Feedback – both firefighter and general public
  - Data Analysis
  - Peer Review Teams to make observations and recommendations
    - Analyze Fire Marshal's Office
    - Improve Squad Operations
    - Bolstering Recruitment & Retention
    - Modernizing Funding
3. Peer Review Team Topics for Discussion
  - North Carolina fire protection funding options available to Counties
  - Experiences with service districts in both Cumberland and Cleveland
    - Pros and Cons
  - Understanding of municipality involvement in service districts
  - Modeling for Cabarrus County
4. Other Items
5. Next Steps – Follow Up Meeting
6. Closing



# **Cabarrus County Fire Service Strategic Analysis August, 2020**

## **CABARRUS COUNTY STRATEGIC PLAN PEER REVIEW GROUP AGENDA BOLSTERING RECRUITMENT AND RETENTION**

**June 16, 2020 – 14:00 – 16:00**

<https://us02web.zoom.us/j/85274768727?pwd=eEw1RDZqb3FvbUloYlJMUHd5VWdodz09>

7. Welcome to Group
  - Cabarrus County Leaders  
Fire Marshal Langer, Odell Chief Johnson, Northeast Board President Bergeron
  - Subject Matter Experts  
Chief Mosley, Wayne Bailey, Spencer Cheatham
8. Overview of the Bertie County Project
  - GIS Analysis
  - Stakeholder Feedback – both firefighter and public
  - Data Analysis
  - Peer Review Teams to make observations and recommendations
    - Analysis of Fire Marshal's Office
    - Improving Squad Operations
    - Bolstering Recruitment & Retention
    - Modernizing Funding
9. Peer Review Team Topics for Discussion
  - Current recruitment programs in place with challenges and successes.
  - Tracking new recruits through the on-boarding process.
  - Mentoring programs in place for new members.
  - Retention benefits offered to volunteers.
  - Identifying the greatest retention challenge.
  - Level of interest and buy-in for recruitment/retention.
  - Community education & outreach that fire departments are involved in.
10. Other Items
11. Next Steps – Follow Up Meeting
12. Closing





**Cabarrus County Fire Service Strategic Analysis  
August, 2020**

**CABARRUS COUNTY STRATEGIC PLAN  
PEER REVIEW TEAM – SQUAD OPERATIONS  
May 27, 2020 AGENDA**

1. Welcome and Introductions
  - a. Langer, Burnette, Styers, Thomas, Alford, LaBelle
2. Overall Process Components
  - a. Stakeholder Feedback, GIS, Data Analysis, Peer Review Teams
  - b. Peer Review Teams – FMO, Squad Ops, Funding, Recruit/Retain
  - c. End Product – Recommendations short term (1-3) and long term (3-5)
    - i. Best practice, sustainable, improve service delivery
3. Current Available Data – Dropbox
4. Needed Information for Team Review
5. Questions and Answers
6. Next Steps



# **Cabarrus County Fire Service Strategic Analysis**

## **August, 2020**

### **CABARRUS COUNTY STRATEGIC PLAN**

#### **SUMMARY OF RECOMMENDATIONS**

#### **Apparatus**

##### **NFPA Life Expectancy**

The Cabarrus County ten (10) volunteer fire departments evaluated in this study have forty-three (43) front-line apparatus and one (1) reserve engine in its current fleet inventory. Seven (7) of those apparatus in six (6) different departments have exceeded the NFPA life expectancy for emergency fire apparatus and several more are fast approaching the twenty-five (25) year mark. See the lists of apparatus and their current age (in years) below that have exceeded the NFPA standard:

- Allen – Rescue 11 (28), Engine 5 (26)
- Flowe’s Store – Tanker 2 (31)
- Midland – Tanker 1 (25)
- Mt. Pleasant – Tanker 1 (27)
- North East – Engine 2 (26)
- Odell – Tanker 1 (27)

An aggressive replacement Capital Improvement Plan (CIP) is needed to update the fire apparatus fleet for Cabarrus County. It is recommended that the county departments adopt a CIP and consider taking advantage of joint purchases for multiple apparatus to save on long term costs.

##### **Apparatus Tire Life and Maintenance**

The NFPA Technical Committee on Fire Department Apparatus has recommended that “tires shall be replaced at least every seven (7) years or more frequently depending on the amount of use”, this requirement was incorporated in a complete rewrite of the 2007 edition of NFPA 1911. Cabarrus County has multiple apparatus with tires that exceed this important standard and should be considered a safety issue:

- Allen – Engine 5 and Rescue 11
- Flowes Store – Engine 1
- Georgeville – Engine 1 and Tanker 1
- Mt. Mitchell – Engine 1 and Tanker 1 (due 2020)
- North East – Engine 1
- Rimer – Engines 1 & 2



## **Cabarrus County Fire Service Strategic Analysis**

### **August, 2020**

It is recommended that each department strongly consider replacing the out of date tires on the listed apparatus and perform annual inspections on the age of the tires, as well as, tire maintenance for tread wear, tire damage, improper inflation pressure and storage conditions.

#### Apparatus Braking Systems

The safe operation of fire apparatus is of the upmost importance and braking systems play a key role in that process. Apparatus weight, distribution of that weight, and responding emergency traffic are considerable factors that make adequate braking systems crucial to the safety of responders, citizens, and adequate service delivery. The county has two apparatus that had insufficient brakes at the time of this study:

- Allen (Engine 1) – front brakes need to be replaced
- Georgeville (Engine 2) – rear brakes need to be replaced

It is recommended that these two engines are taken out of service until sufficient repair can be made to the braking systems.

#### Other Mechanical Issues

The apparatus evaluation found a host of other mechanical issues that need to be addressed if these apparatuses will continue to respond on emergency calls for service:

- Flowes Store (Engine 2) – pump transmission leak
- Allen (Engine 5) – rust on frame rails showing long term deterioration of structural components. (Rescue 11) – Class-3 oil leak and rear springs starting to sag (structural issue).
- Georgeville (Tanker 1) - rust on frame rails showing long term deterioration of structural components
- Mt. Pleasant (Engine 2) – Class-2 engine oil leak. This apparatus has chronic mechanical problems due to being damaged in a motor vehicle crash rollover.
- North East (Engine 1) – significant oil leak
- Odell (Engine 1) – Class-3 oil leak. (Engine 2) – Class-2 oil leak.
- Midland (Engine 3) – rear main seal leak

It is recommended that the above apparatus be serviced and repaired before more long-term damage is done.

It is recommended that scheduled systematic maintenance inspections be performed on all Cabarrus County apparatus in the future to alleviate undo safety issues and long-term damage to emergency apparatus. A county wide apparatus maintenance and inspection program would pay dividends for all departments and the county.



# **Cabarrus County Fire Service Strategic Analysis**

## **August, 2020**

### **Geographic Information Services**

There are properties identified as being over 5 miles from Flowe's Store Fire station and this area should be reevaluated again by county staff.

### **Fire Marshal's Office**

#### **1. FMO Organization and Staffing**

- a. The peer review recommends several organization improvements designed to enhance the overall efficiencies and customer service in the FMO. All formal organizations need to provide guidance for day-to-day activities with policies and procedures to provide consistency. This is especially true for fire code enforcement. It is recommended that the FMO develop a policies and procedures manual for employees to follow for consistent enforcement and provide direction for new employees. Without this guidance mistakes will occur and affect both internal and external customer service.
- b. The FMO has a new records management system (RMS) that should be utilized to track each activity (inspections, plan reviews, meetings, public education, etc.) performed by its employees. Without proper tracking it is difficult to determine when workload outpaces the ability of employees to complete assigned tasks. It is recommended that all activities of the FMO be entered into the RMS and a monthly report be created to determine if assigned tasks are completed. This will allow the FMO to establish goals and outcome measures for its employees.
- c. During the peer review it has become evident that additional staffing is needed based on the current workload. The current fire marshal is managing both the FMO and staffing squad and is assigned other tasks relating to emergency management that have been amplified during the pandemic. A more thorough analysis should be conducted when all activities are entered in the RMS to determine actual workload and how compensated time off affects service delivery. The period from July through December should provide sufficient data to determine staffing needs in the FMO for the FY 2022 budget process. A Deputy Fire Marshal position may be appropriate to add to the staffing complement for Cabarrus County. Other North Carolina counties, as a best practice, use the "Deputy" Fire Marshal designation because it empowers the Deputy Fire Marshal to have the same powers and authority as the Fire Marshal when necessary relative to inspections and investigations.
- d. The Fire Marshal is also performing duties not specified within the job description as outlined in the Appendix. Additionally, the supervisory span of control is



## **Cabarrus County Fire Service Strategic Analysis**

### **August, 2020**

exceeded, and this position is supervising too many staff members to be effective at evaluating and training personnel – especially with the staffing squad. A new Fire Operations Chief position could be used to address this need for the staffing squad component of the need. This position is also recommended under the Squad Operations section of this report.

- e. Data entry for inspections should incorporate all time associated with the activity such as commuting from the office to the site. Plan reviews should include code research, phone calls, and data entry. It is recommended to develop a policy to track all daily activities in the RMS for consistency. Without this information it is difficult to determine when additional staff is needed to perform all functions currently provided.

## **2. Succession Planning and Career Development**

- a. The ability to prepare employees for future promotions is an important goal for an organization. Currently, the fire marshal oversees two divisions and does not have a designated employee to perform his functions if out of work for an extended period of time. It is recommended that Cabarrus County develop a succession plan that includes career development goals for the FMO. This process can occur concurrently with the recommended staff workload analysis.
- b. The job descriptions provided do not reflect the significant time investment and programs assigned for Emergency Management functions for Asst. Fire Marshal I and II, as outlined in the Appendix. It is recommended these functions be assigned to a new Deputy Fire Marshal position or create an additional step within the Assistant Fire Marshal career ladder.
- c. Some duties that are firefighting based, such as fit testing equipment maintenance, should be transferred to the Squad Captains and or the Fire Operations Chief as recommended in this report.
- d. Career ladders are valuable succession planning tools as staff train to advance within the pay grades they also are better prepared to advance within the overall organization and fill expected or unexpected vacancies. This ability is critical to maintaining continuity of operations across the FMO organization. The career ladder in place should be expanded to meet this objective.



# **Cabarrus County Fire Service Strategic Analysis**

## **August, 2020**

### **3. Periodic Fire Inspections**

- a. Existing occupancy fire prevention and code enforcement inspection frequencies are specified as annual inspections. It is recommended a pilot program be instituted to see if this approach is data driven. Fire losses, violations, and complaints would be tracked to see if the annual schedule is justified versus the state mandated schedule which allows some biennial and triannual inspections. This sampling of selected occupancies would take several years to assess but could justify using available staff hours on other critical programs.
- b. Re-inspections of nonlife safety violations could be performed through a mail-in self certification program, which is used in many jurisdictions across the nation. Again, this could be implemented on limited occupancy types as a pilot program to measure compliance effectiveness. The goal is to gain compliance and effectively use limited staffing.
- c. Inspection results are needed to be shared in a consistent method with the affected Zoning departments when properties undergo a change of occupancy or become vacant.

### **4. Plans Review**

- a. Data collection is not consistent across jurisdictions on site plan reviews. Using the TRC model in all jurisdictions will avoid inconsistencies in fire code application and information sharing.

### **5. New Construction Inspections**

- a. The Acela software program used for Building Inspections is capable of being built out to capture all the required fire code inspections and acceptance testing. It is recommended that this software be utilized to its full potential for this data capture.

### **6. Fees and Charges**

- a. No specific recommendations, other than review the dollar amount of fees charged and collected to determine they could help offset additional staffing or program needs.

### **7. Fire Investigations**

- a. Weekly on call rotations are used to maintain a roster of investigators needed for response. There is a need to develop an investigation case management SOG in



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addition to the response SOG, as cases may cross over into additional time periods and jurisdictions.

#### **8. Public Education and Community Risk Reduction (CRR)**

- a. The ability to provide public fire and life safety education in the community should be a goal of the FMO. The requests could include how to use a fire extinguisher or provide a fire truck display. Each of these requests require staff time to either conduct the training or coordinate the event. The primary goal of public education is to prevent or mitigate an incident.
- b. It is recommended that a risk assessment be conducted to determine where the highest risks are in the service area and create individual risk reduction plans to prevent or mitigate the problems. Development of CRR plans at the station level will allow the programs to be data and occupancy specific. Monthly reviews of fire losses and fire causes will develop data driven CRR programs.
- c. The need for specific programs in Public Schools also should be community driven and a partnership should be developed with the County School system.
- d. The FMO expressed a need for juvenile fire-setters intervention program. Fire cause data will justify the need to establish the program.

#### **9. Other Programs**

- a. During our interview, the FMO expressed interest to be more involved with other programs and activities such as:
  - i. Fire Scene Safety Officer
  - ii. Rapid Intervention Teams
  - iii. Fireground accountability methodsAll three of these programs can be explored as possible additions to the Squad program and placed under the supervision of their Captain.

#### **Key Fire Marshal Office Priority Recommendations:**

- A comprehensive set of FMO divisional policies and Standard Operating Guidelines are needed.
- The existing career ladder should be expanded to reflecting actual job duties and organizational expectations.
- Comprehensive data collection is needed in all aspects of job performance and work activities.





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- There is no redundant staffing as shown in the workload analysis, therefore continuity of operations cannot be assured without either additional staffing methodology or workload or work duties reduction. An additional Deputy Fire Marshal position is recommended as soon as conditions will allow.

#### **Squad Operations:**

1. Continue to develop and improve the Squad operation for Cabarrus County. In the short-term, collaborate with fire chiefs in the county to determine the “ancillary duties” that the Squad personnel could be most helpful to them with, recognizing that there may be a baseline across the county and then some contracting fire departments may need more assistance than others. In the long-term, other counties have experienced the value in locating two squads in the county so that areas can be more effectively served geographically. Some planning for this need in future years should begin being addressed.
2. As soon as conditions allow, the Squad and County Government would benefit from a designated lead person to be responsible for the Squad operations. A dual focus of managing the Squad personnel as well as building relationships with contracting fire departments is essential. Observations of the team is that the current county staff does not have the work hours needed to have the level of interaction and direction needed for the current squad program and that the overall fire protection service delivery system could benefit from a higher level of communication with contracting fire departments, with specific attention on enhancing the services of the Squad in order to get the very most effectiveness and efficiency from the program. Some counties implement this type role as an Operations Chief. They would have the responsibility of managing and leading the Squad, but also provide overall focus and attention to the fire protection delivery system with the contracting fire departments. Wake County effectively utilizes the Operations Chief in this capacity.
3. In the longer-term, when conditions allow, the current Squad should be expanded to fifteen (15) personnel. This is consistent with industry standard in the North Carolina fire service recognizing that additional full time equivalent (FTE) personnel are needed in order to maintain minimum daily staffing of four persons per day. Typically, to maintain minimum four person staffing on three shifts requires 15 certified firefighters. Currently, the program utilizes part-time personnel to fill this void. However, in the long-term, there are advantages to utilizing the full-time personnel in this capacity for continuity of operations, relationships with personnel and stronger tactical capability between crew members when on emergency scenes or incidents.



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4. The station location for the Squad should be evaluated. While it has been functional, it lacks some of the space needs that are essential for 7/24/365 operation and the responding equipment is not housed in a heated space. Examples include area to train and additional square feet needs. An analysis through the GIS portion of this project has determined that if there were one Squad, it could be more effectively located to the east of the current location based upon the incidents that the Squad historically responds to. In the short-term, if there were an opportunity to partner or collaborate with an existing fire department or county facility to provide an overall better environment for the squad, especially if geographically closer to the locations specified on the heat maps, that would be desirable. Longer-term, consideration should be given to determining two optimal locations where future fire stations would be built in the county whereas Cabarrus County Government could partner or collaborate with a private, non-profit fire department or municipal government to include adequate space for the Squad operation from the design up. Models of such collaboration abundantly exist in North Carolina with EMS. Some do exist between two separate fire departments – such as with the Town of Morrisville and the Town of Cary, where two separate fire departments operate under the same roof, providing an efficient operation for taxpayers. If Cabarrus County were in on the initial design, it would be typical that Cabarrus County would pay for their portion of the capital expenditures as well as possibly a monthly cost for utilities. Multiple examples of these agreements are available, such as one between the City of Greensboro and Guilford County on Fire Station 59 and Fire Station 63.
5. The Squad's response vehicle should be re-evaluated when conditions will allow. Cabarrus County's Squad is intentionally designed and intended to serve as a supplement staffing unit and the team supports that continued operation. This initiative is not designed to be a front-line response fire apparatus and the team supports that position. However, as a staffing unit, the team is tasked to perform critical fire suppression duties that require them to work in immediately dangerous to life and health (IDLH) environments and the tools and the equipment that they use must be fully maintained, checked and working properly. As an example, tools and equipment used as a part of a rescue intervention team (RIT) must have the confidence of the Squad personnel and if they have not checked the equipment, the Squad members may not have assurance that the equipment is in the proper condition. Some of this equipment will need to be carried on the response vehicle for the Squad. Adequate space for the Squad's equipment is needed. Comparatively, other counties have seen a transition from using a ¾ ton pickup truck (F-250) to a heavier truck (Such as an F-550) with a service body to be the next step forward in the progression of the program. Other counties have found that keeping the Squads operating in a rescue or service type



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truck is effective and keeps the roles and responsibilities of the supplemental staffing crews cleaner and clearer.

6. Comparatively, Cabarrus County's Squad program operating on a 24-hour basis is relatively new. However, attention will need to be given to making appropriate budget and funding adjustments to the program to reflect enough resources to provide the essential personal protective equipment and needed firefighting tools and equipment. This norming of resource allocation is a natural component of the operating cycle of a new program.

### **Recruitment and Retention**

#### Short-Term Initiatives:

1. Training Opportunities

The Team recommends representatives from as many Cabarrus County fire departments as possible attend the NC Association of Fire Chiefs upcoming "Leadership in Retention and Recruitment" class instructed by Tracey Mosley and Spencer Cheatham. These classes will be offered in the Western, Piedmont, and Eastern parts of NC this calendar year free of charge. In addition, the Team recommends that Cabarrus fire departments take full advantage of certification/new recruit academies at local community college by sending members (fee waived for NC firefighters). Other important training opportunities at low to no cost training available to Cabarrus firefighters include:

- a. NC OSFM
- b. NC/SC National Fire Academy weekends
- c. Local NC Community Colleges
- d. NC Firefighters Association Annual State Conference
- e. IAFC National Recruitment Coordinator Network

2. Designate New Firefighter Training Nights

Fire departments find that designating a training night each month for new members is an effective practice to help them acclimate to the fire service. The team would recommend Cabarrus County utilize this approach.

3. Include Leadership Training in County Association Meetings

An important part of retention is developing strong leadership within the fire service. It is recommended that the Firefighter's Association incorporate leadership training and speakers into their meetings periodically as conditions will allow. Including motivational speakers is often beneficial as well. It is



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suggested to provide food when conditions allow as that typically increases attendance. Also, the Team recommends inviting key representatives from the Sheriff's Office and Communications as well as the community college(s) to these sessions. The NC Association of Fire Chiefs has offered to come speak at a meeting related to recruitment and retention efforts for Cabarrus County.

#### **4. Use of Social Media**

Social media, such as Facebook, Instagram and Twitter can be effective recruitment tools for many fire departments. It is also a powerful tool to help communities know what their fire department is doing. Some of the Cabarrus County fire departments are effectively using social media with people following their activities. The Team recommends that Cabarrus County fire departments take advantage of social media to share fire department information, which will assist with volunteer recruitment and retention.

#### **5. Participate in Community Events**

The Team recommends that Cabarrus County fire departments participate in local festivals and/or host events at the fire stations for members and community outreach. These are important opportunities to interact with the community and identify potential volunteers.

#### **6. Sign Boards/Frequency**

The Team recommends installing sign boards in front of fire stations to advertise the need for volunteers. Furthermore, designating times that volunteers are brought into the department may be beneficial such as twice per year or quarterly. Applications can be constantly accepted and personnel brought in together for improved training and coordination.

#### **7. Interest Cards/Flyers**

Develop interest cards and flyers with department specific information to give to interested volunteers. These can be distributed in a variety of methods to help get the word out. Information should have methods to make personal contact and the persons responsible for getting back to interested volunteers should do so on a timely basis.

#### **8. Ride-Along Program**

Consider starting a countywide ride along program for interested volunteers and dispatchers. This can be an effective tool to help attract volunteers. Appropriate release forms and procedures for ride-alongs are recommended for this program as well.



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#### **9. Utilize Volunteers for Non-Traditional Roles**

While interior firefighting requires great strength, stamina and endurance, many fire departments across the state and country have found great success in recruiting persons to perform non-traditional roles in the fire department, such as someone from banking to help with financial matters, teachers to help instruct fire and injury prevention classes, or diesel mechanics to help maintain fire apparatus. As a part of the infrastructure, non-traditional roles are essential in providing fire and rescue service delivery to the communities within Cabarrus County to support front-line firefighters.

#### **10. Family Involvement**

One of the proven methods of increasing volunteerism is involving the entire family in fire department events. The Team understands that this is happening in some fire departments in Cabarrus County already. However, more is encouraged. Examples of successful ventures include “Pictures with Santa” events bringing in kids and pets. These events not only involve families, but also help attract people in the community to become volunteer firefighters. All outreach programs benefit from having materials to hand out to help others learn more about their fire department.

#### **11. Engage Committees**

The Team recommends establishing a recruitment committee within the Cabarrus County Firefighter’s Association to focus on these efforts on an ongoing basis and provide important dialogue and connectivity across the county. This effort needs to be dynamic and change with conditions.

### **Longer-Term Initiatives:**

#### **12. Volunteerism Coordinator**

There could be great value in Cabarrus County engaging a single person to lead the volunteerism recruitment within the County. This could be a part-time person and could potentially be funded through a federal SAFER grant. Having a single point of contact to follow up on persons who are interested in serving as a firefighter has been proven beneficial in counties like Cabarrus. Being able to return calls quickly and help connect interested persons with the best fit agency or fire department in the county could strengthen the number of volunteers available to serve. There is also a great value in having someone to consistently follow up with people who have interest to make sure that there is a positive match. Diversity can also be bolstered through this effort.



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#### **13. Recognition Programs**

Holding firefighter recognition programs such as annual banquets and honoring firefighters that have retired from serving the community are important elements of successful retention programs. Involving retirees provides many benefits. Implementing incentive programs can also be valuable with firefighter retention. An example the Team discussed was the use of “Training Bucks” that can be earned throughout the year to purchase a small gift during the holidays.

#### **14. Junior Firefighter Programs**

The team recommends considering establishing some junior firefighter programs within Cabarrus County. Cabarrus could gain from other counties that have successfully instituted Junior firefighter programs within the state. Demonstrating how the fire service can be meaningful to the community and to spur interest in firefighting as a career can help support volunteerism.

#### **15. High School Program**

It is recommended that Cabarrus County continue to partner and collaborate with the existing high school Firefighter 1 and 2 certification program. There are scores of successful high school firefighter programs across North Carolina and in most areas, the programs have enhanced recruitment of volunteer firefighters.

### **Tax Districts and Funding**

#### **1. Insurance Rating Recommendation for Consideration:**

As an industry best practice, Insurance Districts should reflect a closest station response. Some natural geographic boundaries can alter that some, but generally insurance districts should reflect the closest station response. NC Fire Chief Consulting will provide mapping of those proposed closest station response areas as a part of this project.

Prioritization should be placed on conducting an ISO analysis of the Georgeville, Northeast Cabarrus and Rimer fire districts to determine methodologies that they could utilize to lower the ISO rating for the respective districts. Property owners would greatly benefit from improvements in these three districts in particular.



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### **2. Long-Term, Sustainable Funding Recommendation for Consideration:**

As a North Carolina local government best practice and consistent with North Carolina General Statutes, create a countywide fire and rescue service district (or create a few regional fire and rescue service districts). A specific procedure must be followed in order to create the service district. Once created, a tax rate for the fire protection service district must be set by the Cabarrus County Board of Commissioners. Funds collected from this service district may only be used to provide fire and rescue services. The Team recommends that the service district be established initially to address immediate fire protection needs in Cabarrus County, with the ability to make incremental adjustments year to year as conditions demand. It is further recommended that each contracting fire department be provided with a base appropriation. In addition to this base, the Team recommends that a distribution formula be established that addresses hazard, risk, density and other needs beyond the base so that the service district can adequately meet the needs of the people of Cabarrus County.

County staff and the fire service leadership within the county should model what the best-case single service district would look like for Cabarrus County. Consideration should be made for funding would be necessary and how the single service district could be best implemented. The guidance from North Carolina State Statute should be followed related to the plan that is necessary to be submitted for consideration by the Cabarrus County Board of Commissioners.

### **3. Consideration of Municipalities into a County-wide service district:**

Should the Cabarrus County Board of Commissioners decide to pursue implementing a countywide fire protection service district, outreach would need to be conducted to each municipality within the county to determine if they want to join the unified service district. This determination should be made early in the process. It is recommended that municipalities which choose to be a part of the service district have a voice in the application of the service district. For example, counties often establish a fire advisory board or fire commission to review funding requests and make recommendation to county staff and the Board of Commissioners for adoption.

### **4. Use of General Fund Monies post a County-wide Service District:**

Should the Cabarrus County Board of Commissioners decide to pursue implementing a countywide fire protection service district, supplemental funding that is currently going to contracting fire departments within Cabarrus County





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should be re-diverted to support the staffing squad program to serve all of Cabarrus County. Adequate operational funding should come from the county-wide service district(s).



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### **12. DISCLAIMER**

*This project has been conducted upon the written request of Cabarrus County Government. The sole intent of this project is to improve, advance and strengthen the fire protection service delivery system in Cabarrus County and in the State of North Carolina. Persons involved in this report have contributed for the purposes of providing information, professional observations and recommendations to the County elected officials, management and the fire service leadership. Recommendations included in this report are based upon professional experience and understanding of current fire and rescue service best practices. Examples and references in the document are for informational purposes only. Information contained within this document is not intended to be comprehensive, and recommendations are based on limited information available at this particular time. As with any project based on a snapshot in time, additional facts, local issues and/or changes in the facts could alter the conclusions and recommendations in this document. This document is solely to be utilized by local government and fire service officials for long-term planning purposes. It should not be utilized for any other purpose. No warranties or guarantees (express or implied) are provided. While this document will hopefully assist local officials in their deliberative and long-term planning process, it should be recognized that there are many local issues that may impact the ultimate decisions and what works for a particular jurisdiction. The ultimate decision-making lies with the appropriate local government and fire officials.*



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