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For Client Review



Independent Review of
Fire, Rescue, & EMS services in
PULASKI COUNTY, VIRGINIA



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Gannon Emergency Solutions

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Methodology

Gannon Emergency Solutions (GES) has evaluated and assisted fire departments in over 40 countries using a proven method based on a humanistic approach. We focus on asking questions to gain an understanding of the organizational issues, assess the department against standards and best practices, but also look at risk, liability and compliance based on the project team's expertise.

Every organization has blind spots, issues, developmental concerns and can benefit from an outside assessment from time to time. Often, too much time is spent looking at data rather than a department as a whole. Public service jobs are driven by the people involved, most of the time it just takes a new set of eyes and some honest, open communication to foster productive change.

Prior to a site visit, GES conducts extensive research, gathering as much information as we can via public records and from the host organization. We use that research as a basis for the on-site visit which includes meetings with as many stakeholders and members of the organization as possible to get direct feedback. We then use that information to compile a comprehensive report with 2 levels of recommendations. The first level contains the key recommendations or highest priority items. The second level are recommendations for consideration.

We recognize that implementing many of those recommendations contained in this report will be extremely difficult due to current staffing and time constraints and some suggested models will be unfamiliar. We are regularly asked to assist in managing implementation as part of a phased program of improvement and change. As such, we would respectfully suggest Pulaski County considers continued partnership with GES to manage critical projects such as strategic planning and mentoring staff.

Table of Contents

Gannon Emergency Solutions	2
Table of Contents	3
Executive Summary	5
Key Recommendations	10
1. How are the Fire and EMS agencies in Pulaski County Doing?	19
2. Pulaski County, Virginia	19
3. Organizational Restructuring	20
4. Planning	23
5. Policies	25
6. Fire Departments	25
7. Emergency Medical Services	35
8. Special Operations Team	46
9. Fire and EMS Stations	47
10. Apparatus	55
11. Vehicle and Equipment Management and Maintenance	59
12. Personal Protective Equipment	64
13. Personnel Matters	66
14. Volunteer Recruitment and Retention	67
15. Dispatch and Communications	71
16. Staffing and Standards of Cover	74
17. Safety, Health and Wellness	77
18. Training	80
19. Fire and EMS Oversight – County and Town Administrations	85
20. Funding	85
21. Insurance Services Office, Public Protection Classification	88
22. Prevention and Community Risk Reduction	89
Part 2 – Relationships with Other Agencies	92
2.1 Virginia Department of Forestry	92
2.2 Radford Army Ammunition Plant (RFAAP)	93
2.3 New River Valley Airport (KPSK)	94
2.4 Radford Fire Department	94
2.5 Law Enforcement	95
2.6 Hospitals	96
2.7 Volvo Emergency Response Teams	96
2.8 United States Coast Guard Auxiliary	97
Annex A: GES Zoom and Site Visit Schedule for Pulaski County, Virginia	98
Annex B: Fire, Rescue, & Emergency Management Vehicles and Trailers	99
Annex C: Suggested Policies	101
Annex D: Station Location Analysis	102
Annex E: About Gannon Emergency Solutions	107
Annex F: List of Recommendations	109

Background

Pulaski County consists of 8 separate fire departments and a county-wide EMS system under the name of Pulaski County Public Safety Department. Public Safety employs 19 part-time and 23 full time employees. The Towns of Pulaski and Dublin Fire Departments have both volunteer and paid members, the other six are purely volunteer. Calls for service are increasing, volunteer numbers are declining and the situation required an assessment of current service delivery standards and strategic planning for county population growth aspirations.

Scope

The review was financed by the County of Pulaski and initiated by a request for proposals in June of 2022. The notice indicated the need for a *“Comprehensive Review of the County’s Fire, EMS and Rescue Services.”* The purpose further explained that *“Pulaski County is seeking a professional consultant or firm experienced in the review of volunteer, combination and career fire, rescue, and EMS departments to undertake a comprehensive organizational, effectiveness and efficiency study of all departments serving our community.”*

This report was compiled using a combination of pre-visit data analysis, 24 discussions via Zoom, 6 days of scheduled on-site meetings (Annex A), follow up discussions, and subsequent evaluation of the findings. Ultimately, the ambition was to reveal if expectations on all sides are being met, to identify organizational weaknesses and to offer recommendations that can serve to drive improvement. The secondary purpose of the review was to examine the relationships between the multiple interfacing agencies within and outside the County.

Limitations of the Review

This report is limited to the information obtained and gathered prior to, during, and two weeks after the visit. Only a percentage of the requested data was provided and we believe this is primarily due to staff time limitations and unfamiliarity with where to locate it. Not all fire departments provided the information requested including their by-laws, SOPs, vehicle information and other data needed to accurately evaluate each accurately.

Comparison to Other Counties

There were many comments about how other counties operate their Fire/EMS systems. GES cautions Pulaski County not to simply copy what other nearby counties are doing as those we visited as part of this study also revealed organizational issues and concerns.

Survey Clarification

During approximately the same time frame that GES was conducting our review, a survey was circulated among the Pulaski County employees, and we were asked about this on multiple occasions. For clarification, the survey was in no way related or associated with GES. It was from a consulting group studying the working culture and mental health of county employees.

Executive Summary

This section of the report provides our overall assessment of the situation. It includes elements of our research, interviews and meetings. The latter part of the report contains the supporting information and evidence that helped us reach these conclusions, plus our level 2 recommendations.

Every study and review we have undertaken shares one common theme: inconsistency. While the science and physics behind fires and rescues are universal, the way organizations manage them is always different, and Pulaski County is no exception.

The provision of public safety is the most important function of local government. A main component of public safety is organizing fire and emergency services within a community to provide the most efficient and cost-effective delivery of quality service. Historically, many fire/EMS services were developed and organized on the basis of local neighborhood need and initiative and volunteer fire departments were formed. However, as communities have evolved, calls for service and expectations have risen resulting in the need for more coordination and direction of fire and rescue services.

Nationally, EMS calls account for the vast majority of public safety activity for communities, fire departments that provide ambulances have now become EMS/Fire rather than Fire/EMS.

Delivery of EMS and fire services has been evolving in Pulaski County to the point now where EMS is provided exclusively by the County, and fire/rescue delivered by a mix of combination and volunteer responders.

It has been a genuine privilege working with Pulaski County, everyone we have spoken to expressed significant pride in their roles and most importantly, in their communities. During this review, it was evident that there was no shortage of passion or commitment, but all were very realistic, recognizing the urgent need for change.

The citizens of Pulaski County are reaping substantial economic benefits from its volunteer fire system. Conversion to a baseline career fire system with three shifts of five firefighters across the eight fire departments would cost nearly seven million dollars just in basic personnel costs. In examining the future delivery of fire and rescue services, this estimate of a paid system should be frequently considered.

The current fire/rescue system is experiencing significant pressure and has become dysfunctional. A *“we have always done it that way”* culture exists, and there is a serious lack of emphasis on member safety. The existing system is completing calls in a manner and method that does not reflect industry best practice, consistent safety, or the professionalism that Pulaski County desires and we are deeply concerned that a serious injury will occur if the situation is not addressed urgently.

A clear example of this are motor vehicle collisions on Interstate 81. Morally, first responders feel an obligation to respond to every call, especially when trapped casualties are reported. However, hearing first-hand accounts of personnel jumping over safety barriers to avoid injury, the Draper Fire Chief actually being hit twice by traffic and personnel managing incidents alone, is simply not acceptable for the victims, the members, or their families.

None of the eight departments are adequately resourced or organized to deliver services as effectively or safely as they should be, particularly during weekday daytime hours. There is an absence of standardization, centralized purchasing or control and public funds are not being spent as efficiently as they could be. There is an impressive, but unnecessary level of apparatus and an insufficient and declining number of people to crew them. The 8-year cycle of apparatus purchasing needs to be replaced with a needs-based plan.

DRAFT F FOR CLIENT REVIEW

There are 11 emergency service delivery teams (8 fire departments, 1 county-wide EMS system, 1 Squad 9 program, and 1 special operations team) in the county rather than a synchronized single system approach. Each of the teams, to a greater or lesser extent, seems to focus on its own organization and area of responsibility, creating duplication of effort, apparatus and equipment in a number of areas. Some members mentioned the existence of “fiefdoms” and “egos” on the part of some fire and EMS leaders.

There are eight fire department ‘empires’ all vying for the same things, but despite having a committee, not always working collectively in the common interest. Tradition and history are very important and any changes need to respect the past and retain as much individual identity as possible but the fire departments need to recognize that a growing relationship with the County is inevitable and essential if they are to survive.

It is a known trend, nationally and statewide, that attracting and retaining volunteer members in both fire and EMS organizations is a significant problem. Most volunteer fire and EMS companies across the United States are dealing with the loss of volunteers. In some regions, even in the Commonwealth of Virginia, volunteer fire departments are “closing their doors” and disbanding their organizations.

This is causing significant issues for many counties. Considering this trend in reduced volunteer participation, Pulaski County is very fortunate to continue to be served by dedicated volunteers but on its current path, is unsustainable.

The number one concern from fire personnel was ‘*is this study a precursor to introducing a county career system?*’ With that in mind, it is only fair that we deal with the subject and outline our recommendations here. Conceptually, there appear to be three basic alternatives for staffing fire and rescue units in Pulaski County. These are:

- **Option A: All Paid Staffing.**
- **Option B: A Combination of Paid and Volunteer Personnel.**
- **Option C: All Volunteer Staffing with Career Support.**

Option A – All Paid Staffing

The significant advantage of this alternative is:

1. There would be adequate personnel available at all times to immediately respond to an emergency and to meet all national standards.
2. Because they are available in the station, training could be conducted on a continuing basis and pre-planning could be completed.
3. Officers would be available at all times to supervise the on-duty personnel.

The disadvantages to this alternative are:

1. The cost of providing the service.
2. This staffing scenario would eliminate volunteer involvement in the county system

GES does **NOT** recommend this approach at this time

Option B - Combination of Volunteer and Paid Staffing

Under this alternative, like Pulaski and Dublin, some paid firefighting personnel would be placed in the fire and rescue stations to ensure that there is a rapid initial response to calls, with the volunteers supplying the additional personnel to handle the incident.

DRAFT F FOR CLIENT REVIEW

To ensure continuity of supervision, career officers could be assigned to handle normal administrative tasks and ensure training, pre-incident planning and other non-emergency activities were successfully completed by the crews (regardless of pay status).

The advantages of this alternative are:

1. Blended economy - allows for maintaining part of the major cost savings since volunteers are utilized.
2. Ensures a rapid response for some of the apparatus.
3. Allows the career personnel to handle small incidents without having to call out the volunteers, thus improving volunteer morale and resilience.
4. Allows the paid firefighters to pass knowledge and information to volunteer members in a teamwork environment.

The disadvantages of this alternative are:

1. Increased cost when compared to an all-volunteer system.
2. Inconsistent staffing since volunteer availability is dynamic and often unpredictable.
3. Conflict between paid and volunteer personnel in the station.
4. A possible reduction in volunteers responding because they feel the paid personnel will handle the majority of the incidents.

Based on the experience of other similar jurisdictions, this alternative can realistically work in Pulaski County in the long-term if an action plan to provide supportive actions to encourage and maintain strong volunteer activity is in place.

While this option may be needed in the future, GES is **NOT** recommending this option at this time

Option C - Provide Fire Protection with an All-Volunteer System and improved Career Support Staff

We strongly advise the county moves to create a unified organizational structure with the current volunteer departments remaining intact. This new unified organizational structure would provide oversight and leadership to these departments and utilize career support positions such as those outlined in the following key recommendations.

The advantages of this alternative are:

1. The costs are maintained at a low level.
2. The volunteers maintain their identity and interest in continuing to provide service.
3. There is community involvement in the provision of fire and rescue service delivery.

The major disadvantage of this alternative is the potential inability to rapidly respond to a call. The citizens of the community have no assurance that there will always be a rapid response to a call for help or that sufficient equipment to handle the incident will actually respond.

In summary, citizens are gaining substantial benefits from the current volunteer fire and rescue system. To provide the same level of service with full-time paid personnel would be cost prohibitive.

This continued service depends on the recognition of the County to provide important coordination, resource and support functions to the volunteers to allow them to concentrate their efforts on service-related activities.

GES recommends the county adopts Option C at this time

DRAFT F FOR CLIENT REVIEW

In developing recommendations, we have considered the current fragile nature of the volunteer system in an effort to provide constructive suggestions.

The fire departments rely heavily on volunteers, goodwill, improvisation and aid from other agencies. Attracting and retaining members is increasingly challenging due to social and generational changes, different working practices and the high expectations required of them.

As financial independence and member numbers have decreased, the County has progressively assumed greater responsibility in a number of key areas including the following:

- EMS
- Facility maintenance, construction, modifications, and remodeling
- Apparatus purchasing
- Vehicle and Equipment Maintenance
- Squad 9 Program
- \$14,000 annual disbursement to each fire department
- Standardization of self-contained breathing apparatus (SCBA) through a county-wide FEMA grant for which the County provided the local match funding
- Insurance coverage of fire apparatus, emergency vehicles, and volunteer firefighters

This approach is justified, as increased support has been necessary to maintain the volunteer nature of the services. In today's fiscal environment, it would be impractical for the fire/EMS departments to be financially self-supporting.

Most of the fire departments are relying on a handful of core members and their chiefs have no reliable way of knowing who or when personnel are available and what kind of response they can offer to the public at any given time.

The State of Virginia Title 27 requires departments to have 20 **effective** members to officially exist and be eligible for annual ATL (Aid to Localities) funding. However, chiefs openly stated that many individuals listed on the rosters are inactive and they are actually well below the required number. Each department recently received \$20,000 in ATL funds based on having a minimum, active roster of personnel. **This situation needs to be reviewed urgently to ensure department eligibility and legal compliance.**

The Squad 9 initiative was developed to provide operational assistance during peak hours to both fire and EMS and assume maintenance responsibilities at 6 of the fire stations. The initiative is an excellent one, but when departments rely on an external agency to answer their calls, perform rudimentary checks and assume basic responsibilities for them, it is a clear indicator that the volunteer system is crumbling.

A functional volunteer department should be capable of meeting on a weekly basis to conduct readiness checks, fulfil minimum training standards, plan and socialize, especially if the county is funding large parts of its operations. Sadly, the volunteer departments are not currently managing to achieve this industry standard.

While the Squad 9 program is applauded and should be expanded, it lacks accountability, structure and supervision. Its first SOG's were presented during our visit; some members say they have been under development for some time, others skeptical that they appeared in conjunction with this review. Either way, any emergency organization operating for over four years without an approved, published set of policies and procedures is a concern.

DRAFT F FOR CLIENT REVIEW

Increasing EMS call volume, lack of resources, lack of accountability and labor-management issues are putting a strain on members. Most of the full-time staff are working excessive hours and complaining of both mental and physical burnout. Front line responders stated collectively that *"the system is broken"*.

Poor attitudes and issues are causing a negative workplace culture that some describe as "toxic" and an 'us and them' culture exists between front line staff and management. **A change in structure is required to drive organizational and cultural change.**

EMS needs to explore partnerships in the community to develop and deliver citizen CPR classes and public education programs focused on injury prevention for all age groups, healthy living related to cardiovascular diseases (stroke, heart attack, etc.) and knowing when to call 911 versus when to see a primary care physician. CPR training should be required coursework for all high school students in the County school system, EMS and the school board should work together to implement this.

Compliance with Virginia OSHA laws across the Fire/EMS system is poor and there is culture that reflects safety as a low priority. The lack of policy, routine medical examinations, fit testing, fit for duty, and other practices are prime examples of this. Member obesity exists with no evidence found of directives to improve the health, welfare or physical capability of individuals.

Training is substandard county wide; neither fire nor EMS responders are meeting minimum training requirements for their positions. Essential topics are missing, required refresher training is not occurring, and as a result, competency is questionable. For example, there was no evidence of NFPA 1410 evolutions being conducted, the essential firefighting skills.

Pulaski County fire and EMS is not maintaining all of its equipment, vehicles and facilities to manufacturer recommendations, industry standards, or best practices. There are too many fire apparatus, too much equipment, and not enough planning to ensure proper use and maintenance. A lack of accountability is widespread and county control is 'loose' particularly in respect of statistical evidence and funding oversight.

The Computer Aided Dispatch System must be utilized to collect the number of personnel responding to the stations, number of personnel responding in personal vehicles, personnel per unit, arrival times etc. Without this data it is very difficult to accurately assess the success of any system.

A volunteer fire system and the volunteer/part time EMS personnel represent a huge cost saving to the county. Unless the situation is not stabilized urgently, calls will soon go unanswered, a serious injury is imminent, fire stations will close, or the county faces a multi-million-dollar staffing bill to transition to a career system. All of this can be avoided with a deliberate, immediate and focused effort.

Our experience with Pulaski County and the desire of everyone we spoke with to embrace change gives us confidence that conditions are right for a wholesale re-organization of the county emergency service system and to make it a regional model of excellence. The immediate investment needs to be in key people and we are not proposing unrealistic expenditure on assets or a transition to a career staffed organization at this time.

With the right attention and focusing on doing the basics well, the system can be improved and made sustainable.

Recommendations

GES has identified 25 key recommendations and 97 general recommendations. There are many other suggestions and actionable items advised throughout the report. Significant foundational decisions need to be taken to address vulnerabilities and concerns and ensure Pulaski County is set to cope with current expectations and future growth.

The major issues with fire, rescue, emergency management, and EMS at Pulaski County can be summarized as follows:

1. Incomplete Organizational Structure
2. Lack of Strategic Planning
3. Recruitment, Retention and Appropriate Staffing
4. Accountability
5. Safety and Health Concerns
6. Lack of Centralized Coordination

Culture of Pulaski County Fire and EMS

According to the National Fallen Firefighters Foundation, culture is generally defined as the behaviors, attitudes, values, and beliefs that are shared within a group or organization. It reflects the collective perception of right and wrong, good and bad, or desirable and undesirable actions and characteristics. Based on the findings of this study, fire and EMS operate on a good old boy system that is failing; a change in culture is needed to prevent a future tragedy.

Critical Decision Points

Pulaski County will have many critical decisions to make in the next 1 to 5 years including:

- Imminent Management Changes: Public Safety Director to retire in 2023.
- Fire departments potentially losing their status with the state because they cannot maintain 20 effective members.
- A new fire station is urgently needed for Pulaski town, followed by Newbern, and many fire and EMS facility upgrades are needed throughout the county
- The warning signs are present for a line of duty injury, or worse, if urgent action is not taken.
- Health and safety issues are prevalent throughout.
- Obesity is a widespread issue that needs to be addressed through wellness programs.
- Training is substandard, lacks basic topics for initial and ongoing effectiveness, and has created a significant liability risk

Key Recommendations

Extensive supporting evidence and justification for the following essential recommendations can be found under the related headings further on in this report. The findings should form the basis of a Strategic Plan for Pulaski County Fire and EMS, with short-, medium-, and long-term objectives formulated and shared with all stakeholders.

Implementation Feasibility

Pulaski County fire and EMS personnel are working at capacity. Without additional human resources, very few of these recommendations can be implemented. These changes require leadership to be focused on planning and execution only.

Key Recommendation 1:

Appoint a Director of Emergency Services

More than any other observation or recommendation made during this study is the urgent need for a dynamic, experienced individual to steady the ship and act as a focal point for the eight Fire Chiefs, EMS Director and Director of Emergency Management.

In addition, this project management role needs to oversee a reorganization program by developing and supervising the phased implementation of improvements and initiatives listed in this report. The role should report directly to the County Administrator and represent all four divisions with executive authority over each. An existing local employee or new hire would be needed as an assistant to this position to be mentored and groomed to eventually assume the role.

It is essential that any initial appointment be someone with no ties to the county or state. We were told that the many personal ties between managers and personnel creates perceptions of favoritism and hinders impartial management.

The current Director of Public Safety is due for retirement in 2023. The current Deputy Director appears to be a capable and popular choice to manage this branch under a new Director of Emergency Services.

The current Emergency Management Coordinator is overwhelmed with matters that are neither in the job description and being handled as a courtesy rather than a direct responsibility. The role should be 100% focused on disaster management and preparedness in an age where threats from natural, man-made and biological disasters are growing exponentially.

The eight fire chiefs have no official chain of command, two report to town managers but also rely on county support. They urgently need to be given direction and motivation to energize and transform their operations.

Reorganization of Fire, Rescue, and EMS

The current organizational system is complex and inefficient with overlap and many informal, inter-agency arrangements. The entire structure needs to be cleaned up, streamlined and taken back to basics.

As explained, seven of the eight fire departments are at risk of losing their status due to their membership of effective members falling below 20. The situation is far too severe to rely on these seven departments to turn around their own organizations. If the county does not step in to coordinate fire services now, it will have a much harder time in the future as the situation continues to deteriorate.

Name Confusion: Although Regional Emergency Medical Services, Inc. (REMSI) no longer exists, the name is still on the EMS facilities, some uniforms, equipment, and other objects. It causes public confusion and the name needs to be removed. Pulaski County Public Safety was chosen as the title to avoid offending fire departments, but the public safety title typically implies law enforcement as well. Additionally, the acronym, PCPS, is the same as Pulaski County Public Schools, which has also caused confusion.

Key Recommendation 2:

Change the name of Pulaski County Public Safety to the Pulaski County Department of Emergency Services.

We recognize this would be yet another name change but based on our research – necessary. Numerous complaints were shared concerning the lack of adequate organization, supervision, accountability and leadership that is perceived as neither visible nor engaged. There is too much history under current management to repair the system and a new name heralds a new start.

Key Recommendation 3:

All fire departments, emergency management, and EMS should be reorganized and incorporated under a new Department of Emergency Services.

Pulaski County needs to transition into a unified county service with each fire department adopting the same SOP's while still retaining their existing volunteer associations and non-profits. This will centralize crucial areas of service without destroying the history and independence of each department.

Core administrative and operational responsibilities can be managed more effectively such as:

- Annual and Individual Training Programs
- Administration and Records Management
- Fleet, Facility, and Equipment Maintenance
- Standardization of Assets from Apparatus to PPE
- Finance and Grants Management
- SOP's, SOG's, and Policies
- Health, Safety, Fitness and Wellness Programs
- Community Risk Reduction (education and prevention) Programs
- Collective collaboration with all associations to drive the fire and EMS services
- Personnel management and control over work hours, overtime, and wellness

Key Recommendation 4:

Phased Standardization of Assets, Operations and Administration

One of the biggest problems observed during the study is the lack of standardization in policy, procedure, equipment, vehicles and training. The only positive example witnessed was the county funded SCBA replacement program.

The current system is an extremely inefficient use of funds and creating common policies, procedures, equipment and vehicles will improve coordination, safety and operations. The one thing the eight fire departments do have in common is a lack of personnel, however those eight teams could all benefit, function and cooperate more effectively with standardization of processes and compatible equipment.

It was put to us that having a new piece of apparatus was a big incentive for retaining personnel and while trucks are at the heart of department operations, the declining member numbers did not support that fact and there are better ways to incentivize volunteers.

The fire apparatus purchasing program has outlived its usefulness and is creating a glut of unnecessary costs and apparatus.

Pulaski County is the buyer and owner of most of the vehicles, apparatus, and facilities. In return the county needs to take a more active position on steering processes and standards.

There are more apparatus in the fleet than needed, furthermore future apparatus design should be standardized with specifications and inputs from all agencies.

Purchasing standard apparatus provides discounts from manufacturers, increases buying power and represents savings to the taxpayer. It also makes vehicles easier to maintain and creates compatibility of parts and operations.

Globally, the use of multi-functional vehicles is preferred by departments with smaller personnel numbers as they can rapidly respond to and perform most of the anticipated fire/rescue roles in one package, rather than having a fleet of specialized vehicles for every eventuality and not enough people to crew them. The volunteer stations in Pulaski have larger and more sophisticated fleets than some metropolitan cities, which is neither appropriate nor necessary.

Key Recommendation 5:

Pause the apparatus purchasing program

Do not purchase any more fire apparatus for the next three years in order to reallocate funds to support recommendations in this review and until an apparatus deployment and replacement plan can be developed. The allocated annual budget for apparatus replacement could be better used in the interim for facility repairs, recruitment, staff incentives and other higher priority issues.

Ambulance Staffing

For current and anticipated call volumes, range of responsibilities and sleeping accommodation, Pulaski County requires at least three ambulances on duty 24/7, plus a paramedic supervisor. The management staff also needs to support operations, particularly in times of high system demand and complex calls. All full-time (career) fire staff should have a minimum of EMT to support immediate response needs, drive ambulances, or respond with additional EMS resources in times of peak call volume.

The paramedic supervisor must actively manage and control the EMS resources to ensure balanced and efficient service.

Key Recommendation 6:

Ensure a minimum of three staffed ambulances, ALS or BLS, are available at all times and consider an additional staffed ambulance for daytime peak call volume.

Daily EMS management is poor with crews largely managing themselves and is a cause of system failure and employee burnout. At this rate, calls will go unanswered and crew wellness and morale will continue to decline. Proper day-to-day management is needed. Simply promoting or appointing people to officer ranks is not solving the problem, in fact it is compounding problems and putting too many officers into positions that they and the organization are not prepared for.

Focus should be on better service delivery, improving accountability, pay and benefits, rather than promotions.

Key Recommendation 7:

Implement operational field supervisors for EMS.

One supervisor should always be on duty to manage EMS resources in the county. Ideally, a second should also be on duty and a community paramedic to deal with some of the frequent callers and non emergent calls. Selecting the right personnel for these positions is critical and GES highly encourages an internal and external recruitment and fair selection process.

Health and Safety

Pulaski County fire departments and EMS personnel are at a high risk of injury, illness and accidents. We observed numerous potentially serious health and safety violations. Only some of the compliance issues are described in this report since OSHA compliance was not in the scope of work for this review. We cannot ignore what we found and make this key recommendation in order to improve the health and safety of emergency responders.

A recent [headline](#) makes this even more relevant *“The Virginia Department of Labor and Industry is investigating whether Hampton Fire and Rescue violated state regulations in its response to a four-alarm apartment fire.”* The fire injured 12 people, including eight firefighters. This could happen in Pulaski County and an investigation like this would bring in investigators to interview witnesses, review records and inspect workplaces. With the issues observed, Pulaski County needs serious attention towards health and safety.

The Emergency Management Coordinator is currently responsible for safety and risk management for the county. There is no capacity to address these issues and it must be assigned to a new employee with adequate time and expertise.

DRAFT F FOR CLIENT REVIEW

We are recommending a full-time position of Deputy Director of Safety and Training to fill this gap. This position should be the designated Health and Safety Officer (HSO), chair the Health and Safety Committee, and conduct a full evaluation of NFPA 1500 for safety programs.

This position can oversee the training programs (and training officers/coordinators) of both fire and EMS to ensure compliance with regulatory requirements and best practices. The position can train chief officers to Incident Safety Officer levels, ensure safety practices are followed (especially 2 in 2 out on structure fires), and begin the effort to bring Pulaski County into compliance with many of the regulations.

Key Recommendation 8:

Hire a Deputy Director of Safety and Training to begin to address the health and safety issues in the EMS and fire departments.

Key Recommendation 9:

Medical evaluations and fitness standards programs need to be implemented.

Support Services (Squad 9 Program)

Squad 9 is performing a variety of support functions to aid the fire departments in their basic missions. They exist because the volunteer fire department system is collapsing and they are actually doing work traditionally carried out by the members of each fire department.

As stated, Squad 9 is an excellent initiative with a team of young, enthusiastic members, but greater oversight and management is required to address accountability and internal/external leadership concerns.

Documentation of activity, time management and task allocation all need to be improved. Better oversight by a new Director of Emergency Services and development of structured working routines will help address the concerns and ensure accountability is established.

There is a perception by some that Squad 9 personnel present themselves as elitists, freelancers and superior, which has caused negativity from both firefighters and particularly EMS members. A better sharing and appreciation of policy, procedure, responsibility and expectations would significantly improve this concern.

Designation: The “Squad” name and designation could create confusion about capabilities. If the program continues to target support services, then the program name should be changed to reflect such a role. Consequently, the vehicles should be Support 9 and Support 10.

Expansion: The Squad 9 system should be expanded to 2 daytime units. Ideally, these would continue to be in utility-style vehicles, but also have some initial attack fire suppression capability from ultra-high pressure (UHP) systems that could fit comfortably onto the existing design. The operational schedule should be modified to 06:00 to 18:00.

This can still be accomplished through mix of full and part time employees. Ideally there would be five or six full time employees plus an adequate number of part-time employees on a rotating schedule to ensure a minimum of two personnel per truck are always on duty during the day.

Location: Squad 9 should be placed more centrally in the county. If two units are staffed, one should be based at Draper and one at Newbern for maximum coverage and effective response times.

EMS Responses: This program is primarily designed to support the fire departments, but the crews should be available to first respond to EMS calls, supply an ambulance driver if needed, or do whatever is needed to support the mission and respond to patients. If they are the closest resource to an urgent EMS call, they should first respond.

Key Recommendation 10:

Change the name of the Squad 9 program to Support Services within the Department of Emergency Services command structure and add a second daytime staffed unit.

Training

Training only once a month is not sufficient for a volunteer firefighter or any emergency responder as it is inadequate to maintain skills. There are a minimum number of core topics that should be covered on an annual basis to ensure all emergency responders are competent and able to respond to the emergencies they are dispatched for.

EMS training is also inadequate and missing key topics for regular training. An example is the lack of annual driver refresher training that is strongly recommended by the insurance carrier for the vehicles. Another example is the lack of ongoing Haz-Mat awareness training.

This training does not have to be in person, many of the topics can be covered through one of the computer-based training (CBT) programs. The insurance carrier for the vehicles, VFIS, has a free CBT program for its clients called VFIS University on the Vector Solutions platform.

Key Recommendation 11:

An annual training plan needs to be developed for both fire and EMS agencies. The importance of having a standardized training program that all members are required to adhere to improves operational collaboration, particularly in an area where different agencies regularly combine to provide minimum resources at larger incidents.

A centralized approach to training will significantly improve service delivery and mitigate risk to personnel.

Key Recommendation 12:

Develop better individual training plans and professional development programs for initial, ongoing, and regulatory topics as well as best practices to ensure that emergency responders are competent and capable of handling the emergencies they respond to.

Key Recommendation 13:

Fire department trainings should be mandated by the county as weekly, not monthly, with minimum requirements for continued membership established.

An interesting and stimulating training program is a key component in volunteer recruitment and retention in communities where members do not attend a high volume of fires and accidents. At least 50% attendance is recommended for continued membership, unless extenuating circumstances are involved.

Key Recommendation 14:

Two full-time, dedicated training coordinators are needed, one for EMS and one for fire/rescue.

Two coordinators, at a minimum, are needed to accomplish the immense workload of direct delivery training and coordination, including the necessary record keeping for compliance issues, etc. Additionally, finding someone who is competent and respected in EMS and fire instruction is extremely challenging. EMS already has a training coordinator and based on the individuals we met with, there appear to be good potential candidates for the fire training position.

Community Risk Reduction - Pulaski County Fire Code Official

Both new developments and existing properties in Pulaski County require a properly managed fire prevention and code enforcement program. A county fire code official or fire marshal is needed to ensure suitable fire and life safety plan review, inspections, pre-plans, Knox boxes and key management, public education, and other community risk reduction needs are being met.

DRAFT F FOR CLIENT REVIEW

The county building Inspector expressed both a need and concern that there is no-one in this position currently, and many fire code issues are not being adequately addressed. The Fire Code Official not only improves safety in the residential and commercial community but can also be a revenue generating entity through plan review and violation fees.

This position should work closely with the county building official but needs to be under the umbrella of the Department of Emergency Services to ensure other community risk reduction elements are properly addressed.

Key Recommendation 15:

Hire a Fire Code Official for Pulaski County.

Volunteer Recruitment and Retention

Volunteers are pivotal to the fire departments and the current arrangement has volunteers in short supply. Some members of the public have no idea if Pulaski County fire and EMS responders are paid, volunteer or a combination of both, but the level of expectation is the same. Original members are the backbone, but the demands of training, administration, and maintenance tasks makes recruitment and retention more challenging in an era where cost of living is increasing and volunteerism on the decline.

The County is reaching a pivotal point where either compensation or incentives may be necessary to incentivize volunteers, or a transition to career members must begin.

A Director of Emergency Services would be responsible to coordinate the recruitment processes for all eight fire departments and oversee the same for EMS.

Key Recommendation 16:

Centralize recruitment processes for all fire departments and EMS with the county under the Department of Emergency Services.

Key Recommendation 17:

Apply for a FEMA SAFER grant for a Recruitment and Retention Coordinator.

The average age of volunteers is a concern stated by many of the fire chiefs and officers. When an EMS unit requests a lift assist, most who respond are older and ideally shouldn't be lifting patients anymore. As part of the recruitment and retention plan, Pulaski County should analyze the demographics of the volunteer force to determine diversity, capabilities, and target ages for new recruits.

The traditional ways of joining a fire department are also hampering recruitment. Examples include having to be voted on to join instead of meeting objective criteria. Some members mentioned that the image and attitudes of some chiefs are a barrier to attracting younger recruits. Other issues that are hampering recruitment efforts include a lack of diversity among the emergency responders, nepotism and favoritism issues, intimidating and unwelcomed atmosphere, and lack of incentives. A feasibility study needs to be undertaken to assess a number of incentives that could be made available to volunteer members.

Key Recommendation 17:

Implement incentives to recruit and retain volunteers and employees.

The amount of training required can be off daunting for new members. 160 hours for Firefighter I training may not be realistic for all volunteers. There may be single or specialist roles that volunteers can play if they can't or don't want to be interior firefighters - such as maintenance, support, fundraising, prevention, administrative, apparatus operations, etc.

Key Recommendation 18:

Offer single roles, specializations, and non-operational roles for volunteers.

Once incentives and a restructure of qualifying criteria is agreed, there needs to be a concentrated campaign to recruit volunteers. We believe that with a rebranding of the role and a driven, focused effort from the Director of Emergency Services in tandem with all departments, sufficient numbers could be attracted to at least stabilize the 20 minimum member issue.

Key Recommendation 19:

Develop and initiate a Recruitment and Retention campaign for fire, rescue, and EMS responders in Pulaski County

Maintenance of Vehicles, Equipment, and Facilities

There are excellent vehicles and equipment, but a serious lack of personnel, maintenance and management programs to support them. All fire equipment requires annual maintenance, inspection, and/or testing in accordance with best practices and industry standards. Pulaski County is far behind its compliance with maintaining vehicles, equipment, and facilities.

Vehicle and equipment maintenance is well below manufacturer recommendations and industry standards. Right-sizing the fleet and equipment needs to begin and verbal requests to the staff and director of the county shop from multiple personnel has to stop and become formalized.

Key Recommendation 20:

Improve vehicle and equipment maintenance to meet manufacturer requirements, national standards and best practices.

Cost Recovery

Motor vehicle crashes are common call that fire departments respond to in which insurance companies will reimburse the department for expense. The EMS billing contractor is able to recover costs for these and a program should be in place.

Volunteers are responding to these events but have neither the training, tools nor time to process claims. There are templates and other resources available to make it easy for the field units to gather information without placing too much additional administrative demand on the fire officers. Given the current annual number of vehicle crashes, the revenue is estimated to be approximately \$200,000.

Key Recommendation 21:

Implement a cost recovery program for roadway calls, vehicle crashes, and other appropriate types of responses.

Strategic Planning

No plans are in place to help guide the future of fire, rescue, EMS, and emergency management in Pulaski County. Money is being spent ineffectively, operations are suffering, and no one knows the plan for the near future.

Key Recommendation 22:

Develop a five-year strategic plan for Pulaski County fire, rescue, EMS and emergency management.

Public Information

It is important to give the public and administrators a clear, realistic picture of capabilities and expectations. A frequent comment was that people in rural areas expect urban response times. Pulaski County fire and EMS agencies are struggling to deliver basic services and cannot guarantee the rapidity or quality of response that citizens may expect. A first step to addressing this issue would be to establish and publish community expectations.

- **Career Station Example:** "Pulaski Fire Station is permanently staffed 365 days a year, 24/7 and guarantees to respond to any emergency in this zone in less than 8 minutes under normal circumstances, we are capable of attending one incident at a time. For simultaneous or larger

emergencies, we rely on support from volunteer members who will respond subject to availability”

- **Volunteer Station Example:** “Fairlawn Fire Station relies on the availability of volunteer members who will endeavor to respond to calls in this zone as quickly as possible”

Key Recommendation 23:

Improve and clarify public information.

Staffing

While NFPA standards are a valuable guide, they cannot be applied nationally as a blanket minimum for every community where circumstances and environments often differ. Types of call and call volume statistics are a more accurate and valuable barometer when it comes to calculating appropriate staffing levels for the events commonly occurring in Pulaski County.

The NFPA 1710 recommends a minimum of 4 personnel on a fire truck (engine/pumper) but studies have shown that having 5 personnel on scene is the safest and most efficient number to conduct and manage even routine events.

Taxpayers deserve the same level of service county wide and at the moment there is a wide variance in standards. In Pulaski town, residents get 3 career staff within 5 to 10 minutes, in outlying areas, it’s significantly less and depends on the condition and availability of their local volunteer fire department. There is currently no guarantee if, when, or how many members will respond at any given time. Volunteer members are having to rely on a paged alert, then a commercial application and often cellular or radio messaging as well.

Key Recommendation 24:

A basic system of accountability needs to be introduced where members are required to confirm when they are genuinely available and within a 5/10-minute response area. A simple volunteer staffing sheet can be completed weekly or an app/tech-based solution.

Qualifications

There are many current volunteers and employees who have multiple roles with different agencies. Identifying who has what qualifications and skills, specialized training, and other abilities would be beneficial to help recognize the current capabilities of residents within Pulaski County.

Knowing who serves with which agencies and what their roles are will help with planning and also understand the true number of emergency responders in Pulaski County. Many are currently being counted twice as members of multiple agencies. The exercise is also useful should the county need to recruit professionals to serve in the community who are currently working for other counties.

Key Recommendation 25:

Conduct a membership survey to identify qualifications, skills, and agency affiliations of all emergency responders in Pulaski County.

1. How are the Fire and EMS agencies in Pulaski County Doing?

Good	Needs Improvement	Unsatisfactory
Vehicles and Equipment Pride in Service Engaged and Passionate Members Relationships with other Agencies	Operational Functionality Fire and Rescue Operations Organizational Culture Divisional Administration Public Awareness Preparedness for All Reasonably Expected Eventualities Training Response Times Commercial Occupancy Inspections Inter-Agency Written Agreements Stations and Facilities Policy and Procedure Safety Regulations Cancer Prevention Protective Clothing	Organizational Structure Accountability of Personnel Staffing Supervisor Training Safety Training Safety Culture Workforce Satisfaction and Unity Industry Standard Compliance Strategic Planning Succession Planning Health and Safety Volunteer Recruitment and Retention Preventive Maintenance Command and Company Officer Tactical Training and Development

2. Pulaski County, Virginia

According to US Census estimates for 2021, the population in Pulaski County was 33,759 within their 330 square miles. The population in the Town of Pulaski was 8,961 in 7.8 square miles and the Town of Dublin was approximately 2,584 in 1.4 square miles. The two towns would be considered urban zones since their population density is over 1,000 people per square mile. The remaining areas of the county would be considered suburban and rural with an average of 69 people per square mile.

The largest recreational attraction in Pulaski County is Claytor Lake, a 4,500-acre, 21-mile-long reservoir on the New River formed by Claytor Dam, which is used to generate hydroelectric power by the Appalachian Power Company.

Growth and Plans

The population in Pulaski County shrank 3.1% between 2010 and 2020 (US Census). Pulaski County plans to increase their population to 40,000 by 2030 with better housing and improving infrastructure to help attract and retain businesses in the area.

According to the Pulaski County [comprehensive plan web site](#), *“The county saw most of its population growth from 1960 to 1980. The population has slightly declined since 1980 and it is projected to decline even further by 4%. The county is committed to offset the declining population trend through initiatives such as the “40 by 30” to focus on increasing the population to 40,000 people by the year 2030. The plan will also develop policies to retain younger population and attract more people to live in Pulaski County.”*

Fire, Rescue, EMS, and Emergency Management in Pulaski County

The agencies within Pulaski County include eight separate fire departments, a county wide EMS system organized as Pulaski County Public Safety, an Emergency Management Coordinator, a volunteer special operations team, and a consolidated emergency dispatch center. Call volumes are increasing exponentially to the population trends. EMS is expected to respond to 6,500 calls in 2022 while the eight fire departments are expected to see around 1,700 calls in 2022.

3. Organizational Restructuring

The current organizational structure for Pulaski County Public Safety, Pulaski County Emergency Management, and the fire departments of Pulaski County is dysfunctional and must be modified in order to successfully and safely deliver emergency services to the residents and visitors of Pulaski County.

Virginia Code

The first thing that must be addressed is Virginia Code, Title 27. Fire Protection » Chapter 2. Fire/EMS Departments and Fire/EMS Companies, Article 1. Provisions Applicable to Counties, Cities and Towns. It discusses the requirements to form and maintain a fire company. Section 27-10, Dissolution of Fire Company. It states *“Whenever the fire department of the county, city, or town to which any fire company belongs ascertains that such company has failed, for three months successively, to consist of 20 effective members, or ascertains that it has failed for the like period to have or keep in good and serviceable condition an engine, hose, and equipment and other proper implements, or the governing body of the county, city, or town for any reason deems it advisable, such governing body may dissolve the fire company.”*

The key term in this code is “effective” and what that actually means. The number of effective members would be those who are operational and active. It became very apparent to GES that seven of the fire departments lack 20 effective members. The one that does not appear to be at or below 20 members is the Town of Pulaski due to its career staffing.

Recommendation 3A:

Pulaski County to use Virginia Code 27-10 to combine all fire departments in Pulaski County under one fire authority.

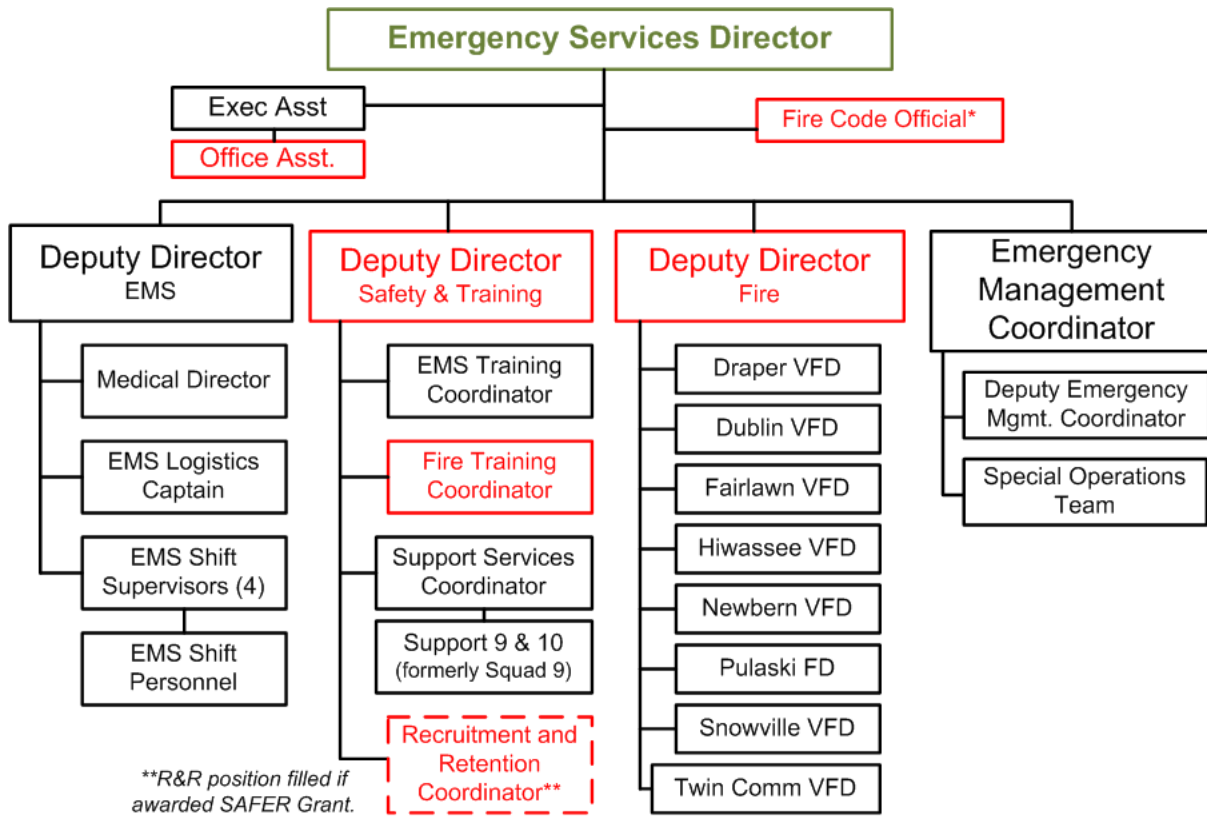
This recommendation would eliminate Pulaski County Public Safety and bring the county EMS system under this new Department of Emergency Services (DES). The top management structure of the DES should include a new Emergency Services Director (reclassify the current Public Safety Director position after Joe Trigg leaves), a Deputy Director of EMS (current position), a Deputy Director of Fire (new), a Deputy Director of Safety and Training (new), and an Emergency Management Coordinator (current).

The current Public Safety Director is eligible for retirement. A new Director of Emergency Services should be hired as soon as possible to lead all fire, EMS, Emergency Management, and rescue related projects.

The importance of hiring the right person as Director of Emergency Services is the key and cannot be understated. This position will unite all fire and EMS services and dedicate time to the multitude of projects that agencies are either unable or incapable of addressing and implement the needed changes identified in this report.

Emergency Management under the Department of Emergency Services

The Pulaski County Administrator should have one POC for all emergency related affairs and the Emergency Management Coordinator should function under the recommended new Department of Emergency Services. The new director position will need to have very strong project management skills and does not have to be a uniformed candidate. All too often, fire and EMS chiefs are put into positions supervising Emergency Management and do not fully understand the unique aspects of the subject and how they are different from operational fire and EMS activity.



*The Fire Code Official would work closely and in coordination with the Pulaski County Building Official

Towns of Pulaski and Dublin

Both of the town’s current provide personnel and funding to their fire departments that have a larger response area in the county than the towns. This relationship is somewhat informal without anything in writing to clarify the expectations of the towns or county. There is a significant need to maximize service to the public as well as provide for higher efficiency, safety, and coordination while minimizing politics and bureaucracy. The county already provides funding and support in multiple ways.

We recommend that both towns calculate the current cost to maintain their individual fire stations, fire personnel, and other fire department related expenditures. Take this cost and establish an agreement with the county to turn over all fire department costs, authority, and operation to Pulaski County under the new Department of Emergency Services. This should also include fire marshal and fire code official duties.

Recommendation 3B:

The Towns of Pulaski and Dublin should turn over fire department operations to Pulaski County under the new Department of Emergency Services.

Advisory Board

If needed to satisfy the elected and appointed officials, there could be an Emergency Services Advisory Board with representation from both towns and the county. This could serve as a communication method to address any concerns or issues with emergency services in Pulaski County, advise elected officials on funding and cost sharing structures, address budget and planning issues, and other advisory tasks.

Voting for Membership

With the exception of Pulaski, all fire departments vote on accepting new members through a general membership vote or through a membership committee. Junior Members, in order to become full members at age 18, must also be voted on. Voting for membership and operational leadership positions is an extremely outdated practice that according to Curt Varone, a retired chief fire officer and practicing attorney *“Numerous laws prohibit discrimination in a variety of contexts, including employment, public accommodations and service delivery. These laws create a patchwork of protections available to someone who believes that he or she has been the victim of discrimination. As a result, discrimination suits have been filed by unsuccessful applicants to volunteer fire companies challenging a membership vote.”* His [2017 article in Firehouse Magazine](#) further explains the concern.

We do not recommend membership voting due to the legal risks as well as the public perception and difficulty it creates in recruitment and retention, especially given the severely low membership levels. Pulaski County should follow a more objective method to onboarding new members. There should be a county-wide policy that outlines objective qualifications, medical exams, physical ability evaluations, criminal background checks, reference checks, an HR approved interview process, and a successful completion of a formal probationary period.

Voting For Operational Positions

All of the fire/line/operational officers in Pulaski County (except for the Pulaski Fire Department) are voted into their positions by the membership of each fire department. The terms, qualifications, and requirements vary by fire department. Some by laws have appropriate minimum qualifications listed per line officer position, others are very vague.

Voting for operational positions is an extremely outdated practice that presents an abundance of liability and accountability risk exposures. Discipline is also a challenge with these positions. With the restructuring of the county into a Department of Emergency Services, the voting of operational officer positions should be eliminated.

The Director of Emergency Services should establish a promotional process for anyone wishing to become an operational officer. Each operational position should have an approved position description indicating minimum and preferred qualifications, experience, knowledge, skills, and abilities. Existing officers should be evaluated for competency and qualifications. Current officers that are well below or are unwilling to attempt to meet the minimum qualifications should be moved to an appropriate rank or position. Existing officers should be given an opportunity to meet these minimum qualifications, ideally through a guided and mentored professional development plan.

Recommendation 3C:

Voting for membership and operational positions should end as soon as possible.

The individual fire department organizations/non-profits should be encouraged to remain in place as a support mechanism for the fire departments. They should still have their business positions such as president/chair, vice-president/vice-chair, secretary, treasurer, etc., but they should not have operational control or oversight of the fire department. That authority should rest with the county under the Deputy Director of Fire who reports to the Director of Emergency Services.

Operational Oversight

Once the appropriate overhead positions are in place at the County (i.e. Director of Emergency Services and Deputy Director of Fire), the county should take a more active role in oversight of operations of all fire departments in Pulaski County. This includes all operational procedures, response and dispatch protocols, training, maintenance, safety, and staffing.

Administrative Oversight

The administrative load for the volunteer fire departments is a burden to their chiefs and other officers. One chief commented *“There are a lot of things that need to be done, but no one has the time to do them, all the paperwork, records, grants, and everything else.”* Restructuring under a county Department of Emergency Services will remove this burden. It will also ensure that administrative items are completed and add accountability to matters such as personnel, finances, planning and discipline.

Other Future Positions

To assist with the key recommendations and in addition to the new positions, the new Director will also need high-level assistance from one or more contract or part-time professionals.

The Volunteer Recruitment & Retention positions should be a full-time position by year four but should be attempted to be filled as soon as possible through FEMA SAFER grant funds. These funds have been used by hundreds of fire departments to fully fund this kind of position for a four-year period.

Pulaski County should try to fund new career Firefighter/EMT (Support Services/Squad 9) positions through FEMA’s SAFER grant. Two applications can be submitted during the same period, one for recruitment and retention and one for hiring. Using this grant would be an excellent cost saving step towards meeting the staffing goals while the area determines what pace the county will grow. The grant could fund career positions for three years, currently with no local match.

Recommendation 3D:

Apply for a Recruitment and Retention Coordinator and additional Firefighter/EMT positions through FEMA’s SAFER Grant Program.

4. Planning

There are no written strategic, financial, annual, or master plans for Fire and EMS in Pulaski County. Additionally, there a lack of staff capacity and ability to develop these plans and ensure they are properly implemented and managed.

Strategic Planning

Some leaders have plans in their heads, but we were not provided any evidence of written plans. Fire and EMS department strategic plans are typically five to ten year outlooks and begin with a “state of desired minimums” or an agreement on what the minimum performance requirements will be. These can be response times, ISO ratings, regulatory requirements, industry best practices, and other performance measures. Additionally, the response times can be broken down by zone and call types.

It is critically important, for a successful and realistic outcome, to have experienced professional help in facilitating the strategic planning process. Engaging the right partner in developing strategic plans can guide the organization to develop realistic goals without overly impacting current staff responsibilities.

Recommendation 4A:

Director of Emergency Services to develop a Strategic Plan for Pulaski County

Involving external stakeholders is a requirement of a community driven strategic plan as required for accreditation from the Commission on Fire Accreditation International (CFAI).

Emergency Operations Plans

We asked for a list of documents including emergency operations plans and any planning documents, however none of these were provided for review.

Annual Report

Internal and external stakeholders would benefit greatly from an annual report. GES discovered a general county-wide report that had a couple pages on fire and EMS, but not a specific report. Such data would be educational and help citizens truly understand what fire and EMS personnel do. Web sites are

DRAFT F FOR CLIENT REVIEW

non-existent for most of the fire departments, or incomplete. Good annual reports can help secure public support for funding.

The only “report” type of item we could find is one page within the 2019 Pulaski County Community Facilities and Public Services report.

Comprehensive annual reports would help with public perception, assist local officials in understanding the scope, operations, and limitations of fire and EMS, and be an excellent source of information to assist with recruitment of both career and volunteer positions. The reports can highlight successes,

interagency cooperation, challenges, and future plans. A key statistic to publish is the cost of fire and EMS per tax paying capita. Pulaski County should begin preparing an annual report for 2022 and accompany that with 5 to 10 years of trends to show the changes and impacts over that time.



Recommendation 4B:

Pulaski County should produce a comprehensive fire, rescue, EMS, and emergency management annual report as a standard practice.

Future Position Considerations

There are many aspects and areas of Pulaski County that need attention to maintain a suitable response to emergencies. There were comments about expanding the Squad 9 program to a 24/7 staffed engine or rescue engine. This could have detrimental effects on the volunteer fire system.

Pulaski County should hire more 40-hour per week positions and require them to be firefighter and EMTs. These 40-hour positions can perform the critical administrative and compliance tasks that are not currently being done while also supplementing operational responses. A trained 40-hour position on duty as a firefighter counts towards ISO staffing credit. These positions should also not have strict limits on overtime but rather be given the flexibility in work schedules to accomplish their needed tasks and use overtime automatically authorized for hours used (or flexed) to respond to emergencies.

Hiring 24/7 firefighters may meet the immediate operational needs of the community but can have a negative impact on the volunteer system and is not sustainable. If the focus was more on sustaining the volunteer system, it would lessen the need for more immediate career personnel. Also adding more front-line personnel without the overhead supervision to support them is not effective. With the new organizational structure, the overhead positions will also be operational.

Most volunteer chiefs would welcome a two-to-three-person skeleton crew of career staff working daytime schedules, particularly in key stations. In departments that are not accepting of a blended staff model, more forward-thinking leadership may be necessary.

Recommendation 4C:

Do not expand the Squad 9 program to 24/7 staffing, keep it a daytime staffing while enhancing evening volunteer staffing with sleeper programs, duty schedules, and other initiatives.

5. Policies

Policies and Standard Operating Procedures (SOPs) or Guidelines (SOGs) are a critical indicator of the condition of fire and EMS departments. Each fire department has its own set of by-laws, some have a limited number of SOPs, and others did not provide any information. EMS had some outdated policies that were updated in the months leading up to the GES site visit.

Squad 9 has been in existence for over 3 years and introduced its first SOP to the County Fire Protection Committee during the GES review. The Town of Pulaski has an employee handbook, but it does not apply to the volunteers.

Instruction manuals and procedures are essential for all products and services. If personnel do not know SOPs intimately in a hazardous life safety occupation, there is a significant risk to the organization, its members and the public.

Departments with a lot of unwritten SOPs, often suffer from confusion and inconsistency that can lead to accidents and injuries. We are currently working with a fire department in Florida where a firefighter was killed precisely due to a lack of policy and training. In terms of liability, Pulaski County and each fire department would be extremely vulnerable if any investigation following injury or loss found policies and procedures to be obsolete or out of date and/or if there was evidence of a lack of member training or familiarization with them. Policies and SOPs are the foundation of operational and administrative guidance and must be the first and most important element of training for all personnel.

Under the reorganization process, county-wide SOPs and policies should be developed. Any new or revised policies should be sent out to the **entire membership** for a two-week comment period. These impact all members and there may be some who have valuable feedback. Newly approved policies and SOPs should be sent to all members and included in trainings to ensure they are received, recorded and understood.

Recommendation 4D:

Develop county-wide SOPs and policies under the new Department of Emergency Services.

6. Fire Departments

Emergency incidents for the eight fire departments in Pulaski County have steadily increased over the years. It is unknown what percentage of increase, but it was often mentioned anecdotally. Below are the 2021 runs reported by fire department through the county records management system.

Agency Name	Calls	Percent
Draper Volunteer Fire Department	91	6%
Dublin Volunteer Fire Department	437	27%
Fairlawn Volunteer Fire Department	99	6%
Hiwassee Volunteer Fire Department	29	2%
Newbern Volunteer Fire Department	189	11%
Pulaski Fire Department	709	43%
Snowville Volunteer Fire Department	65	4%
Twin Community Volunteer Fire Department	28	2%
	1647	

All the fire departments are receiving funds from the county but are operating as eight independent organizations with little input or oversight from the county. There were many comments from members predicting that the future structure of the fire departments will be part of a county-wide system. Not everyone agrees on how that should look, but most see the need. We strongly believe the planning for that begins now.

Emergency Management Coordinator

The Emergency Management Coordinator position was referred to by several names, many fire chiefs and county staff refer to it as the Emergency Services Coordinator, the county payroll and personnel system has it listed as Director of Emergency Management. The position has evolved over the years, but in addition to traditional emergency management duties, the role has been informally serving as the liaison between the eight fire departments and the county for over 20 years.

The incumbent has been in the position for over two years, was previously the Deputy Emergency Management Coordinator, a former wildland firefighter, and a lifetime member of the Dublin Volunteer Fire Department. Without a doubt, he is over tasked with responsibilities, so much so that he cannot adequately focus on his primary job duties as emergency management coordinator.

He currently reports directly to the County Administrator. Although there are benefits to having that direct link, the County Administrator has too many direct reports and the Emergency Management Coordinator should function as part of the management team in the new Department of Emergency Services and report to the new Emergency Services Director.

Pulaski County Fire Protection Committee

The committee is comprised of representatives from each of the eight fire departments in Pulaski County and has been in existence since the early 1980's. They hold quarterly meetings to discuss issues such as training, equipment purchases, apparatus purchases, and other items. We attended the October 11 quarterly meeting at the Twin Community fire station.

The committee is setting policy and direction of fire and rescue services in Pulaski County through a voting system that is independent of any influence or direction from the county. The committee decides how to spend county money, use county resources, and other important topics that should be approved by county management. This committee makes decisions that impact the Pulaski County budget. We were not provided with any by laws or rules for this committee and their actual or official role is not known.

There is a strong disconnect between fire and EMS in Pulaski County. EMS management does not routinely attend the fire protection committee meetings, they attend only upon request. Even when they do attend, they speak about only EMS items and then leave. There are some historical contexts that needs to be addressed and regular meetings need to occur.

Recommendation 6A:

Replace the Pulaski County Fire Protection Committee with a Pulaski County Emergency Services Management Meeting and include EMS leadership.

Separate Ways of Doing Things

Each fire department has their own ways of doing things. We heard *"You do your thing, we'll do our thing"* several times during the review, referring to how the departments respond together, but mostly stay out of each other's business.

The time is now for Pulaski County to evolve past the eight separate empires. The system is not working and it will collapse unless all eight fire departments come together. There is a significant need for central coordination, standardization, and support to ensure fire protection services are effective and efficient in Pulaski County.

Fire Truck Colors

One major change this group enacted in the last couple of years was the color of the fire apparatus purchased by the county. Around 30 years ago, it was decided that all trucks in the county should be a uniform color and lime-yellow was selected. When Dublin was purchasing an aerial truck, they found a

used one in red, but the committee would not allow them to purchase it unless they painted it lime-yellow.

Recently, one of the fire departments wanted to change the color because the Town of Pulaski purchased a used platform aerial that was red and did not want to spend money painting it. The Volvo plant donated a red pumper-tanker to the Newbern Volunteer Fire Department and they also did not have the funds to repaint it. So the committee decided that all new trucks would be red, however the specific tint of the red was not specified and the latest truck purchased, a tanker for Fairlawn, had a dark gray top instead of all red. There are now 5 trucks in the red color (Pulaski's ladder, Fairlawn's tanker, Newbern's tanker, Traffic Management 5, and High Water 2). This is an example of time and effort being wasted on a topic that is imperative to service delivery.

This committee should be a positive information sharing, learning and networking opportunity to collaborate together. Policy and planning should be at the county level under the new Emergency Services Director.

Records Management

Pulaski County began using Image Trend for its fire and EMS records management on January 1, 2021. All fire departments are supposed to be using this. In asking for records for this review, it became obvious that there is a need to improve records management. We were only provided with a fraction of the information and documents requested. Some could not be found and it was unknown who kept them or where they were kept. We asked for access to Image Trend to review the data but were denied.

We asked about NFIRS compliance and were provided a spreadsheet showing which fire departments reported to NFIRS per month in 2021. That data shows that the Pulaski Fire Department is the only fire department reporting on a monthly basis to NFIRS. All of the other seven fire departments only reported during a single month of 2021. This is not acceptable and puts the fire departments at risk of ineligibility for future FEMA grants and other benefits. This is another reason for oversight at the County level through a new Department of Emergency Services.

Recommendation 6B:

All fire departments must report NFIRS and upload them on a monthly basis.

Pulaski County Fire Departments

We spent time with each fire chief through Zoom meetings and then during the on-site review week. Their input is included throughout this entire report, but we have attempted to summarize each fire department in this section. The following are some of the comments from the fire chiefs.

Draper Volunteer Fire Department (Company 1) Chief Justin Dobbins

Chief started in 1997 at 16 as a junior firefighter, moved up the ranks and became chief 4 years ago. The previous chief served as chief for 27 years and in the department for over 60. He is also employed full time with Pulaski County at the nearby water treatment facility. He is allowed to leave work during the day to respond to fire department calls.

Draper has 35 members on the roster, but only 12-15 active. The worst time of the day for volunteer responses is 6:00 to 9:00 AM; typically the chief is by himself. 10 years ago, they had the "dirty dozen" who came to most every call, today it more like the "dirty two or three." They have good equipment and apparatus; just lack the personnel to use it all.

They cover 9 miles of Interstate 81 and the chief is often out there on accidents in morning rush hour by himself. He typically has to ask dispatch for a second page and commonly gets no one else. It's a challenge because Squad 9 does not start until 7:00 AM and the next closest fire department, Pulaski, is not set up for interstate traffic management. Virginia State Police assist with making the scenes safe and Virginia Department of Transportation has a "safety truck" with an arrow board and cones.

DRAFT F FOR CLIENT REVIEW

About 6 of the Draper members are EMTs, but most are career firefighters somewhere else like Pulaski or Blacksburg. The chief does not have EMR or EMT and if they required him to get it, he would quit as would many other volunteer firefighters. It's not why he joined but appreciates the EMS workers.

Dublin Volunteer Fire Department (Company 2) Chief Dean Russell

Chief Russell has been in the fire service for about 30 years and currently serves as a career Captain in Roanoke. Dublin is a volunteer fire department, but the Town of Dublin pays for 2 personnel during the week, a full-time firefighter and a part-time Fire Marshal. The full-time position started as building and hydrant maintenance position. Half of the volunteers are full time with other fire department outside of Pulaski County.

Dublin covers 88 square miles with 70% of the call volume and population in the county response area. The Town of Dublin is only 1.4 square miles with a population of 2,534. Dublin fire department has good vehicles and equipment but could use more support for acquiring equipment such as purchasing turnout gear. A member only has one set of gear and is being washed and dried after each fire. Gear is typically purchased with county funds and with some of the COVID money in 2021.

The Town of Dublin owns the building and pays for the utilities and building maintenance plus the fuel for the trucks. Pulaski County paid for most of the vehicles.

The Dublin Volunteer Fire Department is a separate entity as a 501(c)3 non-profit. The town keeps a "hands-off" approach on the day-to-day fire department operation as much as possible. They have no part in the department's budget except for passing on a stipend that comes from the state. The past couple of years, the Town of Dublin have passed on additional supplemental funds because the department has not been able to fundraise as they have previously.

Fairlawn Volunteer Fire Department (Company 3) Chief Randy Miles

Chief Miles has been with the department for 47 years, started as the first junior member, and has been chief for the last 21 years. Fairlawn was established in 1948 and covers 32 square miles including a commercial area with big stores such as Walmart and Lowe's. EMS station 2 is next to the Fairlawn fire station.

They currently have 24 members on the roster. They have a maximum number of 30 members plus 5 junior members. The challenge is that he has plenty of people to operate the trucks but is short on people to actually fight fire; most of the members are older. It is also difficult when EMS asks for a lift assist and all 4 people who show up to help are over 60 years old.

11 members are career staff elsewhere and are either EMTs or Paramedics. The hardest part is motivating them to respond on their off time. He also has challenges with members cherry picking calls. He referred to some of his members as carrying "solar pagers" as they don't go off at night. He feels the fire department is becoming a catch-all for the community and it's getting worse. 95% of the call types that they run are not the "exciting calls that the guys want to run when they sign up."

The county implemented a dual response program where two fire departments are dispatched to structure fires. Chief Miles explained the biggest complaint with it is most of the time, they get halfway to the call and the neighboring departments cancel them. After a few times of that, the members stop bothering to respond. He is a fan of dual response and thinks it is great, but it needs to be done better. They had a structure fire with a neighboring department recently, dispatched at 10:30 PM and their engine responded with 4 and the chief had to take tanker. That should be a peak response time and call type that should generate 10+ volunteers, but he only got 5. The same thing is happening across the county.

Hiwassee Volunteer Fire Department (Company 4) Chief Donald Boyd

Chief Boyd has been a member for over 30 years and chief since 2008. The Chief did not have time for a zoom call so we were only able to obtain limited information. We met with him at the Hiwassee station

and discussed his challenges. He was very open about his age and physical abilities limiting what he can do. His son is the assistant chief and he is preparing him to take over. He has lost a lot of volunteers, can barely get a response, and doesn't see members in his community joining the fire department. Snowville and Hiwassee department should consider an operational merger with one chief and other shared resources.

Newbern Volunteer Fire Department (Company 5) Chief Brandon Hamblin

Chief Hamblin has been with Newbern for over 20 years and is a career Captain with Pulaski Fire Department for 17 years. Newbern is right in the center of the county with a diverse district covering a large portion of the Claytor Lake and 11 miles of Interstate 81. Newbern is also home to the Volvo plant, the largest truck manufacturing plant in North America. Newbern houses a light and air truck that responds to every structure fire in the county. He feels that it should be possible to have more of a support volunteer take that vehicle rather than an interior firefighter and has some older volunteers who do that.

Pulaski Fire Department (Company 6) Chief Jeff Conner

Covers the 8 square miles in the Town of Pulaski plus 55 square miles of Pulaski County area with 11 career and 22 volunteer members. Several of the career firefighters are volunteer fire officers in other Pulaski County fire department. They operate three shifts of three personnel, a Captain and two firefighters, with a minimum daily staffing of two. The chief hopes to get an additional day-time career firefighter but would ideally prefer a four-person shift.

The Fire Chief is hired by the town (the only fire chief in the county not selected by popular vote). Chief Conner is first chief not hired from within. Volunteers respond to either the scene or the station for an all call. They have a rotation list put out every month - half respond to the scene and half respond to the station for additional calls or to bring additional equipment. Their primary call type is EMS assist, MVAs and fires seem to be seasonal.

Silent Running: There were issues with Pulaski not being dispatched to calls so they wouldn't alert the off-duty and volunteers. Instead the dispatcher would call the station via phone to tell them of a call so the on-duty crew could handle it silently. This changed right after they GES site visit, they now have an on-duty tone and an off-duty tone for the volunteers.

Town versus County Response Procedures: There are historical procedures in place for calls within the town limits versus calls outside of the town and in the county. This response procedures determines which truck responds to which calls, there is an engine for the town and an engine for the county. This is a waste of resources and public funds. The chief wants another new engine; however they currently have enough resources.

Recommendation 6C:

The Town of Pulaski does not need one engine for town response and one engine for county responses; this should be one engine for both.

Snowville Volunteer Fire Department (Company 7) Chief Eddie Farmer

Snowville is a very rural department of 45 Square Miles that includes a 17,000 acre privately owned Boy Scout Campground. Snowville has about 25 enthusiastic members and usually a good turnout of at least 10 members per call. They have a lot of younger members that have a lot of training, but limited experience due to limited call volume and they still struggle to staff a response during the daytime.

The majority of their calls are brush, vehicle, and equipment fires and only respond to a few structure fires per year. Chief Farmer has been on the department for eight years and chief for the last two. Their biggest issue is that EMS (ambulances) are typically 30 minutes away, so they respond to a lot of EMS assists and car wrecks.

They have an engine in their second station; a small one bay building that is about ½ mile away from the interstate. However, the station is not first or second due to any interstate calls, they have been manually requested a few times. The first due is Newbern, eight miles away. There is a feeling in the county that Newbern and Draper primarily cover the interstate and sometimes call Dublin to assist. The chief is not sure how it got set up, just the way it has always been in the county protocols.

The chief's biggest problem is under-utilization, they have low call volume and it can be difficult to keep the members interested. Other departments are struggling with manpower, and he has members waiting at the station listening to the radio traffic and are not called to help. They invite other departments to join them for training to build camaraderie in the county, but usually they do not show up

Chief Farmer has been instrumental in taking the department from six certified members to all except two members. First training of the year is EMS where they all renew CPR and First aid, then host an annual EMR class if any of the members want it. He allows the members to use the department Crown Victoria for transportation to training and is working on ordering a support truck. Some members keep gear with them and respond POV. Station has all new gear lockers, people who live close to station keep their gear there. Have more members than seats on trucks so members who live farther away will respond POV

Twin Community Volunteer Fire Department (Company 8) Chief Chuckie Nester

Chief Nester has been with the department 32 years and chief for three years. He sees about a 50% response from volunteers with MVAs as their most common call. They average two structure fires per year and their second due (Fairlawn) is between five and eight minutes behind them.

He does not have much of a problem with volunteer's cherry-picking calls as he usually sees a good turnout. They put out the page and hope for the best. Some members primarily volunteer in an administrative role such as secretary. There are five EMS members for the licensed first response unit and everyone else is CPR and first aid trained. Their EMS response is not automatic, the ambulance crew must request assistance, even on a CPR call.

Squad 9 (Fire-Medic Program)

The Squad 9 program was originally called the Fire-Medic Program and began October 1, 2018 from an idea of the Public Safety Director who believed *"fire is going to fail, so we need to do this."* The two-person crew originally used an ambulance with the intention of supporting EMS responses and assisting the fire departments with routine inspections and maintenance. Emergency Management purchased them a utility truck in 2020 and have been very useful, responding to many working incidents. In fact, the Squad 9 program, with their battery powered extrication tools, have performed 90% of the extrication in the county since its inception.

The need for fire department maintenance stemmed from concerns that most fire departments were not properly inspecting and maintaining their new FEMA grant funded SCBAs, not properly inspecting their apparatus, and other tasks were not being completed. Squad 9 currently exists because the "all-volunteer fire department models" are failing on multiple levels.

Schedule

They changed the name to Squad 9 about a year into the program to clarify its mission. Squad 9 is staffed Monday through Friday, 07:00 to 19:00. However, a 06:00 start time and 18:00 stop time would be more appropriate since most volunteers who work daytime jobs are available to respond by 18:00 and usually won't respond to a call after 06:00.

Recommendation 6D:

Change the shift schedule for Squad 9 to 06:00 to 18:00

Staffing

The team is made up of two full-time and four part-time personnel. The full-time personnel work 48-hour working weeks with eight hours per week of overtime calculated into the pay. Three of the part time personnel are career firefighters (Battalion Chief, Captain, and Firefighter) in Salem, Virginia. All Squad 9 personnel are required to be cross trained as both fire and EMS. They are the only Pulaski County emergency responders who must complete a pre hire process, annual medical exam and physical agility test.

They are currently housed at the EMS station in Fairlawn, but the Fairlawn Fire Department provides them some workspace as needed (the Squad 9 captain is a Fairlawn volunteer).

Ideally, they would like to be located in Newbern as a more central location in the county. According to the Squad 9 crew, they could get to most calls within 15 minutes and arrive at the most remote location in the county in 20-25 minutes. However, a travel map or response time analysis should confirm this.

Duties

Squad 9 floats throughout the county assisting the 7 volunteer departments and occasionally assisting the Town of Pulaski. They are on a 6-week rotation schedule for supporting the fire departments. However, this fails to accomplish all the monthly inspections required. Some feel they are stretched too thin, that they touch 50+ apparatus and 134 SCBAs every 6 weeks, plus shuttle trucks to and from the shop. GES suggests that with proper management and supervision, the Squad 9 crew could be more efficient with their time and tasks.

Vehicle and Equipment

They use a 1-ton pickup utility truck, which works well for them carrying battery powered extrication tools, SCBAs, medical equipment and fire extinguishers. This vehicle is fit for purpose and they can respond to any fire station in the county to crew larger fire apparatus if needed. The Squad 9 personnel have a completely separate set of PPE for when they work Squad 9, which means all of them also have a set of PPE at their primary fire department in Pulaski County.

We have seen this type of light response vehicle effectively used in many fire departments across the world. A valuable addition would be an ultra-high pressure firefighting unit with appropriate water tank for the GVW of the vehicle to get an initial knock down on most fires. The county is considering purchasing/issuing a take home response vehicle to the Squad 9 Captain, GES advises against this, particularly as they will only be assigned Monday through Friday daytime shift duties.

Perspectives from EMS

When the Squad 9 program was originally set up, EMS personnel thought they were an EMS resource to assist when the system was saturated. There was no communication to EMS personnel from upper management about Squad 9 when it started and with no clear explanation of responsibilities or roles defined, caused confusion. There is still a sense of conflict with some EMS members towards the Squad 9 program, some want them there and some don't. We believe this can be greatly improved through better sharing of information and collaboration on SOP's.

Many comments were made about the current level of morale and service delivery, summed up by one long time member:

"as a citizen, seeing EMS calls going unanswered while you have paid, trained personnel (Squad 9) able to respond is unsettling and very frustrating. EMS personnel are told that Squad 9 is not an EMS resource, yet they are stocked with a monitor, code bags, and drugs"

There is a general misconception that the purpose of Squad 9 is to back up EMS. According to the Public Safety Directors, they are supposed to backup EMS, but their primary purpose is actually to cover fire.

Perspectives from Fire Chiefs

Most chiefs feel Squad 9 has been a very successful program, they absorb numerous volunteer department responsibilities, are a tremendous help with vehicle and equipment maintenance and they provide the much-needed rapid response during the daytime. The downside is that volunteers are not checking their own equipment as they should, which stimulates ownership and familiarity. Every time a piece of equipment is checked or tested, learning, knowledge and responsibility are re-enforced. Some departments still have work sessions to clean and go over equipment, but that is rare.

Squad 9 has to walk a fine line between assisting but not overrunning the operations of the volunteer firefighters.

Some chiefs feel that the county relies too heavily on the Squad 9 crew for firefighting responsibility and they are stretched too thin. During the day, at least they know someone is responding to fire calls. Some chiefs were concerned that Squad 9 didn't have any known SOGs and the fire chiefs didn't know exactly who they are accountable to or evaluates them. One chief said, *"they do great work, but kind of seem to do what they want."*

To become a genuine operational resource in the future, this program should be expanded with a minimum crew of four to five available on each of the two recommended units. With increased numbers, checks and tests can be done more efficiently and minimum personnel standards for fires and accidents can be established. **However, caution needs to be taken to not expand this program too quickly as it could negatively impact the volunteer ecosystem.**

Squad 9 Leadership

The current crew leader is a Captain. He coordinates the schedules and tasks, reporting to the Public Safety Director. There are concerns that he was appointed to this rank without a process that had the appearance of favoritism. Squad 9 has a county issued laptop and cell phone which should stay with the on-duty crew.

There are concerns about Squad 9 leadership from within the team, there are also concerns from some fire chiefs and officers about the attitudes and behaviors of Squad 9. There is a common perception that Squad 9 manages themselves without any overhead direction or accountability.

Accountability

There is a need for more accountable management of the Squad 9 program, but the capacity of the current system does not allow for it. Under the new organizational structure, the Squad 9 program (renamed to Support Services) will be under the Deputy Director of Safety and Training. This will ensure direct supervision and accountability, plus ensures that they are following a program of activity relevant to their mission.

We are concerned that the Squad 9 crew is not documenting their maintenance activity, particularly SCBAs or vehicles. They also do not maintain the small equipment such as the saws, which are a critical piece of emergency response equipment.

Recommendation 6E:

Expansion along with a higher level of accountability needs to be developed for the Squad 9 program.

Policies and Procedures

One of the most commonly heard comments about Squad 9 is that they didn't have any policies or procedures. The Pulaski County Fire Protection Committee meeting held during the week of the GES review was the first time the county fire chiefs were introduced to a draft outline of a Squad 9 SOP. Another concern was that these SOPS were developed with little to no input from the other Squad 9 personnel, many had no idea they would be presented to the fire chiefs in the county,

Future Plans

Squad 9 was originally set up with the intention that it is able to be expanded at a later time. Some feel they should expand the program to staffing an engine 24/7 in the center of the county with 3 people. GES believes the current system of a support vehicle is more appropriate, but expanded to two 2-person crews on duty during the day. The Support Services (Squad 9) crews should also be tasks with duties as assigned such as the following:

- Accountability System Coordination
- Action Items from AARs
- Recordkeeping Mentoring Volunteers
- Research and Development
- County wide hose and nozzle testing
- Safety and Health Program Support
- Public Education
- Smoke Detector Installation Program
- ISO Preparation and Maintenance
- Policy and SOP Development
- Equipment Maintenance and Coordination
- Company Level Fire and Life Safety Inspections
- Assist with Training Coordination and Instruction
- Equipment, uniform, and PPE issuing, inspection, and cleaning
- Facility and Grounds Upkeep and Minor Maintenance
- Pumper Service Testing, apparatus and portable pumps
- Pre-plans

Fire Operations

Each fire department operates in their own way, has their own SOPs and policies, and are independent of each other. It is time for all 8 fire departments to operate under a common set of SOPs and policies.

Motor Vehicle Crashes

Since fire departments are not dispatched to medical emergencies, the most frequent call for fire departments in Pulaski County are motor vehicle crashes (MVCs), sometimes referred to as motor vehicle accidents or MVAs. The most hazardous scene for any emergency responder is operating on and along the roadways while exposed to moving traffic. There were numerous stories of close calls responders have had. One chief commented that most of the time, they are just directing traffic.

Interstate 81 cuts through Pulaski County for 20 miles. It is one of the most dangerous sections of interstate in the region and known as “Tombstone”. It does have reader boards that can alert motorists to crashes and dangerous conditions ahead, but most do not pay attention. There is also no detour plan for crashes on Interstate 81, ideally motorists would know the path to travel to go around crashes, but they often get lost or are unsure where to go, this is a significant concern for large trucks.

Recommendation 6F:

Pulaski County should work with VDOT to implement detour plans for Interstate 81.

The current response plan for interstate and highway crashes is informal, outdated, and is putting responders at great risk. This stems from the way things have always been done and no one pushing for substantial change. Before a responder is seriously injured or killed, Pulaski County needs to update its response protocols and ensure current Traffic Incident Management System (TIMS) procedures are implemented and followed. Some personnel have completed TIMS training, although we were provided with no evidence of this. EMS provides reflective vests and has a policy for their use on roadways, but they don’t have 100% compliance. We observed that not every safety vehicle had vests in the cabs.

There were also concerns expressed that Newbern has the new Traffic Management truck (TM5) with the soft crash cushion and directional arrow, but it does not respond unless it is in Newbern’s response area or specifically requested. All too often TM5 is not dispatched or does not respond and fire apparatus serve as the upstream block or ‘fend off’ and a motorist hitting the soft cushion has a much better chance of survival that hitting a fire truck. A response to I81 should include multiple agencies and

always include TM5 with the soft cushion as the blocking vehicle. Newbern's Utility 5 also has a directional arrow board to deploy.

Recommendation 6G:

Update the response plan for Interstate 81 and other highways to maximum the safety of responding personnel and the public.

The deployment of crash cushions would ideally be the role of the department of transportation. Understanding that there are limited resources available, we understand why the fire departments have taken responsibility for this. However, only those with documented training on the proper response and deployment of the crash cushion should be driving and operating that vehicle.

With the high frequency of road accidents, all fire and EMS responders should complete the free online training required to obtain a National TIM Training Certificate. The new Department of Emergency Services can coordinate this initial training and facilitate annual refresher training. This and many other free courses are available through the [Responder Safety Learning Network](http://www.respondersafety.com) at www.respondersafety.com.

Recommendation 6H:

All responders to roadway incidents should complete initial and annual TIM training.

Recommendation 6I:

Motor vehicle crashes (MVC's) are a core activity for many first responders in the county system but they urgently need coordinated, multi-agency training (including state and federal) on skills and techniques for this subject to become more proficient and safer. Multi-agency MOU's need to be developed urgently to define roles and responsibilities.

Fire Responses

We listened to the radio traffic of 10 different structure fire calls plus several vehicle fires, wildland fires, fire alarms and a variety of other fire calls. We discussed each working incident with either the fire chiefs or Emergency Management Coordinator.

A concern is that Pulaski County is primarily operating on a minimalist mentality. For example, only dispatching and/or requesting the minimum amount of resources that may be needed to accomplish the mission, rarely considering of the contingency or backup plan. As a result the number of firefighters on scene are well below national standards and best practices. We were told by a few that it is not uncommon to work in the hot zone without following the two-in, two-out rule, not have a dedicated backup crew. If this approach does not change, they will be unprepared for a mayday situation.

A prime example is the six-acre wildland fire in late October along Claytor Lake. It was reported that there were not enough resources on scene, especially if the fire made a run and they needed to properly protect multiple structures. There were also not enough capable personnel to safely initiate direct or indirect fire attack along most of the fire line.

From the radio traffic we listened to, there is room for improved coordination and structure, more disciplined and standardized radio traffic. Arrival reports and size ups should be standardized, stating that 360's are complete and whether there is a basement or not, loss stopped, fire under control, safety officer established, and other standard practices (i.e. Blue Card Hazard Zone Management).

Operational Supervision

The National Fallen Firefighters Foundation has identified common causal factors involved in line of duty deaths: Ineffective, outdated or absent policies and procedures, ineffective decisions, lack of preparedness, ineffective leadership and lack of personal responsibility are the top reasons why firefighters die in the line of duty. Operational supervision is tied to all of these factors.

Most of the chiefs and officers use the incident command system, some more than others, and one chief refuses to use ICS. We recommend the adoption of Blue Card or other ICS/IMS system. Blue Card was developed from an evolution of Alan Brunacini's Fire Command programs. The present-day Blue Card program is also strongly based on lessons learned from line of duty deaths. Blue Card focuses heavily on the roles of "Task Level Supervisors" (primarily the crew leaders and company officers) and "Tactical Level Bosses" (heavily experienced chief officer or senior company officers).

Pulaski County suffers from a lack of operational supervision in both fire and EMS. The restructuring as well as implementing training plans should bring existing responders up to a higher level of competence.

After Action Reviews (AARs)

Some of the fire departments do conduct informal reviews after calls, but formal documented AARs are not conducted. Conducting formal AARs requires dedicated administrative time that is currently not available to them and is another task that needs to be taken on by a full-time administrator in the recommended Department of Emergency Services structure. We encourage Pulaski County emergency responders to conduct both informal AARs after each call and facilitate formal AARs for working fires and other significant calls.

Incident Safety Officers (ISOs)

We listened to over a dozen working incidents and an ISO was only appointed on one of them. ISOs play a vital role in operational incidents. Having qualified personnel available to serve as ISOs is critical. Identifying those existing members who are qualified and could fill those roles should be a priority. Wildland fires have Line Safety Officers or Lookouts as an essential role, Haz-Mat incidents are required to have Haz-Mat Safety Officers. The safety officer role should be a standard practice in all working incidents and another argument for establishing minimum staffing numbers.

7. Emergency Medical Services

The county provides Emergency Medical Services as Pulaski County Public Safety and has evolved over the years. Up until 1995, they were 2 separate volunteer rescue quads that included ambulances as well as vehicle extrication units. After concerns about reliability of service and an independent study by a consulting firm, they combined to form a new non-profit called Regional Emergency Medical Services Incorporated (REMSI).

The switchover from volunteer to career was a difficult time. Even though calls weren't being answered, a lot of people were opposed to the change. Over the years, the county contributed more and more of their funding to hire full and part time employees. Eventually the county owned the facilities, vehicles, and equipment, but the personnel and management remained independent.

In the transition to REMSI, the extrication part of the former "squads" was not sustained and the fire departments took over that mission. Extrication tools were distributed to a few of the fire departments and others had to purchase their own.

In 2019, the REMSI Board of Directors requested to transition the corporation into a full department of Pulaski County due to instability of patient revenue and increasing support from the Pulaski County. On September 1, 2019, the Pulaski County Board of Supervisors' resolution went into effect that transitioned REMSI into the Pulaski County Public Safety Department established on January 1, 2020.

They currently have a staff of 25 full-time employees, 21 part-time, a Director, a Deputy Director, and 1 shared administrative assistant.

Ambulances

The fleet consists of 10 ambulances, 2 command vehicles, 1 field supervisor vehicle, and 3 quick response vehicles. It was explained that Pulaski County purchases 1 ambulance per year to keep a

DRAFT F FOR CLIENT REVIEW

rotation and replacement plan of every 150,000 miles. The average mileage on the 10 ambulances is 87,000. Most of the ambulances are configured as closely as possible for standardization.

Designator	Housed	Year	Make	Model	Type	Miles
Medic 12	Dublin	2018	Ford	F-450	Ambulance, Type 1	74,267
Medic 10	Dublin	2022	Ford	F-450	Ambulance, Type 1	348
Medic 11	Dublin	2016	Ford	F-450	Ambulance, Type 1	117,826
Medic 13	Dublin	2010	Ford	F-450	Ambulance, Type 1	131,386
Medic 20	Fairlawn	2019	Ford	F-450	Ambulance, Type 1	19,528
Medic 21	Fairlawn	2015	Ford	F-450	Ambulance, Type 1	106,513
Medic 30	Snowville	2013	Ford	F-450	Ambulance, Type 1	147,311
Medic 40	Hiwassee	2002	Chevrolet	K3500	Ambulance, Type 1	71,747
Medic 50	Pulaski	2017	Ford	F-450	Ambulance, Type 1	96,465
Medic 51	Pulaski	2013	Ford	F-450	Ambulance, Type 1	104,227
Response 15	Dublin	2000	Ford	Expedition	Quick Response Vehicle	139,979
Response 8	Twin Com	1998	Ford	Expedition	Quick Response Vehicle	49,619
Squad 9	Fairlawn	2020	Chevrolet	3500 Silverado	Quick Response Vehicle	10,902
Car 6-1	Snowville	2004	Ford	Crown Vic	Quick Response Vehicle	178,482
Command 1	Director	2011	Ford	Expedition	Command Vehicle	78,500
Command 2	Deputy Dir	2009	Ford	Explorer	Command Vehicle	99,195

Command Vehicle Use

The Director and Deputy Director each have clearly labeled emergency response take home vehicles, Command 1 and 2. These are equipped with emergency lights and sirens, mobile radios, and response equipment. There is a concern that these vehicles do not actually respond to emergencies and that the two personnel assigned to these vehicles do not respond from home but they may occasionally stop by a scene if it is on their way. The two positions are almost exclusively administrative in nature, but there is a significant need for them to be more involved in operations. The call volume dictates their needed involvement operationally and many of the morale issues stem from the two directors not being sufficiently engaged with their operational crews.

There are tax implications for having a take home vehicle of this nature if the person is not on duty or does not have profound evidence that it is used to respond from home. Also, if the person assigned to this take-home vehicle is not physically capable of performing the skills of an emergency responder, it should not be taken home or the vehicle should not be clearly labeled as an emergency response vehicle. In any case, this situation should be evaluated.

In the future, the people assigned these take home emergency vehicles must be assigned an operational responsibility. In the new organizational structure, ideally one of the deputy directors and the director should rotate county-wide executive level duty to monitor calls and incidents, step in where needed, and respond to support working incidents.

EMS Equipment Use

EMS personnel are trained to operate all of the EMS equipment including the patient handling equipment. They receive initial training, but refresher training is not occurring or not being documented. When fire department and other non-EMS personnel are assisting, EMS personnel direct all patient handling to prevent mishandling or drops. They use Stryker cots and stair chairs, the first 3 primary ambulances have the power load system installed. They currently have a couple of people trained to do minor repairs but use an outside technician for significant repairs and annual maintenance. The patient handling equipment has a 700-pound capacity, anything over that and they request the nearest bariatric unit from Roanoke.

Leadership

When the system was organized in 1995, the Director position was added. In 2004, the Deputy Director was added. A few years ago, they started adding structure by appointing Lieutenants who have now moved up to Captains to make room for more Lieutenants. The plan is for the Captains to eventually become Battalion Chiefs.

There was a lot of criticism from EMS and fire department members towards the Director and Deputy Director and comments such as:

- Sit in their office while the system has fallen to pieces
- The only times you will see Directors respond is if the media is there
- They barely meet their certification and are not comfortable in the field running calls
- They keep rehiring people who have been let go at REMSI and other places

Overall, there seems to be a severe lack of engaged and effective leadership within the EMS system. There are mixed reviews about the field leadership and the ability and consistency of some Captains with claims that one or more were promoted even with past performance and disciplinary issues. It was commented that the current Training Captain has been in position for 6 months but has only done 1 class. The general consensus was *“everyone in EMS feels undervalued by those above us.”*

Culture

The EMS system is in desperate need of a complete overhaul. A number of factors have led to extremely low morale, a highly toxic work environment, recruitment and retention challenges, and the tangible tension between the front-line personnel and management.

The employee turnover rate was described as high, but actual statistics were not provided. Some commented that people wanted to work EMS in Pulaski County due to the higher acuity of calls, but it's not an attractive system to work in now. New recruits try to avoid working in Pulaski if they can help it. There is a perception that the medical director has restricted the scope of practice so much that the Paramedics cannot do a lot of skills that other services provide (i.e. no intubation).

Comments made about the Culture:

- Lack of accountability was mentioned many times.
- Field EMS leadership toxic to the system
- County doesn't know most of the personnel history
- We are reactive instead of proactive
- Nothing in writing to address or track concerns
- Routines are not getting done, no one enforces them either
- We simply cannot manage the call volume, there are 2 ambulances most of the time and it's not enough
- Putting an ambulance in Pulaski would help the EMS situation to some extent, but staffing the 3rd ambulance 24/7 would be ideal

Part Time Employees

There are currently 23 part time EMS employees with no limit on the number of part-time employees they can hire. Only about ten of them work regular shifts. The rest work the minimum of one 12-hour shift per month. They have to give the scheduling captain 96 hours of availability so he can schedule them for 12 to 24 hours of shift time. Having a part-time employee who only works 12 hours per month is costing the county in numerous indirect costs, increasing the minimum to a higher number of hours and higher part-time pay rate may also help revise this program.

Recommendation 7A:

The part-time EMS employee system should be revised to require a higher minimum number of shifts per month.

Hiring Process

Although all EMS personnel are employees of Pulaski County, there is little to no involvement from Pulaski County Human Resources in the hiring, promotion, demotion, termination, and discipline of EMS members. This is primarily handled by the Director and Deputy Director of Public Safety (EMS).

Labor Management Relations

It was evident that there is a significant strain in the relationship between labor and management within EMS. It was one of the most frequently commented issues throughout this review. It is so severe that, in our opinion, it cannot be repaired without a change in leadership.

With the planned retirement of the Director of EMS (Public Safety), it will be an excellent time for the organization to restructure and repair this relationship. Since we were unable to communicate with Pulaski County Human Resources directly, we could not verify how complaints were managed, how conflict was handled, and if any of the front-line concerns were on the radar of Human Resources.

One informal recommendation made on site with the County Administrator was to get Human Resources directly involved in all EMS (Public Safety) personnel matters including hiring, promotions, demotions, discipline, etc. The EMS Director and Deputy Director have been handling their own personnel practices with little to no involvement or oversight from Pulaski County Human Resources. This situation has created a significant management liability risk exposure.

Pay and Conditions

The Deputy Director of EMS reported that a salary study was done when neighboring Montgomery County advertised a higher salary than anyone else in the area. Pulaski and others in the area have given some raises to try to keep up; they couldn't match the higher rate but got close. They only lost one full time employee to Montgomery. He believes it needs to be raised again and will be conducting another salary survey to include part time wages. Employees reported that their pay and benefits were well below the other counties. It was said that EMTs can make more working at Walmart.

There is no compensation for classes or training. They have to complete required training to maintain certifications, but Pulaski County does not pay for them to take courses. Although it may or may not be required by law to pay employees for this training, it is best practice to do so. They didn't have a training officer to do the classes in-house until recently, but that training officer has only conducted one class to date due to time constraints.

The holiday and vacation pay for Pulaski County does not consider 12- or 24-hour shift employees. Vacation hours are based on someone working a 40-hour work week, not the 48 to 96 hours worked by most of the EMS personnel. Where daytime employees accumulate hours to take a "day off" work, EMS employees have to accumulate 24 hours of vacation time to take a day off.

Recommendation 7B:

Adjust the vacation/leave accrual for those working 12 and 24 hour shifts to allow for more time off.

Overtime

Nearly every EMS employee works excessive overtime, it was commonly described as "out of control" as there is no attempt or effort to monitor or manage overtime. The typical EMS employee works 72- and 96-hour shifts on a regular basis. This is negatively impacting the physical and mental health of the employees as well as contributing to the negative culture of the organization.

The right amount of rest and recuperation are essential to EMS personnel but it was heard that on top of excessive hours with Pulaski County, many were doing exactly the same for other counties on their

prescribed days off. Both EMS and employees themselves have a duty of care and need to subscribe to a clear policy on working hours.

Recommendation 7C:

Overtime and secondary employment must be properly managed so that employees have appropriate rest time.

Operational Staffing

EMS is allotted 25 full-time positions. In addition to the Director, Deputy Director, and the shared Administrative Assistant, there is also a part time training coordinator (now Captain) that splits his time between shift work and training officer duties. They have 3 full time position open which seems to be a constant number as they are viewed as a training ground for other EMS systems.

Ambulances Approved for Staffing

The EMS system is supposed to have three ALS ambulances staffed 24/7. One in Pulaski (Station 5), one in Dublin (Station 1), and one in Fairlawn (Station 2). However, the 3rd ambulance is rarely staffed. We were told numbers from different people that it was staffed anywhere between 15 and 90% of the time. It appears to be fully staffed only a small percentage of the time based on comments and GES actual observations and monitoring of radio traffic.

The current leadership is considering a future staffing plan of three BLS ambulances plus two ALS chase vehicles (one as an operations supervisor and the other as a community paramedic). There were also considerations for peak use vehicle (also referred by some as a Power Car) for the peak call volume periods. 80% of the calls happen between 7:00 AM and 11:00 PM with Dublin as the busiest station and Pulaski as the busiest area.

There are a lot of concerns about the EMS staffing situation, that the two ambulances on duty are not enough and the third ambulance is rarely staffed. When EMS is understaffed, the dispatchers get flack from the families and 911 callers. Residents wonder why they have to wait so long for medical help.

Recommendation 7D:

Ensure 3 ambulances are always staffed 24/7.

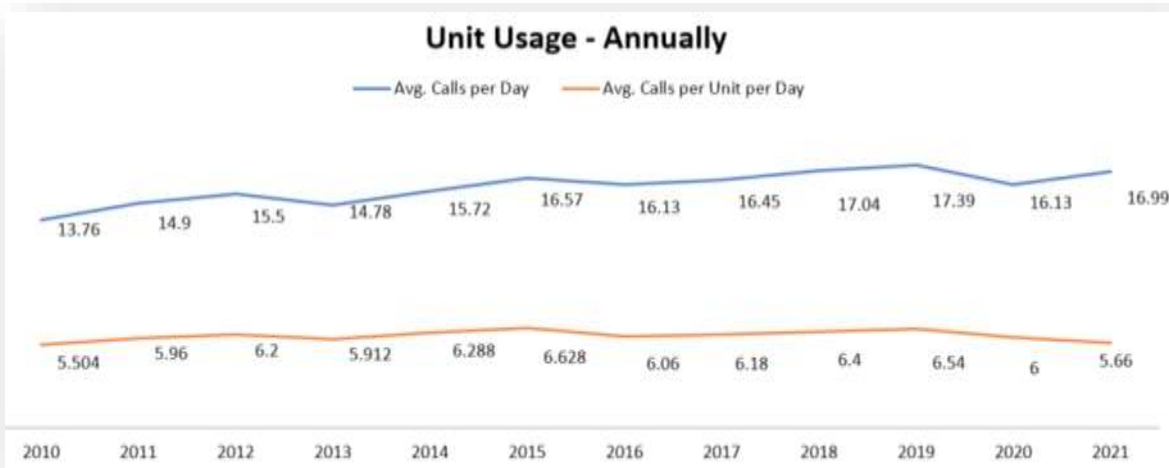
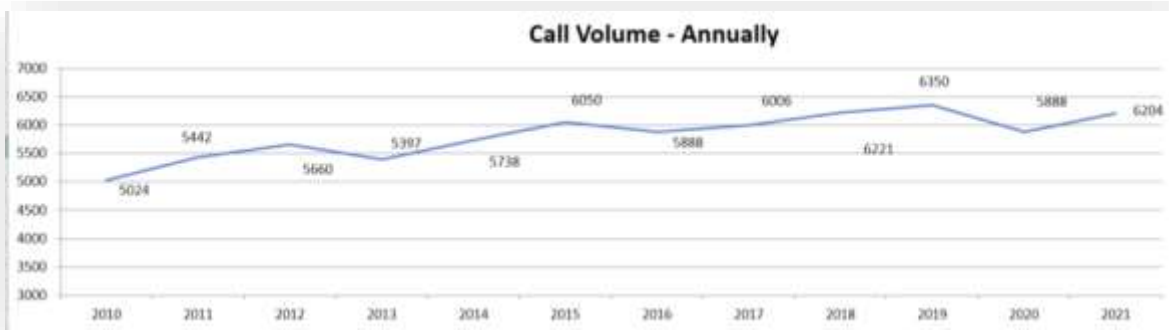
Number of Ambulances Needed

In reviewing the ten-year trend of calls, the actual call volume and unit calls per day has only seen a slight increase. If the 2022 volume is estimated to be 6,570 calls and if two ALS ambulances are staffed, that averages six calls per ambulance in a 24-hour period. According to a [2020 article in EMS World](#) that reviewed the data of 70 EMS departments, the “average ambulance went on 2,408 EMS calls a calendar year, which translated to a workload of roughly 6½ calls in an average 24-hour period.” This seems to be a consistent benchmark among most EMS services. A significant factor for Pulaski County is that the EMS service does not conduct inter-facility transports, which can often be long in duration.

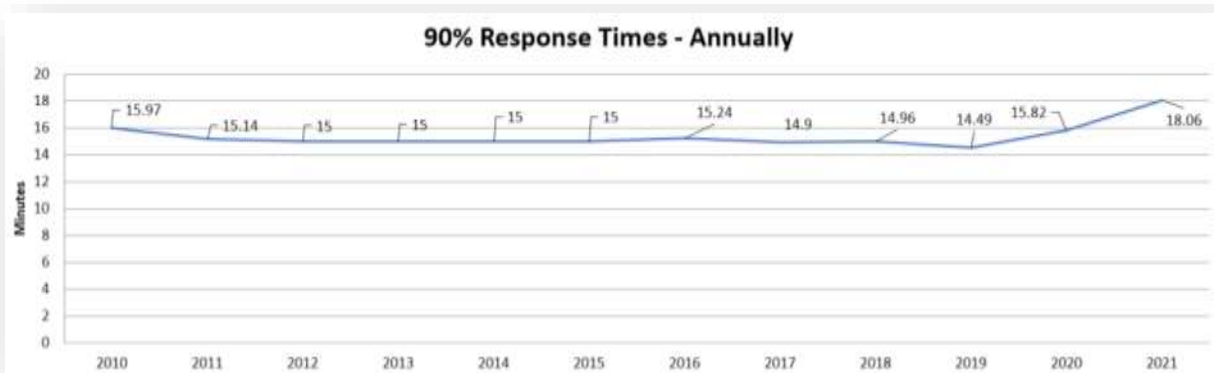
Billable calls are consistently half ALS and half BLS. Pulaski County should consider staffing BLS ambulances with ALS supervisors since the area is light on paramedics. Virginia minimum staffing for an ALS ambulance is an ALS Provider and an EMT. BLS ambulance is one EMT plus a driver with CPR and EVOC.

There was no enough information provided for GES to conduct a unit hour utilization analysis. Several EMS members made comments about a standard of “1,000 calls per ambulance per year” as an indicator of how many staffed ambulances were needed in an EMS system. EMS leadership estimated they needed 6 ambulances staff. This should not be a benchmark for determining staffing in an EMS agency. An average staffed EMS unit should expect 6 to 8 calls per 24 hours.

DRAFT F FOR CLIENT REVIEW



Response times are also fairly consistent over this 10-year period, although 2021 showed about a 2.5 minute increase over the 10-year average.



Three fully staffed ALS ambulances should be sufficient given the call volume in Pulaski County. However, this call volume is not evenly distributed among the current three ambulance crews. A fourth peak unit (or locally called power shift) could be utilized if the data supports the need for it.

DRAFT F FOR CLIENT REVIEW

With no one to manage the operations on a day-to-day basis (the current EMS Director and Deputy Director do not get involved in operations); these three ambulances do not have direct operational supervision to efficiently balance the demands on each crew.

For example, we were visiting EMS Crew A one afternoon who had run only two calls that day. EMS Crew B was on their sixth call of the shift. As we were talking, Crew A was dispatched for a minor EMS call, but Crew A decided to wait a few minutes to see if Crew B would take it, which we saw as a deliberate delay in EMS response. Crew B answered the call. 20 minutes later, another call was dispatched for Crew A. The same thing happened, Crew A waited and Crew B took the call. Finally, 15 minutes later, Crew A was dispatched for a call and took it.

It is clear from that experience, other experiences GES observed, and while monitoring Pulaski County EMS and fire calls for a 6-week period, that EMS lacks operational supervision.

Recommendation 7E:

Implement a shift supervisor program for EMS and an ALS supervisor

Deployment of Ambulances

There are a total of ten ambulances in the Pulaski County EMS system. Three are staffed, which would ideally leave three more for backup, two are unstaffed in the outlying fire stations of Snowville and Hiwassee, which leaves two more for rotation into the system. Below are the ambulances responses per station over the past 5 years.

EMS Calls By Station Per Year	Station 1 Dublin	Station 2 Fairlawn	Station 3 Snowville	Station 4 Hiwassee	Station 5 Pulaski
2021	2481	1092	2	4	2603
2020	2339	1094	2	6	2380
2019	2560	1130	0	5	2542
2018	2575	1078	2	6	2528
2017	2462	1200	3	10	2328
5 Year Total	12417	5594	9	31	12381

According to Pulaski County *“This covers the last 5 years of station activity. These are the “Calls Handled By” and would not cover first response by a crew member or a truck if they did not provide a significant patient care intervention or transport. An educated guess gives this report a 96% accuracy rate.”*

Hiwassee and Snowville Ambulances

The two ambulances, Medic 30 and Medic 40, housed at the very rural Hiwassee and Snowville fire stations are not staffed and rarely used. The Hiwassee ambulance was covered in cobwebs when we visited the facility and it was obvious no one had checked it in weeks, the cypher lock on the exterior door had a dozen spider nests in the push button areas. There are only a few members who respond with these two ambulances.

The data does not support the cost to house and maintain a fully equipped ambulance at either of these locations. We heard arguments for and against these two ambulances, but a combined 40 calls in 5 years do not justify a need for a transporting ambulance.

Recommendation 7F:

Remove the ambulances from Hiwassee and Snowville. Reconfigure and license existing vehicles in those stations for EMS BLS first response.

Brush Trucks and Support Trucks as EMS First Response Units

A more practical approach is to use one of the existing smaller response vehicles at those stations for EMS first response. Many fire departments utilize the smaller brush trucks for EMS first response. Brush 7 (33 calls per year) in Snowville and Brush 4 (14 calls per year) in Hiwassee could be rearranged to have one compartment to house the minimum BLS level of response equipment. The same could be implemented in other fire stations for EMS first response. Instead of having a dedicated Response 8 licensed for EMS (7 calls per year) in Twin Community, Brush 8 (3 calls per year) could be used for both. Support trucks could also be used.

If the county does not reorganize and take over operational control of fire departments, each fire department would need an EMS license to be permitted to first respond but could also be under the umbrella of the county EMS license. County EMS currently provide medical supplies and equipment to the licensed first responder agencies of Twin Community and Pulaski.

One of the challenges to implementing first responder programs in fire stations are the electronic records management systems using tablets. Given the low call volume in most of the stations (except Pulaski), the first responders could just do a short field duplicate form to hand to the transporting ambulance. The town of Pulaski, with its higher call volume and career staffing, should use the electronic tablet if possible.

Town of Pulaski First Responder Program

The Pulaski Fire Department is staffed 24/7 with three personnel (at least one is an EMT) and has emergency response vehicles licensed as EMS first response units. They are willing to respond as a BLS crew and have even offered to house and respond with a Pulaski County ambulance when the EMS system is short staffed. They have offered to pay for additional staffing for the ambulance if the county provides a cost share of the revenues so the Town breaks even.

With the current EMS staffing issues, they feel that the public deserves a response by the closest staffed units that can help. There are times when the EMS system is out of ambulances and the public has to wait 30 minutes for anyone to assist them.

EMS has not made this response automatic; ambulances have to manually request Pulaski Fire Department respond to EMS calls, and they often forget to request them. It is not set up as an automatic response, not even for a cardiac arrest or high priority EMS call.

With the strain on EMS and without additional resources, Pulaski is considering a reduction in their coverage area and possibly stop assisting outside of town as much in order to ensure town residents are covered.

Recommendation 7G:

Implement an automatic response dispatch protocol for Pulaski Fire Department to first respond to all medical calls within their response area.

Fire Department Assistance

Many of the fire chiefs feel like EMS is becoming more reliant on the fire departments to assistance due to their staffing problems. There were many comments about why EMS has become problematic such as a lack of leadership, management not knowing what's going on in the field, and field supervisors unwilling to get on an ambulance. The fire departments do not want to be relied upon to always assist EMS because EMS cannot maintain their staffing. Additionally, there is no formal training to fire departments for patient handling, using EMS equipment, hospital procedures, infection control, blood borne pathogens, driving ambulances, and many other topics.

With regards to implementing fire department first response programs. The fire chief's feel that adding EMS requirements to their existing firefighters would place too much of a burden for training and calls.

The fire departments are already struggling with members and are behind in their required training topics. With a combined county system, it may be possible to add EMS only first responders in some of the fire stations.

Most fire departments would like to be dispatched to life threatening medical calls such as cardiac arrests or CPR in progress calls. This is somewhat challenging for EMS to implement since EMS agencies and response vehicles have to be licensed through the state. The vehicles must meet a minimum equipment package. EMS has requested fire departments paged for CPR providers to respond in remote areas of the county, but it is not automatic and is only done on a case-by-case basis.

The system needs to change so that in those circumstances, dispatch automatically dispatches the closest CPR trained personnel to the incident.

Firefighters do not drive the ambulances very often, but it does happen some in emergency situations. They are not very selective about who drives, as long as they are checked off to drive a fire apparatus, they assume they can drive an ambulance.

Dispatching

EMS units are dispatched via their EMS station number and not by their unit number. Dispatch has no idea if an EMS unit is staffed or not, which is frustrating, delays alarm processing time, and delays response to the patients. Dispatch often pages the station and just hopes an ambulance responds.

Additionally, dispatch and other units have no idea where ambulances are responding from most of the time. If the ambulance is not at their assigned station, they should state where they are responding from (this also includes Squad 9, such as “Squad 9 responding from Twin Community”). Although the ambulances and Squad 9 currently have GPS tracking, only dispatch can see their location and other responders are not aware of that information.

Recommendation 7F:

Dispatch EMS units by unit number and not by station number. EMS units should notify dispatch when they are staffed or not.

Each EMS station had their own two-tones, but during the visit, it was explained that EMS would be going to just one tone for all units. This was to give situational awareness to all on-duty EMS crews. However, some saw this as an unfair practice that would wake up crews during the time they needed to rest during the night. We do not support the “one set of tones for all units” practice.

Future Staffing Options

Although the ideal staffing model is three ALS ambulances, the reality of staffing those 3 ambulances is very challenging given the multitude of factors impacting Pulaski County EMS. The minimum staffing for an ambulance in Virginia is an EMT and a CPR/First Aid trained driver or attendant. Given that 50% of the EMS calls in Pulaski County are BLS, they should consider BLS staffed ambulances with an ALS shift supervisor to intercept as needed.

Community Paramedicine-Type (CP) Services

CP services are where EMS agencies provide EMS personnel and other resources to help meet unmet health needs in their communities. This is generally a specially trained EMT or paramedic who can provide certain kinds of preventive or other primary care. This may be offered between 911 calls or by dedicated CP staff on days that they are not staffing an emergency ambulance (other staffing methods exist as well). This type of program can effectively reduce the consumption by at-risk individuals.

Recommendation 7G:

Implement a Community Paramedic Program

ALS Medications

Pulaski County currently has to conform to the tackle box system of swapping out ALS medications at hospitals. They have established their own pharmacy license because they are aware that that system is going away but will stay on the tackle box program because the hospitals are currently paying for the medications. This only applies to ALS capable vehicles.

Pit Crew CPR

It was mentioned several times that Pulaski County follows the pit crew or high-performance CPR practice, however they do not dispatch the minimum resources needed for true pit crew CPR. Typically, this takes five to nine responders, but Pulaski County is only sending two initial responders with the potential for more to show up. The county should expand the number of responders dispatched to cardiac arrests and, if needed, include the closest fire departments to all CPR calls to have sufficient number to adequately perform high performance or pit crew CPR. When asked about training on pit crew CPR, it was not a regular training session and did not involve fire departments.

Recommendation 7H:

Dispatch enough resources for high performance CPR and train regularly on the pit crew method to ensure all EMS personnel and CPR trained firefighters are proficient.

Ambulance Standbys

Pulaski County provides EMS standby services at High School football games and other events. GES was told that the high school standby is dedicated with no fee charged, but other standbys are case-by-case and will charge a fee if the ambulance is dedicated.

There is no written agreement or documented communication as to the nature of the standby and the role of the EMS units, if EMS is required to be on site, if their role is for the players, spectators, or both, and what happens if the standby EMS unit begins treating a patient, is another EMS unit needed to cover so the event can continue. There are many questions and concerns with informal standby services. GES provided the EMS Deputy Director with information on developing a policy and written agreements on EMS standby services.

Recommendation 7I:

Implement a policy on ambulance standbys

Shift Routines

Routines should be the heartbeat of staffed stations, they give personnel a clear, fair schedule of work that influences many important areas of service. Each EMS station has a routines schedule, but most crews admit that it is not regularly followed and there is no accountability to ensure the tasks are completed. Routines should be structured to feature a range of activities that compliment and support multiple areas. These routines would provide a level of expectations and accountability that is currently lacking. Some departments utilize shift logs to document and account for the activities on shift to show the workload, training, and tasks beyond the emergency response calls. This should be a future consideration.

Recommendation 7J:

Develop an appropriate routines schedule and hold crews accountable to that schedule.

Medical Direction, Dr. Eric Stanley

Is an Emergency Physician, board certified in EMS, who went to college at Virginia Tech and was a volunteer EMS provider in the area. He is a true volunteer medical director and receives no compensation for any of the eight agencies he contracts with. He feels this allows for a lot of training and cooperation opportunities. Responsible for oversight of policy and procedures. He signs off on medical staff providing care (BLS/ALS). No bearing on administrative side of the house, Nice to keep separation between medical and administrative

DRAFT F FOR CLIENT REVIEW

He feels that Pulaski is struggling with same staffing shortage as rest of nation and there is a lot of competition for ALS providers in the area. Virginia, in general, does not pay EMS very well and providers tend to go where they can get paid. He feels that Pulaski has done relatively well with handling the shortage and has not seen exceptional delays in response or in care that are unique to Pulaski.

Dr. Stanley regularly meets with EMS administration every other month. He has never been invited to quarterly fire chiefs' meetings. He works at the non-profit Carilion hospital, a level 3 trauma center. The regional level 1 trauma hospital is Roanoke in the Carilion system.

Protocols

Protocols used are regional from the Western Virginia Region. Dr. Stanley and 2 other colleagues wrote them and they changed way EMS operated in the region. They pulled back intubation, which made Dr. Stanley unpopular, but they were not very successful at the skill. They still are allowed to place I-Gels (recently switched from King airways). They have a pathway for an agency to get approved for intubation has been in place for over a year. First the agency needs to get a pharmacy license for the RSI drugs and Pulaski already has their license. Next hurdle would be to identify the ideal video laryngoscope. Working towards adding advanced airway skills back. Want to make sure ALS care is meeting the standard of care that would be expected in another area. One concern with this is that each ambulance carries intubation equipment to meet the state minimum requirements but cannot use it.

Patient Care Documentation and Refusals

Proper patient documentation, patient care reports (PCRs), and refusals are an integral component of any EMS system and the most significant liability exposures in EMS operations. The PCR should be a documented accounting of the interaction between the patient and the provider, from the beginning to the end of a patient encounter. It is necessary to include detailed information from the perspective of the healthcare provider and all treatments or actions should be rooted in accepted standards of care or medical direction, including treatment protocols.

Quality Assurance & Quality Improvement (QA/QI)

QA/QI is critical to maintaining a high level of competency in any skill set, whether it is EMS or fire. Similar to a formal AAR, a QA/QI process identifies areas of success and improvement. Calls go through an internal QA/QI process and if there are any red flags, they send it over to Dr. Stanley for additional review. Dr. Stanley also has colleagues at the hospitals that sometimes alert him to concerns. He has access to their records management system to review calls but does it with the EMS providers. There are no regular run review meetings from the Medical Director, instead he talks to providers about calls and tried to keep any comments generic so no one feels too singled out.

Pulse Point Application

This smart phone app has proven very effective in many jurisdictions and should be considered. Pulse Point can be helpful when there is a cardiac arrest or other emergency. The app could have an overwhelming impact on bystander CPR occurring in public locations when a cardiac arrest occurs.

Recommendation 7K:

Consider implemented the Pulse Point Application for Pulaski County.

EMS Supplies

EMS personnel stock supplies at Dublin EMS Station 1, they also restock fire department first response vehicles.

EMS Personnel Orientation

A detailed policy is in place for new EMS personnel orientation. It appears to be well organized and comprehensive. The one missing element is a written test on the protocols or policies. Proving the competency and knowledge of EMS personnel is essential for risk management and if liability issues arise. A written protocol test for EMS personnel is a common and best practice for responding personnel

and should be considered as an element of EMS orientation. A written competency test could take the place of several items listed in the orientation task sheet. The orientation

8. Special Operations Team

Pulaski County has a volunteer special operations team that was established 10 years ago that responds to 10 to 20 specialized calls per year. The team has a roster of 25 people, but only about a dozen are regularly active. The team coordinator has been an EMT and volunteer firefighter for 21 years and currently works as the county's radio technician. They have a detailed SOG that describes their roles and provides a guide for each type of incident.

Their purpose is *"to provide highly trained personnel with specialized technical skills, equipment and expertise available to respond and intervene, in a safe and organized manner, for the purposes of efficiently and effectively mitigating the special operations types of incidents."*

To be a member, you "must already be a member or an employee in good standing of a Pulaski County fire department, Pulaski Fire Department, or Pulaski County Public Safety and meet the approval of the Pulaski County Emergency Services Coordinator and the Special Operations Team Leaders."

Within 12 months, new members are required to be certified in a minimum of two of the seven core requirements. These include Trench Rescue, Rope Rescue, Confined Space, Swift Water Rescue, Farm Machinery Extrication Certification, SAR for First Responders, and Wide Area Search.

Staffing is an issue as "the team members are getting old and worn out with no one replacing them." It is challenging to staff this team due to the many specialized skills and high risk, low frequency calls. The special operations team holds four quarterly trainings each year and members can only miss one training per year. They have a hard time walking the line between enforcing training requirements and maintaining enough volunteers on the roster. Since COVID, the Special Ops team has not had face to face trainings. Initial specialized training is done by a state training agency and when the Volvo plant brings in 3rd party rescue companies they invite Pulaski County to attend. They send members to a water certification training center in North Carolina.

We heard some opinions that this team is adequately equipped and trained, the equipment properly maintained and team members are competent in their skills. However, others were skeptical that this is actually the case and felt it was operating under false pretenses. Several mentioned concerns that there are no training plans or structure to ensure team members are competent.

The majority of the calls are water-related, mostly surface water and swift water rescue. The team does not do dive rescue or recovery, although several members have dive certification and do it for other agencies.

Other comments about the Special Operations Team

- Most of the other emergency response units do not carry rescue equipment. Only the Squad 9 crew, Dublin VFD, Fairlawn VFD, and Snowville VFD have rope rescue equipment
- Special Ops Team does not have gas monitoring equipment for confined space rescue. Squad 9 does and most of the fire departments do.
- RIT responsibility is in the purpose statement but nothing has ever been done with that. Most of members are already on scene with volunteer departments.
- Incident Safety Officer is in the SOPs, there is no formal training, but an ISO is appointed on most scenes. They randomly pick whoever is on the incident.
- Joint training with fire department was attempted, but has not occurred like their regular trainings
- Special Ops responds upon request of the fire department. They do not have an automatic response system. Some dispatchers add them to calls, but there is not a specific list of what types of incidents they will respond to.

We understand that the Special Operations Team may not be as prepared, trained, or equipped to respond to all of the emergencies in their scope. They cannot be advertised as responding to specialty emergencies if these concerns are valid. Pulaski County should take a hard look at the team and determine its actual scope and limitations.

Recommendation 8A:

Thoroughly evaluate the needs and scope of the Special Operations Team.

9. Fire and EMS Stations

We visited all of the Pulaski County fire and EMS stations, including the former Pulaski EMS station. We also visited other facilities including the dispatch center, vehicle maintenance facility, county administration building and fire training center. We will first describe items pertinent to all stations and then review specific items of each station visited.

There are nine fire stations and three EMS stations in Pulaski County. Evaluating each facility in detail was not part of the scope of this review, but comments and observations were made that warrant mentioning in this report. It is said *“you can tell a lot about a fire or EMS department just by walking into a station and seeing the cleanliness of the facility and apparatus.”*

How Many Fire and EMS Stations are Needed?

Evaluating the fire and EMS system in Pulaski County, we considered how many stations are actually needed. 9 separate fire stations and 3 separate EMS stations appear to be appropriate for the county size and population. We found that the fire stations are strategically located to cover 95% of the population and value of the county (see Annex D: Station Location Analysis). Fire and EMS stations should be combined in Dublin, Pulaski, and Fairlawn while downsizing the fleet of large apparatus to create greater efficiency in the system.

NFPA 1710 and 1720 have benchmarks for response times, however for Pulaski County as a mostly volunteer fire department system in rural areas, this approach is unrealistic and not cost effective as it would result in additional fire stations and apparatus. First, Pulaski County needs to ensure there is a minimum amount of fire stations strategically located geographically. Therefore we looked at coverage from each station using 5 road miles historically evaluated by the Insurance Services Office. Removing a station would reduce insurance coverage to residents. The most significant overlap in coverage between stations is Dublin and Newbern as they are only 2.6 miles apart. While ISO uses the 5-mile rule, to have an additional station in any community is a bonus and benefit. By pure data analysis, the Newbern station would have minimal impact if it was not in service.

The county must also consider whether a fire station that runs 30 calls per year is worth the cost. Both Hiwassee and Twin Communities fire departments have multiple pieces of apparatus for under 30 calls per year, technically all they need to maintain an ISO class 9 is one equipped engine. For other calls such as roadway or medical calls, a brush truck would be sufficient.

Facility Maintenance

Facility maintenance is primarily reactive with almost no preventive and routine maintenance. Pulaski County is responsible for the buildings (except the Pulaski and Dublin fire stations). We were told of and noticed a lack of attention to basic maintenance. Ideally there would be a formal facility maintenance and inspection program.

All HVAC and other equipment would be on a preventive maintenance schedule. Additionally, the personnel working in the building would perform their own regular or monthly building safety and maintenance inspections to identify issues and needs.

Backup Power

Only 2 stations have working backup power on an automatic transfer switch, the Dublin Fire Station and the new Snowville Fire Station. The county purchased surplus military generators about 4 years ago to place at each station, but none of these are connected. The Twin Community Fire Station has the generator set on a concrete pad, but it is not connected. In researching this situation, we understand that these generators are not appropriate for a backup power supply at emergency response facilities. They require manual adjustment when started and cannot be on an automatic start or automatic transfer switch.

Recommendation 9A:

Plans should be in place to install appropriate generators in all Pulaski County fire and EMS facilities including an automatic transfer switch plus regular testing and maintenance.

Facility Safety

The facilities lack a comprehensive safety program. It appears all of the stations are inadequate in many ways such as: having a hazard communication program, providing for complete and unobstructed eye wash and emergency shower stations, having clear space in front of electrical panels etc. The stations lacked in terms of cleanliness, storage, general housekeeping, emergency lighting, pest and insect extermination, monthly safety inspections and other safety concerns. Slip/trip/fall hazards were prevalent.

Station Diesel Exhaust Systems

Diesel engine exhaust fumes are carcinogenic to humans. None of the stations have direct capture vehicle exhaust systems. These direct source capture systems, when properly used, can capture over 95% of the exhaust gasses and particulates. No stations have a building exhaust capture station, but the shop does have one. The Town of Pulaski apparatus have diesel filters.

Recommendation 9B:

All stations should have direct capture exhaust systems installed.

Although FEMA Assistance to Firefighters Grants do pay for direct capture systems, it is not likely that the non-staffed stations would receive high ratings in the grant review process due to the qualifying criteria. This project should be planned for using budgetary funds and any future station (fire and EMS) should have direct capture systems installed. Avoid ceiling mounted air filtration devices as they are not as effective as direct source capture systems. These systems require annual maintenance and filter changes while only capturing 20-40% of the contaminants. We also recommend against vehicle mounted filters because some diesel exhaust particles can be too small to be captured by onboard filters and toxic gasses are only partially captured.

Garage Doors

The garage doors lack any annual preventive maintenance program. This annual program should check all safety features, springs, electronic openers, rails, and other components. Garage doors should also be checked to ensure their auto reverse anti-crush sensor safety feature is properly working.

Most of the apparatus bay doors observed lacked any safety beam device. It is best practice to have a lower safety beam and an upper safety beam (at fire truck bumper height) on fire station garage doors to prevent the door from coming down onto a fire truck, person, or other item. We also saw several bay door panels that had bent panels and door trim damage indicating they were hit by moving apparatus. We were not provided information on how those accidents occurred or what corrective actions were taken.)

Recommendation 9C:

Implement an annual garage door preventive maintenance program.

Separating Spaces/Zones in Fire Stations

Ensure the area outside of the apparatus bays are positively pressured to keep airborne contaminants out of the living, sleeping, and eating spaces. Consider the cold, warm, and hot zone concepts in future fire station designs, this is highly recommended by the Firefighter Cancer Support Network.

This concept of properly separating spaces was completely missed on the new Snowville Fire Station and the new Pulaski EMS Station. Simple design changes could have solved these issues before construction.

Immersive Design – Mental Health

Pulaski County should incorporate immersive design elements into all future stations. This is a comprehensive design strategy addressing physical, emotional, and mental health. Aspects and design elements of immersive design include lighting, nature, views, sleeping conditions, indoor/outdoor spaces, and amenities to make the areas feel more like home. Immersive design creates a healthy environment to live and work. It is beneficial for mental health, particularly post-traumatic stress and improves recruitment and retention, morale, and other wellness issues.

Again the new Snowville Fire Station and Pulaski EMS Station completely missed these design elements that could have been easily integrated into the design before construction.

Recommendation 9D:

Include immersive design elements in new and existing stations.

Monitored Protection and Security

All of the stations lack a monitored smoke, carbon monoxide, security, or other protection systems. Most destructive fire station fires could have been prevented or loss significantly reduced if there were simple monitored protection means in place. Each facility should have monitoring to ensure the protection and security of assets. A devastating fire could easily be avoided by a basic alarm system.

There are simple solutions to this such as Wi-Fi smoke detectors, freeze detectors, water leak detectors, cameras that also listen for smoke and carbon monoxide detectors. Some fire departments use commercially available systems with apps that are loaded onto fire department owned smart phones so they can be monitored by on duty crews.

Recommendation 9E:

Install monitored alarms in all fire and EMS stations.

Rodent and Pest Control

Rodent and pest control was lacking in all facilities. The worst was the Hiwassee Fire Station EMS Bay as we walked into numerous cobwebs and the push button cypher lock on the entry door was covered in spider nests.

Flammable and Combustible Liquid Storage

Most of the stations lack a proper and approved flammable and combustible liquid storage cabinet as required by OSHA to store fuel, oils, paints, and other materials. Some of the qualities may not reach the OSHA threshold to be stored in flammable or combustible liquid cabinet, but it is a best practice and each station should have one.

Recommendation 9F:

Purchase flammable and combustible storage cabinets for each station.

Grounds Maintenance and Snow Clearing

Maintaining the grounds of each facility appeared to be a cooperative effort between the fire departments and the county (or towns for Pulaski and Dublin). None of the stations had their own plows or mechanical snow clearing equipment. Most rely on volunteers to clear snow with shovels, personal plows, or county/town owned equipment.

The Squad 9 program could incorporate more grounds care and other minor facility maintenance. A volunteer resident program would also assist with grounds maintenance. Whatever direction is taken, a decision needs to be made to ensure all stations are given appropriate attention in terms of facility and grounds maintenance as well as supplies, vehicles, and equipment.

Parking

Most of the facilities lack designated parking spaces, lack handicap spaces, and it was not clear where the appropriate place for both visitors/public to park and where responders should park. All facilities should have a parking plan to indicated appropriate parking spaces. At the very least, handicap parking should be designated at every facility by both signs and the painted handicap symbol on the ground.

Unoccupied Station Signs

The public may not know which stations are staffed and unstaffed, they may go to a fire station expecting to have someone answer the doors. A recommended practice to place signs on the doors, at least the main public entrance door, that the station is not staffed and to call 911 for emergencies. It is also recommended that the non-emergency number be posted along with other contact information such as email or web site.

Recommendation 9G:

Post standard signs on the fire and EMS station doors indicating that it is unstaffed or the crews may not be at the location and to call 911

Resident Housing

Many volunteer and combination fire departments have great success in volunteer resident programs. These are programs where the fire department provides housing for volunteers at no charge in exchange for requirements that benefit the fire department. These requirements are usually a minimum time of documented availability for calls plus other supportive tasks such as projects, collateral duties, maintenance and upkeep of the facility, grounds, vehicles and equipment. The hours the volunteer residents log count towards staffing hours which helps with ISO credit for staffing.

With the decline in volunteerism and the number of volunteers responding from home, a resident program fills the gap and may be the only way an outlying station can get a response most of the time. Pulaski County should consider implementing a volunteer resident program at all stations, but specifically design volunteer resident apartments in all future stations. A perfect candidate for this type of program is the Hiwassee fire station where the EMS bay and back meeting room areas could be transformed into two apartments.

When designing future stations for volunteer residents, consider a family unit instead of just a studio or one-bedroom apartment. There should be a mix of 1, 2, and 3-bedroom apartments to accommodate different lifestyles and families. For example, if there is a married couple who wants a 2-bedroom apartment and only one is a responding firefighter, then there could be a requirement for the other residents to contribute in other ways such as cleaning, maintenance, administrative, or support tasks.

Recommendation 9H:

Consider a Volunteer Resident Program at all new and renovated fire stations.

Future Projects

The Snowville Station project was met with challenges and setbacks, plus lacked guidance from professionals who know the elements needed in a modern fire station.

These stations need to last for 50 years and future projects must be better planned and include the specific safety and immersive design elements.

Fitness Rooms

All new facilities should incorporate a fitness room with appropriate ceiling height, space, natural light, and ventilation. These fitness rooms should be on a ground floor and not on a 2nd floor. Even on the most well-constructed floors, there are still noise and vibration issues.

EMS Stations

EMS operates from five stations, two of these stations are combined with fire departments, and three are stand alone. Having a clean, organized, odor free and inviting workplace is a key component to recruitment and retention, morale, and wellbeing. Incorporating immersive design elements greatly enhances the wellness. The EMS stations have significant issues with these elements that are impacting the people who staff them and deter others who could be potential candidates to work there.

The EMS station numbers do not coincide with their counterpart fire station numbers. EMS Station 1 is in Dublin which is Fire Station/Company 3, EMS Station 5 is in Pulaski which is Fire Station/Company 6, and so on. This should be modified and the EMS station numbers should change to be consistent with the fire station numbers.

Recommendation 9I:

Renumber the EMS stations to coincide with the fire station/company numbers.

Station 1 - Dublin

The Dublin station is a warehouse style butler building that was previously a construction office. The facility was dirty, only had a few windows limited to the front corner of the building, had an unpleasant odor and was disorganized. The kitchen was split between two separate rooms across the hall from each other, the sink in one room and the stove/oven in the other. Smoke detectors covers were open with batteries missing, fire extinguishers were 2 years past inspection, and there was inadequate separation between the vehicle bays and living quarters.

During the review, a new HVAC system was being installed. The old system was poorly maintained and completely filthy; it is assumed that the filters were not changed as often as they should. Surprisingly, the new HVAC system was simply a replacement and not designed to ensure a healthier living environment.

Station 2 – Fairlawn

This is a very small station and tight bay space for 2 ambulances and the Squad 9 vehicle. There is one main living room with 2 recliners, a small eating table, and a personal temporary air bed. Overnight crews have to sleep on recliners or bring their own beds. EMS has projected \$250K to remodel and add onto the station. However the Fairlawn fire station is right next door with plenty of living space to house one EMS crew. An ambulance could be located in the fire station and the brush truck or another vehicle could be housed in the EMS station.

Recommendation 9J:

Instead of renovating the Fairlawn EMS station, use some of that money to remodel the Fairlawn Fire Station for EMS crew staffing and emergency backup power.

Station 5 - Pulaski

The former EMS Station 5 was located at 50 Lagrange Street in Pulaski and was used for approximately 40 years. The building is old, dirty, dark, poorly ventilated, had significant indoor health issues with mold and air quality and has outlived its usefulness. The week before the on-site survey, EMS moved out of their old Pulaski station and into a new one.

The new Pulaski Station 5 is located at 1856 Bob White Boulevard in Pulaski and is co-located inside a storage unit



complex. It is a remodeled car dealership building that was previously a construction office. Although the facility appears to be new, clean, and bright, there are significant design concerns and concepts that were ignored when building a new EMS or fire station. Immersive design elements were almost completely ignored, separation of spaces is not adequate, dual bunk rooms lack privacy or decompression areas, the bathrooms lack showers (the shower is in the laundry room), emergency eyewash and showers are missing from the vehicle bays, and a proper decontamination area in the vehicle bays are missing. These simple design elements should have been included in the design.

Access into the facility from the highway is limited and steep, not ideal for an emergency vehicle station. Parking is limited with a lack of designated parking spaces including a lack of ADA required handicap parking. A new combined facility with Pulaski Fire Department should be planned.

Fire Stations

All of the fire stations appeared generally clean and organized. There is a lack of places to shower or decontaminate people and equipment.

Draper Station (Company 1)

This station recorded 91 calls in 2021 but was dispatched 124 times. The station was built in 1992 and was added on to about 10 years ago. It houses 7 vehicles and 2 trailers - 2 engines, a tanker, a utility truck, an antique engine, a fuel transfer trailer, and a support vehicle.

The downstairs living area has a kitchen, meeting room, office, bathrooms, and utility rooms. The second floor has space to house responders overnight with a large meeting room and two other large rooms plus an additional room that could be a bathroom. The only issue is the lack of windows or secondary egress from the 2nd floor. This could be used as volunteer resident housing, a volunteer sleeper program, or to staff paid personnel.

Dublin Station (Company 2)

This station recorded 437 calls in 2021 but was dispatched 307 times. It is owned and maintained by the Town of Dublin. It houses 7 vehicles and 1 trailer – a rescue engine, a tanker, a ladder, a brush truck, 2 support vehicles, and the high-water flood response truck, plus a cooking/BBQ trailer. It has a very large meeting room over the bays with a bathroom, it could be remodeled into a living area for responders.

If there was combination of the system into a Department of Emergency Services, there could be room for one ambulance and the 2nd floor could be the crew quarters.

Fairlawn Station (Company 3)

This station recorded 99 calls in 2021 but was dispatched 111 times. It houses 5 vehicles including an engine, rescue engine, tanker, brush truck, and a support vehicle. This station has a lot of livable space, the first floor has a large meeting room, kitchen, office/conference room, and utility rooms. The second floor was pre-designed for staffing in that it has 2 large bathrooms, two large offices that could be dorm rooms, and a large meeting room. Instead of EMS adding onto their station next door, the Fairlawn fire station space should be used to house an EMS crew.

Hiwassee Station (Company 4)

This station recorded 29 calls in 2021 but was dispatched 15 times. It houses 5 vehicles including an engine, tanker, quick attack, brush, and an ambulance plus a UTV on a trailer. It has two meeting rooms, a kitchen, and 4 bathrooms. The ambulance bay and rear meeting room could be modified into volunteer resident housing.

Newbern Station (Company 5)

This station recorded 189 calls in 2021 but was dispatched 169 times. It houses 7 vehicles including an engine, rescue engine, tanker, air/light truck, traffic management truck, a utility truck, a brush truck, and 1 fuel spill trailer. They recently purchased a UTV with an enclosed trailer that is parked outside. They

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have a second building on their property across the road that houses the new pumper tanker (formerly Volvo Tanker 33) and an antique fire truck. The main station has a small upstairs with a training room/office and a bathroom.

They have outgrown the current facility and acquired property across the street from current station. They have built the garage for the new tanker and have done some fill work on the land. The new station is an active project and it was explained that “everyone was onboard but is now on hold for this study.” Newbern VFD owns the current building and there is ongoing discussion about what would happen with the current building. There are discussions that it will not house fire department equipment but could house county rescue equipment or a county maintenance station.

The Newbern chief wants the new station to be “done right or not at all.” We asked for plans and details of the new station but were not provided with any. It was explained that the new station is drawn out very roughly by a local engineering firm, Thompson and Litton. It was originally going to be strictly a fire station, but there has been discussion of it being a fire and EMS station. They have about 6 acres of land, but the building site is only about 2 acres and it is titled to the Newbern VFD.

Our assessment of the situation is that a new station is needed but is not the priority in Pulaski County. Newbern has too many vehicles given the number of responses and volunteers, as do most of the fire stations. Additionally, its close proximity to the Dublin Fire Station does not necessitate a large station. A new station should be carefully planned and properly designed to house an appropriate level of apparatus and meet current fire station standards.

The existing station could make an ideal EMS station, they could use the back/north three bays for ambulances and remodel the front/south bays and upstairs to be living quarters. The downside is the location and access to the rest of the county, of particular concern is having to drive through a residential area to reach the interstate. Based on the location need, placing EMS in the Dublin Fire station would be preferred.

Pulaski Station (Company 6)

Pulaski Fire recorded 709 calls in 2021 but was dispatched 321 times. 11 career staff and 22 volunteers operate out of one station. The main station houses two engines, a rescue engine, and a brush truck. This station is owned and maintained by the Town of Pulaski. It is a registered historic building at almost 100 years old and measures approximately 64 x 104 feet. It was built in 1924 with additions in the 1950's. Much of the work done to the station over the years has been done by the firefighters including additions and remodels. The building integrity is very questionable, it has a rock foundation, cracked beams and you can feel the slant in the stairs on one side of the building. It also sits alongside a creek and one of the foundation walls is also the wall to the creek drainage.

The building is subject to flooding and is in a flood zone. When it does flood, they evacuate all of the apparatus and redeploy to 4 different parts of the town until the flooding subsides. Although they mentioned that a major failure is not expected, they have not had an engineer or other professional assess the structure.

Recommendation 9K:

Conduct a structural engineering assessment of the Pulaski Fire Station.

Also on the property is a small fire marshal building which is a single room with a bathroom. To the rear of the property, they lease a 50 x 120 building to house their platform aerial and some special operations vehicles including 2 boats. The building also has an area for fitness equipment. Any maintenance on the facilities are handled by the career staff within their capabilities, anything larger requires a work order for public works. They have a contact for monthly pest control.

The highest priority in the county for a new fire station is undoubtedly Pulaski and most of the fire chiefs agree. The Pulaski chief believes he needs a second station to help cover the county area; however the data does not support this and the cost to maintain two stations is not practical. The current station should be vacated as soon as possible, and a new station constructed. Ideally, this new station would also house the Pulaski ambulances and crew.

Recommendation 9L:

Plan for a new Pulaski Fire and EMS Station as the priority facility need.

There was a past plan to construct a combined police and fire facility, but police wanted more square footage than fire and both had unrealistic expectations. Instead, the town improved city hall to accommodate police needs. We visited the county sheriff's office where dispatch is located and there is plenty of room in the current SO to house both the SO and Pulaski PD, especially when dispatch moves, but they don't want to share space.

Snowville Stations (Company 7)

This station recorded 65 calls in 2021 but was dispatched 42 times. It houses an engine, tanker, brush, quick attack, two support vehicles, an ambulance, two boats, and a chief's vehicle. The station is about 2 years old and the county funded most of the project with a total building cost of under \$900,000. It was an extremely frustrating project as they received very minimal support from the county. They had to find contractor on their own, design it on their own, and the county was difficult on establishing the specifications needed for a fire station.

It's a nice station with plenty of room, but it missed the mark on many basic design elements of a fire station that would not have added a substantial cost. One example is the floor drains in the bay; they are in the center of the bays instead of under the vehicles. The upstairs is one large room and it could have been designed with occupancy in mind. There is also no alarm or suppression system, no vehicle exhaust system, and the separations between the bay and living spaces is inadequate to prevent diesel exhaust from entering the living spaces.

Recommendation 9M:

Future fire and EMS stations should be designed with essential elements of modern emergency services stations.

There is a 13,000-gallon cistern in the ground, but no pump so apparatus have to draft to refill with water. Installing a submersible pump of 250 to 500 gallons would have been a practical option. The station also has a backup general with automatic transfer switch.

Snowville has a second station that fills a gap in their coverage area. It is a single bay building, on a long-term lease, which houses one engine. This station is essential for ISO five-mile coverage and plans should be developed to replace this station in the near future with a purpose-built facility.

Twin Community Station (Company 8)

This station recorded 28 calls in 2021 and was dispatched 28 times. It is a small station that houses an engine, rescue engine, tanker, brush, support truck, and an EMS first response vehicle. For the run volume, the station is sufficient, but cramped. The ceiling to the apparatus bay is open joists and insulation, which should be covered in sheetrock.

Recommendation 9N:

Cover the ceiling of the apparatus bay at Twin Community with sheetrock.

Future Station Plans

As stated before, future fire and EMS stations should be designed with essential elements of modern emergency services stations. A plan should be in place for facility improvements and replacement. We recommend the highest priority for a fire station project to be a combined Fire and EMS facility in

Pulaski followed by a new station in Newbern, then Twin Community and Snowville station 2. Remodels should take place in Fairlawn for an EMS crew to use the fire station, Hiwassee to modify the ambulance bay and back meeting room into resident housing, and Dublin to house EMS crews in the fire station.

Emergency Operations Center (EOC)

The Pulaski County EOC is located in a renovated building that was formerly a grocery store. It shares space with Pulaski County IT and GIS departments. It is well located, equipped, and organized.

10. Apparatus

Pulaski County has an impressive fleet of quality emergency response vehicles and is following a traditional model of having specialist vehicles for every conceivable eventuality. This is an outdated model that Pulaski County needs to move away from. Each apparatus and piece of equipment attracts a significant running cost and many of the statistical response roles can be combined into compact, multi-functional vehicles. The ratio of vehicles to personnel is too high for the volume and type of emergencies expected in Pulaski County.

Some apparatus do not move for months, one department received a new engine that responded to its first structure fire six years later.

Engines and Rescue Engines

Nearly every station has an engine and a rescue engine. Given the call volume, types of calls where extrication is needed, and low volunteer numbers across the county, two engines at these stations is unnecessary. The rescue engines house older heavy hydraulics that require a pump and hose reel that takes up significant space. The county should use the funds saved from not purchasing an engine this year to instead purchase battery powered extrication tools for the engines. Future engines should have enough storage for both structure fires as a Type 1 engine with additional space for some rescue/extrication equipment.

Recommendation 10A:

Use the funds saved by not purchasing a new fire apparatus and replace all extrication tools with smaller battery powered tools.

Recommendation 10B:

Engines and rescue engines are not needed at the same station; combine them to be one multipurpose truck.

Tankers

Most of the tankers in the system are smaller capacity models (under 2,000 gallon), only two are larger. Many of them are pumper-tankers that could operate as first-due units if needed. The county does have a tanker task force, but it takes time to activate. Officers can request specific tankers from neighboring departments pretty easy - they will usually immediately request a couple for a structure fire call. Easier to cancel than it is to get them started.

Ladders

There are two aerials in Pulaski County with the next closest in the City of Radford. If Utility 1 is reconfigured into a Heavy Rescue, it could count as a Ladder Service for additional ISO credit. There was some concern expressed that one or both aerials were not needed, we disagree and feel that the two current aerials, one as a straight stick of 77 feet and one as a 100' platform, is the perfect complement to the needs and hazards in Pulaski County.

Based on the Station Location Analysis, these aerial apparatus are strategically located for ISO and cost/benefit. At this time, it is not cost effective or justifiable to add additional aerial apparatus based on the community risk and need; however two should always be maintained.

Chief Vehicles

All of the fire chiefs are provided take-home command vehicles. A minimum list of equipment is not available and chief's set up their vehicles based on personal preference.

8 Year Fire Apparatus Purchase Rotation

Starting in the 1980's, each of the 8 fire departments has been on a rotation to receive county funding to purchase one or two new apparatus per year, whether truly needed or not. We heard many arguments for and against this practice. Some felt that a department with a low run volume should not be viewed the same as departments with a higher run volume. The smaller departments felt that they deserved a new vehicle because their firefighters and residents were just as important as the larger departments. Also that new apparatus is a motivational tool for recruitment and retention. In any case, the practice needs to be modified.

Pulaski County has more than enough fire apparatus to fulfill needs, and the purchase of larger apparatus should be placed on hold until a proper strategic plan can be developed. The money saved from not purchasing apparatus over the next few years can be put towards accomplishing the other recommendations in this report.

Recommendation 10C:

Pause the purchase of additional fire apparatus for 2 to 4 years while other key recommendations of this report are implemented.

The following are comments direct from fire chiefs about the 8-year rotation:

- The 8-year truck replacement cycle "is a joke"
- Can't say that any department in the county is hurting for trucks, we are very heavy on apparatus.
- Some departments purchase extravagant trucks while others could buy 2 trucks for the same cost.
- The money for the trucks needs to go to the departments that are running the calls and are covering the higher risk areas
- It is nice to know you are going to get a truck, can take too long though.
- There is a budget, but most chiefs are not sure what it is. They get told to spec what you want, bid it, then we will talk about the numbers.
- Newbern took themselves out of the rotation after getting the Volvo truck
- The fleet is too large and they are caught up on apparatus.
- A new system for determining apparatus is needed soon
- The next on the rotation for a new truck is Twin Community, was supposed to get a new truck this year, but it was put on hold pending this review.
- Even if a couple of trucks in the county still need to be replaced, an 8-year cycle is not what they need right now.
- It should be as necessary, not just because you are next in line.
- Need to buy trucks that are high-quality and thought out with needs of the county in mind. Some trucks in the county were built impractically or cheap. Manufacturer went out of business before the warranty expired. Sometimes they buy 2 budget trucks for the price of 1 high-quality
- Everyone gets excited when it's their turn to build a new truck, but then no one comes to the station to drive it or train on it.
- Too much fire apparatus in the county.

Who Needs the Next Truck

If a needs assessment was conducted, the next truck in need of replacement is the Tanker in Snowville. The current tanker is a 1999 model in poor shape and bad design. Because of its handling, only a handful of members drive it and they need to have experience driving large trucks. It holds 2,650 gallons and is

not properly balanced resulting in minimal weight on the steering axle. A custom cab pumper-tanker of at least 2,000 gallons that could hold 4 to 6 members would be more appropriate would allow for more members to ride in trucks and help minimize POVs on scene. Until a new pumper tanker is purchased, Newbern's older unit should be considered for Snowville.

Fleet Reduction

The fleet of emergency vehicles can be reduced and reallocated to more efficiently serve all of Pulaski County. Recommendations for reducing the fleet in Pulaski County include the following:

1. Engines and rescue engines are redundant and not needed. There is an overabundance of extrication equipment in Pulaski County and all of that equipment is costing thousands of dollars to maintain each year. The Squad 9 program has shown that basic small battery powered extrication tools can handle 90% of all extrications. The remaining 10% require additional tools.
 - a. Utilize two existing apparatus as fully equipped rescue vehicles. Utility 1 would be an ideal heavy rescue vehicle.
 - b. Use some of the funds saved by not purchasing a new apparatus this year and purchase battery operated extrication tools to replace the traditional heavy hydraulic tools, this will save space and reduce the need for a dedicated rescue engine.
2. The Town of Pulaski does not need three engines (city engine, county engine, and rescue engine). They should function with one rescue engine and a reserve engine that can be used throughout the county as needed. Their second out fire apparatus for town can be Ladder 6.
3. Brush trucks and/or support trucks can be dual use as EMS first response vehicle at the BLS level, additional response vehicles (including Medic 30 in Snowville, Medic 40 in Hiwassee, and Response 8 in Twin Community) are not needed.
4. Do not purchase any additional UTV's, Boats, or Trailers
5. Only one brush truck is needed per station due to the response data provided. Stations with 2 brush trucks can be reassigned or removed from the fleet including Quick Attack 4, Quick Attack 7, and Quick Attack 8.
6. Newbern does not need two tankers, move one to Snowville to replace its problematic tanker.
7. Dublin Tanker 2 is not an actual tanker, it is an engine and should be classified as an engine. It only holds 1,250 gallons of water, has no dump vales and chutes to quickly offload water, and has no portable tank.

Apparatus Tank Size: The rated size of a water tank may not be the same as the actual size. Pulaski County should weigh all of its apparatus full and empty to determine the actual amount of carried water. It may be surprising to see the actual water hauling capacity versus what was purchased.

Future Tankers should be Pumper-Tankers with 1,000-1,500 gpm pumps and at least 2,000 gallons of water with a top hose bed and minimal engine complement of hose and equipment to get engine credit and be used as reserve engines. This would still have a quick dump arrangement and direct tank fills.

Apparatus Consistency: All are currently configured completely differently. Standardization of vehicles and equipment is fundamental in any department. Maintenance, training and efficiency all stem from a compatible, uniform fleet.

Operating Emergency Vehicles

Pulaski County requires all drivers complete Emergency Vehicle Driver Training. We were told that all drivers are part of the county DMV system and that any driving issues are live flagged in the county

system, it is unknown if this includes all responders or just those who are Pulaski County employees and volunteers.

Backing

There are policies on reversing, requiring a spotter is one is available. No training on backing is conducted to ensure drivers and spotters understand hand signals and procedures. During our interviews and experience, we found backing policies and best practices to rarely be followed.

Response Practices

Pulaski County has policies on maximum response speed, the use of lights and siren, intersections, passengers riding in vehicles, and other aspects of responding in emergency vehicles. This should be applied across the county to all fire and EMS units, and all drivers should be trained in these policies, both initially and in annual refreshers.

Firefighters Driving Ambulances

In 2021, firefighters drove ambulances to hospitals 82 times. Some of these firefighters also work for EMS, but not all. There is no procedure or process for driving to the hospital, driving with patients, alerting the crew in the back of the vehicle as to their location, and other aspects of driving an ambulance. The first time a firefighter drives an ambulance should not be when they are transporting a patient. Ensure that any firefighters driving an ambulance to the hospital have received some basic training. Additionally, there is no policy on this practice.

Recommendation 10D:

A policy should be in place that only firefighters trained and checked-off to drive ambulance should drive them while transporting patients.

Trailers

Pulaski County has over 20 trailers, but no training, policies/procedures, or guidelines on their use. The insurance provider for the trailer, VFIS has a trailer training program that should be used. GES appreciates that many members have practical experience, but to highlight the importance of procedures, GES is currently engaged on a project where a firefighter was killed by a trailer in Florida due to a lack of training.

Recommendation 10E:

Provide trailer training

Fuel Transfer Trailers

Newbern and Draper both have a trailer set up with empty fuel tanks to transfer fuel. There are some concerns about the construction of these trailer units, the lack of stabilization, the lack of procedures to use them, the use of fabric ratchet straps to secure the tanks, etc. These appear to lack proper compliance for travel on the roadway, especially if carrying fuel. This presents a significant liability to the fire departments and county.

Recommendation 10F:

The fuel transfer trailers need additional oversight, approval, policies/procedures in place on transferring fuel, their design needs to follow standards on transferring combustible liquids, and those using the trailers need training on their proper use.

UTVs

Pulaski County has four UTVs at fire departments (Draper, Hiwassee, Pulaski, and Newbern), but lacks policies/procedures on their use, documented training, DOT helmets for operators, and other requirements. Fire helmets may be appropriate for low-risk operations, but high-risk operations required motorcycle style helmets for UTVs as a best practice. The county also has more UTVs than

needed and should not purchase any additional units. In fact, an assessment should be conducted as to how many are actually needed.

Recommendation 10G:

Implement polices/procedures, training, and safety measures on all UTVs in Pulaski County.

Only the special operations team has UTV operator training and a documented check off procedure, but the three other UTVs at fire departments do not. The [Virginia Association of Volunteer Rescue Squads](#) has a UTV training program used by Pulaski County as well as many other training programs that should be considered for Pulaski County responders.

Recommendation 10H:

Require all UTV operators to have documented training and check offs before operating UTVs.

Privately Owned Vehicles (POVs)

The fire departments allow the use of red lights on POVs. Although we could not verify, a fire chief mentioned that the County mandates the color red only and allows no more than 2 flashing lights. Pulaski County requires an EVOC qualification to drive with red lights, be of age 18, and have Firefighter I training. A county-wide policy on the authorized use of red lights on POVs is needed.

A lot of volunteers do have lights in their POV but no sirens. Dublin has had problems in the past with people responding recklessly and potentially acting outside of Virginia code - they do give a bit of grace but are absolutely expected to respond safely and within legal parameters. Chiefs are unsure of the exact requirements - some do have stickers or license plates indicating firefighter/rescue

Recommendation 10I:

Implement a county-wide policy on the use of flashing red lights on POVs.

11. Vehicle and Equipment Management and Maintenance

The Pulaski County Vehicle and Equipment Maintenance Shop maintains all vehicles and gas-powered equipment used by Pulaski County fire and EMS units. The shop employs seven full time mechanics and two administrative staff to support a fleet of 700 vehicles. The shop also does work for some other municipalities through MOUs and bills for that work. The shop charges the county departments just enough to cover shop operations.

Five of the mechanics are assigned to the large commercial vehicles and two are assigned to passenger vehicles. All of the mechanics are Virginia State Vehicle Inspectors, but none of the mechanics have ASE certifications and they will use local shops as needed for anything beyond their capacity or capability. None of the mechanics are qualified as Emergency Vehicle Technicians either. They commonly use Atlantic Emergency Solutions for the EVT needs through their service center in Roanoke, or on site with their mobile technicians. Although the shop states they do not work on the pumps on fire apparatus, not having ASE and EVT credentialed personnel presents a liability risk.

Only properly credentialed mechanics and technicians should be maintaining or repairing emergency vehicles and equipment.

Recommendation 11A:

Only qualified and credentialed mechanics should be working on emergency vehicles.

Vehicle maintenance is exclusively performed or coordinated by the Pulaski County Shop. Fire departments do almost no routine or scheduled vehicle maintenance. This has been the arrangement since the 1980's when a fire department had an incident with brakes failing on a fire truck after work was done in house. All emergency vehicles get an annual inspection at the shop to satisfy the Virginia state inspection. This annual inspection does not necessarily mean an annual service.

Concerns from Fire and EMS about the Shop

There were conflicting comments about the services they receive from the fleet maintenance staff. This may be due to a need for improved communication and coordination. We heard numerous concerns from fire department and EMS personnel on the quality of vehicle and equipment maintenance received from the shop. At one of the on-site meetings, these concerns about the shop were brought up by a front-line responder. A relative of a shop employee became angry and left.

There is a widespread perception that garbage trucks get a higher priority than emergency vehicles. According to the shop, the priority on repairs is assessed based on the urgency of the repair and whether other vehicles are available to accomplish the mission. For example, if one ambulance is out of service, there are others in reserve to fully support the mission without a decrease in service. If a fire station has 2 engines and one is out of service, then 1 engine should be sufficient for that fire department to still successfully accomplish its mission given the call volume, the average number of personnel responding, and aid from other fire departments.

A few weeks before our visit, there were four ambulances out of service at the shop and the Public Safety Director had to push to get them back in service. One fire department described a situation with a support vehicle with a broken seat belt that had been at the shop for four months. Allegedly, the fire department eventually purchased the seat belt and took it to the shop, waited there until it was installed and took the support truck home.

The fleet maintenance shop is not fully staffed or qualified to adequately maintain the fleet of fire and EMS vehicles to recognized standards. The new organizational structure of a Department of Emergency Services should improve the coordination and communication with fire and EMS personnel. Additionally, proper oversight and planning can occur to ensure all emergency vehicles are properly maintained.

One suggestion heard several times was **“the shop should stop spending time fixing non-county vehicles.”** Although the shop charges to recover their cost, it has the perception that they may be neglecting county owned vehicles. Given the observed need for greater attention towards emergency vehicles, Pulaski County should consider this suggestion.

Town of Pulaski Vehicle and Equipment Maintenance

The Town of Pulaski does not normally utilize the Pulaski County maintenance shop for their vehicle or equipment. A summary of the Pulaski Fire Department maintenance was provided, but we did not view actual maintenance records to verify. Pulaski explained they conduct a documented weekly inspection of all apparatus and a more thorough monthly, documented inspection. Annually, they do a complete service on all apparatus by certified mechanics at respective garages which includes oil changes, lubrication, state inspections, and fluid checks. Batteries are changed on a regular basis with documentation on years of service. Tires are changed at a minimum of every seven years with documentation. Pump testing was completed in 2021 and they conduct quarterly breathing air tests on their SCBA compressor (this was viewed and verified).

Work Order System

The shop has a work order system in place, but the fire departments do not use them. They typically call the Director of Operations whom most of them know personally, since he was formerly the Emergency Management Coordinator. A more appropriate method would be for the fire departments to call the shop administrative personnel for them to enter the request into the work order system. The ideal situation would be for all fire and EMS members to utilize the work order system.

The fire and EMS personnel are not utilizing the fleet maintenance work order system currently available. Instead, most chiefs and staff contact the Director of Operations directly for their maintenance needs.

Recommendation 11B:

Fire and EMS officers need to utilize the Pulaski County work order system for maintenance requests. There should be a designated fleet/equipment rep on each station and all issues handled exclusively by them.

Preventative Maintenance

Vehicle (and most equipment) maintenance is basically reactionary with very little opportunity or capacity for preventative maintenance, apart from the annual state inspection. A fire department must have an effective maintenance program to ensure every vehicle is checked, at least annually, up to the level of a DOT inspection or similar level of attention.

Vehicle and Equipment Checks

Some of the fire departments and EMS staff conduct their own regular vehicle and equipment checks. However, most rely on the Squad 9 crew to perform these checks. Surprisingly, we found no evidence of any documentation on these checks, even from the Squad 9 crew. There was even a lack of documentation on the SCBA routine inspections. This must be remedied as soon as possible.

Recommendation 11C:

Implement a documentation program to record all vehicle and equipment inspections.

Pumper Service Testing

We were informed that pumper service testing was performed every five years, the last in 2021, however none of the records of these test were produced or found in the vehicle maintenance files. Annual pumper service testing, in compliance with applicable NFPA standards, should be conducted, ideally the shop would have a pumper service test pit to perform these.

Maintenance Files

Only work orders and some invoices were produced. Pumper service tests and most of the invoices used to replace the equipment were absent. Although these invoices are likely sent to finance to pay and placed in financial files, a copy should always be made and placed in the vehicle's maintenance files.

Tires and Batteries

Emergency vehicle tires and batteries should be tracked on a replacement plan. Ideally, batteries should be replaced every five years and tires no longer than ten years (the standard is seven years without an inspection per NFPA 1911). We found batteries without dates and tires on first out fire apparatus that were 15 to 20 years old with visible cracks in the sidewalls. Although we did not perform a detailed inventory, it appeared that at least a third of those vehicles over 10 years old had tires that were original to the vehicles.

The shop should try to be proactive in replacing fire apparatus tires. There is no written tire replacement schedule or plan, but they try to replace tires on at least one major fire apparatus per year. All tires should be inspected as soon as possible with a chart indicating the age, size, position on vehicle, and condition. A replacement plan should be developed from that chart.

All batteries should be inspected and load tested as soon as possible and recorded on a chart indicating the age, type/model, and condition. A replacement plan should be developed from that chart.

Recommendation 11D:

Implement a tires and battery replacement plan for all emergency vehicles. Replace tires on emergency vehicles that are over 10 years old.

Emergency Vehicle Lighting

Most of the apparatus have new or upgraded LED lighting, but day and night intensity levels needs to be considered as ultra-bright lights can be hazardous, especially during the night. Many of these lights have intensity adjustment. For example, the upper rear red lights on Squad 9 are connected to the brake

lights, however these lights are entirely too bright, especially at night, and they are blinding to the vehicles behind them as we experienced following them one evening. They should be adjusted to a suitable intensity.

Comments about Fleet and Equipment Maintenance

1. **Apparatus and equipment replacement plan.** There should be a 10- and 20-year plan for major equipment and all vehicles. When planning for new apparatus, consider multipurpose units such as Rescue Engines, Pumper Tenders, and Wildland Interface Engines.
2. **There are four fueling stations** throughout the county where responders use a key and PIN to access fuel. County garage operates the fueling locations in the county. Departments used to purchase fuel on own, now most of them utilize the central county fueling stations. Have a winter blend of diesel. Gasoline is only non-ethanol. Try to purchase high quality fuel because vehicles sit for a while
3. Vehicles have **not been properly weighed** to ensure they are within safe limits. If they are, we were provided no evidence of this and did not see any weight indications in the maintenance files. Ideally, all vehicles would be weighed per tire to determine weight per axle and side-to-side weight.
4. **Tracking of assets** and inventory is inadequate throughout the county. When we asked how many nozzles, how much hose, etc., it was mostly unknown.

Equipment Maintenance

The shop tried to implement a portable equipment maintenance program, but it was not successful and is currently not in effect. The shop can work on small engines if asked, but fire departments usually handle this on their own or take it to a local shop. Special equipment such as hydraulic rescue equipment testing is handled by each fire department. There is no consistent or formal maintenance program for small equipment such as hose, nozzles, powered equipment, saws, fans, gas detectors, ladders, and most other equipment.

Recommendation 11E: A comprehensive asset management and equipment maintenance schedule needs to be developed to ensure items are inventoried, reflected in the county financial accounts, tracked and maintained to industry standards. Support Services (former Squad 9) program should be tasked to implement and manage the portable equipment maintenance program.

Keep in mind that the more equipment you have, the more it will cost to properly maintain it. Consider downsizing equipment to meet the essential needs of fire and EMS. For example, all of the extrication equipment is not needed given the call volume. Consolidate the equipment to two locations for heavy rescue needs and downsize the other stations.

Ladder Testing

Aerial ladder testing is apparently conducted annually for the two aerials (Dublin and Pulaski), however we were not provided documentation to review the types of tests conducted to validate if they were performed according to NFPA 1911. Ground ladders are not tested, but the manufacturers require all fire department ground ladders to be service tested at least annually, in accordance with NFPA 1932.

Recommendation 11F:

Ensure the aerial ladder testing to NFPA 1911 and ground ladder testing to NFPA 1932 is conducted annually.

Hose and Nozzle Testing

Hose testing is inconsistent and depends on each fire department; nozzle testing is not being done at all. In general, hose testing is not being conducted in Pulaski County. It is challenging for volunteer fire departments, and even some paid departments, to spend the time to properly test their hose and

ensure it is documented properly. All hose and nozzles should be tested and inspected according to NFPA 1962.

The two options for Pulaski County are 1) expand the Squad 9 program to have enough personnel to conduct the hose and nozzle testing for all fire departments, or 2) hire a hose and nozzle testing company/contractor to conduct the annual testing. Hiring someone else to hose test could cost approximately \$20,000 per year.

Recommendation 11G:

Conduct hose and nozzle testing per NFPA 1962 and consider hiring an outside company to conduct this annual service testing and inspections.

Regarding the amount of fire hose in Pulaski County, it appears that some stations have an excessive amount of spare hose. There needs to be a balance of how much spare hose is actually needed. If the hose is there, it must be maintained and tested. As we have said many times in this report, all fire equipment requires annual maintenance, inspection, and/or testing. The more equipment you have, the more costly it is to maintain all of it. Right sizing the fleet and equipment is a necessary task.

Self-Contained Breathing Apparatus (SCBAs)

Pulaski County was awarded a FEMA Assistance to Firefighters grant in 2015 to purchase 134 MSA G1 SCBA's for every fire department in the county. We were not provided any procedures for these SCBAs including use, cleaning, etc. It is unknown what mask cleaning procedures they use, we did not see any mask wipes at the stations but were told that they have been purchased and there is no dedicated cleaning equipment for masks at most of the stations.

There were not enough masks ordered to issue everyone an individual mask. We observed several storage methods for these masks, some without storage bags and loose in the apparatus cabs, some were dirty. Mask storage and cleaning needs to be improved.

Each SCBA should have its own record of inspection and maintenance. Typically there is a binder for each apparatus or station with dividers for each SCBA. There is no documentation for routine (weekly/monthly) SCBA inspections. Many departments are not properly maintaining SCBAs with annual flow testing and inspections prior to these new SCBAs.

Recommendation 11H:

Improve the SCBA inspection and maintenance program, ensure masks are properly cleaned and stored, and ensure proper record keeping.

Breathing Air Compressors

Most of the stations have breathing air compressors. They are tested quarterly and maintained annually as required. We saw evidence of this at most of the compressor, but not all such as the Air/Light 5 response vehicle. Ensure that the breathing air tests are posted by each compressor.

EMS Equipment

All of the EMS equipment requires maintenance. The patient handling equipment should be maintained annually by a licensed contractor while training some in house personnel to trouble shoot conduct appropriate maintenance. The cardiac monitors also require annual maintenance and calibration, as well as regular maintenance when issues arise. The EMD Deputy Director and the EMS Logistics Captain need to ensure that all EMS equipment is properly maintained per manufacturer instructions. We saw no evidence of this, only verbal.

Gas Detectors

Fire departments respond to reported combustible gas leaks or smell of gas calls, we witnessed one of the fire departments responding to a possible gas leak call. We were told that most of the fire

departments have a 4-gas monitor with a combustible gas sensor with a sensitivity of 0.1% LEL. **It is unknown what brand, model, or the routine maintenance performed on these devices.**

Many fire departments use combustible gas detectors that can detect combustible gasses as low as 1 ppm, such as those used by utility companies. Since it takes 1,000 parts per million to equal 0.1% on a typical 4 gas meter, these combustible gas detectors are very effective in combustible gas leak calls. They are often used side by side with 4 gas monitors in a more tactical response to gas emergencies approach. There is an excellent July 2021 Fire Engineering webinar on the Tactical Response to Explosive Gas Emergencies and NIOSH issued a [related safety advisory](#) in March 2021 after a propane explosion killed 1 firefighter and hospitalized 6 others.

Recommendation 11l:

Ensure combustible gas detectors are on each engine and ladder. These should have a documented inspections and maintenance according to the manufacturer's requirements.

Safety Concerns with Apparatus and Equipment

1. **Securing Hose Lines and Exterior Equipment:** Many vehicles need attention to ensure proper securement to prevent unintentional deployment of hose and equipment from falling off apparatus. Some vehicles were purchased with securement devices that are now removed such as hose covers. Some vehicles have the straps in place for hose in front bumpers and other places, but the hose is not being secured by those straps. ***Removing a vehicle safety device or not using the manufacturer supplied device elevates the risk and liability concerns and could be considered willful negligence.*** The issue of securing lose equipment also applies to equipment inside the passenger compartments of apparatus, which is an issue in nearly every apparatus.

Securing Interior Equipment: In the ambulances, everything above the stretcher level is supposed to be secured and the Zoll monitors have manufactured mounts. In viewing most of the ambulances and fire apparatus, attention is needed to ensure everything is secured inside the patient compartments and cab. This also includes the cabs of fire response vehicles.

2. **Reflective Striping:** Most vehicles have proper reflective striping as well as chevrons to the rear, but not all. All emergency vehicles should be properly equipped with reflective striping, particularly to the rear, meeting the requirements of NFPA 1901.
3. **Portable Fuel Storage and Use:** Fuel used for portable equipment such as chainsaws and fans as well as fuel used for UTVs. GES observed a variety of fuel containers and methods to store those containers. Pulaski County should refrain from using plastic fuel containers. All fuel should be stored in proper containers, ideally Type I or II metal safety gas cans. Additionally, these gas cans should be positively secured and not just sitting on the floor of a trailer with a bungee cord.

12. Personal Protective Equipment

It appears that Pulaski County has adequate protective clothing for all of its emergency responders. Although we did not inspect or assess each fire department's PPE, there were general observations to report. Each fire department has its own stock of protective clothing; it also orders its own protective clothing, mostly using the ATL and county funds. A more practical approach is to have a centralized stock of PPE and ordering system so that members receive the appropriate and properly fitted gear.

New Member PPE: New members are issued protective clothing and equipment from a stock of old and used PPE which is often not correctly sized. They have to wait for properly sized PPE which can take up to a year or more. Properly sized protective clothing is essential and should be ordered so that it is received at least before any live fire training.

PPE Inspection Program: PPE should be inspected every 6 months and that inspection should be documented; this is currently not happening in Pulaski County.

PPE Cleaning and Repairs: NFPA 1851 states that a fire fighting entity must have their gear cleaned and inspected a minimum of once a year. Six of the fire departments have extractor washing machines for cleaning protective clothing. Ideally, a fire station will have an extractor washing machine for contaminated and dirty PPE and a second washing machine for uniforms and other fabrics. Even with these machines, the cleaning of other PPE items may also not be adequate as we observed dirty helmets and dirty PPE in station lockers. When asked about repairs, there were also inconsistencies. There should be a process for an outside vendor to professionally clean, repair, and inspect PPE. Pulaski County should locate the closest verified Independent Service Providers as detailed by NFPA 1851 and establish a contact with them.

PPE Drying: Some stations have PPE drying systems, either cabinets or racks that flow air. All stations should have a method to dry gear using forced room temperature air to facilitate faster drying.

PPE Inventory Controls: EMS and fire departments in general lack adequate controls to track which member is issued what PPE, what size each member has for their PPE, the year of manufacture, make/model, etc. With the high cost of PPE, all of it should be properly inventoried to determine replacement needs, adequate controls, and to hold members accountable for their issued equipment.

Particulate Blocking Hoods: There were very few particulate blocking hoods observed in place, the majority of hoods are standard non-particulate blocking. All hoods should now be particulate blocking.

Gear Overlap: We observed a mix of PPE styles and models. It is important to ensure that the protective ensemble have the proper overlap such as the jacket/glove interface.

Wildland PPE: Most fire departments lack adequate and proper wildland PPE, all but Pulaski and Dublin lack fire shelters. This is a serious issue as departments respond to wildland (brush) fires in brush trucks. There was a six-acre brush fire along Claytor Lake in late October and there were issues with improper PPE. If Pulaski County fire departments are going to fight wildland fires, they need to be outfitted with the proper PPE and wear it.

PPE from Other Agencies: Members who are also members at other agencies have multiple sets of PPE, some have up to 3 different sets of structural firefighting PPE. With a county-wide system, this would be avoided.

Second Set of Structural Protective Clothing: The only fire department that has a complete second set of structural PPE is Pulaski who purchased it with the ARPA funds. The seven other departments only have one set for most of its members. A second set is a best practice, but not practical for departments who don't have the call volume to justify it.

A more practical approach is for Pulaski County to maintain a stock of spare clean gear in a central location. This stock should be accessible by the officers and be checked out to use when a primary set of PPE is being cleaned. Members should be required to return the 2nd set (in the same condition it was loaned) once their primary set is back in service.

Personal Flotation Devices (PFDs): Claytor Lake, New River, and the numerous creeks, runs, and branches in Pulaski County create a significant exposure to emergencies near and on waterways. First, there should be a county-wide policy on requiring the wearing of PFDs for incidents where personnel are within 10 feet of a body of water. Second, all emergency vehicles should be equipped with an appropriate number of PFDs. We were told of incidents with fire departments being too close to water with the wrong type of PPE on. Shockingly, only the Special Operations team has PFDs and there may be a couple in Pulaski and Dublin.

Recommendation 12A:

Ensure that all responders are provided with the appropriate PPE and that it is properly maintained per the manufacturer requirements.

Cancer Prevention

According to studies discussed in the Firefighter Cancer Support white paper ‘Action Against Cancer in the Fire Service’ firefighters experience higher rates of various cancers compared to the general population. The highest being a 2.02 times greater risk for developing testicular cancer.

A firefighter’s exposure to carcinogens and other hazardous materials doesn’t end after emergency response. Research shows a strong link between dirty bunker gear and cancer. Fewer firefighters on the fireground, faster burning and more toxic structure fires and the misuse of SCBA masks and other PPE all contribute to firefighters’ increased exposure to cancer-causing chemicals. With recent findings, the fire service industry developed best practices for the proper care and use of PPE to reduce cancer risks.

These guidelines include:

- Wearing SCBA throughout all stages of the fire, even overhaul
- Removing contamination at the fire scene by wiping soot from the head, neck, throat and underarms
- Changing out of PPE immediately after returning to the station
- Showering after the fire
- Properly cleaning PPE
- Avoiding the transportation contaminated PPE home or in living areas at the station

13. Personnel Matters

We attempted multiple times to communicate with Pulaski County Human Resources, but none of those requests were answered. The only information provided was through the Emergency Management Coordinator and it was a list of wage ranges in the Pulaski County Public Safety Department. Some personnel matters are in other section of this report, this section will include parts not covered elsewhere.

Accountability

One of the most common themes heard during the review was a lack of accountability at all levels of the organizations. Holding people accountable is a very challenging effort. Most who want increased accountability are often not those who want to be held accountable. Accountability, along with communications, is at the core of many of the relationship issues that are harming the EMS system in Pulaski County. Annual performance reviews were absent until this year.

Pulaski County provides funding to fire departments but the only thing they get in return in a summary report of their activity. Each department should at least be required to provide standard regular reports such as annual reports, monthly training, activity by member to prove they have 20 “effective” members, fuel purchases, utility costs, NFIRS submissions, community prevention activity, etc.

Discipline: With most of the fire officers being placed into their positions through a voting system, discipline is challenging and often not addressed. There were several examples explained during the review of potential violations by members and there was a perception of no consequences for them. In EMS, discipline was perceived to be inconsistent and depends on many subjective factors for each person.

Promotional Process

The only promotions in the County are with the EMS employees. We were not provided with the details of the promotional process used, but the employee perception is that some people were appointed into positions and did not follow an objective process.

The Pulaski County policy manual states *“all appointments and promotions to positions in a classification shall be made on the basis of merit and fitness, which insofar as practicable, shall be determined by means of performance-related, fair and competitive standards.”* This is vague and could be explained in more detail, especially for fire and EMS positions.

Recommendation 13A:

A promotional process for fire and EMS should be developed and incorporated.

Succession Planning

Succession planning is absent throughout Pulaski County fire and EMS. In EMS, 5 of the most senior personnel are set to retire in the next 5 years. Succession planning is also important to ensure that tasks are not dependent on just one person. There should automatically be another person who can pick up an officer’s responsibilities if they are not available.

Position Descriptions

There are position descriptions for EMS and Emergency Management personnel that appear to be standard in a quick review. Some of the fire department by-laws have elements of position descriptions for the fire officer positions, but they are not in the format of a full position description.

Human Resources Involvement

Pulaski County Human Resources is not involved in the hiring or promotional process. Each county department has autonomy on personnel matters. Human Resources is primarily there to assist.

Recommendation 13B:

Human resources should be more involved in the oversight and approval of EMS hiring and promotions.

14. Volunteer Recruitment and Retention

Pulaski County fire departments responders are all volunteer except for the eleven career staff in Pulaski and 1.5 in Dublin. Many of the volunteers wear multiple hats and are career firefighters in other communities. The fire departments rely on volunteers and sustaining the volunteer system must be a priority. All of the departments are experiencing a decline in the number of effective/active volunteers. Most have seen such as drastic decline, they can no longer rely on their own fire department to handle working calls without assistance from others. Many of the fire departments have older members who can no longer be interior firefighters. The volunteer system is crumbling and will collapse if immediate attention is not given to it.

The recruitment problem is systematic. Some feel it is the county’s responsibility and some feel the fire chiefs and fire departments need to change or adapt to recruit new members.

The Snowville VFD has found success with its recruitment and retention program, we believe due to the leadership style and efforts of the chief.

Our key recommendation to for apply for a SAFER grant for a Recruitment and Retention Coordinator will help drastically. Many volunteer fire departments have been revived by these positions.

Currently, recruitment and retention is not a Pulaski County responsibility, they have no authority to change. The county could help coordinate the process, however there are a lack of staff to give attention to it and each chief has different ideas on recruitment. Ideally, with the reorganization, the Department of Emergency Services will coordinate all recruitment and implement retention efforts.

Recruitment efforts are minimal, mostly word of mouth. We observed no recruitment materials during the study. A comprehensive recruitment effort needs to be developed and executed.

Comments from Chiefs on Recruitment and Retention

- Volunteer numbers look good on paper, but participation is poor, people only want to come out for the ‘glamorous’ calls
- Used to have the ‘dirty dozen’ responders in each fire department that covered 90% of the calls, then they went to the ‘dirty half dozen’ and now we have the ‘dirty 3 or 4’
- Rosters may have 30 people listed, but the regular count is closer to 15 and the average turnout is less than 5 people
- Some young recruits get their training and then they move on
- As people graduate high school, they have a lot of free time to join and gradually get less and less free time as jobs and family grow
- Generational change to a ‘me’ focus, they don’t fight fire the same as other places in the country
- Volunteer staffing is becoming almost nonexistent, call volume continues to increase
- Administrative work is overwhelming volunteer chiefs and has increased significantly over the past 10 years
- Right now, we get the job done and do the best with what we have, but we are slipping
- Need capable, trained bodies that they can count on
- Members are supposed to attend 16 hours per year, but that never happens and if they tried to enforce it at this point, most of their members would just quit
- Feels like the younger generation is a different breed and not interested in volunteering
- Haven’t had anyone wanting to join in a while
- Day time can really only count on 2 or 3, nighttime might get as many as 7
- About half of members are paid staff somewhere else, they get off a 24-hour shift and would rather be with their families resting than go to the station for meetings, training, etc.

Fire Department Volunteer Hiring Process

Most of the fire departments have an application process, although we were not provided with most of those and this is primarily based on verbal information. Generally, an interested person stops by to obtain an application and they are told to return it during the fire department’s next monthly business meeting. Some chiefs do an interview, some do not. Most check their background, driving record, and criminal history.

The applicant is encouraged to observe and attend a number of meetings and activities before the membership votes to add them to the fire department roster. Some fire departments have a probationary period ranging from six to 12 months before they are voted on by the full membership.

This process of voting a member into an organization is extremely outdated and is a hindrance to recruitment. It also presents a variety of liability concerns and should be stopped immediately.

Some put a time limit, such as two years, to get their Firefighter I and II and EVOC. Some require a written test over the by-laws and SOGs. Some fire department allow new members (without training) to start running calls and receive on the job training by shadowing more experienced members. None of the departments sign a liability waiver or release during the times they are observing and before they are officially placed on the membership roster, this is a significant concern. In general, the recruitment processes are not streamlined and does not make applicants feel wanted.

Recommendation 14A:

Recruitment and retention efforts need to be centralized and coordinated at the county level under the new Department of Emergency Services.

Mentors: A best practice is for each new volunteer to be assigned a mentor, an experienced volunteer to help them through their probationary period.

Retention

What keeps volunteers active is the biggest challenge. You invest time, training, and money into someone that you hope will be around for 10 or more years. A variety of factors impact retention including demands, politics, station culture, incentives, and the feeling of being appreciated and needed.

Volunteer Needs

In a successful volunteer system, the members should not have to purchase essential items. The fire department should provide everything they need and they should not have to ask for basic items such as a uniform t-shirt or ball cap. Consider Maslow's Hierarchy of Needs as it applies to volunteer firefighters. At the bottom level is the physical needs and the department should go out of its way to provide all those and ask if there is anything else they need.

Junior Programs

Many of the fire departments have a junior member program and a significant number of the adult members began as juniors. Junior members are 16 to 18 years of age. These can be a valuable recruitment tool for fire departments if properly managed. During the review, we asked questions about the junior member programs and it appears that there is potentially significant exposure regarding them. Junior firefighter programs come with their own unique risks, liabilities, and challenges. A comprehensive review and formal oversight of the program is needed. The NVFC, VFIS, and others have guidelines to assist.

Recommendation 14B:

Implement a county-wide policy on Junior Member programs based on best practices by the NVFC and VFIS.

EMS is starting an EMT program at Pulaski High School in the hopes that more students will become junior members or eventually firefighters and EMTs after high school in Pulaski County.

Recognition

It is important to recognize members at every opportunity. Social media is an excellent outlet. Most fire and EMS agencies hold an annual awards banquet. Snowville arranged a paintball outing. Anything you can do to recognize your members will help in overall retention and may help recruit new members who see that recognition.

Volunteer Reimbursement and Compensation

Most of the volunteers are not paid a nominal fee or reimbursed at all. Some departments pay nominal fees for training classes, such as \$15 for every eight hours of certification classes. Pulaski pays their volunteers a per-call stipend. It is a delicate balance on how to compensate volunteers while staying within the laws of the IRS and FLSA. Some departments find it easier to make all of their volunteers' part-time employees and pay them an hourly rate for any response, training, and other approved activities.

Pulaski County should consider methods to reimburse or compensate all volunteer firefighters under the new Department of Emergency Services.

Incentives

It is challenging to come up with incentives to meet the needs of the majority of volunteers, there isn't a one size fits all in terms of incentives. Many VFDs found that the "laundry list" approach works best where members can pick and choose what fits them as long as options are equitable and fair. Currently, Virginia state law allows the county to provide one county decal and a \$25 check.

Some of the most effective incentives are as follows:

- Provide food at all training events. This not only eliminates the need for a volunteer to eat dinner at home before a nightly training, it is also a great way to bond between members at the fire station. Some departments already provide food at every training session or class.
- Tax breaks
- Childcare assistance
- Education allowance
- Housing allowance
- Paid per call (stipend)
- Annual bonus
- Retirement schemes
- Supplemental Insurance
- Health Insurance
- Resident volunteer housing at stations
- Nominal fees reimbursed

Retirement

Virginia has the Virginia Volunteer Firefighters' & Rescue Squad Workers' Service Award Program VOLSAP, www.volsap.org). VOLSAP is a service award program established to provide a financial incentive and monetary award to eligible volunteer firefighters and rescue squad workers. The program allows eligible volunteers to contribute money that is then invested alongside the VRS pension trust fund in a widely diversified portfolio. Members can begin receiving a distribution upon reaching age 60 and having at least 10 years of service credit, but partial distribution is available with five years of service credit. None of the volunteer fire departments participate in this program but could.

Recommendation 14C:

Pulaski County should investigate the VOLSAP program.

Supplemental Insurance

There are no supplemental insurance programs in place at this time. Programs are available through the National Volunteer Fire Council (NVFC) and through many other means. Pulaski County should consider different supplemental insurance programs for the volunteers and employees.

Health Insurance

Health insurance is an important benefit to employees and volunteers. Offering health insurance to volunteers and increasing the benefits to all participants could attract more volunteers and employees and retain them better than any other option. People would become volunteers just to have this health insurance, either as their primary or secondary health insurance coverage.

All Hazards or Specialization (Single Role Responders)

Currently, responders in Pulaski County are allowed to either participate as a firefighter or an EMT/Paramedic. We encourage Pulaski County to maintain this separation, the option for specialization or single role members/responders. Requiring volunteers to be fire and EMS certified often creates a burden that is too great and deters volunteers. For most, it is too difficult trying to complete all of the initial and ongoing training requirements while balancing work, family and the other demands of life. Many departments that have done this are not going back to allow single role responders.

This single role volunteer can be expanded to allowing volunteers to be just driver/operators, exterior only, support members, and administrative only roles. Having people who contribute in a variety of ways can make a huge difference and help accomplish the goals and mission of fire and EMS, it just takes more time and management capacity to accommodate different roles and abilities.

The only personnel required to have both fire and EMS certifications are the Squad 9 full-time and part-time employees. This should remain as a requirement for Squad 9 to ensure they can respond to both types of incidents.

Staffing Volunteer Responses

The traditional volunteer model used by ISO recommended that three members on the roster are needed for everyone expected to respond to an emergency call. The model is old, and today that ratio is likely closer to four or five members for every one person expected to show up for a call. The goal should be at least four persons per call which would mean 16 to 20 members per station. However, Virginia law dictates 20 effective members are needed.

On-Call Awareness

It is difficult to know who is available to respond if there happens to be a call at an unstaffed station, or who will be available to respond with additional apparatus from a staffed station. With no on-call system, a response is not always guaranteed. Ideally, each fire department would know how many volunteers to expect at all times if they were dispatched for a call. There are apps that can be used for this, a calendar schedule, and other methods.

Sleeper Shifts

Volunteer and combination fire department successfully utilize are sleeper shifts where volunteers can sign up to pull an evening shift to respond to calls. This may be most appropriate at Pulaski, Fairlawn, or Dublin stations.

Volunteer Resident Program

Many fire departments have resident programs where they provide housing at or next to the fire station for little to no cost in exchange for the volunteer being dedicated to respond for a certain amount of hours while also maintaining the station, vehicles, and equipment. If some fire departments did not have a volunteer resident program, they would not exist.

This may be the only way some of the stations will survive, especially Hiwassee. You could remodel the ambulance bay and back training/meeting room into two apartments.

15. Dispatch and Communications

Pulaski County Emergency Dispatch Center (EDC) is the public safety answering point for all of Pulaski County, Virginia and was established in 2014 after consolidating other centers. They dispatch for the Pulaski County Sheriff's Office, the Town of Pulaski Police, the Town of Dublin Police, all eight fire departments, and Pulaski County EMS units.

Dispatching By Unit

All of the fire and EMS units are dispatched by station or department. This should be changed to dispatching by unit so that the appropriate units are dispatched to each type of call. This also helps the front-line responder know which unit to respond in from each station including which unit should respond first.

Recommendation 15A:

Fire and EMS calls should be dispatched by unit and not by station.

Staffing

The current EDC staffing is 18 and the minimum is 3 (1 for Fire/EMS, 1 for Pulaski PD, and 1 for Sheriff), but they have made adjustments when staffing is low. On the day we visited the center, the Director and Deputy Director were both staffing dispatch consoles due to a late arriving dispatcher and another calling in sick. New hires have three weeks of classroom training and about 10 weeks on the floor with a supervisor. Most of the current staff have experience working as a front-line responder. All staff are employees of Pulaski County.

Funding

The combined dispatch center is funded based on the population served by each agency. A board oversees the dispatch center made up of most of the funding agencies.

Emergency Medical Dispatching (EMD)

EMD is a program where dispatchers are trained to use guides to assist 911 callers to initiate medical care before an EMS responder or ambulance arrives. Virginia law mandated CPR coaching, but not EMD. The EDC is in the process of implementing an EMD program. With EMD, a QA/QI program is a must.

Facility

The EDC is located in the Sheriff's Office building and they have an agreement with the City of Radford for backup dispatch services as they have a common phone and radio system. The current EDC is planned to move to a new facility near the Pulaski County EOC. A move would be beneficial to the staff as they are often tasked with non-dispatch duties such as administrative support for the Sheriff's Office, answering phones, buzzing people in through the main Sheriff's office door, and other tasks that should not be burdened by dispatchers.

The current facility also lacks many of the immersive design elements critical for the mental health of dispatch center staff. Concepts such as daylight, nature, outdoor spaces, earth-toned colors, decompression rooms, etc. should be incorporated into the new EDC for the mental wellbeing of the dispatch center staff.

Recommendation 15B:

Plan to relocate the dispatch center to a location that includes immersive design elements and can be easily accessed by both fire and law enforcement partners.

One security concern at the current Sheriff's office is that there is an entry way that is unsecured 24/7 with a clearly visible floor plan of the building. This is a secure building and there should not be a building floor plan. When we asked about this, we were told that the fire marshal required it above the alarm panel to show the alarm zones. This is not appropriate and the floor plan should be removed and relocated. It can be placed in Active 911 if needed or right inside the secure part of the building.

Recommendation 15C:

Pulaski County Sheriff's Office should remove the floor plan clearly visible at the public unsecured entrance.

Radio Communication Practices

We monitored radio traffic and calls for over six weeks and there are radio practices that should be reviewed and changed to reflect consistency and proper communication techniques.

Pre-Alert: We questioned the use of pre alert tones and announcements during the Zoom calls and recommended they be discontinued as it is unnecessary and adds to the alarm processing time. When asked why this was happening, it was described as a historical practice. Director Akers discontinued the pre-alert several weeks later. Ideally, the dispatcher should immediately proceed with alert tones and a short description of the call, which units are being alerted, the nature of the call, and the location. Further information can be updated after the first unit calls enroute.

Send-Receive-Acknowledge: Acknowledging a status is an important part of a complete and adequate radio communication. This rarely happens at the Pulaski County EDC. Most commonly dispatched reply with either a simple acknowledgement, usually in the form of a "10-4". Standard communication protocol in public safety, as well as in aviation, dictates that messages are sent and then repeated to confirm they are understood. For example, if Chief 2 calls in responding, dispatch should reply "Chief 2 responding" or "copy, chief 2 responding." To ensure the transmission was received properly and so that other units on the radio also responding can hear that status.

Re-Paging: Sometimes, when the EDC has to re-page a fire department that didn't acknowledge the first page or hasn't responded an apparatus yet, the dispatcher tells them - this this is your "second alarm" page. This can be confusing as Pulaski County moves to an alarm progression system of dispatching. Re-paging is not a second alarm, it is a second page or re-page.

10 Codes: Clear text is the standard language for emergency services radio communications and required by Homeland Security Presidential Directive 5. The Pulaski County EDC still utilizes 10 codes, most commonly 10-4 in the receipt of radio status messages. Law enforcement units are using codes that are outdated and inconsistent with current best practices and standards. The use of 10 codes, specifically the use of 10-4, should be discontinued immediately for all Fire and EMS radio traffic.

Recommendation 15D:

Discontinue the use of 10-code and improve radio communication practices to ensure status messages are properly acknowledged.

Quality Assurance / Quality Improvement (QA/QI): There are no regular meetings or a process in place to review Fire and EMS calls. They are implementing an EMD program and QA/QI EMS calls will be a part of that. The EDC is not typically involved in after action reviews of calls, but after-action reviews rarely, if ever, occur.

Automatic Vehicle Location (AVL): Pulaski County has Pep Wave AVLS in all of the ambulances to see their real time location.

CAD: The county is currently using Shield Technologies out of Iowa. There are only a handful of agencies in Virginia that use this vendor, but both PDs were already using them when the EDC combined. Units can look at their time stats, generate automatic stats weekly, and can get some data off of the CAD system.

ISO: The last ISO rating scored high in all areas except dispatch protocols.

Response Plans

Currently, the first and second due response plans are established, but they are by fire department and not by unit. This essentially allows two fire departments automatically dispatched for structure fires and accidents with entrapment but leaves it up to the incident commander to manually request specific additional units. With only two departments responding to structure fires, that only gives eight to ten responders and it is way below the number needed to safely operate. 16 firefighters should be responding to working fires in single family dwellings, additional units should be dispatched on the first alarm to reach 16 firefighters.

Recommendation 15E:

CAD should be programmed with response plans by unit to ensure an adequate number of responders are on scene per type of call.

Active 911

This smart phone app at Pulaski County sends information from dispatch to responding units. Members can use the app to indicate if they are responding and where. We were added to this app for the review and believe it is an excellent tool, but underutilized. Not everyone indicates if they are responding, there is an unavailable button that is confusing because it still shows the person on the list with the other responders, and you just have to read the underlying print to see that it is unavailable. The buttons can be customizable to indicate any status. We strongly advise that this app be more utilized to its full capabilities.

There are other options to add to Active 911 that are not currently being used such as monitoring radio traffic, seeing updated CAD notes, pre-plans, and other information.

It was mentioned that the county was considering a switch to another application. We strongly encourage a side-by-side comparison and a trial with the new app before a complete switch over. We have personally used both applications and believe the current one is most appropriate for Pulaski County, especially since responders are already familiar with it and its features.

Number of Personnel per Apparatus

It is not known how many personnel are responding on each apparatus. Do units call in with the number of personnel on apparatus? Chiefs or duty officers assumed to be 1?

Providing this critical piece of information needs to be enforced, especially at the career staff level to set the example for radio traffic behavior since they are using the radio more often. The more they announce the number of personnel, the more it will become a habit. This is especially important for situational awareness, accountability, and planning for the IC and others listening.

Radio System

The current radio system is a UHF conventional system that is being upgraded to a Kenwood NXDN Digital Radio system using \$2.4 million of ARPA funds. Although this system is an upgrade to the current one in place, it is not compatible with other radio system. Kenwood and Icom use a proprietary Frequency Division Multiple Access (FDMA) technology whereas most other manufacturers utilize Time Division Multiple Access (TDMA) technology. Although both are compliant with the FCC and work well, they are completely incompatible with each other and are technically not P25 as they use proprietary technology. The radios have to incorporate interoperability channels to meet that requirement, but those are not the daily operational channels.

There is a concern from other agencies, such as the Radford Army Ammunition Plant, the Radford Fire Department, mutual aid fire departments outside of Pulaski County, and others, that they will not easily be able to communicate with Pulaski County units on this new system. Although some provisions are being built into the system to ensure interoperability, it may not be as easy as simply changing channels.

With the new system, the dispatch center will take control of all radios and radio equipment to ensure standard programming and maintenance.

Monitoring Radio Traffic

The new system is planned to be fully encrypted and those who now listen via scanners will no longer be able to monitor radio traffic. Additionally, there is currently an internet feed of fire and EMS radio traffic through Broadcastify.com, which is also planned to be discontinued. This level of security is not typical for fire and EMS departments in the U.S. and may cause problems and concerns. We advise Pulaski County to carefully weigh this decision to avoid any potential operational issues.

Radio Maintenance

Each radio should be part of a preventative maintenance schedule and checked periodically for proper operation. The County has a full-time Radio Technician to maintain the radio system and the portable and mobile radios.

Radio Handbook

A radio handbook should be published as an aid to every emergency responder. These books show how to use the radio features, the layouts of the zones, and other important system information.

16. Staffing and Standards of Cover

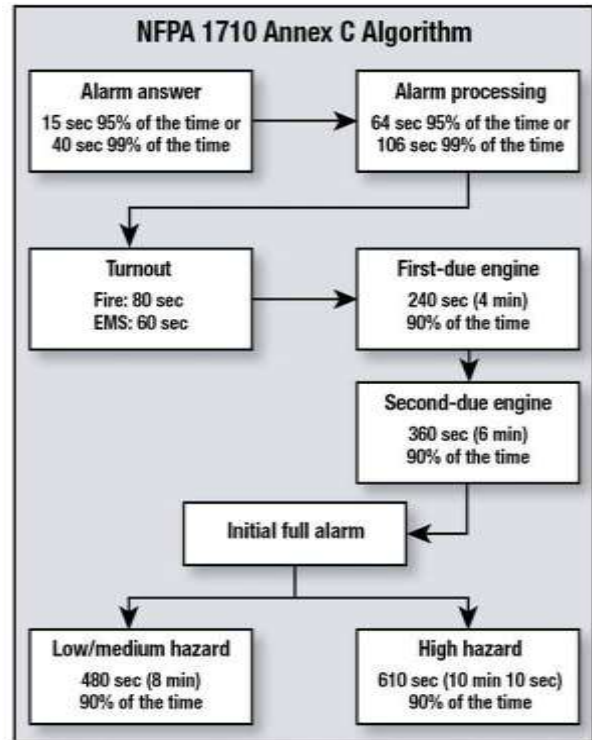
NFPA 1710 requires a minimum complement of four on an engine for career crews. Having a well-trained crew of four or five knowing their designated roles means anyone in that seat knows what they are doing for a multitude of different events, regardless of who they are.

There is no pre-determined staffing of vehicles except for the Town of Pulaski career staff. The other fire departments and volunteers at Pulaski making on the spot decisions with staffing. It is decided on a case-by-case basis and has to hope volunteers will show up to staff vehicles.

Response Times

What is the standard is for PULASKI COUNTY. Some feel that the response times in the Towns should strive to meet 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* and the response times outside of the towns should meet 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*. Others feel that is unrealistic and not cost effective to meet these NFPA standards.

NFPA 1710 has response time benchmarks. Alarm answered in 15 seconds 95% of the time or 40 second 99% of the time; this is the time between the 911 call ringing and the dispatcher answering it. The alarm processing time should be 64 second 95% of the time of 106 seconds 99% of the time; this is the time between answering the 911 call and dispatching or alerting emergency response units. The turnout time should be 80 seconds for fire and 60 seconds for EMS, which is the time between the alert to wheels rolling on emergency vehicles. The first due engine should arrive on scene within 4 minutes 90% of the time and a second due engine arriving in 6 minutes 90% of the time.



NFPA 1720 has a different set of time benchmarks as shown in the table below.

Demand Zone*	Demographics	Minimum Staff to Respond**	Response Time***	Meets Objective
Urban Area	1,000 people per sq. mi.	15	9 minutes	90%
Suburban Area	500-1,000 people per sq. mi.	10	10 minutes	80%
Rural Area	500 people per sq. mi.	6	14 minutes	80%
Remote Area	Travel distance >8 mi.	4	Directly dependent on travel distance	90%
Special Risks	Determined by AHJ	Determined by AHJ based on risk	Determined by AHJ	90%

* Jurisdictions can have more than one demand zone
 ** Minimum staffing includes members who respond from the AHJ's department and automatic aid
 *** Response time begins upon completion of the dispatch notification and ends at the time interval shown

Defining Response Time

NFPA identifies and defines different segments of time to determine the total response time. The time begins when the 911 call rings at the Public Safety Answering Point (PSAP) and ends when the first response unit arrives on scene.

Turnout Time is one segment of the response time, the time between when units are alerted and when the first apparatus responds (the wheels begin to roll). Without ensuring a standard approach via policy

DRAFT F FOR CLIENT REVIEW

as to when units actually call enroute, there are typically discrepancies in turnout time. All units should call enroute/responding in the same way, when the apparatus wheels are rolling. Without proper and standard turnout times, the actual response times cannot be accurately calculated. GES was provided with one data set for response times.

Pulaski County tracks response time as the time interval between the alert of fire department units and when the first unit arrives on scene. They provided a chart labeled “80% First Unit Response Time with NFPA [1720] Goal” where they have each fire department listed and their response times. They are using the rural area response time of 14 minutes, but the NFPA 1720 goal isn’t just the first unit on scene, its 6 responders on scene within 14 minutes.

2021 Fire Department Response Time – First Unit on Scene		
Fire Department	Minutes from Dispatch to Arrival, 80th Percentile	Average Responders Per Structure Fire Call
Draper VFD	13.83	4.3
Dublin VFD	13.96	5.0
Fairlawn VFD	13.72	3.9
Hiwassee VFD	19.60	3.4
Newbern VFD	16.72	3.6
Pulaski FD*	7.73	11.1
Snowville VFD	14.52	6.7
Twin Community VFD	13.00	3.7
Squad 9	11.62	0.8

* The town of Pulaski FD could be considered under NFPA 1710 as a mostly career department.

Recommendation 16A:

Implement a clear communications procedure/policy to track time benchmarks, ensure consistency across all members, and report and evaluate those quarterly.

Number of Firefighters Needed Per Structure Fire

We were told that individual fire departments used to handle structure fires on their own, but now it requires two or three fire departments to get enough personnel on scene. When asked how many was enough, the typical response was 10 to 12, which shows that some of the critical positions are not actually or properly being filled such as a backup crew. EMS will respond an ambulance to provide medical standby and rehab. If Squad 9 is on duty, they will self-dispatch and respond with their 2 crew members as well.

NFPA and other organizations specify a minimum initial alarm deployment by hazard. A low hazard structure fire (single family dwelling) is 16 firefighters, a medium hazard structure fire (multi family dwelling) is 28 firefighters, and a high hazard (commercial) is 43 firefighters. Pulaski County needs to dispatch the necessary resources to meet these minimums.

There were multiple stories about structure fires where they have to tone out multiple departments just to get six SCBA wearing firefighters on scene. It is common for apparatus to arrive with personnel who are not physically capable of wearing an SCBA. This situation needs to be considered and working fires needs more than just the two initial fire departments to safely operate.

Recommendation 16B:

Ensure that an adequate number of resources are dispatcher per type of call on the first alarm to obtain an adequate number of responders to safely operate

Automatic and Mutual Aid

The Emergency Management Coordinator facilitates all of the automatic and mutual aid agreements and response plans, particularly the ones between counties. Each of the fire departments within Pulaski County has mutual aid agreements with each other. With the new Department of Emergency Services, a response plan should be developed that supersedes all mutual and automatic aid agreements within Pulaski County. This response plan should use the average number of responders assembled from each department to determine how many resources should be dispatched to meet the NFPA minimums.

17. Safety, Health and Wellness

The most concerning issue to us is the level of safety, health and wellness of the volunteers and employees. They fall extremely short of meeting many of the standard safety regulations and practices. There is a serious lack of a safety culture, the lack of a designated safety office, no safety committee, and no medical evaluations for any responder except a minimal exam for Squad 9 personnel. The signs are obvious, a significant number of obese and overweight responders, tobacco use, PPE issues, lack of training, lack of policies and procedures, a lack of accountability, and lack of compliance with many Virginia Occupational Safety and Health laws. This is the primary reason we have recommended a Deputy Director of Safety and Health.

Everyone Goes Home is the motto of the National Fallen Firefighters Foundation who strive to prevent firefighter line-of-duty deaths and injuries. It's first of 16 initiatives is to *"Define and advocate the need for a cultural change within the fire service relating to safety; incorporating leadership, management, supervision, accountability and personal responsibility."* It further explains *"the safety culture within a fire department is reflected through its members' behaviors, attitudes and actions in and out of the station as well as on the fire ground. The 1st Initiative asks us to explore the characteristics of our departments to bring about a higher commitment to safety."*

Pulaski County has had one line of duty death according to the USFA and is at extreme risk for more. On June 8, 2009, Firefighter Jeffrey H. Reed, 39, of the Pulaski Fire Department was operating a fire engine at the scene of a residential structure fire. Reed began to experience a medical issue; he was transported to Pulaski Community Hospital and subsequently transferred to UVA Medical Center where he passed away.

Pulaski County does not have a person solely responsible for safety and risk management. Individual department heads are responsible for safety and risk management within their own department rather than a central person for the county.

Recommendation 17A:

Pulaski County needs to implement policies, plans, and procedures to address the considerable issues in Safety, Health, and Wellness.

Injury, Illness, and Accidents

We requested information on injuries, illnesses, an accident, but only received information from the Town of Pulaski. This lack of information means we are unable to assess trends or issues but is also a key indicator of much larger issues occurring in Pulaski County with regards to safety.

Medical Exams

Only six responders in Pulaski County complete an initial medical exam, there are no ongoing or annual exams for anyone. Squad 9 personnel have to pass an initial basic wellness exam, similar to a DOT medical exam. Pulaski County should be performing a fit for duty medical exam on all emergency responders. It is required by law before firefighters can wear an SCBA or be fit tested – a clear violation. Also, the insurance carrier for the emergency vehicles, VFIS, highly recommends that all emergency vehicle drivers be medically cleared to operate emergency vehicles.

DRAFT F FOR CLIENT REVIEW

It was glaringly obvious that some emergency responders in Pulaski County are not fit for duty. Some position descriptions and ranks that require the use of SCBAs should not be worn by the people in those positions. There were responders who expressed their physical limitations, what they can and cannot do, but there were no restrictions. One person could barely walk, has significant back issues, and was a very active volunteer fire officer regularly responding. Those personnel should not be responding to emergencies or operating emergency vehicles.

Every responder in Pulaski County should receive an initial medical evaluation to ensure they are fit for duty as well as a follow up review of screening to determine if a follow up or annual exams are needed. There also needs to be flexibility in establishing alternative roles for volunteers if they cannot wear and SCBA. Those firefighters wearing SCBAs must complete a medical screening questionnaire reviewed by a licensed health care professional before being fit test and authorized to wear an SCBA. A physical ability course or demonstration of skills should also be part of an annual fit for duty program for fire and EMS responders.

Ideally, the medical exam program would be compliant with NFPA 1582, but that would be challenging to implement without a phased approach. Cost is also a factor, but the five-year goal should be NFPA 1582 medical exams.

Recommendation 17B:

Implement a medical examination program for all emergency responders in Pulaski County.

Implementing a medical examination program will likely result in existing employees and volunteers who will not be fit for duty. Pulaski County should accommodate and work with these individuals on an improvement plan in order to meet the fit for duty requirements.

Fit Testing

SCBA mask fit testing is not being done in Pulaski County. The SCBA manufacturers and Virginia OSHA require it. With 134 SCBAs, Pulaski County should purchase a fit testing machine that can be used by firefighter and others who require respiratory protection in the course of the duties.

Recommendation 17C:

Purchase a fit test and conduct mask fit testing as required by OSHA annually for all members wearing a respirator.

Mental Health Support

Firefighters and EMTs are at increased risk of depression, anxiety, stress and other mental health-related problems that may be either chronic or acute. It was obvious that EMS is working at an unhealthy pace with 72- and 96-hour shifts that do not allow for decompression or down time – a significant factor in mental health issues.

The physical workplace has a major impact on mental health and the EMS stations could use significant improvements to aid in the mental health of EMS responders. As discussed, simple immersive design elements could have been designed into the new Pulaski EMS station, but they were not. All future fire and EMS station designs must incorporate these immersive design elements to aid in the mental health of those working and living in them.

There are no mental health services available to most of Pulaski County emergency responders. The county has an Employee Assistance Program for employees, but providers are limited and not screened to treat emergency responders. Peer support is absent and there is no plan to implement mental health services. Given the comments heard and the stress observed, a mental health program is desperately needed. Critical Incident Destressing occurs by EMS on very rare occasions and they usually invite the volunteer firefighters, law enforcement, and dispatch. However, they are switching over to the more personalized and individual model.

Recommendation 17D:

More attention and consideration needs to be given towards the mental health of emergency responders in Pulaski County.

Physical Fitness

There is a lack of physical fitness equipment at most of the fire and EMS stations. Future stations should be designed with a fitness room, preferably on the first floor and well ventilated. It was explained that Pulaski County employees get a free pass to the local YMCA for fitness, but that is not practical for most firefighters and EMTs.

Accountability System

The fire departments currently use an accountability system of rings and clips. The problem with rings and clips is that you cannot visually organize and quickly view where units are assigned or operating. There are much better systems in use elsewhere that should be adopted by Pulaski County such as the Passport Accountability system with Velcro tags and cards.

Other Comments about Health and Safety

- Safety culture is poor, one manager commented “Although we have made some strides and efforts, we run into resistance of having been done things the same way for 25 years”
- Cancer prevention efforts need to be increased. Pulaski Fire Department is the only agency with on board filters for their diesel vehicles. All future stations, and eventually existing stations, should include an exhaust capture systems. Fire-ground decontamination equipment and practices should be standardized, implemented, and enforced as they are for state live fire training evolutions.
- Training on safe roadway operations, such as the Traffic Incident Management Training System, needs to be mandatory for all responders operating on the roadways, the most hazardous place to operate.
- Basic OSHA safety training such as fall protection, hearing protection, powered equipment/saws, face/eye protection, etc. is not in place
- The number of safety vests needs to be increased. There should be one vest per riding position in every vehicle, including wildland, command, and support vehicles.
- Personnel use personal vehicles to go to trainings and to bring dirty equipment back to the station from calls, there needs to be large sealed (preferably clear) trash bags to place dirty gear in during transport back to the station where it can be properly cleaned and decontaminated.
- Most fire stations lack Hazard Communication programs and the elements of them such as Safety Data Sheets, there are some at the EMS stations.
- EMS personnel have initial training on Infection Control and Blood Borne Pathogens, refresher training is not occurring annually. The EMS training captain is also the Infection Control Officer for all of Pulaski County. Fire department personnel have no training and very limited equipment to deal with bodily fluids.
- No Hepatitis B vaccine or TB testing
- Backing policies are in place for the Town of Pulaski and Pulaski County EMS personnel, but not for others
- Little to no consequences when someone damages a vehicle, hits a garage door panel, strikes another vehicle, strikes the garage door trim, backs into something, and other accidents
- Grooming and hygiene standards are nonexistent or not enforced. Numerous staff GES spoke with had tobacco in their mouth, wore dirty uniforms, emitted odors, and were grossly overweight.
- One SOP for a fire department states “no interior fire attack will begin without 2 in 2 out established per OSHA guidelines” but GES was told this rarely happens

NFPA 1500 Assessment

National Fire Protection Association 1500 is the Standard on Fire Department Occupational Safety, Health, and Wellness Program. It “specifies the minimum requirements for an occupational safety and health program for fire departments or organizations that provide rescue, fire suppression, emergency medical services, hazardous materials mitigation, special operations, and other emergency services.” Although we have identified several areas of NFPA 1500 in this report, a comprehensive assessment is needed.

Recommendation 17E:

Pulaski County should conduct an assessment of its compliance with NFPA 1500 and develop a long-term plan to meet the standard.

Organizational Statement	Protective Clothing and Equipment (Structural FF, EMS, Wildland, Haz-Mat, Liquid Splash, CBRNE, Surface Water Ops)	Rapid Intervention for the Rescue of Members
Risk Management Plan	Respiratory Protection Program (training, fit testing, air quality, maintenance, types of respirators, hydrostatic testing, annual maintenance, cleaning/inspection)	Rehab
Safety and Health Policy	Life safety rope and system components	Scenes of violence, civil unrest, terrorism
Roles and Responsibilities [defined/established]	Face and eye protection	Post Incident Analysis
Occupational Safety and Health Committee	Hearing Protection	Traffic Incident Management
Records	Incident Management	Facility Safety
Health and Safety Officer	Communications	Medical Requirements
Training Requirements	Crew Resource Management	Health and Fitness
Member Qualifications	Risk Management During Emergency Operations	Physical Performance Requirements
Special Ops Training	Personnel accountability during Emergency Operations	Confidential Health Database
Member Proficiency	Members Operating at Emergency incidents	Infection Control
Training Activities (i.e. Live Fire per 1403)	Hazard Control Zones	FD Physician
Apparatus		Fitness for Duty Evals
Driver/Operators		Behavior Health Program
Riding in Vehicles/Apparatus		Wellness Program
Inspection, Maintenance, and Repair of Fire Apparatus		Occupational Exposure to Atypical Stressful Events
Tools and Equipment		Exposure to fireground toxic contaminants

18. Training

Fire and EMS training in Pulaski County varies by department. Each fire department takes care of its own training. Most new recruits attend basic courses such as Firefighter I that are held locally or within the region. Ongoing training consists of one training night per month per fire departments. The Pulaski Fire Department trains their career staff during shift. EMS has implemented a Training Captain position in the past year, but evidence of the training conducted and effectiveness of that training was not provided.

We were only provided some training records from the Pulaski Fire Department, no other records or programs were provided so we could not adequately evaluate the training delivered. Through questioning, it was apparent that many topics are not being covered in the ongoing training programs. Additionally, there is a severe lack of training on basic personnel and human resource policies and practices (i.e., Harassment and Discrimination Prevention, Complaint Procedures, Accident and Injury Reporting, etc.), basic OSHA safety topics (hearing protection, fall protection, electrical safety, etc.), and many others.

EMS Training

The EMS Training Captain works part time in the office while also pulling a 24-hour shift per week on an ambulance. He was promoted to an administrative role in the months leading up to this study to rewrite policies and SOPs. He is also the infection control officer for the entire county. A part time EMS training

specialist position has been approved and they are trying to fill it. They are also working on establishing themselves as AHA training center to be able to provide ACLS and PALS.

EMS was very limited on what they could do for EMS training due to budget limitations. The budget has expanded recently which allowed more flexibility in expanding trainings. They currently do as much as they can with their budget. Front line EMS personnel were very critical of that training position, expressing their frustration about how that position was appointed and the lack of actual direct delivery training.

Ongoing or annual EMS skills checks are not being conducted. It was explained that the reason is they “don’t have the staff, it has been discussed, it just hasn’t been picked back up because it is too labor intensive.” This kind of training should be delegated down to the EMS crew level to complete. There should be one training session each shift, 30 to 60 minutes, it just takes management.

Fire Training

Most of the fire department have a training committee or training coordinator assigned that sets up the monthly drills, some train every month, some only do 10 months out of the year, and others are more infrequent. Pulaski requires a minimum of 24 hours of annual training and holds 6 in house fire schools (days) per year. It was explained that most of the monthly training sessions are informal and may not be actual training courses with properly tracked objectives and proficiencies. Several departments admitted the difficulty just getting members to attend the monthly training nights. There is little to no accountability if a member does not attend ongoing training.

Supervisor Training

Supervisor training is also lacking county-wide. Supervisors and officers have not been properly trained on many essential topics and policies such as performance evaluations, complaints, disciplinary procedures, coaching and counseling, harassment and discrimination, retaliation prevention, workplace violence, drug and alcohol abuse, family medical leave, supervisory record keeping and file maintenance, reporting allegations and claims or incidents of workplace risk and wrongdoing, and other essential supervisory topics.

Training Resources

There were minimal training resources observed at each station, primarily limited to IFSTA textbooks. A standardized basic training library should be established at every facility and form the basis for a new annual training program.

Training from Other Agencies

Many members of Pulaski County fire and EMS departments are also members of other agencies outside of Pulaski County. The training records from those other agencies should be recorded in the Pulaski County training records, ideally updated every 6 to 12 months to ensure current competency and regulatory compliance.

Training records

Training records are very inconsistent throughout the fire and EMS departments. Some departments track certifications and provided that information to us, but we saw no evidence of actual training records per session. Proper training records are critical to ensure compliance, competency, and for ISO points. The fire and EMS departments have access to a records management system and should utilize this. At the very least, each and every training session, drill, or class should be tracked on paper and then submitted for electronic entry. This should include training held outside of Pulaski County agencies.

The following is an excellent description from the State of Wyoming regarding the importance of training records: *Record keeping is one of the extremely important duties associated with a training officer’s responsibilities. Training is one area that has information that outside agencies will be requesting if something happens in the department that reflects on the quality of training it has been*

DRAFT F FOR CLIENT REVIEW

conducting. Typically, if an injury occurs in a fire department, some of the first records to be subpoenaed are the training records. Additionally, ISO requires that all members use a full signature when signing in for training, no initials allowed.

Your training records should show: 1) If the class was taught in house or obtained elsewhere, 2) Who taught the class, 3) Date and length of the class, 4) Whether the training was hands-on or classroom, 4) Whether the training was a night drill, multi-company drill, or a mutual aid drill, and 5) Documentation of the written and/or manipulative evaluation to ensure the class objectives were met.

Recommendation 18A:

Improve the training record keeping system for all fire and EMS departments.

Driver/Operator Training

Pulaski County requires all volunteers and employees to complete Emergency Vehicle Driver training before being allowed to drive or operate emergency vehicles. This is only the initial training as ongoing driver training (or annual refreshers) is not in place. Most fire departments start their members on driving brush trucks and get the checked off on driving and operating then. Then move up to engines and tankers. Not all fire departments follow this practice and there was no written policy to support most of the driver/operator requirements.

Recommendation 18B:

Ensure that all personnel receive annual refreshers on driving emergency vehicles.

Recommendation 18C:

Implement a county-wide policy on the driving and operating of emergency vehicles including minimum qualifications, initial and ongoing training, circle of safety, backing, intersections, emergent driving and other aspects.

Command Officer Training

Aside from NIMS courses and some area wildland ICS courses, there is no incident command training at Pulaski County, there is no guidance on being an incident commander, no command simulation software, and no training of tactical decision-making. The nearby Salem Fire Department has implemented the Blue Card Hazard Zone

According to their web site, *"The "Blue Card" training program provides Fire Departments with a training and certification system that defines the best Standard Command Practices for common, local, everyday Strategic and Tactical emergency operations conducted on NIMS Type 4 & Type 5 events."*

The lack of adequate incident command is one of the top five factors in NIOSH line of duty death investigations. This review has revealed a significant lack of command level training. In listening to working fire calls and in discussions with personnel, there is also a consistent lack of accountability, safety, risk assessment, adequate communications, and no county-wide SOP. All of these factors are key indicators that Pulaski County is trending towards a catastrophic line of duty death or deaths. The addition of the Deputy Director positions and other organizational restructuring indicated in this report is intended to help correct that trend and improve the safety of emergency responders and the public.

Recommendation 18D:

Implement Command Officer Tactical Training for all Fire and EMS Officers along with a county-wide policy on standards command practices.

Wildland Training

None of the fire departments deliver the basic wildland fire training, the NWCG Firefighter Type 2 minimum of S130/S190/L180. Some fire department members have completed basic wildland firefighter training from other agencies, but there is no ongoing training or annual refreshers.

Haz-Mat

Members receive awareness or operations level Haz-Mat training during initial recruit training courses. There is no ongoing or annual refresher training for Haz-Mat. All fire and EMS personnel should have initial basic Haz-Mat training at the Awareness or Operations level and an annual refresher.

Traffic Incident Management System (TIMS)

Some fire departments said they are trained on TIMS and other were not, we saw no records of this and if the training was the full course or partial. Has TIMS program for highway safety

Special Operations Training

The Special Operations team requires specialized training for their UTV and boats. There is no training on trailer and there is a lack of ongoing training. The team is supposed to train quarterly, but that was suspended during COVID and has no returned.

Live Fire Training

All of the Pulaski County fire departments (and many other area fire departments) utilize the Town of Pulaski fire training center. It was built in 2009 through a state sponsored program through the Virginia Department of Fire Programs. Strict compliance to NFPA 1403, *Standard on Live Fire Training Evolutions*, is listed in the [state's compliance policy](#) and is posted on placards around the facility. We observed a live fire training session and inquired as to the documentation and procedures in place. The Town of Pulaski is required to have a written facility use policy, a live fire training policy, a live fire pre-burn plan template, the related documentation for this facility, and the other requirements outlined in NFPA 1403 – there was none of this in place.

NFPA 1403 requires a documented Preburn Plan/Briefing that is prepared and utilized during the preburn briefing sessions. It also requires that various records and reports be maintained on all live fire training evolutions held at the facility including

- An accounting of the activities conducted
- A listing of instructors present and their assignments
- A listing of all other participants
- Documentation of unusual conditions encountered
- Any injuries incurred and treatment rendered
- Any changes or deterioration of the structure
- Documentation of the condition of the premises and adjacent area at the conclusion of the training exercise

Additionally, NFPA 1403 required a post-training critique session, complete with documentation, shall be conducted to evaluate student performance and to reinforce the training that was covered. The Virginia Department of Fire Programs compliance statement places responsibility of the owner (Town of Pulaski) for maintenance of the burn building prop and requires compliance with the 5- and 10-year inspection criteria, we requested this documentation, but it was not provided.

Recommendation 18E:

The Town of Pulaski should develop a policy and procedure for the training facility that strictly follows NFPA 1403 and maintain the required documentation on the inspections and use of the facility.

There is no fee for the use of the training facility and the Town of Pulaski is spending funds to maintain it. Fire departments using the facility simply have to bring their own equipment, consumables, burning materials, and clean up before they leave. When other departments use facility, Pulaski “just unlocks the door and lets them do what they do.”

Recommendation 18F:

The Town of Pulaski should implement a nominal fee for the use of the fire training facility.

DRAFT F FOR CLIENT REVIEW

The main concern with the fire training facility is the inadequate road and driveway access. There is a steep driveway that cannot be used by all apparatus because they bottom out near the top, primarily the longer apparatus such as the aerials which have to use a separate gated access through the neighboring National Guard facility. Exiting the facility grounds is the most challenging as you cannot turn north without making a hairpin turn and visibility of oncoming traffic is impaired. Departments used to access the facility through the National Guard entrance, which is a much better and safer entrance and driveway, but that changed several years ago when they had to install a gate and fence.

Recommendation 18G:

Improve the driveway access to the fire training facility.

Computer Based Training (CBT)

CBT platforms have been successfully used in most fire departments in the country to meet the minimum personnel and safety topics. CBT platforms have also been used for members to recertify or refresh on the classroom portions of driver training, hazardous materials, EMS, and even the annual wildland fire safety refreshers. CBT platforms have become proven and effective training methods in recent years, especially during the pandemic.

One particular platform that these consultants have used, Vector Solutions has been updated and has an extensive library of fire, EMS, supervisory, safety and other topics. You can also customize the platform for non-fire personnel such as general administrative employees who may only need the personnel and OSHA related topics. It can also be used to create customized training programs specific to the agency. The platform has a robust records management system that automatically logs when personnel complete a training program, whether based on the training platform or entered from a hands-on drill.

CBT platforms make it easy for volunteers and career staff to complete these courses. Most of which are under an hour and can be completed using any computer, tablet, or smartphone. Since they are far behind in these essential training topics, a CBT platform should be explored as soon as possible, at least as an option for the essential regulatory and personnel types of training topics.

The insurance provider for the emergency vehicles is VFIS. They have a free online training program through Vector Solutions called VFIS University. VFIS has over 20 training kits that can be utilized as well, free to clients. Some of the most relevant ones that Pulaski County should order and train personnel on include the following:

- Emergency Services Trailer Operations and Safety Program
- Emergency Services UTV/ATV Safety Program
- Traffic Incident Management
- Emergency Responder Safety
- Patient Handling: Preventing Patient Drops (particularly since FDs are called to assist with patient handling)

Recommendation 18H:

Pulaski County should utilize the free online training programs from VFIS University to improve various aspects of training and safety.

The lack of a proper training program, oversight on ensuring compliance with required training topics, and inconsistent attendance at scheduled training creates an extreme risk to the emergency responders and the public. We heard comments that if training requirements were increased, they would lose members. Improvements need to be made and oversight is required to correct this deficiency in the form of a Deputy Director of Training and Safety.

Pulaski County should sign up the active/effective emergency responders and develop a training plan. This can be used to ensure compliance with various safety, personnel, and regulatory topics. It can also be used to complete refresher training on vehicle driving and other topics. Pulaski County should also explore other computer-based training platforms or expand the Vector Solutions platform from VFIS for implementation to meet minimum regulatory and personnel training topics.

Other Training Comments

- EMS has noted the need for refresher training
- The fire departments typically handle landing zones, but most don't have landing zone training
- No written protocol test, most new employees have already been practicing elsewhere with the county protocols with the council protocols
- No fire extinguisher training

19. Fire and EMS Oversight – County and Town Administrations

We spoke with Pulaski Town Manager Darlene Burcham, Dublin Town Manager Ty Kirkner, and Pulaski County Administrator Jonathan Sweet. It is obvious to all administrations that EMS has become the highest demand on fire and EMS, whether it is for vehicle crashes or medical calls.

Pulaski Fire Department is 43% of county call volume and Dublin is 27%. However approximately 70 to 75% of those calls are outside of the town limits and into the county area. Population growth is currently occurring, but more so in the county than in the towns.

Pulaski County provides the insurance to cover all volunteer fire department personnel, the buildings, the vehicles, and the equipment. This includes Pulaski and Dublin, minus the facility insurance coverage. There are no written agreements between the towns and county for fire or EMS. We heard comments that the two towns were unwilling to fund the needs of the fire departments, but that is not the case. The towns are contributing to their maximum ability.

The administrators are not aware of any written agreements between the towns and county for fire and EMS response other than the response zone map which gives the towns a significant portion of the county. They are more concerned about the delivery of services to all citizens.

20. Funding

EMS and Emergency Management is funded through the Pulaski County government operating on a fiscal year from July 1 to June 30. EMS has a budget, according to the director, of \$2.5 to 3 million and uses a 3rd party billing services to recover as much funding as possible. The fire department funding is separate from the County. The Towns of Pulaski and Dublin each fund their own departments and personnel, but the County provides and maintains most of the emergency vehicles and pays for other equipment. [Note: GES was not provided the EMS budget and could not verify the actual amounts.]

County Funding to Fire Departments

Pulaski County provides \$14,000 per year to each fire department. That is their primary method of operation and is mostly used up to cover the cost of utilities and fuel. In order to receive this \$14,000, the fire department must provide an annual report to the county that outlines its members, calls, budget, training hours, and other information. This amount has been unchanged for over 15 years and is almost exclusively used to pay for basic utilities, vehicle fuel, insurance, etc. However, there is one anomaly in this process with the Dublin Fire Department. The Town of Dublin pays for all utilities and fuel so the Dublin Fire Department can use the \$14,000 for other purposes.

The other financial assistance is in the form of the eight-year fire apparatus rotation. Fire chiefs were critical of this, one stating *“they have given us some nice trucks, but most of the stuff put on them is by volunteers.”*

Aid to Localities (ATL) from the Virginia Fire Fund

The state provides financial assistance to local fire department via the Virginia Fire Programs Fund which is derived from one percent of fire-related insurance coverage. [ATL](#) provides funds to pay for training, construction of training centers, firefighting equipment and protective clothing.

Allocations are population-based. The money is distributed to the cities, incorporated towns, and counties. In Pulaski County, the ATL funds are sent to the county and then disbursed to the fire departments.

This check was typically around \$14,000 to each fire department, but \$20,000 per fire department was distributed during this study. The ATL funds are restricted to fire department specific purposes like equipment and training. The only county funds the Pulaski Fire Department receives is the ATL check which they delegate to the volunteers and let them decide how to use it.

Coordination of Purchases and Funds

Both the ATL and county disbursement of funds are distributed evenly without a consideration of need or planning. There is a significant potential for the County to manage both of these funds much more efficiently, especially since the County owns and maintain the buildings, most of the vehicles, and some of the equipment. For example, instead of each fire department being burdened with multiple bills for fuel and utilities, the County could take over all of these invoices and consolidate the process.

Another example is the purchase of fire equipment such as hose, nozzles, and protective clothing. Every fire department plans to purchase a certain amount of protective clothing each year, but most of these brands and styles are different. The county should coordinate this as an annual purchase based on needs for all fire departments, one turnout brand with options to ensure each fire fighter has at least one compliant set of gear.

Recommendation 20A:

Pulaski County should manage the ATL and annual county funding for all fire departments to enable a more efficient and appropriate use of funds.

EMS Billing

The County use third party billing provider, Certified Ambulance Group in Connecticut, with a recovery rate of approximately 70%. The billing rates were revised in 2020 and appear appropriate for the region, but might be slightly low, at a \$630 BLS base rate, \$707 ALS-1 base, \$1,027 ALS-2 base, \$17 per mile, \$120 for treat and release, and \$206 for advanced treat and release. The Deputy Director plans to do a rate study in the next year, GES supports that endeavor and would encourage Pulaski County to adopt a higher rate structure if warranted. EMS billing brings in approximately \$1.2 million in revenue. Total expenditures for EMS (including Squad 9) is \$2.5-3 Million. Even if the recovery rate was 100%, it still would not cover everything.

Cost Recovery

The County has recovered costs from hazardous materials spills and can expand this to motor vehicle crashes and other calls. The EMS billing company is prepared to add this service to their contact. Since a significant portion of fire department responses in the County are for transportation incidents, the costs recovered for these crashes would be significant. It is estimated that implementing a cost recovery program could generate between \$200,000 and \$300,000 per year.

The most challenging part is implementing an easy process in the field to gather this information and also train responders to obtain the proper information. Managing a program like this is also an additional administrative burden, but something that existing staff at Pulaski County could be tasked with. Most of the fire department officers we spoke with about cost recovery were in favor of it, as long as the recovered funds went back to each fire department.

Recommendation 20B:

Implement a cost recovery program for billable calls

Fund Raising

All of the eight fire departments participate in one or more fund raising activities. Most are single fire department efforts, some are joint, and some are done by completely outside agencies and organizations. All associations have some sort of raffles with prizes such as guns, TVs, grills, chainsaws, Newbern has a community fall festival conducted by the Newbern Volunteer Fire Department (we were able to view this during the site visit).

Draper used to organize a big dinner fundraiser, but each year the volunteer participation got less and less until it was too much to handle for the ones who were willing to help. They have run raffles but have had problems with those too. They have tried letter drives in their coverage area. Out of the 1,300 letters, they received around \$16,000 in donations and only had to spend about \$1,000 to send them out.

Snowville organizes a couple of fundraisers per year, one is usually a dinner, and those raise about \$10,000 per year. They also fill swimming pools, but only about 10 per year.

Dublin arranges fundraisers when they foresee a larger than usual expense. In the past they have run raffles for motorcycles, guns, and other items. That money is used for purchases equipment like extrication tools or outfitting a new apparatus.

Fairlawn does a letter campaign about every two years, typically tied to a specific project. 1,200 letters are sent out and they usually get about 250 responses that brings in about \$16,000. They have applied for some smaller grants such as the Richardson grant that has a \$10,000 limit which was used to replace hoses and nozzles.

Grants

Federal Emergency Management Agency (FEMA) Assistance to Firefighters Grant (AFG) have been in existence for over 20 years and have helped thousands of fire departments purchase equipment and vehicles, hire personnel, and improve safety. In researching FEMA awarded grants in the last 10 years, only 3 grant awards were found. Two for the Town of Pulaski, one in 2020 for \$1,906 for operations and safety and one in 2019 for \$11,428 for fire prevention and safety. The Draper VFD Chief told us that he wrote a FEMA grant that was awarded in 2005 for 30 sets of turnout gear plus a washer and dryer. Pulaski County was awarded a county-wide grant for SCBAs in 2015 for \$604,455. We were also told of other grants, some fire apparatus, awarded 10+ years ago.

Many of the fire departments have not applied for the FEMA AFGs because they have a hard time coming up with money for the matching portion, plus finding the time and right person to write the grants is difficult. It would be nice to have a county grant writer to assist, this can be accomplished through the restructured Department of Emergency Services.

The challenge is just finding the time and right people to research the items needed and write the application, then the management piece is the only complication. We explained the SAFER grant and the ability to hire a Recruitment and Retention Coordinator who would also manage their own grant.

We highly encourage application for these grants. They could be used to purchase protective clothing and equipment, upgrade fire stations with diesel exhaust systems, purchase portable and mobile radios, fund training such as Blue Card, assist with recruitment and retention, fund the hiring of additional staffing, and other projects.

Recommendation 20C:

Ensure compliance and eligibility for FEMA Assistance to Firefighters grants and apply for these grants to offset budgetary limitations

Capital Projects

We were not provided with a capital improvement plan or list of proposed projects. Pulaski County needs a firm plan on capital improvement projects that are properly planned and budgeted.

Recommendation 20D:

Develop a realistic capital improvement plan tied into strategic planning that incorporates improvements to the current eight-year fire apparatus investment strategy.

21. Insurance Services Office, Public Protection Classification

The Insurance Services Office (ISO) rates a community's fire protection using a Public Protection Classification (PPC) scale from 1 to 10, with 1 being the best. That rating directly and indirectly impacts what property owners pay for insurance premiums. Most of the fire chiefs did not know what their own ISO rating was.

The Town of Pulaski is an ISO Class 3 (verbal) within the town limits and the Town of Dublin is a Class 4 (effective 2019). These include properties within 5 road miles of their two stations and within 1,000 feet of a fire hydrant. All other properties within Pulaski County that are within 5 miles of a listed fire station are a Class 9. Properties beyond 5 miles are a Class 10.

The difference between a 9 and 10 is commonly significant or more than double, that is only if an insurance company will provide coverage for a Class 10 property. If a fire department dissolves and/or the fire station is de-listed, then all of those properties currently within 5 miles of it will likely either see a drastic increase in their insurance premiums or their insurance company will drop them.

Improving the ISO rate takes careful planning, preparation, and attention to detail. At this time for Pulaski County, it would be extremely difficult improving the ISO ratings given all of the other challenges explained in this report. However, with careful planning and implementation, it is entirely possible to improve both ratings within the towns and in the other areas.

An internal audit should be completed by someone with extensive knowledge of the ISO Fire Suppression Rating Schedule or under their strict guidance. There are many parts of this review that require careful analysis and preparation, such as inventorying all apparatus for minimum equipment, a deep assessment of a variety of records, water supplies, communications, prevention, and many other areas. This would likely take a 0.5 FTE position about three to six months to complete. If there is no internal capacity to prepare for the review, then seeking outside assistance should be considered.

With the restricting of the county-wide system under the Department of Emergency Services and basic improvements, many areas of the county could see a drastically improved insurance rating.

Water Supplies

Pulaski County has many hydrant systems and their reliability is critical to safety and effective fire fighting. It was unknown how many separate systems are within Pulaski County. The towns of Pulaski and Dublin have their own system, the Volvo plant has its own system, the City of Radford provides water and hydrants to the Fairlawn area, and there are numerous other systems throughout the county. Although most of these hydrants are plotted on response maps and in the Active 911 app, it is apparent that information on the systems is relatively unknown by the fire departments.

During the review, it was explained that some of the systems are so old and fragile, that fire departments are discouraged from relying on them. The Town of Pulaski's water system is so fragile that structure fires activate a tanker task force. **Most of the water operators will not flow test hydrants due to the fear it will cause a water main break. The hydrant systems are so unreliable that the fire departments typically use tankers as their primary source.**

The water supply systems are 40% of an ISO rating, they are highly important within that water system's area and to the county as a whole. Each system must be properly inspected and maintained – and that

proper records are kept which show the data points that ISO looks for. Each of these systems should also have a fire flow analysis to know their capabilities. Pulaski County can provide guidance to these system owners to improve compliance and ensure they are properly credited in the ISO review.

Recommendation 21A: Each water system should be evaluated in detail for compliance with ISO. Pulaski County should help those systems that need guidance in documentation and practices to achieve a maximum ISO rating.

Pulaski County can also preplan rural water supply sources as part of the ISO water supply grade. This can be more challenging than pressurized hydrant systems. Nonetheless they should also be properly documented, inspected, and maintained for maximum ISO points. Refer to NFPA 1142 for more information.

And finally, the hauled water credit for ISO is critical to the overall ISO rating in the non-hydrant areas. Many departments utilize their tender shuttles, folding tanks, draft sites, and rural water supply practices and equipment to achieve substantial hauled water credit. Although Pulaski County has a strong fleet of tenders there is little to no practice on rural water supply drills between fire departments. There are many simple improvements that could be made to have a huge impact on ISO hauled water credit.

22. Prevention and Community Risk Reduction

Fire prevention in Pulaski County is inconsistent. The State of Virginia encourages all localities to enact/adopt the Statewide Fire Prevention Code (SFPC). The County of Pulaski has not adopted this code, but the towns of Dublin and Pulaski have.

The Town of Pulaski has its own Deputy Fire Marshal while the Chief is the appointed Fire Marshal. The Town of Dublin has a part time Fire Marshal, appointed in 2005, but the person in that position lacks any current credentials to conduct inspections. Plan reviews in Dublin are handled by the town and county building official, with input from the Dublin Fire Marshal, but no actual fire and life safety plan reviews are conducted.

Dublin and Pulaski will sometimes provide code enforcement to areas outside of their town limits, but only within their county response areas. The State of Virginia Fire Marshal's office conducts fire and life safety plan reviews and inspections outside of the town limits, but there is too much work for their staff to adequately provide those services in Pulaski County.

Towns of Pulaski and Dublin Fire Marshals

Chief Conner is technically the Fire Marshal for the Town of Pulaski and was hired to do both. He quickly realized he needed help and transferred one of the career staff to the role of Deputy Fire Marshal (in training). They do not do any inspections or investigations in the county, even if it is a fire in the county that they respond to.

The Town of Dublin has one part-time employee who doubles as a Fire Marshal. They sometimes share him in for help in the county such as consulting on hydrant locations, new business plans, and requested inspections. The Dublin Fire Marshal has been grandfathered in the eyes of the town. He is technically not a certified fire marshal or building official. They recognize this could be liability, but believe he does a great job and has been around since before certifications were required. He will be retiring in the next four to five years.

Building Officials

The County of Pulaski has a full-time Building Official who enforces the Virginia Statewide Building Code but does not have a Fire Code Official. They staff a certified Permit Technician, a certified Combination Inspector, and a certified Building Official/Master Code Professional. While they take tremendous pride in their work, it does not include the provisions of the Virginia SFPC.

DRAFT F FOR CLIENT REVIEW

The purpose of the SFPC is to provide statewide standards to safeguard life and property from the hazards of fire or explosion arising from the improper maintenance of life safety and fire prevention and protection materials.

Based solely on the existing structures that should have an annual fire inspection, there is a tremendous need for Pulaski County to have a full time Fire Code Official. These include 7 big box stores, multiple strip malls, gas stations, hotels, schools, speedways, movie theater, airport, golf courses, restaurants, day care facilities, multiple logistics and support facilities for manufacturers, hospital, municipal buildings, the largest truck manufacturing plant in North America, and many others.

A Pulaski County Fire Code official could bring in revenue through plan review fees, re-inspection fees, fines for code violations, and other methods. It is unknown what performance standards or inspection statistics are being completed by the two towns or state. As stated in Key Recommendation 15 Pulaski County should hire a full-time certified fire code official.

A standard of how many inspections and of what type completed annually should be part of the strategic planning process. Organizations should identify the percentage of each type of occupancies they will inspect each year or some other measure. If the community expects a higher level of performance, then additional staff and resources will be needed to meet that goal.

Investigations

The Pulaski Fire Chief and Deputy Fire Marshal handle fire investigations within the town, the same for the town of Dublin and their Fire Marshal. For the county, they rely on an investigator from the Sheriff's Office and sometimes an investigator from the State Police.

Plan Reviews

The towns and county conduct plan review, but the lack of a fire and life safety plan review in the county is alarming. Fairlawn has a substantial commercial area including big box stores, but the fire chief has no part in the plan review process.

Inspections

The two towns conduct inspections and copies of some were provided to us for review. The Dublin form is comprehensive and appears to contain most of the relevant information expected, however the code violations lack any reference to the code section they are enforcing or a time limit to comply.

The town of Pulaski form is more basic and only contains basic property contact and location information, but it does require a referenced code section in the violation, the description of the violation, and a time limit for correction.

Both of these forms should be updated so they can be used as both a method to gather pre-incident plans and properly enforce the fire prevention code (with each violation referring to a section of the code).

Self-Inspection Program

There is no self-inspection program in Pulaski County. There are many communities who have successful self-inspection programs, especially for small businesses and lower risk occupancies. Some of these programs are self-developed and some are commercially available such as Inspection Reports Online (<https://inspectionreportsonline.net/>). Simple ones including sending business owners a simple checklist to complete, sign, and return. We do not endorse any particular program but support properly implemented and managed self-inspection programs.

Recommendation 22A:

Develop a self-inspection program to increase the percentage of completed annual fire and life safety inspections.

Pre Plans

We found no evidence of formal pre-incident planning. A program should be developed and part of the strategic planning process.

Public Education

The week of the on-site review was national fire prevention week. Numerous school visits and other activities were described and/or observed.

We were told of fire apparatus visiting different groups, but it was unknown if a specific program was being followed in terms of what messaging is being delivered to which age groups. A more formal public education program should be developed and part of the strategic planning process to ensure the proper message is being delivered to the appropriate groups.

There is a huge opportunity for a dedicated Public Education Specialist for all of Pulaski County in the future. It should be someone who can be certified as a Public Safety Educator that meets the requirements of NFPA 1035 *Fire and Life Safety Educator, Public Information Officer, Youth Fire setter Intervention Specialist, and Youth Fire setter Program Manager Professional Qualifications*.

Recommendation 22B:

Plan to add a full time Public Education Coordinator to Pulaski County after the reorganization and initially proposed positions are filled.

Knox Key System

Dublin, Fairlawn, and Pulaski have Knox Box keys to fit Knox Boxes and switches within their towns and county response areas. The Town of Pulaski manages the Knox Box system for both towns and Fairlawn. Knox Box keys need to be secured in order to prevent misuse or loss of a key, which can have profound impacts on the fire departments and towns. We were told that the key system is on the same key for both towns. We observed Knox keys unsecured in apparatus.

This security issue must be resolved as soon as possible. First, contact the Knox Box Company to obtain a list of all keys and ensure that all Knox Box keys are accounted for. If a key is missing, follow the recommended practices of the Knox Box Company. Second, order the Knox box key secure system and install them on all vehicles that will have a Knox Box key. A Knox Box key must either be in a Knox key secure system or in a locked safe or other secure location. A Knox Box policy should be implemented for the key system county-wide.

Recommendation 22C:

Properly secure all Knox Master Keys in a vehicle mounted electronic key secure devices.

Address Signs

Finding the address of properties is one of the most challenging parts of responding to an emergency. An address sign program would be beneficial. Some fire departments sell white or silver reflective house/property address numbers on a dark black or blue background. This should be a project considered in Pulaski County.

Wildland Fire Prevention

Wildland fires that have devastated communities, including those in the Appalachian Mountain region. Pulaski County has some effective programs in place for fuels reduction and fire breaks, but they could be improved. Pulaski County should be prepared to defend structures during and prevent the devastation as seen in many other places. Oregon has a very successful and refined structure protection program and methods that should be considered by Pulaski County. Firefighters should be trained to use the strategies, including level of structural preparation in terms of surface prep and full prep.

Up until a few years ago and for over 20 years, the state had a Type 2 initial attack wildland crew of 20 to 25 firefighters in the region that would respond when needed with their own equipment, engines and

response vehicles. This was led by the current Emergency Management Coordination, before he took the county position. When this crew was disbanded, Pulaski County applied for and was awarded grant funding for a part-time wildland fire mitigation crew. This is a six person crew consisting of mostly college students who assist on their days off.

Recommendation 22D:

Develop plans, purchase equipment, and train responders on structure protection methods.

Part 2 – Relationship with Other Agencies

We spent a considerable amount of time meeting with the other agencies with who Pulaski County emergency responders regularly interact. In a crisis, the community requires and expects that those who are able to provide assistance will be there to do so as quickly as possible. When the crisis is major, the community requires and expects that many actors will join forces, working together cohesively to limit the damage and loss.

The community is blind to the badge on the truck, the uniform of those who come to help and doesn't care if the responders are paid or volunteers. It is not aware of the invisible lines that separate agencies or concerned with the organizational arrangements that give primary responsibility to one agency or another. While these lines and arrangements are important for guiding and coordinating response, they should not operate as barriers to providing optimum assistance to persons in need.

With a number of different groups handling municipal fire/rescue, wildland, airport, lake, disaster management (police/hospital could be included in the group too) for a smaller population but large geographical area, our initial interest was to see how they operate individually and collectively.

The Pulaski County emergency response system as a whole includes other resources from many different agencies. This section explains how each of the other agencies relate to Pulaski County and identifies any issues that need attention to ensure future success, safe operations, and effective timely responses.

2.1 Virginia Department of Forestry

We spoke with Dan Hosack of the Virginia Department of Forestry (DOF), via Zoom and in person. Although, some of Pulaski County includes parts of the George Washington and Jefferson National Forests, the interaction with fire and EMS units is minimal and we did not pursue discussions with the USFS.

Dan has been in the county for a year and half and has great admiration for the local emergency responders. He says that when DOF gets to wildland fires, the local firefighters have already made good progress. The largest recent fire has been six acres and remained small in size due to the fire department's quick and efficient response.

The DOF assists with any large wildfire (non-structural). They do not have many resources, primarily a bulldozer position in Dublin and sometimes a Type 6 engine. There is no MOU specifying who provides what and when. At the beginning of every fire season, the DOF updates the local resources and the list is turned in to DOF regional office.

Pulaski can be prone to fire at certain times of the year, but a lot of the fire can be contained to small acreage. Many topographical factors limit the spread by boxing it off or create fire breaks. Not a lot of starts reach large size, but some geographical areas have the potential. November is typically the high point for wildland season.

2.2 Radford Army Ammunition Plant (RFAAP)

RFAAP is a 5,000-acre complex built in 1940 to support the war effort. It is split between Pulaski and Montgomery Counties operated by BAE Systems. Their web site describes the plant as “the U.S. Military’s Primary Propellant Manufacturer.” We met via Zoom with Fire Chief Grady DeVilbiss and Assistant Chief Nic Moser. They are a contract fire department utilizing federal equipment staffed with 10 personnel 24/7 plus a chief and assistant chief who are Monday-Friday positions. They have two engines, one BLS ambulance, one brush truck, and a variety of boats, haz-mat equipment, and special operations trailers. There are three shifts working a 24-hour modified scheduled with five-day breaks.

Their first due mutual aid is Pulaski County, but they are set up to take care of most calls independently without much aid. They have MOUs to respond to assist Pulaski County, Montgomery County, and Radford City, but they only are requested a few times per year. There are areas of Pulaski County that they could be at quicker than the volunteer departments. RFAAP encourages Pulaski County units to request them for any emergencies and has the capabilities to be included in automatic aid agreements. The RFAAP has operational plans in place to account for one crew providing outside assistance and the facility would not be affected.

With the nature of the products they are manufacturing, they have to ask for assistance sometimes given the potential hazards. The RFAAP uses the same SCBAs as Pulaski County, but Montgomery County is different.

The RFAAP fire department will respond anywhere in Pulaski County to assist if requested. This is typically a four-person engine (1,250 gallons and 1,500 gpm pump). Most of their firefighters are also volunteers in their hometowns, including in Pulaski County. They also have great mutual aid for water rescues and can access part of the New River faster than Pulaski County resources.

RFAAP has recently upgraded to a full Haz-Mat Technician team, but the program is still new. They are working to get set up to respond outside of the plan to assist as Haz-Mat Technicians. They would respond to Pulaski to assist with a new 24’ custom cab walk around Haz-Mat response vehicle. The closest regional Haz-Mat team in Virginia is in Roanoke, 35 to 40 miles away. It is a composite team with members from multiple departments.

They use the Town of Pulaski Fire Training Facility twice per year for required live fire trainings. They have to adhere to both state training regulations and army training regulations. They are required to have an NFPA 1403 compliance officer and a written action plan.

Fairlawn is closest Pulaski fire station and Dublin is other station primarily utilized due to their ladder truck since the army has not gotten RFAAP a new ladder truck yet. They rely on Pulaski County for first due ALS (Radford is 2nd and Montgomery is 3rd). Sometimes they intercept the ALS ambulance or the ALS provider rides in the RFAAP ambulance. Cots are interchangeable so sometimes they just swap. They have discussed adding ALS care, but their medical director advised against it because their providers would not get sufficient patient contact to maintain ALS skills.

They have a good working relationship with Pulaski County Emergency Management and the emergency responders, but do not regularly interact. They are familiar with everyone and feel everyone is good about working together to get resources where they are needed.

They can communicate on the current Pulaski County radio system and would like to obtain a couple of radios for the new system since it will be incompatible with their current system.

2.3 New River Valley Airport (KPSK)

Aaron Brummitt is the Airport Manager for the New River Valley Airport. They are classified as regional GA airport. The New River Valley Airport Commission owns the airport which consists of seven localities, each have an appointed commissioner.

According to Brummitt, the majority are small aircraft with the largest being a Gulfstream 550 (small private passenger jet of 10 to 12 seats). They typically have a half dozen private jets and 15 to 20 general aviation planes land or take off per day. They have lighting systems and AWAS work all night so anyone can land anytime, but nighttime services are on request only. There is no ATC, communications work on the common frequency and Roanoke is the closest tower.

They have a staff of three full time, one part time year-round, and two additional part time in the summer. Typically staffing is 8:00 AM to 7:00 PM Monday through Friday and 9:00 AM to 5:00 PM on Saturdays and Sundays.

If the airport expanded to needing fire staff on site, they would cross train operational staff to be ARFF certified, but that is likely three years or more from now. No part 139 requirements for commercial aircraft right now and there is no fire or EMS on site.

County is looking at developing a property for maintenance of passenger aircraft such as B737 or A319s, would most likely have no paying passengers on board. Unclear if having the empty aircraft on site would subject them to part 139 requirements.

Dublin is closest fire department to the airport, but they are not trained on aircraft emergencies. The airport does not typically drill with local fire departments or EMS, they are not required to have any kind of crash or MCI drills. The airport manager attends the LEPC meetings.

There is not written emergency response plans, airport staff are trained to handle crashes. If fire personnel respond to airport property, they are escorted by staff. For an aircraft calling in distress, either a plane issue or medical emergency, they call 911. If aircraft cannot get off runway, there is a federal system to close the runway.

Airport does not authorize landings, a distressed plane would likely land immediately. They have only had four or five incidents in the past 18 months. All have been landing gear failures with no injuries, just aircraft stuck on runway. They have specialized equipment for moving the aircraft.

2.4 Radford Fire Department

The Town of Radford is an independent city within Virginia, not part of a county. They have a population of 17,833 (202 US Census) and is home to Radford University. They have their own fully career fire department lead by Fire Chief Rodney Haywood with an ISO rating of 3 (earned in 2019). They are the closest and most frequently used mutual aid fire department into Pulaski County.

They staff 27 personnel across three shifts working a 24/48 schedule out of one station with two ALS ambulances (EMT-B and Paramedic staffing) and three or four Personnel on a quint (Driver, Captain, two Firefighters). This allows two people to be off with a minimum staffing of seven. They response to approximately 3,000 EMS calls and 1,100 fire calls each year.

Radford City has their own fire and police dispatch center, but discussions are happening to combine this with the new Pulaski Dispatch center.

It is estimated that Radford provides aid to Pulaski County more than receiving aid, about a 70/30 ratio. They respond into the county a few times each month, which is primarily dependent on staffing for Pulaski EMS Station 2 in Fairlawn. For EMS responses, there is a line in Pulaski County that defines where Radford will respond when requested for a mutual aid call. Radford does not want their

ambulances tied up too long. A similar line is set for Montgomery County on the other side. There is an SOG for this practice, but GES did not receive it.

Radford is not on the automatic aid system for fire or EMS, only mutual aid as requested. Pulaski County does not typically call Radford for assistance with working fires except in Fairlawn. Pulaski County apparatus will respond through Radford City limits to go to another jurisdiction for a fire, but Radford City is usually not toned out, which does not make sense to most Radford personnel.

Chief Haywood would like to see more cooperation and communication between Radford and Pulaski County. He does not attend the quarterly chief meetings or meet regularly with the other chiefs. They occasionally train together, and Radford uses the Town of Pulaski Fire Training Center.

Radford has a training program open to Pulaski County members including EMT, Firefighter I, Firefighter II, and Haz-Mat on an annual cycle. Fire and Haz-Mat classes are free and there is a \$550 fee for EMT, but there are easily obtainable grants to cover that. He is also looking into hybrid trainings to accommodate the new generations of students.

2.5 Law Enforcement

We spoke with Pulaski Police Chief Jill Neice and Dublin Police Chief Dennis Lambert about law enforcement interface with Pulaski County Fire and EMS agencies. We were unable to meet with the two other primary law enforcement agencies in the area, Pulaski County Sheriff's Office and Virginia State Police. Typically law enforcement officers work 12-hour shifts. There are only a couple of local officers who also volunteer for area fire departments.

Pulaski Police are all paid while Dublin Police supplements paid officers with auxiliary officers. Dublin and Pulaski try not to steal from each other, but many of the areas around them pay significantly more and can cause some retention problems. Dublin does not have trouble attracting auxiliary officers, most of them have shifted over to private sector to make more money but need to keep up their certifications and the auxiliary program allows for that.

The law enforcement representatives expressed no problems with the fire departments. EMS is a different story, as they have seen multiple times when "they need to step up and do their job". Have seen patients "clearly injured and EMS spends a lot of time trying to talk the patient out of going to the hospital"

Officers do respond to EMS calls to assist with finding the address and guiding the ambulance in. Police officers receive basic EMS training during their basic academy and there are even some officers who are CPR/First Aid Instructors. They are not interested in increasing their officer training to include more EMS training or certifications. None of the officers carry AEDs and they do not usually get involved in the team of providers providing CPR, they typically work with the friends and family on scene.

Some law enforcement officers feel that EMS is not using the law enforcement appropriately. They are excessively calling for assistance on falls, forcing entry, etc. which raises concerns that officers may be injured while trying to assist EMS. They will absolutely respond for an emergency call such as not breathing. They understand everyone is in the same boat, that EMS is short staffed too and aren't opposed to helping, they just don't want to be abused which is what they feel like sometimes.

Joint training is not conducted between law enforcement and EMS/Fire. They have done some active shooter and MCI training, but not much.

The most common interface is motor vehicle crashes. Most of the time law enforcement gets the call first and is often first on scene. However they only respond to vehicle crashes within their districts and

their primary responsibility (on roadways and other calls) is to make the scene safe for other people to do their job. The interstate is the State Patrol's responsibility.

Traffic incident management (TIMS) training has not been conducted by local law enforcement. That should be required.

2.6 Hospitals

We were unable to connect with representatives from the two closest hospitals, Lewis Gale Hospital in Pulaski and Carilion New River Valley Medical Center in Montgomery County. The Pulaski County Medical Director, Dr. Eric Stanley, is an Emergency Department Physician at Carilion New River. He felt that the relationship with the hospitals is good. There isn't regular training together, but if the hospitals have relevant training, they often invite Pulaski County EMS providers.

The only concern expressed was that patient care reports are not readily available when transferring patients. The actual reports do not get sent or into the hospital system for a few days. It is not a reflection on the providers, more on the records systems and how they integrate. It makes it difficult to track patient care. Back when everything was paper and on triplicate copies it was much easier to share information, now it is all technology dependent.

Pulaski County should consider this feedback and look at options to ensure patient information and data can be transferred to receiving hospitals when the patient is delivered.

2.7 Volvo Emergency Response Teams

The Volvo plant is the largest truck manufacturing plant in North America. It is a 24/7 run facility on 500 acres with over 3,700 employees and 1,400 contractors. Any given shift has 1,200 to 1,500 personnel.

They have several emergency response teams including their medical responders, security, hazardous materials, confined space and high angle, and a fire brigade. They protect the lives and property within the Volvo complex, but rarely come off site and are not typically configured to respond off site. There is also no written mutual aid agreement to assist off site.

Many of the members are state certified due to their role as volunteers for local fire and EMS agencies in Pulaski County and neighboring areas. They are able to just turn their hat around and can work as an Incident Commander for the county departments.

The facility/team is not state certified and is only able to provide first aid and CPR, but there is a medical clinic on site. They are not required to have the medical emergency response team but do because they have the talent and are in a rural area. Their insurance carrier required a dispatch office and fire brigade. Volvo is not usually invited to Pulaski County fire department trainings, but they do invite the county firefighters to come to Volvo trainings when they have spots open.

Any emergency or situation they cannot handle in house, they call 911. They have 35 EMS first responders and 28 fire brigade members, but most of them do both. Have an ambulance, but it can't go off the property with it. EMS training and CEUs is conducted by an outside contractor who also works for Pulaski County EMS.

The fire brigade is a state registered organization that interacts with the State Fire Marshal. They follow NFPA 600, Standard on Facility Fire Brigades and NFPA 1081: Standard for Industrial Fire Brigade Member Professional Qualifications, as an incipient stage brigade. Only apparatus at the site is a gator UTV with a pump and 75-gallon tank. Main plant and some other portions of the plant have standpipes. Sometimes meet Pulaski at the gate, but the plant is large enough for them to drive into the plant

Newbern VFD is first due and Dublin VFD is second due. Volvo built a custom fire truck, but their insurance company recommended they not maintain or operate it as a fire brigade. Instead, they

donated to Newbern VFD and is titled by Pulaski County. Members do some training at the Pulaski fire training center when they are with their home departments.

Volvo maintains a file of run reports but does not track statistics for number of runs. About 60% of the calls are EMS and almost all of the rest is Haz-Mat. Annual facility inspections are done by the county building official, but no fire code inspection.

Volvo could assist off the plant if requested and the last time that happened was 6 years ago. They are open to responding in the community more but would have to be formally requested. Consideration should be given that most of their equipment is not licensed to be on public roadways. Also most of the emergency response team members are full-time Volvo employees. They are building trucks until a call goes out and they leave the line, but the line very rarely shuts down.

Volvo is installing a new radio system and working with interfacing it with Pulaski County law and emergency response agencies. If there is a multi-agency response, unified command would need to be implemented with their respective radios.

2.8 United States Coast Guard Auxiliary

Steve Holcomb is the local coordinator of the Coast Guard Auxiliary. They operate on the 21-mile-long Claytor Lake which can have over 10,000 boats on the lake on a busy weekend. They respond to about 20 calls per year using four boats with one always on water. Staffed boats are not always available. A minimum crew of three is ideal, but it has gone out with one at times. They have no firefighting capabilities as they are not supposed to fight fire, but they have a cable with a grappling hook if they need to pull a burning boat away from exposures. They primary perform vessel safety inspections and assist boaters. They also have dewatering capabilities for sinking vessels and can tow a boat if they are in danger.

The auxiliary has 56 members including 25 Virginia Tech Cadets; however they are gone during the busy summer months. The response time to the boat is 30-40 minutes and the Coast Guard goals is to have resources on scene within 40 minutes, including aircraft.

Recruiting volunteers has become more difficult for him. Not for the faint hearted - Same certifications as active duty. Lose quite a few during the training/weed out process/first few weeks. After that, they have good retention. Has noticed a problem recently the obesity epidemic making it difficult to find qualified volunteers. Has noticed that it can be difficult to find people that meet the strict physical requirements of the job. Likes that the VA Tech Cadets are required to participate in PT. Has heard from other organizations that they are having a hard time recruiting

They have communication capabilities with other agencies, primarily using a Marine radio. Pulaski County Special Operations uses Marine Channel 9. They monitor channel 21A (liaison channel with boats in distress or other agencies) and channel 22 (the USCG Agency Channel). The Coast Guard has a strict rule that if communicating with another operation, that other organization must come to the Coast Guard, the Coast Guard will not go to them. If they are aware that responders are on the water, they will put their radios on scan to try to meet up with them.

Annex A: GES Zoom and Site Visit Schedule for Pulaski County, Virginia

Day	Stakeholder and Activity
	24 Zoom Calls Prior to the Visit with Internal and External Stakeholders
1	Area Familiarization and Discussions with Residents
2	Tour with Emergency Management Coordinator and Pulaski Fire Chief, observe a fire code enforcement activity, Newbern community bazar, aerial operator practical testing session, and a live fire training session at the Pulaski Fire Training Facility.
3	Draper Volunteer Fire Department, Chief Justin Dobbins
	Newbern Volunteer Fire Department, Chief Brandon Hamblin
	EMS Stations and Front-Line Staff including the old and new Pulaski Stations 5, Dublin EMS Station 1, and Fairlawn EMS Station 2 including Squad 9
	Fairlawn Volunteer Fire Department, Chief Randy Miles
4	Fleet Maintenance and Shop, Josh Tolbert
	Hiwassee Volunteer Fire Department, Chief Donald Boyd
	Snowville Volunteer Fire Department, both stations, Chief Eddie Farmer
	Pulaski Fire Department, Chief Jeff Conner
	Twin Community Volunteer Fire Department, Chief Chuckie Nester
	Pulaski County Fire Protection Committee Meeting
5	Pulaski County Emergency Dispatch Center, Director Chris Akers
	Dublin Volunteer Fire Department, Chief Dean Russell
	Local Emergency Planning Committee Meeting
	Squad 9 Personnel
	Open Forum for Frontline Personnel
6	EMS Captains
	Pulaski Fire Department Open House
	Pulaski County EMS, Director Joe Trigg and Deputy Director Shawn Hite
	Pulaski Fire Prevention Parade
7	Pulaski County Administrator Jonathan Sweet
	Pulaski County Commissioner Andy McCready
	Radford Fire Department, Chief Rodney Haywood
	Pulaski County Building Official, Scott Macdonald
	Emergency Management Coordinator Brad Wright
	Pulaski County High School Homecoming
8-16	Additional Phone Calls and Emails

Annex B: Fire, Rescue, & Emergency Management Vehicles and Trailers

Draper VFD	Year	Make	Model	Miles	Pump GPM	Water GAL	Foam GAL	Seats	2021 Calls
Chief 1	2019	Ford	F250 Pickup	4,895	N/A	2.5	N/A	4	84
Engine 1	2009	Kenworth	Pierce	11,185	1250	1000	No	2	16
Rescue Engine 1	2004	Freightliner	FL80 Elite	19,387	1250	1000	60	2	74
Tanker 1	2000	Volvo	Autocar	21,049	1250	3000	60	2	17
Brush 1	2016	Ford	F550	3,197	100	400	N/A	4	29
Utility 1	2016	Kenworth	Rescue Body	5,733	N/A	N/A	N/A	2	45
Support 1	2011	Ford	F250	12,657	N/A	N/A	N/A	4	27
Fuel Trailer 1	2022		5x8						5
UTV 1 (Spec Ops)	2014	Kawasaki	Mule	1,865	25	100	N/A	4	
UTV Trailer 1									
Dublin VFD	Year	Make	Model	Miles	Pump GPM	Water GAL	Foam GAL	Seats	2021 Calls
Chief 2	2017	Ford	F250	19,322	N/A	N/A	N/A	5	181
Rescue Engine 2	2013	Pierce	Velocity	13,903	1500	700	30	6	165
Tanker 2	1996	Pierce	Lance	34,592	1250	1250	15	8	80
Ladder 2	2005	Ferrara	77' Inferno	17,476	2000	600	30	6	73
Brush 2 (Replacement ordered)	1989	Ford	F350	22,303	300	300	1	3	53
FM 201	2003	Ford	Crown Vic						20
Response 2	2006	Ford	Crown Vic	200,000+	N/A	N/A	N/A	5	8
Support 2	1996	Ford	F350	113,111	N/A	N/A	N/A	5	102
Flood Response 2	2002	Stewart	Stevenson						
Spec Ops 2 (Trench/Shoring)		Trailer							
Cribbing Trailer		Hurst							
Cooking Trailer	2003	Long CHCI							
Fairlawn VFD	Year	Make	Model	Miles	Pump GPM	Water GAL	Foam GAL	Seats	2021 Calls
Chief 3	2008	Ford	Expedition	31,117	N/A	N/A	N/A	5	59
Engine 3	2011	Pierce	Velocity	10,425	1500	750	0	6	22
Squad 3	2003	Pierce	Enforcer	13,678	1000	500	0	6	41
Tanker 3	2020	Pierce/FL		3,198	1250	2000	0	2	5
Brush 3	2006	Ford	F350 Pickup	5,104	250	225	0	3	6
Support 3	2015	Ford	F250 Pickup	?	N/A	N/A	N/A	5	25
Hiwassee VFD	Year	Make	Model	Miles	Pump GPM	Water GAL	Foam GAL	Seats	2021 Calls
Chief 4	2008	Dodge	Durango						12
Pumper 4	2007	Freightliner			1250	1000			3
Tanker 4	2000	Freightliner			500	1500			1
Brush 4	2016	Ford				400			14
Quick Attack 4	2007	GMC	C5500		750	500			9
UTV 4	2020	Polaris	Ranger 550						4
UTV Trailer 4		Kaufmann							4
Newbern VFD	Year	Make	Model	Miles	Pump GPM	Water GAL	Foam GAL	Seats	2021 Calls
Chief 5	2015	Chevrolet	Tahoe						88
Engine 5	2004	Freightliner							44
Rescue Engine 5	2012	Pierce							106
Tanker 5	2012	Volvo	Custom		2000	2500			15
Tanker 5-1	2004	Freightliner							8
Brush 5	1988	Ford							10
Utility 5	1985	Chevrolet							53
Traffic 5	2006	International	DT466/4300						44
Air 5	2002	Freightliner	FL80						32
UTV 5	2022								

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UTV 5 Trailer	2022	Homesteader	Intrepid						
Spill (Fuel) Trailer 5	2014	Hustler							
Pulaski FD	Year	Make	Model	Miles	Pump GPM	Water GAL	Foam GAL	Seats	2021 Calls
Chief 6	2009	Chevrolet	Suburban	74,652					86
Engine 6-1 (EMS)	2003	ALF	Custom	40,750	1250	1000			324
Engine 6-2	1997	Freightliner	FL80	34,547	1250	1000			68
Rescue Engine 6 (EMS)	2019	Smeal/Spartan	Custom	9,486	1250	750			177
Ladder 6	1999	Pierce	100' Platform	9,331	2000	250			4
Brush 6	2002	Ford	F550	23,112	125	400			58
Utility 6	1990	Ford	F350	27,069					26
Car 6 (EMS)	2004	Ford	Crown Vi	180,365					16
Support 6	2015	Ford	F250	17,662					50
Response 6	2005	Ford	Escape	128,635					34
FM 6	2017	Ford	Explorer	50,700					5
UTV 6	2022	Tracker	800SX LE		50	50			16
UTV Trailer 6	2021	Homestead	Cargo						16
HM Trailer 6	2005	Covenant	Cargo						0
Rope 6	1991	Ford	F-250						2
Water 6	2000	Ford	E-500	Old Amb					7
Boat 6 Trailer	1995	Hustler							4
Boat 6	1991	Lowe	14'						4
Raft 6									0
Snowville VFD	Year	Make	Model	Miles	Pump GPM	Water GAL	Foam GAL	Seats	2021 Calls
Chief 7	2017	Ford	F250						49
Engine 7 (St2)	2010	Freightliner	Ferrara		1250	1000			15
Rescue Engine 7	2010	Freightliner	Ferrara		1250	1000			24
Tanker 7	1999	Freightliner			750	2650			11
Brush 7	2017	Ford	F350		150	225			33
Quick Attack 7	2002	Ford	F550		150	250			30
Response 7	2005	Ford	Crown Vic						18
Raft 7		Quick Silver	380 Inflatable, Mercury 20 Jet						
Raft 7 Trailer	1998	Hustler							
Boat 7	1991	Lowe 16'	Flat Bottom, Mariner Prop						0
Boat 7 Trailer	1994	Hustler							0
Twin Community VFD	Year	Make	Model	Miles	Pump GPM	Water GAL	Foam GAL	Seats	2021 Calls
Chief 8	2015	Chevrolet	Tahoe						23
Engine 8	2006	Ferrara			1000	1000			11
Rescue Engine 8	1993	Pierce			1000	1000			9
Tanker 8	2010	International			1250	1800			3
Brush 8	1995	Ford	F350						3
Quick Attack 8						250			
Response 8	1998	Ford	Expedition						7
Support 8	2018	Ford	F250						6
Other	Year	Make	Model	Miles				Seats	
Squad 9	2021	Chevrolet	3500 Utility						
Boat 10	2018	SJX	2170						0
Boat 10 Trailer	2018	Gateway							
ES-2	2018	Chevrolet	2500 Pickup						
ES-3	2022	Chevrolet	3500 Utility						
Command Trailer	2011								

Note: The calls per year column is based on the number provided from the 2021 NFIRS reports in Image Trend. There were significant inconsistencies between the call volumes provided by the chief, dispatch, and those in the completed NFIRS reports. EMS vehicles are listed under the EMS section in the report.

Annex C: Suggested Policies

- Road Traffic Collision (RTC) Vehicle Parking/Blocking/Fend Off
- Facial Hair
- Alcohol/Drugs – Random testing, post-accident, drinking while on call, reasonable suspicion
- Civil Disturbances
- Active Shooter
- Fraud, Corruption, Bribery, Fidelity
- Acting Up Arrangements
- Confined Space Rescues
- Elevators
- Compartment Firefighting
- Contractors on Station
- Controlled Burning
- Cylinders
- Power Lines
- Dynamic Risk Assessments
- Explosives
- Forced Entry
- Hydration
- Infectious Diseases
- Smoking Policy
- Rider Board
- Routines
- Standbys
- Water Rescue
- Working on Roadways
- Hydrants and Inspections
- School Visits to Stations
- Station Logbooks
- Staffing Positions/Rotations
- Equality
- Vision/Eyesight/Visual Aids/Glasses
- Minimum/Maximum Service Age
- Recruitment
- Equipment Register/Records
- Complaints and Compliments
- PPE
- Basement Fires
- Chimney Fires
- Health and Safety in Stations
- Car Fires
- Electrical Fires
- Flooding
- Discipline Code
- Incidents Involving Animals
- Counseling/Mental Health
- Promotion
- Defects
- Reports and Forms
- Familiarization Visits
- Secondary Employment
- Foam

Annex D: Station Location Analysis

Strategically locating fire stations is a critical step in any planning and deployment. ISO looks at the percentage of the community within specified response distances of engine/pumpers at 1.5 miles and ladder/service apparatus at 2.5 miles. Alternatively, they will consider deployment performance results in lieu of distances. Pulaski County should look at both options to consider what criteria best suits the Towns and built upon areas.

That short distance is more applicable to urban areas and is not practical for the mix of urban, suburban, rural, and remote/frontier areas in Pulaski County, Virginia. If there is a separate performance evaluation demonstrating that the deployment of companies meets the general criteria of NFPA 1710, ISO will use that information as an alternative to a road-mile-based evaluation. However, the only department close to meeting 1710 is the Town of Pulaski. NFPA 1720 would apply county-wide.

Since the population density in the Town of Pulaski is approximately 1,080 per square mile and the Town of Dublin is 1,940 per square mile and an urban area per the National Fire Protection Association is areas with a population of 1,000 per square mile, we have broken down the location analysis in two parts. The maps were created using DeLorme Topo North America 10.0.

Number of Stations: Pulaski County currently has 9 fire station locations, each of the 8 fire departments have 1 station and Snowville has a 2nd single bay station. These are all strategically located and needed for the 5-mile travel distance coverage typically used by the Insurance Services Office. If the travel distance was not a factor, Pulaski County would not need all 9 fire stations. Given the other factors such as response times, apparatus, and personnel, only 4 would be appropriate.

Information was requested from Pulaski County GIS to assist in the analysis including maps and protected values, however none of that information was provided to GES. This makes it challenging to accurately determine the impacts of eliminating specific fire stations.

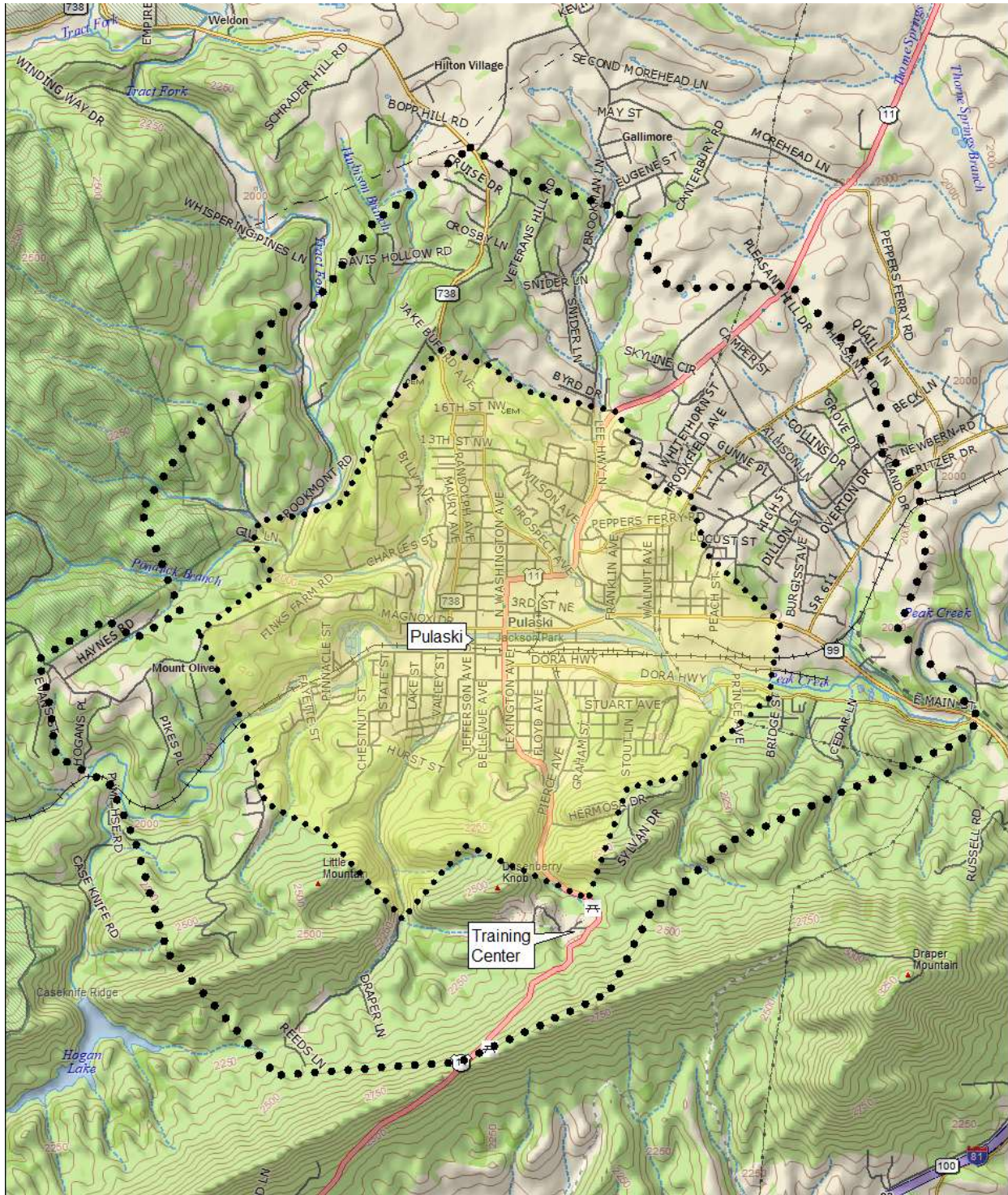
Dublin and Newbern Stations: Purely by the map coverage, the most extensive overlap between two stations is Dublin and Newbern as they are only 2.4 miles apart. If you eliminated the Newbern Fire Station, this would leave a gap in the Claytor Lake State Park area and properties off route 661. To be more cost effective, the two stations should respond together and could reduce their numbers of apparatus without impact to the ISO ratings. For example, Dublin's tanker could be eliminated and one of Newbern's engines.

Urban or Built-Upon Area Coverage

There are essentially 2 small urban areas in Pulaski County, the Town of Pulaski and Town of Dublin. However, the commercial built upon area in Fairlawn could also be considered an urban area.

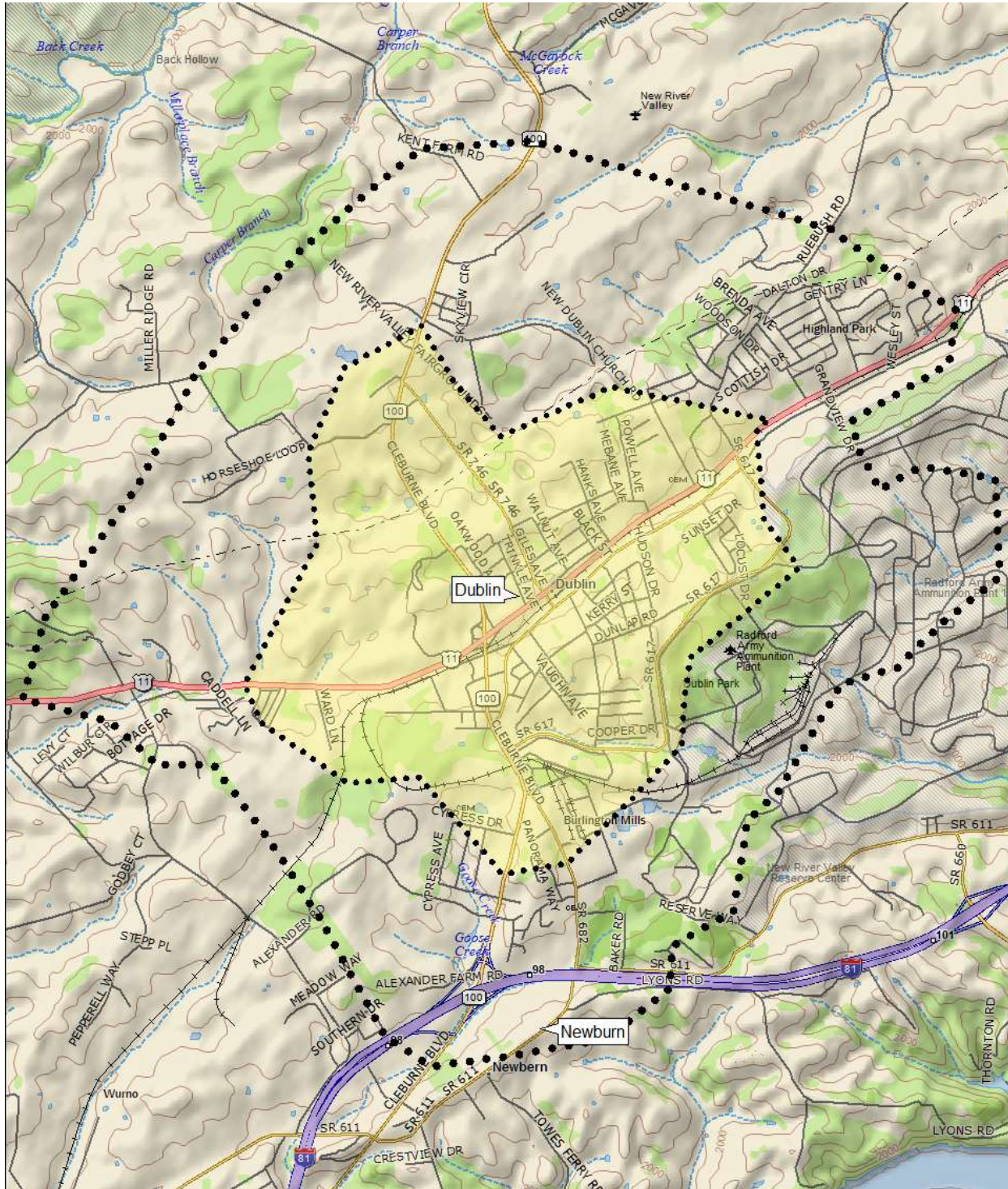
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Town of Pulaski: The current station covers approximately 70% of the town limits for 1.5 road miles for an engine. The 2.5-mile distance for a ladder ends near and covers approximately 95% of the current town limits. For maximum coverage, the new station should move west, but not farther than ½ mile from the existing location to maximize the coverage.

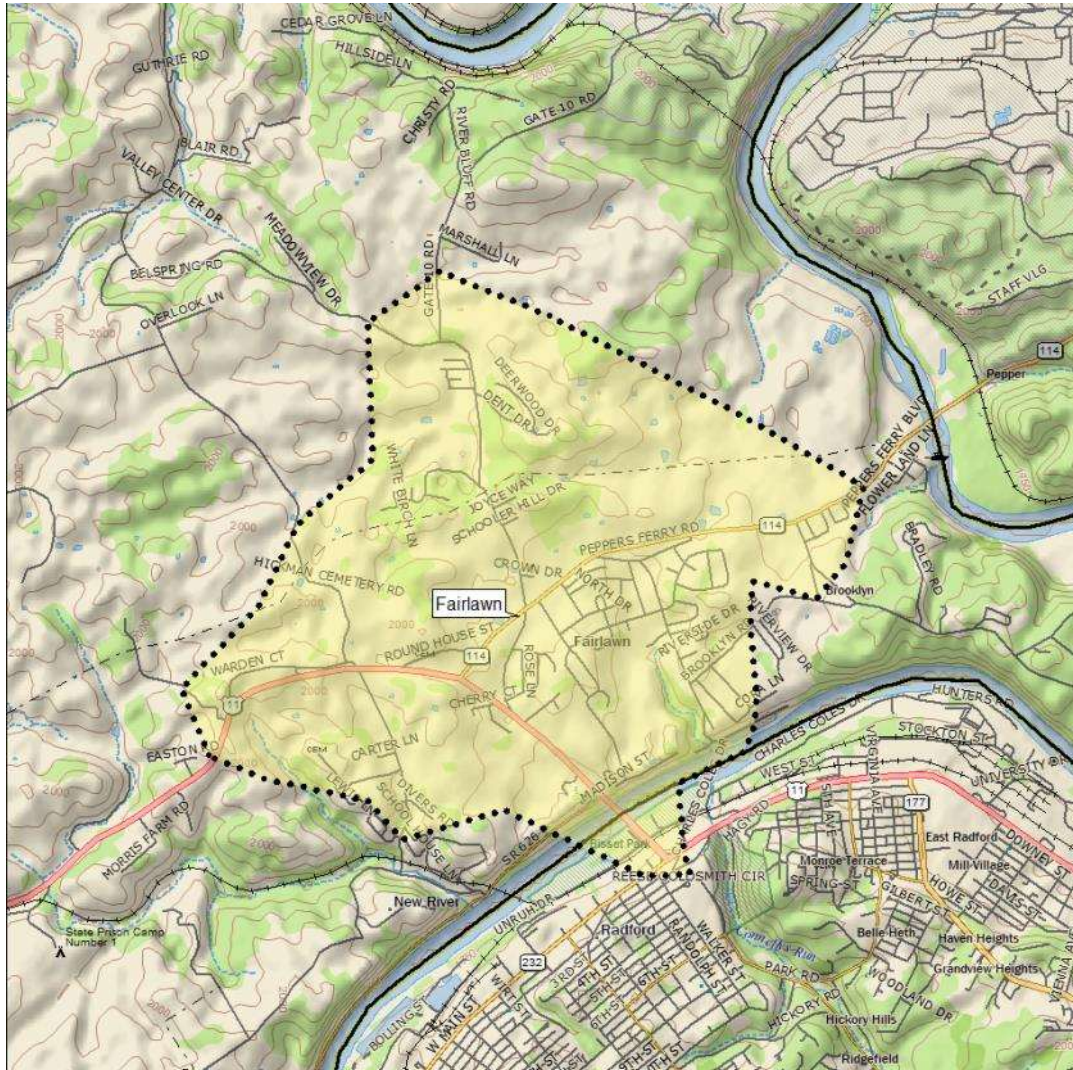


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Town of Dublin: The current station is in an ideal location for maximum credit of the 1.5 road miles for an engine and covers approximately 90% of the current town limits. The 2.5-mile distance for a ladder appears to cover 100% of the current town limits.



Fairlawn Built Up Area:

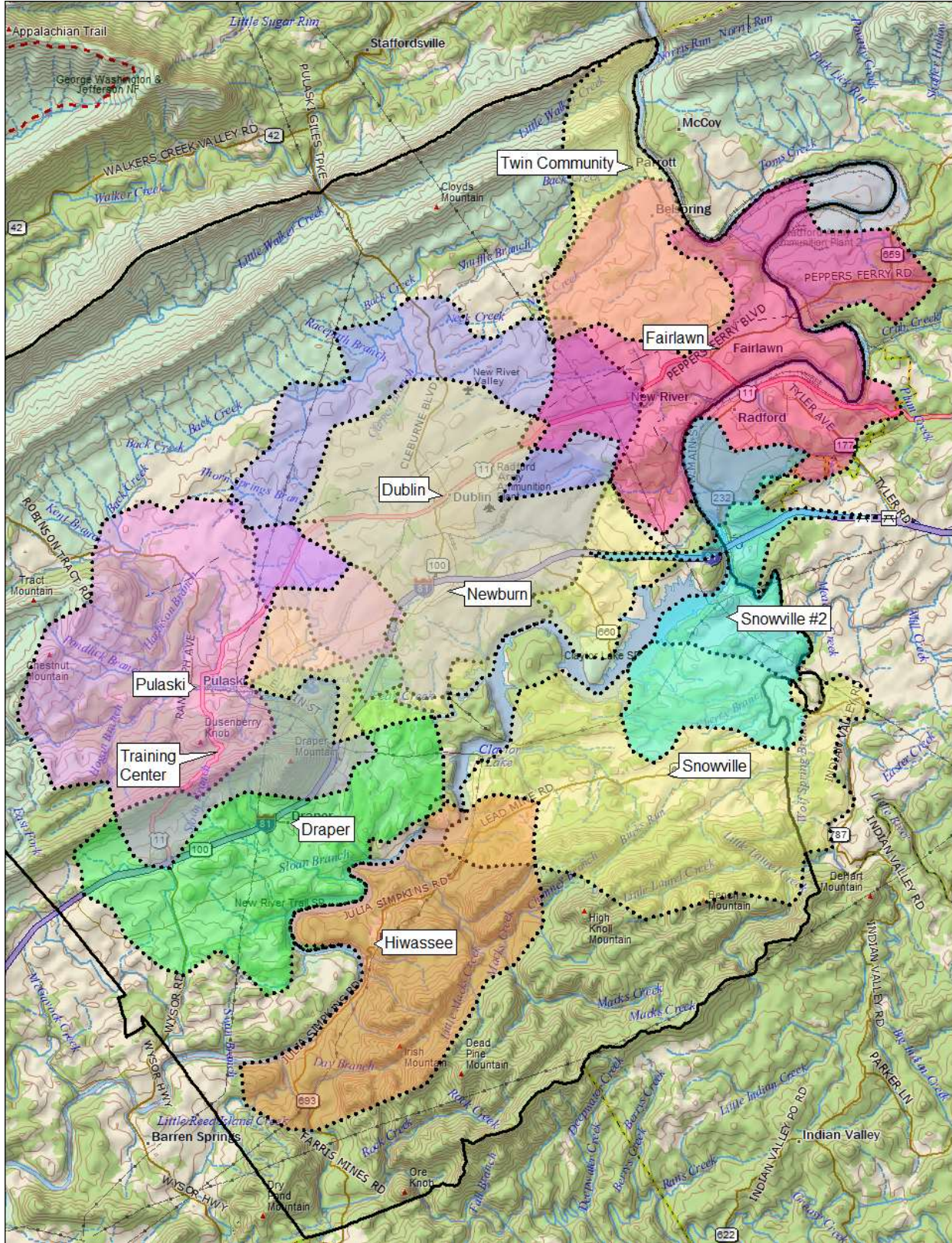


Future Stations: There is not a need to add more fire stations in Pulaski County at this time or for the foreseeable future given the other higher priority facility needs. Pulaski County should focus on the existing immediate station needs including a new combined fire and EMS station in Pulaski and the new station planned for Newbern. However, these stations **must** include modern health and safety design elements and should have considerations for resident housing options.

Suburban, Rural, and Remote/Frontier Areas

All fire stations in Pulaski County were assessed using the ISO 5 road mile distance. The maps on the following pages show the coverage of each station. As explained, there are minimal gaps in this coverage and the most significant overlap is Dublin and Newbern. This is a general map to show a representation of the coverage. If more detailed maps or map data is needed, GES can provide the shape/draw files.

Pulaski County, Current Fire Station 5 Mile Distance Coverage



Annex E: About Gannon Emergency Solutions

“We provide objective reviews to promote the efficiency, effectiveness, and safety of Fire and Rescue Departments, as well as the health and welfare of the people they serve.”

Gannon Emergency Solutions (GES) are specialists in the review and improvement of Fire and Rescue Services and is led by Chris Gannon, a globally recognized pioneer of reform in the industry. After 27 years of experience working on 5 continents and now fully registered here in the USA, we bring a unique and unparalleled level of experience to Fire Departments and share insight that could make the best, even better.

Local Governments and Fire Departments are constantly being asked to reduce the cost of service delivery, improve insurance ratings and implement change. A review is a valuable investment to help Chiefs, Board Members, or City/County Managers maintain standards, improve efficiency, and plan to meet the growing number of challenges faced by first responders in our changing world. Our reviews have included National, Municipal, Paid, Volunteer, ARFF, Industrial and Corporate Fire and Rescue Departments.

The Method

Using our systematic approach, we will carefully and respectfully assess your organization and work hand in hand with managers to deliver a comprehensive report on its operational and administrative efficiency, identifying and grading standards from excellent, to any areas where things could be changed or improved.

Contact Information

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Project Team

GES works with a team approach, hiring experts for each specific project. The primary project team for the independent review of Pulaski County Fire/EMS was Chris Gannon and Jack Krill.

Chris Gannon is the Chief Executive Officer of GES and is a globally recognized pioneer of reform in the fire and rescue industry. He has dedicated his career to reviewing and improving municipal, aviation, industrial and commercial fire and rescue services worldwide. Chris' career began in the United Kingdom (UK) in 1992 where he rose through the ranks. In 2002, the UK Government handed him the job of developing the first ever fire and rescue services in the Turks and Caicos Islands where he single-handedly developed an organization from concept to completion in 6 years. The success of that project lead to government work all around the world where Chris has been hired by organizations in 40 counties for a whole host of reasons. From developing policies and procedures and improving operational efficiency, to a growing demand for cultural and transformational change projects. While serving the UK Government, Chris also held the roles of United Nations Disaster Management Director for the Caribbean as well as the Regional Disaster Management Advisor and Fire Service Inspector for all UK Overseas Territories.

Jack Krill has been in the fire service since 1991 and has worked in all types of fire departments from small rural volunteer, municipal career, suburban combination, and industrial. He spent 2 years as a career firefighter, EMT, and Haz-Mat Technician at the largest municipal department in Alaska, served 4 years as Chief of the largest Fire/EMS combination department in Alaska, and then worked as a full-time chief officer in combination fire departments in the northwest US for the next 13 years. He earned a Bachelors and Masters in Fire Protection and Safety Engineering from Oklahoma State University plus graduated from the National Fire Academy's Executive Fire Officer Program. He has worked with over 350 fire departments, ambulance services, dispatch center and helped their chief fire officers improve safety, training, operations, recruitment/retention, and effectiveness as a consultant for over 17 years. This also included grant writing, master and strategic planning, after action reviews, root cause incident investigations, and other areas. He has conducted over 40 full assessments of fire departments

to prepare for ISO reviews that resulted in improved protection classes. He has wildland fire qualifications up to Division Supervisor, Line Safety Officer, and trainee as a Type 2 Safety Officer.

Peer Reviewers

GES utilizes a unique peer review process to provide the project team with valuable feedback while validating our findings and recommendations. The peer review team for this project consists of international and US based industry experts.

Chief Tom Jenkins has served as the City of Rogers, Arkansas Fire Chief since 2009. Prior to his arrival in Arkansas, he served as Deputy Chief for the City of Sand Springs, Oklahoma Fire Department. Chief Jenkins is a 2006 graduate of the NFA Executive Fire Officer Program and a Chief Fire Officer and Chief EMS Officer designee from the Commission on Professional Credentialing. Chief Jenkins is a regular presenter at national conferences and serves in various capacities on numerous boards and committees, including NFPA 1710. Chief Jenkins serves as an adjunct professor for Oklahoma State University, Drury University and Northwest Arkansas Community College. Tom served as the President of the IAFC from 2017 to 2018 and served on their Board of Directors from 2015 to 2019. He has served on the IFSTA Executive Board since 2017. Tom holds a Bachelor's in Fire Protection and Safety Engineering from Oklahoma State University and a Master's in Public Administration from the University of Oklahoma. He serves as a board member for the PulsePoint Foundation and National Fallen Firefighters Foundation. In 2020, Chief Jenkins was appointed to the Homeland Security Advisory Council for the US Department of Homeland Security.

Dr. Robert "Bob" E. England is an American political scientist with a high level of understanding of the American fire service. He has worked with emergency services leaders for over 25 years in organizations such as the International Fire Service Training Association (IFSTA), International Association of Fire Fighters (IAFF), International Association of Fire Chiefs (IAFC), and the National Fallen Firefighters Foundation (NFFF). He is an Emeritus Professor in the Department of Political Science at Oklahoma State University (OSU), where he taught for 32 years. England is the Founding Editor of the *International Fire Service Journal of Leadership and Management (IFSJLM)*, which is published by Fire Protection Publications at OSU. This academic journal, now in its fifteenth year, publishes peer-reviewed articles focusing exclusively on fire leadership and management issues. His scholarly work includes over 30 peer-reviewed articles in political science and public administration journals. He is coauthor of five books including *Managing Urban America*, which is now in its eighth edition. England is the co-founder of the Masters of Science in Fire and Emergency Management Administration at OSU and served as the first Program Director. He also served five years as an elected leader, including one year as chair, of the Stillwater, Oklahoma, school board.

Chief Doug DeVore is a retired Fire Chief who has served as an advisor and peer reviewer to chief fire officers for over 30 years and also worked as a fire apparatus and equipment manufacturer representative. He last served as Fire Chief of Chelan County Fire District 3 in Leavenworth, Washington, a combination department in a tourist town and wildland urban interface area. Prior to that, he was Fire Chief of the Kuparuk Oil Field Fire Department on the north slope of Alaska. He was a founding member and Assistant Chief of the Lakes Volunteer Fire Department in Alaska which consolidated with the Wasilla Fire Department to become Central Mat-Su Fire Department. He began his career in 1970 as a volunteer fire fighter in Kent, Washington.

Annex F: List of Recommendations

Key Recommendations

Key Recommendation 1: Appoint a Director of Emergency Services

Key Recommendation 2: Change the name of Pulaski County Public Safety to the Pulaski County Department of Emergency Services.

Key Recommendation 3: All fire departments, emergency management, and EMS should be reorganized and incorporated under a new Department of Emergency Services.

Key Recommendation 4: Phased Standardization of Assets, Operations and Administration

Key Recommendation 5: Pause the 8-year apparatus purchasing program

Key Recommendation 6: Ensure a minimum of 3 staffed ambulances, ALS or BLS, are available at all times and consider an additional staffed ambulance for daytime peak call volume.

Key Recommendation 7: Implement operational field supervisors for EMS.

Key Recommendation 8: Hire a Deputy Director of Safety and Training to begin to address the health and safety issues in the EMS and fire departments.

Key Recommendation 9: Medical evaluations and fitness standards programs need to be implemented.

Key Recommendation 10: Change the name of the Squad 9 program to Support Services within the Department of Emergency Services command structure and add a second daytime staffed unit.

Key Recommendation 11: An annual training plan needs to be developed for both fire and EMS agencies.

Key Recommendation 12: Develop better individual training plans and professional development programs for initial, ongoing, and regulatory topics as well as best practices to ensure that emergency responders are competent and capable of handling the emergencies they respond to.

Key Recommendation 13: Fire department trainings should be mandated by the county as weekly, not monthly, and a minimum attendance of twice a month must be a minimum requirement for continued membership and access to any individual or departmental benefits.

Key Recommendation 14: Two full-time, dedicated training coordinators are needed, one for EMS and one for Fire and Rescue.

Key Recommendation 15: Hire a Fire Code Official for Pulaski County.

Key Recommendation 16: Centralize recruitment processes for all fire departments and EMS with the county under the Department of Emergency Services.

Key Recommendation 17: Apply for a FEMA SAFER grant for a Recruitment and Retention Coordinator.

Key Recommendation 18: Implement incentives to recruit and retain volunteers and employees.

Key Recommendation 19: Offer single roles, specializations, and non-operational roles for volunteers.

Key Recommendation 20: Develop and initiate a Recruitment and Retention campaign for fire, rescue, and EMS responders in Pulaski County

Key Recommendation 21: Improve vehicle and equipment maintenance to meet manufacturer requirements, national standards and best practices.

Key Recommendation 22: Implement a cost recovery program for roadway calls, vehicle crashes, and other appropriate types of responses.

Key Recommendation 23: Develop a 5-year strategic plan for Pulaski County fire, rescue, EMS and Emergency Management.

Key Recommendation 24: Improve and clarify public information.

Key Recommendation 25: A basic system of accountability needs to be introduced where members are required to confirm when they are genuinely available and within a 5/10-minute response area. A simple volunteer staffing sheet can be completed weekly or an app/tech based solution.

Key Recommendation 26: Conduct a membership survey to identify qualifications, skills, and agency affiliations of all emergency responders in Pulaski County.

Recommendations

Recommendation 3A: Pulaski County to use Virginia Code 27-10 to combine all fire departments in Pulaski County under one fire authority.

Recommendation 3B: The Towns of Pulaski and Dublin should turn over fire department operations to Pulaski County under the new Department of Emergency Services.

Recommendation 3C: Voting for membership and operational positions should end as soon as possible.

Recommendation 3D: Apply for a Recruitment and Retention Coordinator and additional Firefighter/EMT positions through FEMA's SAFER Grant Program.

Recommendation 4A: Director of Emergency Services to develop a Strategic Plan for Pulaski County

Recommendation 4B: Pulaski County should produce a comprehensive fire, rescue, EMS, and emergency management annual report as a standard practice.

Recommendation 4C: Do not expand the Squad 9 program to 24/7 staffing, keep it a daytime staffing while enhancing evening volunteer staffing with sleeper programs, duty schedules, and other initiatives.

Recommendation 4D: Develop county-wide SOPs and policies under the new Department of Emergency Services.

Recommendation 6A: Replace the Pulaski County Fire Protection Committee with a Pulaski County Emergency Services Management Meeting and include EMS leadership.

Recommendation 6B: All fire departments must report NFIRS and upload them on a monthly basis.

Recommendation 6C: The Town of Pulaski does not need one engine for town response and one engine for county responses; this should be one engine for both.

Recommendation 6D: Change the shift schedule for Squad 9 to 06:00 to 18:00

Recommendation 6E: Expansion along with a higher level of accountability needs to be developed for the Squad 9 program.

Recommendation 6F: Pulaski County should work with VDOT to implement detour plans for Interstate 81.

Recommendation 6G: Update the response plan for Interstate 81 and other highways to maximum the safety of responding personnel and the public.

Recommendation 6H: All responders to roadways incidents should complete initial and annual TIMS training.

DRAFT F FOR CLIENT REVIEW

Recommendation 6I: Motor vehicle crashes (MVC's) are a core activity for many first responders in the county system but they urgently need coordinated, multi-agency training (including state and federal) on skills and techniques for this subject to become more proficient and safer. Multi-agency MOU's need to be developed urgently to define roles and responsibilities.

Recommendation 7A: The part-time EMS employee system should be revised to require a higher minimum amount of shifts per month.

Recommendation 7B: Adjust the vacation/leave accrual for those working 12 and 24 hour shifts to allow for more time off.

Recommendation 7C: Overtime and secondary employment must be properly managed so that employees have appropriate rest time.

Recommendation 7D: Ensure 3 ambulances are always staffed 24/7.

Recommendation 7E: Implement a shift supervisor program for EMS and an ALS supervisor

Recommendation 7F: Remove the ambulances from Hiwassee and Snowville. Reconfigure and license existing vehicles in those stations for EMS BLS first response.

Recommendation 7G: Implement an automatic response dispatch protocol for Pulaski Fire Department to first respond to all medical calls within their response area.

Recommendation 7H: Dispatch EMS units by unit number and not by station number. EMS units should notify dispatch when they are staffed or not.

Recommendation 7I: Implement a Community Paramedic Program

Recommendation 7J: Dispatch enough resources for high performance CPR and train regularly on the pit crew method to ensure all EMS personnel and CPR trained firefighters are proficient.

Recommendation 7K: Implement a policy on Ambulance Standbys

Recommendation 7L: Develop an appropriate routines schedule and hold crews accountable to that schedule.

Recommendation 7M: Consider implemented the Pulse Point Application for Pulaski County.

Recommendation 8A: Thoroughly evaluate the needs and scope of the Special Operations Team.

Recommendation 9A: Plans should be in place to install appropriate generators in all Pulaski County fire and EMS facilities including an automatic transfer switch plus regular testing and maintenance.

Recommendation 9B: All stations should have direct capture exhaust systems installed.

Recommendation 9C: Implement an annual garage door preventive maintenance program.

Recommendation 9D: Include immersive design elements in new and existing stations.

Recommendation 9E: Install monitored alarms in all fire and EMS stations.

Recommendation 9F: Purchase flammable and combustible storage cabinets for each station.

Recommendation 9G: Post standard signs on the fire and EMS station doors indicating that it is unstaffed or the crews may not be at the location and to call 911

Recommendation 9H: Consider a Volunteer Resident Program at all new and renovated fire stations.

Recommendation 9I: Renumber the EMS stations to coincide with the fire station/company numbers.

Recommendation 9J: Instead of renovating the Fairlawn EMS station, use some of that money to remodel the Fairlawn Fire Station for EMS crew staffing and emergency backup power.

DRAFT F FOR CLIENT REVIEW

Recommendation 9K: Conduct a structural engineering assessment of the Pulaski Fire Station.

Recommendation 9L: Plan for a new Pulaski Fire and EMS Station as the priority facility need.

Recommendation 9M: Future fire and EMS stations should be designed with essential elements of modern emergency services stations.

Recommendation 9N: Cover the ceiling of the apparatus bay at Twin Community with sheetrock.

Recommendation 10A: Use the funds saved by not purchasing a new fire apparatus and replace all extrication tools with smaller battery powered tools.

Recommendation 10B: Engines and rescue engines are not needed at the same station; combine them to be one multipurpose truck.

Recommendation 10C: Pause the purchase of additional fire apparatus for 2 to 4 years while other key recommendations of this report are implemented.

Recommendation 10D: Provide trailer training

Recommendation 10E: A policy should be in place that only firefighters trained and checked-off to drive ambulance should drive them while transporting patients.

Recommendation 10F: The fuel transfer trailers need additional oversight, approval, policies/procedures in place on transferring fuel, their design needs to follow standards on transferring combustible liquids, and those using the trailers need training on their proper use.

Recommendation 10G: Implement polices/procedures, training, and safety measures on all UTVs in Pulaski County.

Recommendation 10H: Require all UTV operators to have documented training and check offs before operating UTVs.

Recommendation 10I: Implement a county-wide policy on the use of flashing red lights on POVs.

Recommendation 11A: Only qualified and credentialed mechanics should be working on emergency vehicles.

Recommendation 11B: Fire and EMS officers need to utilize the Pulaski County work order system for maintenance requests.

Recommendation 11C: Implement a documentation program to record all vehicle and equipment inspections.

Recommendation 11D: Implement a tires and battery replacement plan for all emergency vehicles. Replace tires on emergency vehicles that are over 10 years old.

Recommendation 11E: A comprehensive asset management and equipment maintenance schedule needs to be developed to ensure items are inventoried, reflected in the county financial accounts, tracked and maintained to industry standards. Support Services (former Squad 9) program to implement and manage the portable equipment maintenance program.

Recommendation 11F: Ensure the aerial ladder testing to NFPA 1911 and ground ladder testing to NFPA 1932 is conducted annually.

Recommendation 11G: Conduct hose and nozzle testing per NFPA 1962 and consider hiring an outside company to conduct this annual service testing and inspections.

Recommendation 11H: Improve the SCBA inspection and maintenance program, ensure masks are properly cleaned and stored, and ensure proper record keeping.

DRAFT F FOR CLIENT REVIEW

Recommendation 11I: Ensure combustible gas detectors are on each engine and ladder. These should have a documented inspections and maintenance according to the manufacturer's requirements.

Recommendation 12A: Ensure that all responders are provided with the appropriate PPE and that it is properly maintained per the manufacturer requirements.

Recommendation 13A: A promotional process for fire and EMS should be developed and incorporated.

Recommendation 13B: Human resources should be more involved in the oversight and approval of EMS hiring and promotions.

Recommendation 14A: Recruitment and retention efforts need to be centralized and coordinated at the county level under the new Department of Emergency Services.

Recommendation 14B: Implement a county-wide policy on Junior Member programs based on best practices by the NVFC and VFIS.

Recommendation 14C: Pulaski County should investigate the VOLSAP program.

Recommendation 15A: Fire and EMS calls should be dispatched by unit and not by station.

Recommendation 15B: Plan to relocate the dispatch center to a location that includes immersive design elements and can be easily accessed by both fire and law enforcement partners.

Recommendation 15C: Pulaski County Sheriff's Office should remove the floor plan clearly visible at the public unsecured entrance.

Recommendation 15D: Discontinue the use of 10-code and improve radio communication practices to ensure status messages are properly acknowledged.

Recommendation 15E: CAD should be programmed with response plans by unit to ensure an adequate number of responders are on scene per type of call.

Recommendation 16A: Implement a clear communications procedure/policy to track time benchmarks, ensure consistency across all members, and report and evaluate those quarterly.

Recommendation 16B: Ensure that an adequate number of resources are dispatcher per type of call on the first alarm to obtain an adequate amount of responders to safely operate

Recommendation 17A: Pulaski County needs to implement policies, plans, and procedures to address the considerable issues in Safety, Health, and Wellness.

Recommendation 17B: Implement a medical examination program for all emergency responders in Pulaski County.

Recommendation 17C: Purchase a fit tester and conduct mask fit testing as required by OSHA.

Recommendation 17D: More attention and consideration needs to be given towards the mental health of emergency responders in Pulaski County.

Recommendation 17E: Pulaski County should conduct an assessment of its compliance with NFPA 1500 and develop a long-term plan to meet the standard.

Recommendation 18A: Improve the training record keeping system for all fire and EMS departments.

Recommendation 18B: Ensure that all personnel receive annual refreshers on driving emergency vehicles.

DRAFT F FOR CLIENT REVIEW

Recommendation 18C: Implement a county-wide policy on the driving and operating of emergency vehicles including minimum qualifications, initial and ongoing training, circle of safety, backing, intersections, emergent driving and other aspects.

Recommendation 18D: Implement Command Officer Tactical Training for all Fire and EMS Officers along with a county-wide policy on standards command practices.

Recommendation 18E: The Town of Pulaski should develop a policy and procedure for the training facility that strictly follows NFPA 1403 and maintain the required documentation on the inspections and use of the facility.

Recommendation 18F: The Town of Pulaski should implement a nominal fee for the use of the fire training facility.

Recommendation 18G: Improve the driveway access to the fire training facility.

Recommendation 18H: Pulaski County should utilize the free online training programs from VFIS University.

Recommendation 20A: Pulaski County should manage the ATL and annual county funding for all fire departments to enable a more efficient and appropriate use of funds.

Recommendation 20B: Implement a cost recovery program for billable calls

Recommendation 20C: Ensure compliance and eligibility for FEMA Assistance to Firefighters grants and apply for these grants to offset budgetary limitations

Recommendation 21A: Each water system should be evaluated in detail for compliance with ISO. Pulaski County should help those systems that need guidance in documentation and practices to achieve a maximum ISO rating.

Recommendation 22A: Develop a self-inspection program to increase the percentage of completed annual fire and life safety inspections.

Recommendation 22B: Plan to add a full time Public Education Coordinator to Pulaski County after the reorganization and initially proposed positions are filled.

Recommendation 22C: Properly secure all Knox Master Keys in a vehicle mounted electronic key secure devices.

Recommendation 22D: Develop plans, purchase equipment, and train responders on structure protection methods.