Tennessee County Fire Handbook

prepared by Kevin J. Lauer, Fire Management Consultant

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THE UNIVERSITY of TENNESSEE

CTAS
County Technical Assistance Service
In cooperation with the Tennessee County Services Association and the County Officials Association of Tennessee

TENNESSEE COUNTY FIRE HANDBOOK

Kevin J. Lauer
Fire Management Consultant

DEDICATION

The *Tennessee County Fire Handbook* is dedicated to Dwight and Gloria Kessel. Dwight Kessel gave 31 years of dedicated service to the people of Knox County as a Knoxville City Council member, Knox County Clerk and County Executive. During his tenure as County Executive, Kessel oversaw tremendous growth in the county's population and services provided. The county was handed several duplicate governmental services from the city such as schools, jails, libraries and indigent care (which became a model that other communities across the nation studied and used to improve their delivery of indigent care). All were successfully absorbed into the realm of county services.

In 1983 Knox County suffered some major losses from apartment fires, including one fatality. Kessel put together a task force to address what was needed to prevent these tragic events from re-occurring. In 1984 the County Commission passed a resolution establishing a fire prevention department. Building and fire codes were adopted and subsequently two groups were formed to enforce the codes. The building department addressed new construction practices and the fire bureau's role focused on fire prevention practices in both new and existing buildings. Over time the fire bureau expanded to provide public education and fire/arson investigation as well as code enforcement. This approach was unprecedented at the time on a county level and remains a model that most counties in the state should study to improve life safety and property loss reduction.

Even after Kessel's tenure in office, he has continued to improve county government across the state. The Kessel's generous endowment to the University of Tennessee was earmarked for special projects that the County Technical Assistance Service (CTAS) would not normally be able to fund. The endowment has made this groundbreaking evaluation of county fire protection possible. Many issues and concerns have been identified, and this book will assist county officials for many more years with improving fire protection.

The University of Tennessee and CTAS are extremely appreciative and grateful to have supporters like Dwight and Gloria Kessel who assist with the mission of improving the delivery of county governmental services across the state of Tennessee.

FOREWORD

County government officials and local citizens across the state face many challenges in regard to fire protection issues. The most serious of the concerns is the fact that the state of Tennessee has the second highest fire death rate in the nation. Many factors contribute to this grim statistic, including some of the deficiencies that are identified in this publication. Secondly, numerous counties are becoming more urbanized due to massive growth and changes in demographics and land usage. With the increased urbanization, more demands for traditionally "municipal" services are challenging county officials. One pressing service is in regard to fire protection. In the past, most counties have given donations to the local volunteer fire departments and some have bought apparatus for these departments. This action is being examined more closely across the state. With the costs of fire engines exceeding $150,000 per truck and ladder trucks in excess of $500,000, county officials see an increased need to ensure proper planning prior to these purchases in accordance to long range plans addressing the overall "fire situation." Several counties have to address the decreased availability of volunteer and part-time personnel during normal working hours. Fire prevention services, along with building codes, are an increasing service to improve public welfare and reduce losses.

The scope of this document is to determine the need for fire protection assistance to county governments, assess the current level of fire protection across the state and establish a reference source for improving the multiple versions of fire protection services. In order to accomplish this goal, initially two surveys were developed. One was sent to all County Executives/Mayors, and a more in-depth survey was sent to more than 650 fire departments. Additional site visits were taken to encourage fire departments to complete the evaluation survey. The following pages contain the results of this project. During the scope of this assessment, an additional 17 county projects were requested regarding fire protection issues. Some have been completed, while others are in various stages of completion. The challenges regarding the delivery of a balanced and progressive approach to fire protection will only increase as populations grow and demographics shift. Counties will be called upon to provide higher levels of fire protection services and must begin to plan for these issues prior to the occurrence of a crisis or catastrophe.

The County Technical Assistance Service (CTAS) intends to assist counties with these issues by providing comprehensive reference materials, educational opportunities addressing current and crucial topics, and a high level of technical assistance that most counties have found essential to the delivery of county services. It is the goal of CTAS to assist counties in providing the highest level of fire protection that is economically feasible in each jurisdiction that chooses to address this issue.

(Note: Most percentages referenced in this document were rounded to the nearest whole number; therefore, some tables that categorize all responders to the survey may not add up to 100 percent.)

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TENNESSEE COUNTY FIRE HANDBOOK

Kevin J. Lauer, Fire Management Consultant

I. EXECUTIVE SUMMARY OF STATEWIDE ANALYSIS

BACKGROUND

- Surveys were created to assess levels of fire protection from the county officials as well as the fire departments that deliver the service.
- Eighty-six of the 95 County Executives/Mayors returned the completed survey.
- Fifty-one percent of the 654 identified fire departments returned the assessment form.
- Fire department responses were compared with similar type departments: city, county, combination city/county, subscription/fee based and non-profits (traditionally mostly volunteer organizations), as well as population categories.

COUNTY EXECUTIVE/MAYOR SURVEY FINDINGS

- A high level of interest has been generated from county officials who must work with the various models of fire protection services.
- Twenty-one countywide fire departments as defined by T.C.A. § 5-17-101 et. seq. were identified as operating in the state.
- Ten counties that responded indicate that they have fire tax districts to finance fire department operations. Additional counties are currently looking at this option.
- Several county officials indicated their concern for a higher level of accountability from the independent fire departments that receive funds from the county. Also, a higher training and certification standard must be set to ensure a minimum level of competency throughout the state.
- The average per capita expenditure in counties that provide funds for fire protection was $7.31 when the top three counties were taken out of the equation. (These counties were taken out due to the large gap between them and the next highest per capita expenditure.)
- While several counties have subdivision regulations that affect fire protection (almost one-half), several indicate that the enforcement of these regulations is practically non-existent.
- Only eight counties have some type of organized fire prevention office.
- More than 60 percent of the counties indicate that they can use technical assistance in regards to numerous fire protection issues.

FIRE DEPARTMENT SURVEY FINDINGS

- More than half of the communities in the state are served by an Insurance Services Office's (ISO) rated Class 8, 9, or 10 fire department.
- Forty-two communities have an ISO Class 10 fire department. This is equivalent in insurance rating purposes to not having a fire department.
- Only 57 percent of fire departments versus 81 percent of county executives/mayors see the need for ISO rating improvement assistance.
- Fifty-one percent of municipal departments that responded to the survey provide primary fire protection to some area of the unincorporated portion of the county.
- Fifteen percent of these departments charge a fee or sell subscriptions for this service.

SERVICES PROVIDED

- Almost all fire departments have some type of mutual aid agreement in place with other departments.
- More than one-half of the departments have an automatic aid agreement with other departments. An automatic aid is an agreement that more than one department is automatically dispatched on a specified type of response without the other department requesting them. These can be beneficial in numerous ways, including ISO points.
- Of the departments that do not provide emergency medical first responder service, 41 percent of the incidents are fire related.
- Of the departments that do provide emergency medical first responder service, only 13 percent of the incidents are fire related, while 55 percent of the calls were medical related.

PREVENTION

- Less than one-half of all fire departments conduct pre-incident planning on all commercial structures within their jurisdictions.
- Most fire prevention activities conducted by fire departments were in the form of public education. Most of these specific activities were based upon visiting the schools once a year instead of targeting risk groups with education and codes enforcement efforts.

TRAINING

- More than 50 percent of the fire departments responding have little to none of their personnel formally trained in fire suppression, while only 16 percent of the departments have all personnel trained.
- The smaller communities and the non-governmental fire departments have a higher percentage of personnel not trained.
- Seventy-one percent of the departments have little to none of their personnel trained in hazardous materials recognition/response.
- A much higher percentage of trained personnel exists within departments that provide first responder medical service. Seventy-six percent of those departments have all or most of their personnel formally trained to a medical certification level.
- Only 32 percent of the departments responding have a training officer that is certified beyond a Firefighter I level.
- More than one-third of the departments do not have an appointed training officer.
- Seventy-eight percent of the fire departments indicate that they have a minimum monthly training requirement; however, the average requirement is less than the minimum required by ISO to receive full credit.
- More than one-half of all departments use the State Fire Academy to receive some training. The departments that protect larger populations and governmental departments have a higher percentage of on-campus attendance.
- Few fire departments utilize the National Fire Academy for on-campus advanced training courses.
- While 41 percent of departments claim to have some facilities for training, most of these consist of only a training room.
- Only 3 percent claim to have a drill tower and/or facility to conduct live burn training.
- Only 55 percent of the departments indicate that they have some personnel with Incident Command System training and 21 percent of the departments have personnel with basic hazardous materials training.
- Sixty-four percent of the departments responding indicated that they must conduct fundraising efforts in order to remain

operational. Departments serving a population of less than 2,500 conduct an average of 1,328 hours of fundraising a year.

CERTIFICATION

- Nearly one-third of the departments responding do not have anyone certified to the Firefighter I level. This is estimated to be much higher (more than one-half) once the non-returning departments are calculated in.
- Only 8 percent of the departments indicate that 90 percent to 100 percent of all personnel are certified to the Firefighter I level.
- Less than one-third of the responding departments have anyone certified to the Fire Instructor and/or Fire Officer level.
- A large contributing factor to the low levels of minimum training and certification within the state is the fact that no regulations exist that mandates the training. Low level of funding provided to most departments is another factor. Training is considered a non-essential function from an immediate financial standpoint.

SAFETY

- Nearly one-third of the departments responding do not have a standard operating procedures and/or guidelines manual.
- Forty percent of the departments that responded do not have an incident personnel accountability system in place.
- Only one-third of the departments indicate that they use an Incident Management System on all emergencies, with an additional 28 percent indicating that they do not use it at all.
- Twenty-eight percent of the departments do not use the federally mandated "two-in/two-out" rule when operating in a hazardous atmosphere. Most of the non-profit departments have difficulty assembling the minimum of four personnel in a timely manner during a daytime structure fire.

RESPONSE PERSONNEL

- The statewide average response for a night-time structure fire is one career and 10 volunteer/part-time personnel. Daytime response averages one career and 5.5 volunteer/part-time personnel.

FIRE APPARATUS AGE

- The statewide average age for a front-line pumper/engine is almost 18 years old.
- The average age of a reserve engine is almost 29 years old.
- The average tanker age is 20 years old.
- The average age of an apparatus in a community with a population of less than 2,500 is almost 23 years old while the average age in a community with more than 25,000 population is 14 years old.

TECHNICAL ASSISTANCE

- A large gap exists between the recognition of county officials and the fire departments for the need for technical assistance, evaluation and planning for fire protection.
- A significant contributing factor to this issue is the low levels of funding for fire protection across the state. While county officials see the need to evaluate and plan for fire protection prior to committing higher levels of funding, the operational personnel can see only the lack of funds as the major obstacle to improvement. However, without a short and long term plan additional funds may not be utilized in the most efficient manner.

GENERAL RECOMMENDATIONS FOR FIRE PROTECTION IMPROVEMENT

- Counties must increase fire prevention activities. The creation of a fire prevention office that conducts plan reviews, codes enforcement, thorough public education, fire investigations and recommendation of engineering improvements for fire protection will create a significant improvement to fatalities, injuries and property loss.
- Subdivision regulations need to be established/upgraded to address fire department access, fire flow and fire hydrant locations.
- Counties need to establish sprinkler system requirements in areas to address the increased population/commercial growth or size of structures. These regulations also reduce the overall community fire flow requirement that helps reduce the strain and the economic impact on the water utility districts.
- Many counties that are protected by independent fire departments are identifying the need for greater coordination and administrative support for these agencies. A senior fire administrator for the entire county is needed in many of these jurisdictions. This official can be called the County Fire Chief (this term can create a lot of resistance from the various independent departments) or the County Fire Coordinator. Whatever the title, the primary role is to evaluate current protection levels, develop long term plans and their budgets, and assist/provide coordinated training along with a multitude of other administrative functions that most independent departments do not have the time or capabilities to conduct.
- Departments need assistance with the delivery of fire protection services. This may be by the traditional means of increasing funding or by non-traditional means such as purchasing apparatus, providing insurance, funding fire prevention activities, establishing an incentive pay program, adding fire stations and location planning, providing in-kind services, assisting with secretarial functions, coordinating a Citizens Corps unit, providing scholarships for training activities, creating volunteer retirement programs, and assisting with grant writing, etc.
- Fire personnel must establish a minimum criteria in the following areas:
  - o All personnel must receive basic fire, haz-mat and incident command training within a specified time period of joining a department (recommended within the first year).
  - o All drivers must complete a specified amount of driver and pump operations training prior to operating equipment during an incident and should be at least 21 years old.
  - o Department personnel must complete a minimum amount of training per month/year.
  - o Require departments to complete incident reports and submit to the state.
  - o Monthly/quarterly activity reports and financial information should be submitted to the county. Copies of annual hose and pump tests (especially on county owned vehicles) should be submitted annually.
  - o Certification requirements should be established, and all personnel should be Firefighter I certified. Additional certifications can be required based upon rank, pay grade, etc.
  - o Encourage advanced training.
- Departments need assistance in acquiring the technology needed to conduct incident reporting, training/testing documentation and inventory programs. A computer and commercial software designed for these functions should be the minimum in each fire department.

- Multiple departments are encouraged to train together. This increases the confidence in the capabilities of others and helps eliminate turf war situations. A county training facility is an excellent opportunity for this to occur. This will provide ISO points to multiple departments.
- At a minimum, basic hazardous materials training must be provided, along with research materials for identifying an incident and taking the appropriate defensive actions.
- Joint departmental task forces addressing various specialty services can be formed to assist with the financial burden and manpower required in providing these services. Examples include fire investigation, wildland fire, haz-mat, public education and specialized rescue.
- Counties should assist with pre-planning activities. If a fire prevention bureau is operating within the county, fire prevention employees can assist the local departments with providing information, drawings, etc for these pre-plans.
- Counties should utilize CTAS evaluation and consulting services to evaluate current fire protection levels and assist with developing short- and long-term improvement plans.

These are general recommendations and may not be necessary in all jurisdictions. The recommendations are not intended to be THE road map for improved fire protection, but a general minimum set to improve service delivery. Each county must first evaluate its current situation. Plans for improvements will vary based upon this assessment.

II. CURRENT ASSESSMENT OF FIRE PROTECTION CAPABILITIES

The purpose of this study was to develop a baseline assessment of fire protection services and capabilities in unincorporated portions of counties throughout the state of Tennessee. Two surveys were developed and mailed. One survey was sent to all 95 County Executives/Mayors and a longer survey/assessment form was sent to 654 fire departments. Ninety-one percent of the County Executives/Mayors returned the completed survey forms, while 51 percent of the fire department surveys were completed and returned.

COUNTY EXECUTIVE/MAYORS SURVEY

The results of the County Executive/Mayors survey has not only allowed CTAS to understand the needs of these officials, but also has provided for portions of this document to be developed in response to these needs. A series of questions were asked in the survey in order to understand where county government stands with regard to fire protection.

COUNTYWIDE FIRE DEPARTMENTS

A total of 30 counties indicated that a countywide fire department structure existed within their respective counties; however, only 21 countywide fire departments were identified as operating as a single department. This in itself explains a certain amount of confusion that has existed in the fire service for many years. A "fire department" can be loosely defined as an agency organized to provide fire protection and prevention services along with a number of other emergency and non-emergency activities. These activities can include rescue, hazardous materials response and first responder medical to name only a few. A fire department can consist of one or multiple stations as long as its authority and existence is based upon a centralized charter. Over the years even though fire departments have consolidated or have added new stations, the communities still identify with the individual stations instead of the overall department. This situation has arisen out of resistance to change and overt actions in other instances to identify in the most advantageous position for the station. It is very important for each county to have an emergency services organizational chart that clearly defines the types of services available within the county (including county, city, private and volunteer organizations), the departments that provide these services and the stations and coverage areas of each department. This alone will help reduce the instances of turf wars that could ultimately harm the citizens in the time of an emergency.

FIRE DEPARTMENT FINANCING

The next item addressed in the survey was fire department funding and concerns. Ten of 86 counties responding indicated that fire tax districts had been established within their counties to provide funding for fire departments. Some of these counties had a centralized countywide fire department in place, while others addressed fire protection with contracts to existing municipal and volunteer agencies. One of the advantages to having fire tax districts for county government is the ability to have a greater amount of accountability and control in how the funds are used. A few jurisdictions provide for fire protection by means of utility type fees, assessed directly to the property owners, or by allowing or permitting a private fire department to provide fire protection services. The private fire services "subscription fee or fee for service" is charged directly to the property owners. The disadvantage of a subscription service is that a minority of citizens pays for the service, making the cost much higher to the actual subscribers. A flat rate fee schedule makes fire protection unaffordable

to some, unfair to many and unavailable to those unable to pay. Subscribers pay for a significant portion of the capital and operational expenditures through ever increasing rates, while non-subscribers may or may not receive the benefit of fire protection, based upon the fire department policy. In areas that have subscription services, non-subscribers are supposed to be assessed a Class 10 insurance rating (equivalent to no fire protection) per the ISO rules and regulations. Without an extremely complex administrative process, it is impossible to tell who does or does not have coverage. Most counties provide funding for fire protection by "donating" funds on an annual basis to the independent volunteer fire departments. Some counties provide insurance for fire departments and other in-kind services to assist with operational/administrative issues.

Per capita costs for fire protection have been calculated for each county in the state. Following are some of the statistics regarding per capita spending. (Note: $0.00 indicates that a county does not provide funds for fire protection.)

- The total per capita cost ranged from $0.00 to $150.46, with an average of $9.49
- Two of the top three departments in per capita cost include emergency medical services (ambulance transportation) in the Fire/EMS budget.
- Five of the counties do not provide any funding for fire protection. One of these is an all career county department that receives fees collected on power and gas bills. This is only permitted in T.C.A. § 5-16-101.
- When the top three and the $0.00 per capita counties are taken out of the equation, the average per capita cost is $7.31.

FIRE PREVENTION AND SUBDIVISION REGULATIONS

Some counties, while not providing fire suppression emergency response, do provide some level of fire protection through code enforcement, planning committees and subdivision regulations. Subdivision regulations can be of tremendous assistance when dealing with fire protection issues. The subdivision regulations should be used to address fire department access, as well as available and adequate water supplies for current and future needs. The regulations can assist counties with deferring all or some of the cost to those involved in the development of commercial and residential properties. Currently, 49 percent of the counties have fire hydrant placement requirements (though some admit that these are not enforced). Forty-eight percent of the counties have minimum water line size/fire flow requirements. (ISO does not even recognize a water line smaller than 6 inches. If lines are being installed below this minimum the community will not receive credit for them in the very important water portion of the evaluation). Fifty-five percent of the counties have minimum street width/grade requirements. While the existence of these requirements is a positive step, if the requirements are not enforced or are inadequate from the fire protection perspective, they can be creating a false sense of security and can actually have a negative economic impact (see chapters addressing ISO requirements and County Water Supply Planning.) As with most rules and regulations, these should be re-evaluated on a regular basis and updated to meet the current and future growth trends.

The amount of fire prevention activity is very low in the state on a county basis. Only eight counties have some type of Fire Prevention/Fire Marshal's office. The existence of a fire prevention

office can have one of the most significant returns on a dollar-for-dollar basis in both property saved and the prevention/reduction of injuries and deaths attributed to fires. This topic is addressed further in the Fire Prevention chapter.

TECHNICAL ASSISTANCE AND COMMENTS

The final two sections of the County Executive/ Mayor's survey asked what technical assistance was needed. A separate portion allowed for comments. The following response rates indicated that CTAS assistance would be used in the following areas:

- Grant writing assistance, 85 percent.
- ISO rating assistance, 81 percent.
- Development of model statutes regarding fire protection issues, 79 percent.
- Development of standard operating guidelines procedures, 78 percent.
- Master planning activities, 76 percent.
- Fire department evaluation/organization support, 75 percent.
- Volunteer retention program development, 66 percent.
- Resolution development/presentation support, 61 percent.
- Station location planning, 61 percent.
- NFPA standard interpretation/implementation support, 61 percent.
- Promotional process support, 31 percent.
- Hiring process support, 29 percent.

(Some respondents indicated that as they became more involved with fire protection issues, they would also use this assistance.)

As stated earlier, a comment section was provided that allowed the County Executives/ Mayors the opportunity to address specific issues that affect their counties and maybe others. A wide range of topics was addressed. They included the following:

- Funding–Many comments were received regarding the need to fund fire protection at a higher level. No comments stated or implied that too much money was being spent on fire protection. However, while many feel that more funds should be dedicated to fire protection, others felt that a higher level of accountability, reporting (both fiscally and activity based) and countywide planning should be part of the funding process. Also, the need to study fire tax districts was addressed.
- Grants–The need for grants to fund the large expenditures (apparatus, facilities and equipment) associated with fire protection was stated multiple times. Assistance from CTAS in planning for and securing these grants was requested.
- Insurance ratings–No comments indicated that any county was happy with its insurance rating. Many counties expressed the need to lower rates. Also voiced were concerns related to the inability to acquire insurance or to change carriers.
- Technical Assistance–Several counties stated that any and all assistance would be welcomed.
- Training–Several county executives recognized the need for additional training as well as funding issues related to acquiring this training.
- Minimum Standards–A few counties addressed the need for minimum standards. One comment, "We agree with minimum standards for everyone. Make changes and raise the bar slowly. If the bar is raised too high, too quickly, we'll lose more people." Another comment referred to this topic: "There needs to be a standard of training set by the state to mandate that firefighters complete a minimum standard of training prior to going to work as a firefighter. The state mandates that all EMS and Law Enforcement complete a minimum

training (requirement), and the same should be done for firefighters." (The CTAS Fire Consultant agrees with this statement. However, until a mandate does exist, this issue must be addressed on the local level.)

- Turf Wars–The concern about turf wars between various fire departments and rescue squads is a concern in many areas. The potential danger of these battles is recognized, and the need to resolve these issues through joint planning, training and cooperation is vital to the safety of the public.
- Consolidation of departments/services–The need for less redundancy of services and consolidation was addressed by some responses. Also, the delicate issue of bringing together several independent entities is a concern that can be addressed by joint master planning facilitated by an independent outside source.

FIRE DEPARTMENT SURVEY

The fire department survey takes a much more in-depth look at the individual departments to identify strengths and weaknesses that exist across the state. As stated earlier, only 51 percent of the departments returned the survey. Based upon experience and involvement in various departments and organizations, fire departments can be divided into three categories. These categories are a cross mix of municipal, county, volunteer and private departments, as well as small, medium and large populations.

- The top category operates with a high level of standards and training requirements; has the appropriate equipment for the hazards faced; conducts planning and evaluation methods for improvement; has an adequate number of personnel; has started additional services other than firefighting in response to community needs (such as prevention activities, public education, hazardous materials response, first responder medical and rescue services); and operates on a fiscally responsible budget. They also complete required documentation including incident reports filed with the state and testing of equipment.
- The middle category operates with varying degrees of standards and recognizes the need for training; has respectable amounts/types of equipment that is functional and reliable; has enough personnel to handle routine activities most of the time; realizes that more services should be offered, but may or may not offer them due to manpower, budgets, etc.; and generally are under-funded to adequately provide the necessary services. They may or may not complete incident reports on regular basis, but do test equipment as manpower/funds are available.
- The bottom category barely exists. The equipment is often unsafe and unreliable. Minimum and continual training is not required. They cannot assemble on a regular basis the minimum personnel to meet national standards and requirements, and generally operate on a shoe-string budget, often spending their own money for needed equipment and repair of existing equipment. They do not have the time ability to conduct needed testing of equipment, and most do not report incident responses to the appropriate agencies.

While 51 percent of the departments responded, most of this percentage came from the "top two categories" of the departments. Most of the bottom category departments do not have the time or desire to participate in assessment processes, even if they may ultimately benefit them. The statistics that are generated in this report do not reflect the responses of most of the bottom category in the state and if these assessments could be conducted, the whole

averages would be worse than what is being published. A significant portion of this data will be presented in tables and charts by department type and/or population served. It is important to note that while a county may have a population of 45,000, for instance, it may have 12 volunteer departments serving various population ranges. For comparison purposes, county officials should assess the square mileage and approximate population served by each department in the county.

GENERAL DEPARTMENT INFORMATION

As stated earlier, the fire department survey was sent to over 650 departments that had been identified across the state. Fifty-one percent of the departments returned the completed survey. Following are the types of departments and percentages of responses returned.

- Municipal departments–43 percent
  - o 51 percent of the these city departments provide fire protection outside of their incorporated limits
- County departments–6.4 percent
- Combination city/county departments–0.6 percent
- Subscription/fee based departments–1 percent
  - o 11 percent of the "traditional" type departments charge some amount of fees and/or subscriptions. Most of these are city departments that charge fees in the unincorporated portions of the county.
- Non-profit corporations (usually all or mostly volunteer departments)–44 percent
- Non-profit associations (departments that are operating without a charter)–5 percent

An additional classification of the departments that responded to the survey is based upon population served.

Population Served	Departments (by percent)
Less than 2,500	50.3
2,500 to 4,999	17.2
5,000 to 9,999	15.2
10,000 to 24,999	11.3
25,000 and up	6

The average number of personnel and the gender, based upon department and population served, is listed in the table below. If a department type or population category is not listed, no response was received by the department.

AVERAGE NUMBER OF PERSONNEL

Fire Department Type	Population	Full-Time Paid	Part-Time Paid	Volunteer	Male	Female
City	<2,500	0.5	1.5	14.4	15.4	0.9
City	2,500-4,999	0.8	2.1	19.2	20.7	1.4
City	5,000-9999	6.5	2.2	20.9	28.2	1.4
City	10,000-24,999	20.2	3.5	10.3	30.5	2.0
City	>25,000	56.8	1.0	25.8	80.0	2.3
Combination: City/County	5,000-9,999	0.0	0.0	18.0	18.0	0.0
Combination: City/County	10,000-24,999	25.0	0.0	100.0	122.0	3.0
County	5,000-9,999	1.0	0.3	69.7	63.3	7.0
County	10,000-24,999	0.5	0.3	111.3	102.2	9.5
County	>25,000	25.1	3.8	130.0	127.3	12.9
Subscription/Fees	>25,000	52.5	47.5	29.0	115.5	13.5
Non-Profit	<2,500	0.0	0.0	17.6	15.3	2.4
Non-Profit	2,500-4,999	0.0	0.0	22.5	20.1	2.5
Non-Profit	5,000-9,999	0.0	0.0	27.0	24.1	3.1
Non-Profit	10,000-24,999	0.8	0.0	48.8	44.3	5.7
Non-Profit	>25,000	0.5	0.2	50.1	48.0	3.7
Avg. of all departments		3.9	1.1	30.9	31.9	3.2

The table indicates that cities begin to rely more on paid personnel once the population reaches 5,000, while county departments increase the number of paid personnel when the population served exceeds 25,000. These averages are not intended to be used as a guide for hiring personnel, but as a reference to what the average department is currently doing in the state. Each community must decide upon its "acceptable level of risk" and plan for fire protection and hazard mitigation accordingly.

MUNICIPAL DEPARTMENTS IN THE COUNTY

As stated earlier, 51 percent of the city departments that responded to the survey provide "first due" (meaning the area is within their primary response zone) fire protection to some area of the unincorporated portion of the county. Fifteen percent of the city departments charge fees and/or subscriptions to county residents and 36 percent indicated that they receive some funds directly from the county government.

Seventy-six percent of the total area and 49 percent of the total population responded to by municipal departments is located outside of the city limits.

MUTUAL AND AUTOMATIC AID

Mutual aid agreements are vital to most departments in the state. While a significant number of departments are able to mitigate the routine emergency calls without assistance, few can successfully handle the large fire, hazardous

materials incident, specialized rescue, or multiple incidents at the same time without help from outside resources. Additionally, a well analyzed automatic aid agreement can benefit multiple jurisdictions by spreading the cost of equipment, facilities and personnel, as well as receiving additional points if the appropriate ISO rating criteria are met.

- Ninety-six percent of the departments that responded have mutual aid agreements in place.
- Fifty-five percent of the departments that responded have an automatic-aid agreement with one or more other departments.
- Of the non-municipal departments that responded, 75 percent have mutual and or automatic aid agreements with municipal departments.

With these statistics in mind, it is very important when evaluating fire protection in a community to look beyond the primary provider in order to see the "big picture." With an open mind and cooperation, fire departments can benefit each other at times, and everyone wins, especially the public.

TECHNOLOGY IN THE FIRE STATION

The advent of computers, e-mail and Internet communications have changed the way that all of society conducts business and their daily lives. The fire service is no exception to this rule. Access to training materials, research for new equipment purchases, communication with multiple fire stations and department members, as well as receipt of dispatch information, completion of run reports, management of personnel files, etc. are all functions that can be improved with the use of computers. The state fire marshal's office requests that incident reporting be completed by computer and e-mailed or placed on a disk to be sent to the office. Several commercial software packages are available to make incident reporting and record keeping much easier and more accurate. Successful grant applicants to the FEMA Firefighter Assistance Grant program can receive a computer with software if they don't already own one. Reporting to the state fire data collection authority is a requirement for receiving a federal grant under this program.

Of the departments that responded to the survey,

- 63 percent indicated that they had access to a computer that could be used to report to the Tennessee Fire Incident Reporting System (TFIRS).
- 61 percent have access to the Internet.
- 60 percent have access to an e-mail account.

These statistics must be taken into account with the fact that most of the bottom category of fire departments did not return the surveys. Once that information is factored in, the percentages should be lower. Access to this technology is a critical need. All fire departments need this technology in order to improve data collection as well as normal administrative functions in the fire service.

TYPES OF RESPONSE

The responses of the fire service are changing very rapidly. Just 15 to 20 years ago, most departmental responses were to fires only. In this time period the fire service has had to greatly expand its mission to include first responder medical, hazardous materials response, extrication and specialized rescue services, not to mention all of the non-emergency activities that fire departments coordinate and provide. The advent of "Homeland Security," or "Homeland Protection" as this may more accurately reflect the scope, has pushed the many services that are vital to each community that the fire service provides to the forefront.

The following tables show the percentage of calls broken down by type of department and community size of the surveys that were returned.

PERCENTAGE OF INCIDENT RESPONSES IN AGENCIES THAT DO NOT PROVIDE FIRST RESPONDER MEDICAL

Fire Dept Class	Population	Structure Fires	Brush Fires	Car Fires	Rescue	Haz-Mat	Alarms	Other
City	<2,500	35.7	26.3	10.6	4.7	0.4	8.2	14.1
City	2,500-4,999	22.8	21.7	20.3	1.8	4.9	9.8	18.8
City	5,000-9,999	20.2	11.3	13.0	21.7	2.0	16.8	15.0
City	10,000-24,999	21.3	17.5	5.6	25.0	3.0	13.8	13.8
City	>25,000	10.7	11.0	6.9	1.9	3.9	5.8	59.8
Combination: City/County	5,000-9,999	39.4	21.2	19.7	0.0	0.0	19.7	0.0
County	5,000-9,999	30.6	30.6	10.6	4.7	0.0	18.8	4.7
County	10,000-24,999	25.6	12.3	15.7	18.4	3.4	5.5	19.1
County	>25,000	16.5	16.2	6.8	13.0	2.1	10.7	34.7
Non-Profit	<2,500	23.0	25.1	9.9	9.6	1.1	12.3	19.1
Non-Profit	2,500-4,999	14.1	16.0	7.9	14.3	1.5	21.0	25.3
Non-Profit	5,000-9,999	17.8	14.7	8.3	12.9	1.8	17.7	26.7
Non-Profit	10,000-24,999	11.1	13.8	9.5	33.2	2.3	14.0	16.1
Non-Profit	>25,000	2.4	12.9	4.7	2.5	1.8	21.6	54.1
Statewide percentages		16.4	15.8	8.6	13.6	2.2	13.4	30.0

PERCENTAGE OF INCIDENT RESPONSES IN AGENCIES THAT PROVIDES FIRST RESPONDER MEDICAL

Fire Dept Class	Population	Structure Fires	Brush Fires	Car Fires	Medical	Rescue	Haz-Mat	Alarms	Other	Not Categorized
City	<2,500	8.4	10.3	3.8	39.3	6.9	0.5	7.2	6.7	17.0
City	2,500-4,999	11.6	10.5	4.5	45.8	6.1	2.4	8.7	10.4	0.0
City	5,000-9,999	6.9	3.2	2.8	57.1	8.9	2.5	8.6	10.0	0.0
City	10,000-24,999	6.1	3.9	3.2	57.9	1.8	3.3	6.3	17.6	0.0
City	>25,000	10.0	0.5	4.1	62.7	2.1	0.7	16.5	3.3	0.0
Combination: City/County	10,000-24,999	15.2	10.2	11.1	1.1	39.5	3.7	19.2	0.0	0.0
County	5,000-9,999	11.8	8.5	4.4	48.4	6.5	1.5	12.9	6.1	0.0
County	10,000-24,999	11.2	15.3	4.8	55.0	3.7	0.4	4.9	4.7	0.0
County	>25,000	3.1	2.4	1.3	63.2	12.8	0.6	11.9	4.6	0.0
Subscription/ Fees	>25,000	2.9	3.3	0.6	58.9	0.0	0.2	7.7	26.3	0.0
Non-Profit	<2,500	12.6	15.6	19.0	25.7	6.1	1.3	11.6	8.2	0.0
Non-Profit	2,500-4,999	8.3	13.3	4.7	42.7	5.0	1.6	10.9	9.2	4.3
Non-Profit	5,000-9,999	9.2	8.4	5.6	40.6	9.5	1.4	6.1	19.2	0.0
Non-Profit	10,000-24,999	9.8	6.4	2.5	48.8	12.3	1.4	6.5	12.3	0.0
Non-Profit	>25,000	7.2	6.4	2.7	45.0	15.3	2.2	6.4	14.9	0.0
Statewide percentages		5.9	4.9	2.6	54.9	8.0	1.1	9.2	13.0	0.4

EMERGENCY RESPONSES

For the purpose of this study, all departments contacted are considered "fire departments." Therefore, 100 percent of the respondents provide some level of fire suppression services. Fire departments do provide a varying degree of other services depending upon local capabilities, funding, and local need. The most common services can be classified into three categories: First Responder Medical, Hazardous Materials Response, and Rescue.

FIRST RESPONDER MEDICAL

An increasing demand for emergency response, in all communities across the state, is the need for pre-hospital emergency medical care. The increased usage and availability of 911 services, the aging of Tennessee residents, and the increased capabilities and availability of EMS providers have helped to fuel this trend. With the increased demand for emergency medical response, a two-tiered system has emerged. In numerous communities across the state various agencies are working together to provide a quick, efficient, and competent response to life threatening injuries and illnesses. Due to high call volumes, ambulance services typically cannot place ambulances and personnel in rural and remote locations. Most ambulance services must keep their equipment and personnel centrally located in urban areas, as dictated by hospital locations and call volumes. County fire departments, in order to have appropriate fire suppression responses, are typically located in

geographically supportive areas further from urban centers. In order to remove the gaps in medical service areas and to provide for initial response when ambulances are on other incidents or out-of-service, fire departments are providing "first responder" emergency medical services.

The first responder departments may provide varying degrees of medical care, depending upon available staffing and funds. The state department of health mandates that any personnel providing medical treatment within the state receive a specified amount of training and pass the appropriate test issued by the Department of Health, Emergency Medical Services Division.

The levels of training can be classified as

- First Responder–The most basic, which should provide initial patient assessment, oxygen therapy, CPR, Automated External Defibrillators or AEDs (if trained), and have the equipment and basic treatment/stabilization of injuries and illnesses.
- Basic Life Support–The next level of care provided by emergency medical technicians (EMT and EMT-IV's) includes delivery of oxygen and a limited number of other medications, usage of airway devices, and various treatments beyond the first responder level.
- Advanced Life Support–Performed by paramedics, advanced patient assessment, treatment procedures and medication delivery operating most of the time under pre determined physician approval. Many ALS engine companies can offer the same assessment and treatment services that an ambulance can, with the exception of transport capabilities. The goal of the pre-hospital EMS system is to provide a continuity of care that can be rapidly accessed and provide better opportunities for positive patient outcomes. Rapid ALS fire department medical care, equal to the care provided by ambulance personnel, can aide in decreasing patient mortality rates, shorten hospital stays and decrease long term health care costs.

In many counties, this care begins with a trained dispatcher in the 911 center giving instruction to a caller. The call is then advanced to the fire department and then to ambulance services, until the patient ultimately makes entry into the hospital system.

Of the departments responding to this survey, 55 percent indicate that they provide some level of EMS First Responder service. As indicated earlier, this number is most likely higher than the actual percentage due to the fact that departments providing first responder services are more progressive and are more likely to respond to assessments about their operations. Some charts follow that breakdown the percentage of departments providing EMS services by department type and community size.

Department Type	Departments Providing EMS Services (by percent)
City	58
Combination: City/County	50
County	48
Subscription/Fees	100
Non-Profit	49

Population Category	Departments Providing EMS Services (by percent)
< 2,500	41
2,500- 4,999	55
5,000- 9,999	53
10,000-24,999	67
>25,000	61

As with all levels of medical care, it is vitally important to have established medical protocols that are approved by a medical director (physician) and a quality assurance/quality improvement program in order to continue to improve the level of treatment received by the community. In some counties, the fire departments are operating under the local ambulance authority's protocols and medical director. The charts below indicate the percentage of departments providing EMS services with these programs in place, as well as the level of service provided (some departments provide various levels of service depending on availability of personnel and funding for equipment, supplies, etc).

Department Type	Level of Service			Percent of Departments with		
	First Responder	BLS	ALS	Protocols	Medical Director	QA/QI
City	88	36	7	55	52	33
Combination:						
City/County	50	50	0	100	100	0
County	100	20	20	60	60	3
Subscription/Fees	50	50	100	100	100	100
Non-Profit	81	44	10	56	51	29

Population Category	Level of Service			Percent of Departments with		
	First Responder	BLS	ALS	Protocols	Medical Director	QA/QI
< 2,500	93	32	4	39	32	14
2,500- 4,999	88	39	9	64	61	24
5,000- 9,999	93	34	7	45	41	31
10,000-24,999	67	42	4	67	67	46
>25,000	76	59	41	82	76	59

HAZARDOUS MATERIALS RESPONSE

Hazardous materials response is an ever-increasing demand in all communities across the state. With increased chemical (both legal and illegal) production and transportation, meth labs, as well as the homeland security concerns of chemical, biological and nuclear attacks, fire departments must realize that potentially every call could be a hazardous materials incident. Examples: unknown illness in a residence, residential as well as industrial structure fires, motor vehicle incident on the highway, propane/natural gas leak, etc. Therefore all departments, at the very least, must obtain a basic amount of training to recognize a hazardous material incident and to take appropriate initial responses to prevent further injury, death, or environmental disaster. All departments were asked if they provide hazardous materials response and for their level of response capabilities. Of the departments responding, 67 percent indicated that they provide some level of hazardous materials response.

Department Type	Percentage Providing Haz-Mat Response
City	78
Combination: City/County	50
County	81
Subscription/Fees	100
Non-Profit	60

Population Category	Percentage Providing Haz-Mat Response
< 2,500	45
2,500- 4,999	63
5,000- 9,999	76
10,000-24,999	81
>25,000	93

These percentages indicate the difficulty of providing the needed services in smaller communities. This is an excellent example of how multiple departments can work together to provide services to a larger portion of the public than if they were working alone. The response capabilities were classified as: First Responder (not to be confused with medical first responder), Technician, and Specialist. These coincide with the levels of training and the amount of equipment needed to operate at these levels. (First responder is the most basic, and specialist is the highest.) Some departments indicated multiple levels of response based upon availability of trained manpower and equipment.

	Percentage of Level of Service		
Department Type	First Responder	Technician	Specialist
City	77	21	7
Combination:			
City/County	50	50	0
County	76	71	5
Subscription/			
Fees	50	0	50
Non-Profit	95	16	2

	Percentage of Level of Service		
Population Category	First Responder	Technician	Specialist
< 2,500	100	10	0
2,500- 4,999	92	5	5
5,000- 9,999	90	21	5
10,000-24,999	83	38	3
>25,000	73	58	12

RESCUE SERVICES

Historically in the state, the volunteer rescue squad has provided rescue services in most jurisdictions outside of municipalities. These services ranged from the basic vehicle extrication and "first aid," to the more advanced departments providing search and rescue, trench, high-angle and swift water rescue services, to name only a few. A few rescue squads even provide varying degrees of fire suppression services. Most of the rescue departments have members that also served in the local fire departments. As time commitments of members have changed and increased call volume and training/specialization requirements have increased, numerous rescue squads were unable to maintain the level of services and personnel that is needed to continue to operate at this level. With these events occurring, fire departments began to train and provide these services as part of normal emergency responses. This trend will continue to occur in both career and volunteer agencies.

Below are charts showing the percentage of rescue services provided by the fire departments that responded to this assessment.

Department Type	Vehicle Extrication	Water Rescue	Confined Space	High Angle	Trench
City	49	14	22	14	16
Combination: City/County	0	50	50	50	0
County	62	29	5	14	62
Subscription/Fees	50	0	50	50	0
Non-Profit	44	15	10	11	8
Statewide Percentage	47	16	14	13	10

Population Category	Vehicle Extrication	Water Rescue	Confined Space	High Angle	Trench
< 2,500	29	7	4	3	3
2,500- 4,999	40	13	12	10	10
5,000- 9,999	56	18	13	15	7
10,000-24,999	69	28	28	22	22
>25,000	71	29	29	29	21

As you can see, vehicle extrication is the most common rescue service provided by fire departments. Most likely this is because fire suppression personnel must be on the scene to prevent/extinguish fires during rescue operations. The addition of extrication services ensured that rescue activities would not be delayed due to multiple agencies responding, setting up, etc.

Structural collapse training and response, also known as Urban Search and Rescue (USAR), was not identified in the survey. However, this specialty must be addressed by the fire service due to the increased amount of lightweight construction and subsequently early collapse during structure fires as well as increased occurrences of natural disasters.

NON-EMERGENCY RESPONSES

The types of non-emergency activities that a fire department provides to a community can be just as beneficial in terms of lives saved and dollar loss prevented as the actual incident responses. These activities or lack of, will often determine the outcome of an incident.

PRE-PLANS AND FIRE HYDRANT TESTING

Fire hydrant testing and pre-incident planning not only assist with determining operational readiness, but also provides valuable ISO rating points to improve insurance ratings within the community. Pre-incident planning also provides for valuable training opportunities that should assist with the identification of specific hazards in a structure/process that may save the life of a firefighter and/or citizen. With these points in mind, all fire departments must do pre-incident planning and either the water purveyor or the fire department must test all fire hydrants.

The following tables show the current percentage of responding departments that participate in these activities.

	Pre-Incident Plans		
Department Type	All Commercial	Target Haz. Only	None
City	43.8	20.5	35.6
Combination: City/County	50.0	0.0	50.0
County	23.8	28.6	47.6
Subscription/ Fees	100.0	0.0	0.0
Non-Profit	40.0	15.6	44.4

	Fire Hydrant Testing					
Department Type	Twice a Year	Once a Year	Other	None	Water Department	No Hydrants
City	16.4	43.8	1.4	9.6	27.4	1.4
Combination: City/County	0.0	0.0	0.0	0.0	100.0	0.0
County	14.3	33.3	0.0	9.5	33.3	9.5
Subscription/Fees	100.0	0.0	0.0	0.0	0.0	0.0
Non-Profit	11.9	34.4	0.0	19.4	23.7	10.6

FIRE PREVENTION

Fire prevention activities are critical to improving the current fire situation and establishing pro-active practices that will yield positive returns in the state. Tennessee has the second highest fire date rate in the nation. Many factors contribute to this grim statistic, including the lack of fire prevention work. Even in communities that do some type of fire education programs, these often only consist of visiting schools one time a year. The lack of on-going fire education programs targeted at all risk groups, codes enforcement (both building and fire), and engineering approaches to fire protection, puts the citizens in most counties at a greater than acceptable level of danger.

The following table indicates the percentage of responding departments that are participating in fire prevention activities.

Department Type	Fire Inspections	Public Education	Smoke Alarm Installation	Home Safety Checks	Fire Investigations
City	37	74	46.6	35.6	50.7
Combination: City/County	0	100	0	0	50
County	9.5	57.1	33.3	42.9	23.8
Subscription/Fees	100	100	100	50	100
Non-Profit	7	60	37.5	37.5	21.9

Collectively, fire prevention inspections are being conducted in very few communities. As stated earlier in the County Executive/Mayor's survey, only eight counties provide some type of fire prevention activities. This coupled with the lower amount of prevention/education programs in areas protected by county and non-profit fire departments can have a disastrous effect. This is an area that must be addressed to improve the overall fire situation in the state. (See Fire Prevention chapter.)

TRAINING

A progressive training program is one of the most critical functions that a fire department must conduct. No matter how many personnel they have, or how many fire trucks and air packs are listed on the inventory sheet, if the department does not a mandatory training program that starts with basic training for all members and progresses throughout their tenure, then fire losses and civilian deaths/injuries will be higher, and each member is more likely to receive a serious injury or worse: a line of duty death.

A good training program begins with mandatory formal basic fire training, such as provided by the state fire academy or an in-house career recruit class. This training should be completed before the member participates in any actual incidents. The increased risks that the fire service faces today does not leave room for "on-the-job" training alone. The program continues throughout the personnel's career utilizing both well developed in-service training and specialized training from external sources. The program develops competent instructors within the department and regularly analyzes the need for specific training to address emerging hazards and technology.

Each fire department was asked how many personnel who are involved in structural firefighting in their department received formal (not on-the-job) training (i.e. state fire academy Rookie School, career recruit academy, etc.) The answers were categorized as: All, Most (two-thirds), Some (one-third), and None.

- Over 50 percent of the fire departments have little to none (one-third to zero) of their personnel formally trained in fire suppression.
- Sixteen percent of the fire departments have 100 percent of their personnel formally trained.
- Thirty-three percent of the fire departments have most (two-thirds) of their personnel formally trained.

Following is a breakdown of the departments by type and population protected.

Percentage of Departments with Formal Fire Training

Department Type	Personnel Trained			
	All	Most	Some	None
City	21	33	40	7
Combination:				
City/County	0	50	50	0
County	10	43	38	10
Subscription/ Fees	100	0	0	0
Non-Profit	14	33	43	11

Percentage of Departments with Formal Haz-Mat Training

Department Type	Personnel Trained			
	All	Most	Some	None
City	16	16	42	25
Combination:				
City/County	0	50	0	50
County	19	33	33	14
Subscription/ Fees	100	0	0	0
Non-Profit	12	11	64	14

Percentage of Departments with Formal Fire Training

Population Category	Personnel Trained			
	All	Most	Some	None
< 2,500	7	29	49	14
2,500- 4,999	13	40	37	10
5,000- 9,999	15	33	53	0
10,000-24,999	33	44	19	3
>25,000	29	21	43	7

Percentage of Departments with Formal Haz-Mat Training

Population Category	Personnel Trained			
	All	Most	Some	None
< 2,500	4	10	36	49
2,500- 4,999	8	8	53	30
5,000- 9,999	9	13	60	18
10,000-24,999	31	31	28	11
>25,000	43	29	25	4

The fire departments were also asked for the number of personnel that has received formal hazardous materials training. As noted earlier, all members of a fire department must receive some haz-mat training due to the varied nature of the incidents to which they respond.

- Fourteen percent of the departments have all of their personnel formally trained to some level of hazardous materials response.
- Fourteen percent of the departments have most of their personnel trained.
- Seventy-one percent of the departments have little to none (one-third to zero) of their personnel trained to any level of hazardous materials response.

The following tables show the breakdown of hazardous materials training by department type and population served.

The final category of formal training pertains to departments that provide first responder medical services. As stated earlier, the state department of health mandates that personnel involved in patient treatment receive a specified level of training and certification. Legislatures looking to improve the competency level of fire and hazardous materials response should examine this concept because the level of training is significantly higher. For now, local jurisdictions must adopt stronger Standard Operating Procedures/Guidelines and support financially the requirement for formal training by all personnel. Statewide training percentages are as follows:

- 76 percent of the departments that provide EMS first response have most to all of their personnel formally trained to some level of medical certification.

- 21 percent have some personnel trained.
- Only 3 percent do not have any personnel formally trained.

Following is formal medical training by department type and population served.

Percentage of Departments with Formal Medical Training

Department Type	Personnel Trained			
	All	Most	Some	None
City	64	14	19	2
Combination:				
City/County	0	100	0	0
County	70	20	10	0
Subscription/ Fees	100	0	0	0
Non-Profit	49	23	24	4

Percentage of Departments with Formal Medical Training

Population Category	Personnel Trained			
	All	Most	Some	None
< 2,500	46	14	36	4
2,500- 4,999	64	18	15	3
5,000- 9,999	38	24	31	7
10,000-24,999	71	21	8	0
>25,000	71	24	6	0

TRAINING OFFICERS

One of the cornerstones of a good training program is to develop competent instructors within the department. The instructors are guided by a training officer that leads the planning and delivery of in-house and external training opportunities. In many departments the training officer plans, develops, and delivers most, if not all, of the training themselves. The following charts show the amount of departments that have a dedicated training officer, as well as the percentage of training officers that have some type of fire certification beyond Firefighter I (By certification it is meant that an independent practical and written examination has been successfully completed by a certification body. i.e. Tennessee Commission on Firefighting or similar agency.)

Department Type	Appointed Tr. Officer	Tr. Officer Certified
City	71	48
Combination:		
City/County	50	100
County	62	62
Subscription/Fees	100	100
Non-Profit	73	41
Statewide Average	71	45

Population Category	Appointed Tr. Officer	Tr. Officer Certified
< 2,500	52	31
2,500- 4,999	77	35
5,000- 9,999	73	40
10,000-24,999	86	68
>25,000	82	87

DEPARTMENTAL TRAINING REQUIREMENTS

Fire departments must train. In order to receive the maximum points in the training category from ISO, career personnel must complete 20 hours of training time each month. Volunteer agencies must also train and complete 4 hours of training monthly for maximum points from ISO. A volunteer department must be more flexible with training scheduling in order to accommodate the highest percentage of personnel who have full-time commitments beyond the fire department. It is vital to the safety of the fire personnel, as well as the public that they serve, that all departments have a minimum training requirement. This requirement should be listed on the recruitment materials that a candidate receives in order

to establish the mandatory requirement for employment and/or membership of a department.

Seventy-eight percent of the departments indicated that they have a minimum monthly training requirement.

Departments that have some full-time personnel have an average monthly training requirement of
- 8.1 hours/month for full-time personnel,
- 1.7 hours/month for part-time personnel, and
- 2.7 hours/month for volunteer personnel.

Departments that have some part-time personnel, without full-time personnel, have an average monthly training requirement of
- 1.2 hours/month for part-time personnel, and
- 3.2 hours/month for volunteer personnel.

Departments that have all volunteer personnel have an average monthly training requirement of 3.5 hours/month.

EXTERNAL TRAINING SOURCES

The state fire academy offers numerous courses for both career and volunteer fire agencies throughout the state for a reasonable price. The programs are classified in three areas:
- On Campus–Courses conducted at the fire academy's facility in Bedford County
- Field Programs–Courses offered at various locations across the state. Many of the courses can be scheduled at an individual fire department's facility with a minimum number of participants registered.
- Smoky Mountain Weekend–Numerous courses are offered on a scheduled weekend each spring in Sevier County. Usually attended by approximately 700 fire personnel from across the state.

The following tables show the percentage of departments participating in these programs.

	State Fire Academy Programs		
Department Type	On-Campus Programs	Field Programs	Smoky Mtn. Weekend
City	53	66	38
Combination:			
City/County	0	100	0
County	67	67	52
Subscription/			
Fees	50	0	100
Non-Profit	37	54	39

	State Fire Academy Programs		
Population Category	On-Campus Programs	Field Programs	Smoky Mtn. Weekend
< 2,500	28	46	23
2,500- 4,999	28	58	30
5,000- 9,999	58	64	44
10,000-24,999	56	69	58
>25,000	79	71	71

The National Fire Academy located in Emmitsburg, Maryland, is another excellent source for various training programs. Three categories of training deliveries were assessed in the survey.
- Tennessee Weekend–An entire weekend on campus devoted to training fire personnel from Tennessee. The courses are generally 16 hours in length and give fire personnel from various types of departments across the state the opportunity to network.
- Two Week Programs–These advanced courses are geared toward administrative and up-and coming fire personnel. They are generally 80 hours in length and qualify for college credit hours.
- VIP Programs–Volunteer Incentive Program courses are advanced programs geared

toward administrative officers of volunteer fire departments. Courses are shorter (usually six days) in length to better accommodate full time jobs and also qualify for college credit hours.

The percentage of fire departments in Tennessee with personnel participating in these courses are listed below.

	National Fire Academy Programs		
Department Type	TN Weekend	Two-Week Programs	V.I.P. Courses
City	25	12	8
Combination:			
City/County	0	0	0
County	38	19	5
Subscription/ Fees	100	50	50
Non-Profit	30	7	8

	National Fire Academy Programs		
Population Category	TN Weekend	Two-Week Programs	V.I.P. Courses
< 2,500	14	1	4
2,500- 4,999	15	3	5
5,000- 9,999	38	9	9
10,000-24,999	44	22	14
>25,000	64	29	8

Several community colleges across the state offer advanced fire and emergency management related programs. Only 14 percent of the departments have personnel enrolled in these courses. The National Fire Academy has a model Bachelor's Degree program that it administers through seven universities across the country. These courses can generally be taken in a distance format and allows fire personnel to continue to work while receiving the advanced training and knowledge needed to successfully administer an emergency services organization into today's changing world. Only 6 percent of the departments across the state indicated that they have personnel enrolled in these programs.

There are several sources of independent training opportunities that can be purchased by departments to assist with training multiple personnel. These programs are satellite- or video-delivered media that allow departments to keep up to date with the latest changes in the fire service. Some of the most commonly used programs are

- The Fire and Emergency Television Network (FETN)–delivered by satellite. Five percent of the departments in the state participate in this program.
- The Working Fire video–12 percent of the departments receive this monthly program.
- The American Heat video–4 percent of the departments receives this monthly program.

FACILITIES FOR TRAINING

An important component of any training program is the ability to conduct training in an appropriate environment. ISO recognizes this need and incorporates it into the training portion of the assessment. Forty-one percent of the fire departments claim to have some type of training facility; however, most of these consist of only a training room. While a training room is important, departments must be able to conduct training with hands on, realistic scenarios in order to become more proficient. Other department training facilities included the following:

- 19 percent of departments have some type of props to practice with,

- Only 3 percent claim to have a burn building to simulate live fire extinguishments and rescue situations,
- 3 percent of departments have a drill tower,
- 4 percent of departments have a fire hydrant cutaway, and
- 3 percent of departments have a fire pump cutaway.

Multi-departmental or regional training facilities may be a more economic alternative in order to increase the ability to train fire-fighting personnel in counties.

HAZARDOUS MATERIALS AND INCIDENT COMMAND TRAINING

As stated earlier, all fire department personnel must receive hazardous materials training due to the multiple hazards that are faced on a regular basis. The foundation for responding to a large-scale event such as a haz-mat, structure fire, or multi-casualty incident is based upon a well-organized incident command system. Only 55 percent of the fire departments in the state have personnel with Incident Command System (ICS) training. This course should be taught to all fire personnel and implemented by all fire departments in the state. A large-scale incident is practically impossible to mitigate safely and properly without the use of an ICS model.

Only 21 percent of fire departments across the state have some personnel with hazardous materials operational level training. Twenty-nine percent of the departments have some personnel with radiological monitoring and hazardous materials technician level training. A breakdown of the departments by type and population served shows a direct correlation with personnel trained versus population category. This reinforces the fact that smaller communities must take an extra effort to provide these important courses.

Percentage of Departments with Haz-Mat Training

Department Type	Incident Command System	Radio-logical Mon.	Haz-Mat Operat. Level	Haz-Mat Tech. Level
City	51	30	23	30
Combination:				
City/County	50	50	0	50
County	67	71	57	62
Subscription/				
Fees	100	100	50	50
Non-Profit	56	23	15	24

Percentage of Departments with Haz-Mat Training

Population Category	Incident Command System	Radio-logical Mon.	Haz-Mat Operat. Level	Haz-Mat Tech. Level
< 2,500	41	7	6	7
2,500- 4,999	43	23	8	25
5,000- 9,999	67	36	22	33
10,000-24,999	69	44	42	56
>25,000	82	71	64	61

FUND RAISING EFFORTS

One of the consistent concerns, by both county officials and fire department personnel, is the lack of funds available for fire fighting and the need to augment public (tax) funds with alternative finances. Sixty-four percent of the fire departments that responded to this survey claim that they must participate in fundraising activities in order to operate their agencies. Average hours the departments spend in fundraising activities are listed in the following table.

Fundraising

Department Type	Average Hours per Year
City	780
County	1620
Non-Profit	1131

Fundraising

Population Category	Average Hours per Year
< 2,500	1328
2,500- 4,999	955
5,000- 9,999	970
10,000-24,999	1181
>25,000	950

As can be seen, the smaller as well as the more rural departments must commit a higher amount of man-hours to fundraising in order to be able to operate their departments. If the same amount of hours were dedicated to additional training, the operational effectiveness of these departments would be significantly higher.

CERTIFICATIONS

Certification of fire personnel by the Tennessee Fire Commission is an independent source to verify that training received from various entities meets the applicable national standards. Typically, each level of certification requires prerequisites; a practical (hands-on) examination and a lengthy written examination administered by the state. This process is similar to state licensing of health care personnel with the exception that there isn't any mandatory requirement that fire fighters have to be certified (with the exception of paid personnel in order to receive the small pay supplement from the state when funded). The issue of mandatory training and certification is of increasing concern to many people both inside and outside the fire service. Those in favor of mandatory certifications and training feel like this will increase the knowledge and abilities of the fire service in general, leading to decreased losses of life and property, as well as begin to grant fire department personnel professional recognition such as that obtained by members of the healthcare and various other traditional professional fields. Without these requirements being mandatory, local jurisdictions and departments must address this with local policies and rules.

Each department was asked to indicate the percentage of personnel that hold the Firefighter I certification from the Tennessee Fire Commission or similar certifying agency. Of the departments responding to this study from across the state,

- 31 percent do not have anyone certified at this level. (It is estimated that this number is actually higher.)
- 24 percent only have 1 percent to 24 percent of personnel certified.
- 15 percent indicate that they have 25 percent to 49 percent of personnel certified.
- 12 percent of the departments have 50 percent to 74 percent of personnel certified.

- 9 percent of the departments have 75 percent to 89 percent of personnel certified.
- 8 percent have 90 percent to 100 percent of personnel certified as a Firefighter I.

A breakdown by department type and population served indicates the percentage of certified personnel

Firefighter I Certification
Percentage of Departments

Department Type	None	1-24	25-49	50-74	75-89	90-100
City	33	26	11	14	3	14
Combination: City/County	50	50	0	0	0	0
County	29	29	14	14	0	14
Subscription/Fees	0	0	50	0	50	0
Non-Profit	31	23	17	12	13	4

Firefighter I Certification
Percentage of Departments

Department Type	None	1-24	25-49	50-74	75-89	90-100
< 2,500	43	19	13	10	9	6
2,500- 4,999	35	28	10	12	10	5
5,000- 9,999	27	29	18	15	5	5
10,000-24,999	22	22	22	11	14	8
>25,000	7	29	18	18	11	18

Beyond the Firefighter I certification level, various other certifications exist. Each department was asked if any personnel have the following certifications. Statewide the percentage of departments with personnel certified to the following levels include

- Firefighter II–54 percent,
- Fire Instructor I–28 percent,
- Fire Instructor II–7 percent,
- Fire Officer I–22 percent, and
- Fire Officer II–10 percent.

The following table is a breakdown of department by level.

Percentage of Departments by Type with Certified Personnel

Department Type	Firefighter II	Fire Instructor I	Fire Instructor II	Fire Officer I	Fire Officer II
City	47	30	10	27	14
Combination: City/County	50	50	0	50	0
County	62	48	10	29	10
Subscription/Fees	100	100	100	100	50
Non-Profit	56	24	4	18	8

SAFETY

The foundation for safe fire department operations is based upon a thorough analysis of hazards in the community and the risks that a department is willing to take in order to mitigate hazardous conditions. These issues must be addressed in a Standard Operating Procedures and/or Guidelines manual. The manual should establish rules and regulations for the department to follow and specific procedures or general guidelines addressing fire department operations. Thirty percent of the departments responding to this study indicated that they do not have a SOP/SOG manual in their department. The actual number of departments that do not have these documents is estimated to be higher, due to the "lower category" (as defined earlier in this document) of departments that did not respond.

Forty percent of the departments that responded to the survey do not have an accountability system in place that identifies who is working on an emergency scene and where are they located. A significant number of firefighter fatalities have been attributed to not having an accountability system in place and operational. Often times when a fire fighter working inside a structure fire or other hazardous environment becomes displaced from their crew and/or hose-line, an accountability system is used to identify that a crew is no longer intact and emergency rescue operations are initiated almost immediately. When a system is not in place, valuable time can elapse before it is discovered that a firefighter is missing and often the member has sustained fatal injuries before being discovered/rescued. OSHA and NIOSH have sited this as a contributing factor in numerous serious injury and fatality investigations.

A well-planned and practiced Incident Management System is vital to handling both small and large-scale incidents as efficiently and safely as possible. The key to being able to function appropriately on a large incident is to have practiced and refined the system on small-scale events. Therefore, the IMS must be used on all emergency responses in order to gain a high level of proficiency. Only 34 percent of the departments responding to this survey indicate that they use an IMS on all emergency responses. Twenty-eight percent do not use an Incident Management System at all.

Federal regulations require that personnel operating in a hazardous atmosphere (structure

fires, haz-mat incidents, etc.) cannot make entry without at least one other crew member. Two additional members must be ready outside the "hot zone" in order to initiate a rescue in case the operating crews become incapacitated. This is commonly known as the "two-in/two-out" rule. Twenty-eight percent of the departments operating do not use this rule during operational incidents. Additionally, only 36 percent of the departments utilize Rapid Intervention Crews during an emergency.

Infection control programs are necessary to prevent the transmission of communicable diseases from both the public as well as other fire service personnel. Several regulations address the needs and requirements for these programs in the emergency services. Only 42 percent of the departments responding indicate that they have an infection control program in place.

A qualified safety officer is a necessary position in any fire department that is attempting to meet recognized standards such as NFPA 1500 Standard on Fire Department Occupational Safety and Health Program. The following tables indicate the percent of departments that have an appointed safety officer and the percentage of those safety officers that have any type of fire certification.

Department Type	Appointed Safety Off.	Safety Off. Certified
City	42	32
Combination:		
City/County	50	100
County	33	29
Subscription/Fees	50	100
Non-Profit	46	19
Statewide Average	44	25

Population Category	Appointed Safety Off.	Safety Off. Certified
< 2,500	28	5
2,500- 4,999	47	18
5,000- 9,999	51	36
10,000-24,999	58	38
>25,000	50	36

STRUCTURE FIRE RESPONSE

The final criterion addressed in this study concerning fire department safety is the average number of personnel operating at a structure fire. The two categories that were chosen to classify personnel are Career and Volunteer/Part-time. These categories were chosen because in general terms, career personnel are available almost immediately to respond from the fire station or the apparatus, and volunteer or part-time personnel must be summoned from various locations (work, home, etc.) when a call is received. This in turn increases turn-out/response times. Of the departments responding, the statewide personnel response average to a daytime structure fire is 0.94 career personnel and 5.54 volunteer and/or part time personnel. The evening response average was almost identical for career personnel (reflecting most are on 24-hour shifts), but the volunteer/part-time average basically doubled. The evening averages make it difficult to successfully and safely initiate an aggressive interior attack with all of the necessary support functions. However, the daytime averages make it basically impossible. The staffing levels must be increased to improve safe and effective operations, as well as to gain needed ISO points. The table on the following page shows the averages for each department type and population category.

Fire Dept. Category	Population Category	Average Number of Responders per Structure Fire			
		Evening Career	Evening Volunteer/ Part-Time	Daytime Career	Daytime Volunteer/ Part-Time
City	<2,500	0.2	9.4	0.2	5.9
City	2,500-4,999	0.9	11.3	0.8	6.9
City	5,000-9,999	3.3	10.8	2.8	6.1
City	10,000-24,999	7.0	5.6	6.8	2.6
City	>25,000	10.3	5.3	10.3	5.3
City Average		2.4	8.8	2.3	5.3
Combination: City/County	5,000-9,999	0.0	9.0	0.0	6.0
Combination: City/County	10,000-24,999	8.0	4.0	8.0	4.0
Combination: City/County Average		4.0	6.5	4.0	5.0
County	5,000-9,999	0.3	12.3	0.7	6.0
County	10,000-24,999	0.8	15.2	0.8	8.5
County	>25,000	4.4	11.1	4.4	6.6
County Average		2.3	10.9	2.3	6.1
Subscription/Fees	>25,000	5.5	13.5	5.5	8.5
Subscription/Fees Average		5.5	13.5	5.5	8.5
Non-Profit	<2,500	0.0	8.2	0.0	4.8
Non-Profit	2,500-4,999	0.0	10.7	0.0	6.2
Non-Profit	5,000-9,999	0.0	12.9	0.0	6.4
Non-Profit	10,000-24,999	0.4	17.1	0.4	8.1
Non-Profit	>25,000	0.0	16.8	0.1	8.3
Non-Profit Average		0.0	10.5	0.0	5.6
Statewide Average		0.96	10.02	0.94	5.54

EQUIPMENT

Fire departments must conduct testing of equipment or a regular basis to ensure that the equipment maintains a high level of safety and reliability during usage. Additionally, pump and hose testing cycles are part of the ISO rating system. As with any equipment testing and/or maintenance routine, it is vital to ensure that thorough records of these tests are made and kept. Without these records, it is impossible to obtain the ISO points for this testing. Also, lack of good testing records will make it extremely difficult to successfully defend against the plaintiff's claims in any lawsuit alleging negligence in the maintenance of equipment when a defective piece of equipment contributes to a personal injury or loss of property.

Of the fire departments that responded, 76 percent indicated that they conduct hose testing, with 68 percent of the departments conducting this operation on the annual schedule needed for the maximum ISO points. Seventy-seven percent conduct pump testing, with 78 percent testing on an annual basis.

Ladder testing is another important testing category that should be conducted an annual basis. Twenty-five percent of the departments conduct ladder testing, with only 20 percent on an annual testing cycle.

Forty-one percent indicated that either they did not have or did not know if they have the minimum equipment needed to receive the maximum ISO points for each applicable apparatus.

The age of fire apparatus is an important factor when planning for fire protection and capital equipment replacement schedules. Of course other factors such as amount and types of usage, maintenance schedules, etc., must also be taken into account. It is important however for fiscal planning purposes to establish replacement schedules for front-line apparatus. The following tables indicate the average age for equipment by fire apparatus type, department type and population served. As can be expected, the smaller communities and non-profit departments have the older apparatus, due to the difficulty in raising funds for these large purchases. Also remember that these are averages, and that for every new truck purchased this year, the same number of 40-year-old apparatus

Average Age of Apparatus by Department Type

Department Type	Front Line Pumper	Reserve Pumper	Tanker	Ladder	Quint	Brush Truck	Command Unit	Haz-Mat Unit	Heavy Rescue	Light Rescue	Support Vehicle
City	15.3	27.8	20.2	16.4	8.0	19.0	7.8	11.4	6.6	11.0	11.0
Combination:											
City/County	24.7	N/A	20.7	19.0	N/A	11.0	3.0	N/A	13.0	3.0	N/A
County	16.5	24.3	19.7	N/A	6.0	16.6	5.8	11.2	7.0	13.5	13.2
Subscription/ Fees	10.6	14.0	14.0	29.5	10.5	12.0	6.6	19.0	N/A	19.7	19.2
Non-Profit	19.9	32.0	20.4	24.8	N/A	18.6	10.3	N/A	13.3	12.2	13.4
Statewide Average	17.7	28.8	20.0	19.1	8.1	18.0	8.1	11.9	10.6	12.0	12.9

Average Age of Apparatus by Community Size Protected												
Department Type	Front Line Pumper	Reserve Pumper	Tanker	Ladder	Quint	Brush Truck	Command Unit	Haz-Mat Unit	Heavy Rescue	Light Rescue	Support Vehicle	Statewide Average /Pop.
<2.500	22.7	37.9	22.5	N/A	15.0	22.2	11.0	8.0	4.0	16.5	17.0	22.8
2.500 to 4.999	19.7	28.5	21.2	27.7	N/A	19.6	12.0	N/A	5.0	11.0	10.5	19.4
5.000 to 9.999	19.4	28.9	19.8	20.2	11.0	17.1	9.7	13.0	17.8	11.7	14.7	18.4
10.000 to 24.999	15.9	30.2	19.0	14.4	22.0	18.4	7.8	19.5	8.8	9.6	13.2	16.6
>25.000	12.8	22.3	18.4	20.4	4.4	14.1	5.0	10.6	10.3	13.2	11.8	13.9

TECHNICAL ASSISTANCE

The fire departments were asked the same questions as the county executives/mayors in regards to the need for technical assistance. The table below reflects their answers in a comparative basis.

Technical Assistance	Percentage of County Mayors	Percentage of Fire Department
Grant writing assistance	85	62
ISO rating assistance	81	57
Development of standard operating guidelines/procedures	78	52
Master planning activities	76	32
Fire department evaluation/organization support	75	48
Volunteer retention program development	66	54
Resolution development/presentation support	61	34
Station location planning	61	21
NFPA standard assistance/implementation support	61	36
Promotional process support	31	14
Hiring process support	29	11

As is obvious from the table, elected officials see a much greater need for technical assistance than fire department personnel. Several factors can be attributed to the wide range between the county mayors and fire department administration. The fact that only 32 percent of the fire departments see the need for master planning versus 76 percent of the Mayors is based on a major obstacle to fire department vision–lack of funding. Almost without exception, the fire departments don't have a level of funding that allows them to think, much less plan, beyond survival in the current budget year. The common statement among fire officials is, "Why plan if you don't know if you will even have enough money to put fuel in the vehicles." Until fire protection at the county level rises to the stage of being considered a basic service, the need–in

fact the very desire to do master planning–will be a low priority for fire service leaders. And yet, if a fire department does not regularly evaluate their operations and changes in the demographics of the county and the need to map out a course of action for improvements, any additional revenues received will not be utilized in the most effective manner for the greater benefit. This "survival mode" lack of planning becomes a vicious circle and the level of fire protection never rises.

Both Mayors and Fire Administrators agree that help in finding grants and other sources of operating funds is the highest priority in technical assistance. Once fire protection is recognized as part of the infrastructure of county government and annual, adequate funding of fire department operations is a foregone conclusion, master planning will begin to occur. Master planning can only occur in situations where basic needs have been met and the possibility of improvements in the level, delivery, or efficiency of service levels can be anticipated in the future. Then and only then, will there be an incentive to do fire department master planning.

An additional area that shows a large difference between fire personnel and county officials is the subject of fire station location planning. This is a vital area that can have economic implications for multiple years. Commonly, fire stations are placed on free or cheap land with little or no consideration for the strategic differences that distance to structures makes on ISO ratings and that response time makes in the saving of both lives and property. This so-called free land actually costs hundreds of thousands of dollars over the life of the fire station in extra dollars in insurance premiums over the course of an ISO rating period. There are numerous instances in the state where fire departments have not looked at the big picture and have located fire stations practically within sight of each other. These situations create turf war situations and do not provide the proper service to the public. County government can no longer afford to support such a waste of precious resources. Each fire station must have its coverage area maximized to the greatest extent possible.

With due apology on the front end, it must be said that many fire departments do not see the need for technical assistance because they do not know they need it. Since they struggle for survival just to keep the doors open and trucks running–in many cases spending more time on fund-raising than on training–it is easy to see why they have not made better strides to raise the level of the fire protection playing field. Some fire departments deliberately resist change. They have a "closed door" policy and operate what may essentially be called a "good ole boy's club." The general public is not aware, or for that matter capable, of making any judgments about how good or bad a fire department may be operated. Without fear of any rebuttal, it can be clearly stated that any fire department that has existed for more than three years and has a Class 9 or 10 ISO rating is in serious need of technical assistance. Some departments do not want an outside agency assisting them in order to prevent their operations from being evaluated and ultimately having to "change" the way they operate.

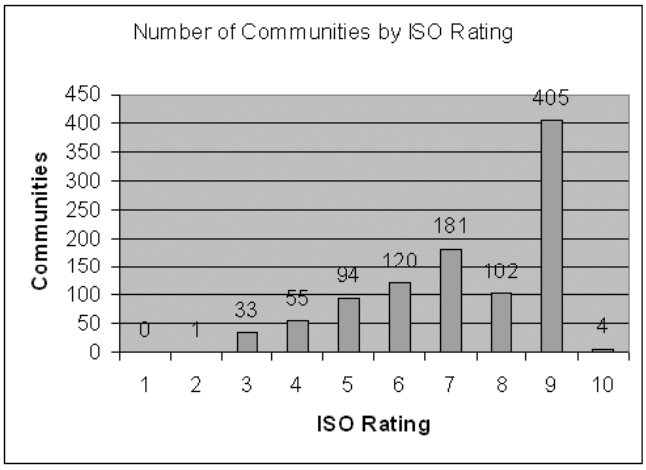
III. ISO RATINGS AND COUNTY GOVERNMENT – WHAT IS ISO?

The Insurance Services Office, Inc., also known as ISO, is a for-profit corporation that works for insurance companies to evaluate the capability of a community to suppress fires. Through an

extensive rating schedule, ISO sets the Public Protection Classification for the area that it is evaluating. The schedule provides a national standard that fire departments and government agencies can use to plan and budget for facilities, equipment, and training activities. This Public Protection Classification (PPC) impacts every person that buys fire insurance in that community.

RATING CLASSES

Communities that choose to improve their fire protection based upon the ISO rating schedule will benefit from lower insurance premiums. ISO rates an area on a scale of 1 through 10. An ISO rating of 1 is the best (less than 45 in the country). An ISO rating of 10 is equivalent to not having any fire protection. If a fire department has not been rated by ISO, they have the equivalent of a 10 rating. In Tennessee, ISO has rated four communities with a 10. An additional 42 communities that have not been rated have the equivalency of a Class 10 rating in the state. According to ISO, the following PPC's have been rated.



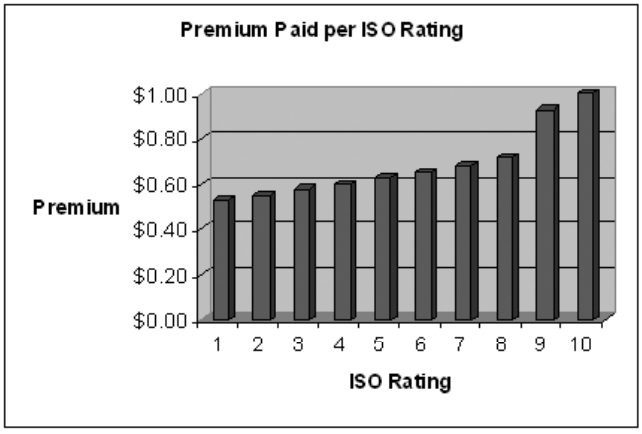
ECONOMIC IMPACT

It is in the best interest of the taxpayers for counties to begin to address insurance ratings if they are not already doing so. Insurance premiums are rising dramatically nationally as well as in Tennessee. Several factors have contributed to this rise in rates including increased natural disasters, terrorist attacks, and a prolonged slow economy that effects investments. These premium increases are more pronounced with the higher ratings, i.e. 7 through 10. Additionally, insurance companies are using a new advanced software program that accurately identifies the location of the insured property and can pinpoint the actual driving distance from the closest fire station by computer. The implementation of the program has caused many people who were being rated with a more favorable ISO rating to be given a more accurate rating based on property location. In some cases, the insurance premium increases have been in excess of $2,500 per year. This multiplied by 10 years for a rating schedule cycle will equate in an increased premium being paid of $25,000 by the insured if improvements are not made and a new evaluation requested.

In the following example, if a homeowner paid $1 per year for insurance in a Class 10 rating, then

- Class 9 pays .93, a savings of 7 percent over a Class 10.
- Class 8 pays .72, a savings of 28 percent over a Class 10.
- Class 7 pays .68, a savings of 32 percent over a Class 10.
- Class 6 pays .65, a savings of 35 percent over a Class 10.
- Class 5 pays .63, a savings of 37 percent over a Class 10.
- Class 4 pays .60, a savings of 40 percent over a Class 10.

- Class 3 pays .58, a savings of 42 percent over a Class 10.
- Class 2 pays .55, a savings of 45 percent over a Class 10.
- Class 1 pays .53, a savings of 47 percent over a Class 10.



These rates must be multiplied by 10 years to understand the true impact of improvement or lack of improvement in fire protection that the fire insurance rates have on property owners.

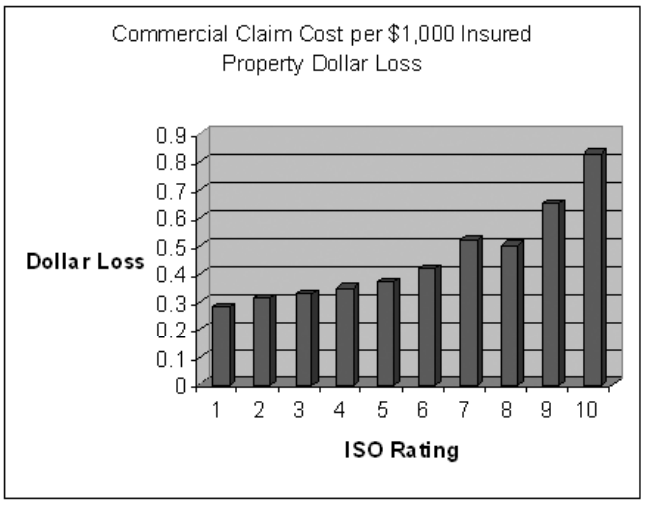
Most insurance companies offer only small discounts on residential policies in Class 6 or better communities, but commercial premiums offer substantially more discounts. Each Insurer may set their own rates, subject to approval by the Tennessee Department of Commerce and Insurance-Division of Insurance.

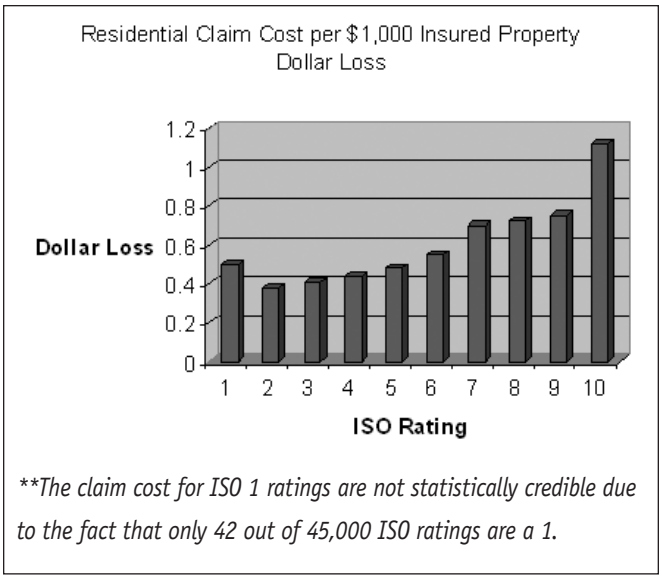
Another important factor when considering improvements in the fire suppression capabilities of a community is to consider the effects of ISO rates on industrial recruiting practices. With most other factors remaining nearly constant, (labor market, availability of land, construction factors, taxes, etc.) a corporation will most likely locate a new factory in the jurisdiction that has a more favorable fire insurance rating. This is a factor that they will save expenditures for the life of the facility. A reasonable investment to ensure that the ISO rating in an area is improved can produce enormous benefits in tax base expansion, more disposable income for taxpayers, and the ability to obtain insurance that many could not previously afford.

IMPROVED FIRE PROTECTION

A strong relationship exists between improved ISO ratings and improved fire protection capability. This in turn equates to decreased fire losses. A community that has improved its water supply, adequately trained and equipped its fire department, and ensured that the appropriate dispatching capabilities have been put in place will reduce it's fire dollar loss.

ISO reviewed claims from a five-year period of residential and commercial fire losses. The following charts show the relationship between ISO ratings and fire loss.





***The claim cost for ISO 1 ratings are not statistically credible due to the fact that only 42 out of 45,000 ISO ratings are a 1.*

FACTORS ASSOCIATED WITH AN ISO RATING

ISO rates a community based upon three major categories: communication, fire department and water supply. An additional minor category is divergence.

DIVERGENCE

Divergence is the difference in score between your fire department and water supply. It is always a negative number and is used to discourage communities from placing too much of their resources in either water supply or the fire department. The best score that can be obtained with divergence is zero. This would mean a perfect rating balance between the fire department and the water supply's capability exist.

COMMUNICATIONS

Ten percent of the overall credit is based upon communication capability to dispatch the fire department. The communications category evaluates telephone service, operators (dispatchers), and dispatch circuits.

The telephone portion is based upon the appropriate number of telephone lines and how they operate (roll-over capability and recording with instant playback.) The telephone service should be in compliance with National Fire Protection Association (NFPA) Standard 1221 Public Fire Service Communications. The fire department's listing in the phone book is also verified to meet the requirements set by ISO.

The number of operators required on duty to receive full credit is based upon the total alarms per year as well as the fact that the operator is dedicated to dispatching the fire department or has other duties.

A dispatch circuit is simply stated as the equipment used to dispatch the firefighters. Dispatch circuits take into account the equipment used to dispatch the alarm and the means by which the dispatch is received. Emergency power supplies are also required for the dispatch circuits.

FIRE DEPARTMENT

The fire department portion of the ISO rating process carries the greatest weight in the total formula, representing 50 percent of the total points. The fire department portion is broken down into categories such as engine and ladder companies, personnel, training, and distribution of fire stations. These categories do not represent an equal percentage; therefore, counties and fire departments must determine what improvements will give them the most ISO points while fitting into the level of risk that the community is willing to accept.

FIRE DEPARTMENT-ENGINE COMPANY

Simply stated, an engine company is a fire engine, the equipment carried, and the people needed to operate it. The engine company category comprises 10 percent of the total points

for an ISO evaluation. One engine company is needed if the jurisdiction contains a population under 1,000, has less than five driving miles response to all areas, and the required fire flow does not exceed the pump capacity of the truck. If the jurisdiction exceeds any one of the above listed requirements, additional engine companies are needed. Administrative procedures, such as automatic sprinkler ordinances for all or certain types of structures, can reduce the fire flow requirements, thus reducing the pump capacity needed.

ISO has created an inventory list that is required to receive full credit for each engine company. Inventory sheets are located in Appendix A. ISO has also accepted equivalencies for the required equipment to reflect the changes in technology available over the years from the original list. When specifying apparatus and equipment, each apparatus should meet the minimum NFPA 1901 Standard for Automotive Fire Apparatus as well as the ISO inventory sheet.

A reserve pumper is also needed and makes up 1 percent of the total points. If a fire department has more than eight needed pumpers, one reserve pumper is needed for each eight pumpers in service.

Pump capacity of pumpers can make a large difference in ISO points for the initial dollars spent. In a jurisdiction with a fire flow requirement of 2,500 gallons per minute (gpm), the needed pump capacity can be achieved by 1) purchasing four trucks with 750 gpm pumps, 2) three trucks with 1,000 gpm pumps, or 3) two trucks with 1,250 gpm pumps. The cost savings between numbers one and three can easily exceed $350,000, plus the money ($30,000 each) for the equipment needed on each apparatus.

FIRE DEPARTMENT-LADDER/SERVICE COMPANIES

The Ladder/Service categories comprise 5 percent of the total points in an ISO evaluation. Many smaller and medium sized jurisdictions pass over this category because they do not think that they need a ladder truck. If your jurisdiction has over five unsprinklered buildings that exceed 35 feet in height, a ladder truck is needed per ISO. Once again, adopting a sprinkler ordinance for larger structures will produce a cost benefit in not only the purchase of a ladder truck, but will benefit the ISO rating and subsequently the insurance premiums. A new ladder truck will normally cost $700,000 or more.

Even if a ladder truck is not needed in the jurisdiction, a service company is needed. Service trucks (and ladder trucks) have an inventory list of the required equipment. A service truck can come in various forms. It can be as simple as a box van (bread truck) or other specified piece of apparatus that meets particular community needs with the appropriate equipment for service company points. A jurisdiction that responds to rescue or haz-mat calls can specify an apparatus that will give them service credit and address the extrication or haz-mat first response call.

FIRE DEPARTMENT-STATION DISTRIBUTION

Proper fire station distribution is a critical function when planning for adequate fire protection. Not only does it account for 4 percent of the ISO equation, but lives saved and property protected are directly related to response times. The distribution objective that a fire department needs to plan for is to have an engine company within 1.5 miles of 90 percent of the structures and ladder/service companies within 2.5 miles. This may be difficult to achieve in a rural setting; therefore, an in-depth analysis of structures and station locations should be conducted prior to

adding any new fire stations to determine the highest percent of structures protected that is possible.

Many mistakes have occurred over the years in placing fire station locations. The determination for a new station location is often determined by the availability of free or cheap land. Unfortunately, this cheap land may be paid for by insurance rates for the next 10 to 15 years. Additionally, structures that are located beyond five driving miles from a fire station receive a Class 10 rating. This is considered in insurance terms to be without fire protection, and the highest premiums (if insurance can be obtained) will be assessed.

FIRE DEPARTMENT-COMPANY PERSONNEL

Company personnel account for 15 percent of the entire ISO rating scale. This is an important factor to address, not only for ISO points, but also for the simple matter that emergency activities cannot be safely and successfully mitigated without adequate manpower. According to ISO, a total of 13 personnel must be dispatched and on the scene of a first alarm assignment to get the full credit. The three methods for providing personnel are 1) Hire full-time paid firefighters, 2) Staff with volunteer firefighters, or 3) Provide a combination paid/volunteer service.

Several factors should be in place prior to hiring full-time firefighters. Obviously, adequate funding must be place, but also good job descriptions should be written, effective shifts should be established to address community risk and manpower issues, and good supervision established. To calculate the full-time equivalencies of manpower for career personnel add all hours worked by the firefighters and divide by 8,760 to get the on-duty staffing. (Example: If a community had six firefighters who work 24 hours on and 48 hours off, they would work about 2,920 hours a year each. Six firefighters x 2,920 hours worked = 17,520 hours worked. 17,520/8,760 = 2. In this example the community gets credit for two of the needed13 manpower positions.)

Volunteer personnel are becoming more difficult to recruit and retain. They can be of great importance to the overall community safety plan. One way to ensure a steady stream of volunteers for the future is to form a formal Scout Explorer post. This is the better alternative than an in-house Junior Firefighter program because of the association with the Boy Scouts of America. The explorer program is open to both male and female members and provides insurance coverage as part of the nominal annual dues. These members cannot be counted for ISO points and should not be used in hazardous situations, but they can receive the important training. Even more importantly, the interest in emergency services can be developed so that when they are old enough they will want to become a volunteer or career member of the department.

Volunteer members should receive equal training and treatment within an organization, and incentives must be established to keep them active after the initial interest starts to wane. A volunteer coordinator position should be created to concentrate on recruitment, training, and retention of volunteer personnel. Volunteer personnel are calculated by adding the number of volunteers present at fire calls in the past year and dividing by the number of calls, then dividing that number by three to get the full time equivalent. (Example: Four fire calls with a total of 36 personnel attending: 36/4 = 9. Nine is the

average number of volunteers. 9/3=3. Three is the full-time equivalency.) For an all-volunteer department to receive full manpower equipment, they must average 39 personnel per fire call.

FIRE DEPARTMENT-TRAINING

Training comprises a total of 9 percent credit in the ISO rating scale. It is CRITICAL to establish comprehensive new recruit training and have a progressive in-house annual training program. The safety and survival of the citizens and firefighters is dependent upon this issue. All fire departments must have minimum monthly training standards. Full-time firefighters must train a minimum of 20 hours per month, and volunteer firefighters must train a minimum of 4 hours per month.

ISO establishes what type and the minimum length of the training that should be accomplished each year. The training can consist of station training, drills, pre-fire planning, and fire academy instruction. A very critical part of the training requirements is proper documentation. If the documentation is not completed, the training did not occur! The documentation should contain where the training occurred, who attended, length of class, topic covered, and who taught the class. A copy of the training documentation must be placed in each firefighter's personnel record.

An adequate training facility would provide classroom space, books, drill area, smoke/burn areas, and training aids. The formation of training facilities can be a creative process to address both community risk and available funding. Many fire departments have joined forces and shared training facilities to receive valuable training and ISO points. This generally allows for the departments to train together and increases competency from which the community as a whole will benefit.

WATER SUPPLY

Water supply comprises 40 percent of the total points for an ISO rating. It is of vital importance for fire departments and county government to join forces with private utility companies to ensure that public water supply systems are being designed and maintained for fire protection and not for potable water alone. Typically water systems can be designed and installed for fire protection for only a 4 percent to 10 percent increase in total project cost over a potable system only. This is another area that will pay huge dividends over the next 10 to 15 years. Public water systems are becoming more common in unincorporated portions of counties. The chapter of this manual titled "County Water Supply Planning" will further address county government's role in water supply planning.

If a jurisdiction does not have a public water supply system or must rely totally on tankers for delivering water because the system will not handle fire protection needs, then the jurisdiction cannot attain an ISO rating better than a score of 6.

A total of 35 percent of the points are based upon the water system. Items that are evaluated include above ground storage capacity, fire hydrant placement, size of water mains, and plant capacity/backup.

Fire hydrants compose the final 5 percent of the points in the rating system. To receive maximum credit, hydrants must be installed to American Water Works Association standards on a minimum 6-inch main and have three outlets. Hydrants must be flow tested at least annually

and inspected twice a year. They should have a consistent color code system that indicates the gallons per minute that the hydrant flows.

For areas without a public water supply system, the following flow rates must be achievable for a minimum of two hours. The flow, measured in gallons per minute (gpm), must be established within 15 minutes from the alarm time.

ISO Rating	GPM
9	100
8	250
7	350
6	450

As you can see, to obtain a Class 6 or 7 without a water supply system, an ambitious tanker shuttle program must be established. This program should include standardization of equipment, identification of water access points within one mile of most structures in the jurisdiction, the instillation of dry hydrants, and lots of training. If mutual/automatic aid companies are included in this shuttle operation planning, then cooperation between departments is a must. When a fire department must rely on delivering water to the scene instead of connecting to a fire hydrant, the tactical operations become more difficult. Since a number of personnel will be busy locating and transporting water, fewer firefighters will be available for fire suppression. For this reason, it is vital that the shuttle operations are tested repeatedly to insure the smoothest of operations.

CLASS 9 ISO RATING REQUIREMENTS

For a department to obtain a Class 9 rating, a minimum of requirements must be met. Only a 7 percent reduction in insurance premiums is achieved in this classification versus not having fire protection at all.

To meet minimum requirements, a department must have

- Definite boundaries and be compliant with state or local laws.
- A person responsible for operations.
- Sufficient membership to ensure a minimum of four personnel to respond to a structure fire.
- At least two hours of training every two months.
- Adequate alarm notification.
- At least one apparatus meeting the general criteria of NFPA 1901 with a pump that can obtain 50 gpm or more at 150 psi, with at least a 300 gallon tank.
- Some type of housing to protect the fire truck from the weather.
- Records showing fires, members, training sessions, meetings, etc.
- Two 150-foot lengths of booster hose or a 1.5-inch pre-connected hose with a nozzle.
- Two portable fire extinguishers.
- One 12-foot roof ladder.
- One 24-foot extension ladder.
- One pick-head axe.
- Two electric hand lights.
- One pike pole.
- One bolt cutter.
- One claw tool.
- One crowbar.

CLASS 8B ISO REQUIREMENTS

A new ISO rating classification has been established for fire departments that provides good fire protection services and fire alarm handling, but does not have a water supply system that will support the 250 gpm requirement for a Class 8 rating.

The requirements for a Class 8B rating include

- Minimum facilities requirements as stated above.
- At least 5 points in the "Receiving and Handling Fire Alarms" category.
- At least 20 points in the "Fire Department" category.
- At least 6 firefighters responding on first-alarm responses to structure fires.
- At least 24 hours per year training for structure fires for each firefighter.
- At least 200 gpm for 20 minutes from the water supply.
- Minimum fire flow must start within 5 minutes of the arrival of the first engine company.
- Minimum fire flow to at least 85 percent of the built-upon areas of the community.

In order to meet the minimum fire flow water delivery requirements, it is imperative that a department have at least enough trucks on the first alarm assignment to carry 4,000 gallons of water directly to the scene without refilling.

OTHER ISO RATINGS

Once you are successful in improving your ISO rating, it will become increasingly more difficult to achieve the lower ratings, but not impossible. Various configurations can be used to address the fire protection delivery requirements to meet the minimum points in each rating category. Therefore, counties must either conduct their own study or request that an agency like CTAS conduct a comprehensive study of the fire protection system and make recommendations for improvements in the community. In order to improve the ISO rating, the county must be dedicated to long-range planning, updating administrative and operational activities, and investing money in itself. The dollars invested to improve fire protection services will not only save additional lives and property, but will be a direct economic benefit to the community for the next 10 to 15 years.

IV. COUNTY WATER SUPPLY PLANNING

County residents and county government have a strategic interest in water supply capabilities outside of municipal jurisdictions. As counties become more urbanized, residents and business owners begin to expect the same services that are available inside city boundaries. Industrial development puts a greater strain on the water supply for not only the processes that are conducted, but also for the increased demand for available fire water. This presents a unique situation in many counties in the state. Very few county governments are "in the water business;" therefore, strategic partnerships with the utilities districts, county government, development boards, and fire protection agencies should be developed to provide not only good potable water, but also adequate fire flow capabilities for long range planning.

Across the state, many counties have formed planning commissions and several conduct building and fire code plan reviews and inspections. This may create a dilemma for developers in regard to conflicting requirements between subdivision regulations, fire code requirements, and utility district regulations. Therefore, all parties must conduct joint planning meetings to establish adequate regulations that will satisfy all of the various interests (safe/dependable potable water supplies, adequate storage capacities, and fire-flow requirements.) Through progressive planning, a relatively small investment on the front-end of development projects will yield financial benefits many times multiplied from the initial costs. Additionally, adequate fire flow capabilities can quickly be

established that can mean the difference in life or death, or whether a factory that employs 200 workers will be able to re-open in a few weeks or stay closed forever, leaving a large hole in the tax base.

FIRE PROTECTION WATER SUPPLY STANDARDS

An excellent resource for water supply planning in regards to fire protection is NFPA 1142 *Standard on Water Supplies for Suburban and Rural Fire Fighting*. The standard addresses topics such as calculating minimum fire flow requirements, developing alternative water supply sources, water hauling capabilities, and the use of large diameter hoses. Schematics on the proper construction of dry hydrants are also presented. The use of this document can assist the fire protection authority with adequate fire protection planning and development of recommendations for subdivision regulations adopted by the planning commission.

The ISO publication *Guide for Determination of Needed Fire Flow* should also be used when planning for needed fire-flow requirements.

NEEDED FIRE FLOW

A simple formula for suppressing fires is correctly applying water in sufficient quantity to absorb the BTU's of heat being produced. To accomplish this, research has generated needed fire flows. Needed fire flow (NFF) is the amount of water, expressed in gallons per minute (gpm), needed to put out the fire. For commercial property this NFF is calculated on a building-by-building basis. For one and two family dwellings, a simple chart has been established:

Distance Between Structures	Flow
100′ or more	500 gpm
31′ to 99′	750 gpm
11′ to 30′	1,000 gpm
10′ or less	1,500 gpm

The Planning Commission has the responsibility of setting the distance between homes and establishing minimum water line sizes. Both of these factors must be considered when establishing a master development plan and/or zoning regulations for the safety and welfare, as well as the economic impact of the community.

WATER SUPPLY COMPONENTS

Components of fire protection water supply can be very diverse depending upon fire department capabilities, public water availability, and geographical factors. The most reliable component of the water supply system is a properly designed public water system. This system will have adequately sized water mains, pumps, and above ground storage capabilities as well as properly placed fire hydrant locations. In developed areas, fire hydrant spacing should NOT exceed 1,000 feet and should be placed within 500 feet of driving distance to any accessible point of a structure. In more rural areas fire hydrants should be placed as close to structures as possible with the driving distance from a hydrant to the structure, not to exceed 500 feet if possible. The minimum size of a water main should be not less than 6 inches. Water mains should be designed with future fire protection in mind, not just to address the current needs for water. Systems should also be designed to meet the calculated fire-flow requirements in the various land use zones. At no point in the water system should a fire flow of less than 500 gpm at 20 psi be achieved.

Secondary water supply components can consist of fire department tankers, ponds, streams, and even swimming pools. An active approach to identify these water sources should be addressed. Some jurisdictions are creating alternative water supply committees consisting of fire officials and planning personnel to identify alternative water supplies in strategic locations. This should also be addressed in areas with public water as a "back-up" in case a catastrophic event disables the water system. These locations are then investigated further to verify drought resistance and the possibility of dry hydrant placement. Dry hydrants are a cost effective way of establishing a water supply in areas without public mains. They also can be counted the same as a regular hydrant in jurisdictions that have a split ISO rating, as long as the dry hydrant is located within 1,000 feet of the structure and five driving miles of a fire station. Many sources of water are available beyond the accessible reach of a fire truck. The installation of dry hydrants can extend the "reach" of a fire truck in a year-round capacity.

Swimming pools can be a good source for water. An average size in-ground pool holds 15,000 gallons or more. If the pool is to be located beyond the fire vehicle access point, a connection to a dry hydrant at the road could be installed off of the main drain. This could even be incorporated into swimming pool regulations in counties that conduct building permits and inspections.

Subdivision developments can install underground water storage tanks or cisterns to provide water access. Any development that creates or utilizes a pond or lake should provide dry hydrant capabilities. These are low cost alternatives to providing water supplies where public water is not available or may be inadequate for the fire-flow requirement.

These alternatives can eliminate ISO split ratings and reduce insurance premiums by thousands of dollars per property owner over a 10-year period. Optimally, alternative water sources should be identified within one driving mile of all structures. This is about the furthest distance that an effective tanker shuttle can be established to meet the fire-flow delivery requirements to obtain an ISO rating of 6.

PUBLIC WATER SYSTEM PLANNING

As new development is being planned, water systems must be designed to meet the new and future demands on the system. Even if the water supply network going to a new development is inadequate, the future sites should be designed to handle the potable and fire-flow projections for the next 25 to 40 years. Then as the water system is retrofitted, the inadequate mains can be upgraded at a lesser cost. Projects that are being designed to only meet today's demand will have to upgrade all of the water mains, because they will all be undersized. Additionally, fire hydrants should be placed appropriately, with additional hydrants being placed by the future development projects.

This creates a pay-now-or-pay-more-later situation. Designing and installing a water line expansion for fire protection versus potable water only adds only a small percentage to the costs of a new main. For any new water project the cost to design/engineer the system and the labor to dig the trench and install the pipe are relatively the same. The only difference is the actual pipe cost. This same principle holds true for aboveground storage capacity. The small amount added to a water bill is many times offset by the reduced

insurance premiums over the course of a 10 to 15 year rating period.

The following information was compiled by MTAS in 2002 and is very relevant due to the fact that the data comes from actual utility projects that occurred in the state.

PVC Pipe Installation Cost

2" Line	$5.00/L.F.
4" Line	$7.00/L.F.
6" Line	$8.00/L.F.
8" Line	$9.00/L.F.

L.F. = Linear Foot

Water Line Capacity (with velocity equaling 5 ft/sec)

2"	49 gpm
4"	196 gpm
6"	441 gpm
8"	783 gpm

Elevated Water Reservoir Cost

Gallons	Cost
100,000	$160,000
185,000	$164,000
200,000	$262,100
300,000	$367,000
500,000	$610,000

As you can see, the increased cost is not proportional to the increased capabilities of the system. A good rule of thumb in regard to hydraulic calculations is, "As you double the size of the water line, the capacity increases by four-fold." The charts above show that the cost does not increase four-fold with the doubling of the water line size. Therefore, it is essential that as new development and upgrades occur, the maximum feasible system capacity should be designed.

Water system and community development planning is a complex subject that county government cannot afford to ignore. It is vital not only for the life safety and property conservation, but also the continued economic growth of a region.

V. FIRE PREVENTION

Fire prevention activities must be conducted in every county in the state. As stated earlier in this publication, Tennessee has the second worst fire death rate in the United States, with a death rate over twice the national average. Several factors contribute to this grim statistic, with the lack of fire prevention activities in many jurisdictions being a leading factor. There are several layers of involvement that counties can contribute in order to improve fire prevention including codes enforcement and inspection activities, engineering controls, public education, and fire investigations. This is a "systems approach" and must work together to provide maximum effectiveness.

The State Fire Marshal's office only conducts plans review and inspection of assemblies with an occupant load of 300 or more, three or more story buildings used for residential or business occupancy, correctional facilities, enclosed malls, high-hazard industrial occupancies, and two-story residential occupancies with 12 units or more in non-exempt jurisdictions. Additionally, only educational and healthcare occupancies receive annual fire prevention inspections from the state.

According to the research for this document, only eight counties in the state operate a Fire Prevention/Fire Marshal's office. Since most counties do not have "County" fire departments, this is one area that needs to be addressed in order to improve public safety. Additionally, the creation of a Fire Marshal's position can have a direct impact on the total fire problem in the county and be the direct point of contact that is needed between the independent fire departments and county government.

CODES/INSPECTION SERVICES

Codes enforcement and inspections are an integral part of any county's development. Many counties conduct building inspections and planning commission reviews of new development, but few actually look at codes from a fire perspective or review new plans with respect to water supply, fire department access, etc. The majority of the building code addresses fire protection issues in new construction; however, once the building is occupied nothing is done to ensure that it remains safe over the lifetime of its usage. Additionally, when a fire does occur, the fire department must enter this building to rescue occupants and protect property. This makes it even more important to ensure that the structure and processes being conducted have been maintained properly. Tragically, a significant contributing factor in the death of 100 and the injury of an additional 200 more individuals in Rhode Island, has been directly linked to inadequate inspections and lack of sprinklers.

The state requires that local jurisdictions that conduct inspections adopt a code that is within six years of the adopted code by the state. Currently, the state has adopted the 1999 *Standard Building Code* by the Southern Building Code Congress and the 2003 edition of NFPA 1 *Uniform Fire Code*. T.C.A. § 68-120-101 allows for exempt jurisdiction to adopt either the *Standard Building Code* or *International Building Codes*. At the time of this publication, the state is conducting hearings regarding the adoption of the 2003 *International Building Code*.

The State of Tennessee requires that all personnel conducting fire or building inspections to be certified by the state within one year of beginning inspections. This is very important due to the fact that it ensures that the personnel have obtained a recognized level of training and passed an independent certification test.

ENGINEERING CONTROLS

An additional factor that is needed to provide adequate protection from fire is engineering controls. These items come out of case studies in other jurisdictions, local fire investigations, and public education efforts, as well as facts about the capabilities that the local fire department has to provide protection. Rules and regulations such as street width in subdivision regulations, minimum water line sizes, fire flows, and hydrant spacing will provide for a more effective response and suppression efforts.

Automatic sprinkler systems, in not only commercial structures but also residential occupancies, can create many trade-offs that will benefit the homeowner and the community. In communities that have required residential sprinklers, the following benefits have been realized:

- Lower insurance premiums (as much as 30 percent lower from certain companies),
- Reduced street widths,
- Increased hydrant spacing,
- Decreased water line size, because the fire flow requirements are less,

- Decreased pump capacity of fire trucks (These may mean that existing equipment is adequate versus the purchase of trucks at $250,000 each),
- No loss of life from fire in totally sprinklered structures,
- Reduced water damage. (It takes a sprinkler system an average of 341 gallons of water to extinguish a fire versus 2,935 gallons from the fire department, in addition to the destruction from smoke and advanced fire conditions),
- Increased housing density, and
- Reduced cost (Systems are being installed for about 84 cents per square foot. This in turn produces significant reductions in public infrastructure upgrades.)

PUBLIC EDUCATION

Public education is one of the most cost-effective means to reduce property loss and injury/death from fires. Most fire departments and counties do not do an effective job with this tool. For most jurisdictions, public education is about going to the schools one time a year during fire prevention week and showing the fire truck. While this is important to establish good public relations and support in the community, it does very little to truly educate the public. Additionally, only a small segment of the total community demographic can be reached by this method.

An effective public education program identifies the community demographics, uses data from fire investigations to determine the most at-risk groups, and delivers year round programs to reduce the occurrence of fire. Departments must also be willing to recruit and train non-fire personnel to assist with these programs. This can reduce the increasing workload that volunteers and career departments experience and make outreach programs more effective. Programs such as Risk Watch®, from the NFPA can be taught in schools to address fire and injury prevention to multiple grade levels. Development of home safety surveys and installation of smoke alarms that the public can request will deliver "in the home" educational opportunities. Senior citizens can be taught to deliver programs to other senior citizens as an extension of the fire department. Other public education programs that can be delivered are Safety Days at the Fire Station, Citizen Fire Academy, Fire/Severe Weather safety trailers, open houses, etc. The main point that must be ingrained within the culture of safety professionals is that every contact opportunity that is made with the public must be used to continually reinforce the fire prevention/safety awareness message.

FIRE INVESTIGATION

Every fire that occurs within a jurisdiction must be investigated to determine origin and cause. This is important in order to determine if a crime has occurred, as well as directing public education activities and code enforcement changes for increasing fire trends. The level of the investigation will depend on local resources. All departments must have enough knowledge and training to be able to preserve a fire scene and request further assistance from the State Fire Marshal's Bomb and Arson unit. Other jurisdictions have formed joint task forces that include fire personnel, sheriff's personnel, and other entities. These task forces have a high level of training and are able to immediately begin an investigation without waiting for the state.

The Assistant to Commissioner of Commerce and Insurance designation that is now required of every fire chief to be in compliance with the Fire Department Recognition Act, states that all fires must be investigated. The State Fire Academy has

various courses from basic to the advanced that will provide the necessary training to perform these investigations proficiently and legally.

COUNTY FIRE MARSHAL

With these points in mind, a logical first step for many counties is to create a fire marshal position or strengthen existing fire prevention efforts. In addition to the fire prevention duties that are attributed to the fire marshal, this position can also serve as an administrative position in counties that have multiple fire response entities. A Fire Marshal in counties without a countywide fire department should

- Review all commercial and development site plans prior to presentation to the planning commission for fire codes compliance, adequate fire department access, adequate water supply access, and fire flows, etc.
- Review all commercial and multi-family building plans along with the building inspector for a unified correction list of deficiencies in pre-construction plans.
- Review all fire protection systems plans prior to installation.
- Conduct or supervise the conduction of inspections during construction for compliance with adopted codes.
- Work closely with the building department to reduce miscommunication issues and coordinated compliance review for an improved relationship with developers, builders, owners, and occupants.
- Develop an annual inspection program of existing commercial and multi-family facilities and coordinate with the local fire departments to improve pre-incident planning.
- Analyze fire trends within the jurisdiction and create an aggressive public education program to decrease the occurrences of injury, death, and/or loss of property from fire.
- Evaluate current county rules and regulations in regard to fire-related issues and make recommendations to accurately address these issues to the County Mayor, County Commission, Planning Commission, other County Departments, etc.
- Develop an overall fire mitigation plan for the county, including incorporation of existing volunteer fire departments into these plans where applicable.
- Be a point of contact for the volunteer fire department in regard to county government, budget matters, public safety committee assistance, etc.
- Coordinate the investigation of every structure fire and other hostile fires to determine origin and cause, assist with the arrest and conviction of those causing arson incidents, and determine additional public education and engineering solutions to prevent additional fires.
- Coordinate public education programs with local fire departments.

VI. FIRE DEPARTMENT RECOGNITION ACT

Prior to July 1, 2003, in the State of Tennessee, no rules or regulations existed in regard to the formation of a fire department. This has created numerous problems over the years in regard to jurisdictional issues (turf wars), service delivery issues, and unnecessary duplication of services, to name a few. Anyone anywhere could start up a "fire department" without any governmental approval process. The state legislature and the Tennessee Fire Chief's Association recognized this issue, and a new bill was introduced and passed to begin to resolve these issues and improve the competence level of the fire service in the state.

Adding a new Part 3 that included the language from this bill amended Tennessee Code Annotated,

Title 68, Chapter 102. The act defines what a fire department is in the state and requires that all fire departments currently operating or that may be formed in the future must be registered with the Tennessee Fire Marshal's Office.

In order to register with the Fire Marshal's Office, the department must complete a short application that is notarized, pay a $50 registration fee, and be in compliance with T.C.A. § 68-102-108 by properly requesting designation as an Assistant to the Commissioner of Commerce and Insurance. This application process was due no later than December 31, 2003. Any new department that was not in existence on the day that the bill was enacted, must also receive written approval by the local elected governing body that includes a written or graphical representation of the territory that will be covered by the department.

Any department that is not in compliance with this act shall not receive or solicit money from any source, including local, state, or federal government for the purpose of operating a fire department.

Additionally, any person violating the provisions of the act shall be guilty of a Class C misdemeanor per Section 8.

DESIGNATION AS ASSISTANT TO THE COMMISSIONER OF COMMERCE AND INSURANCE

As stated earlier, the act requires the chief of the department to obtain designation as Assistant to the Commissioner of Commerce and Insurance. Previously, this designation has been granted to most municipal fire chiefs or fire marshals, but rarely used in the county government setting. T.C.A. § 68-102-108 establishes who may obtain this designation. The two main references to county fire protection are

(b) (5) Within the bounds of any county but outside any municipality contained therein, the chief of any county-wide fire department authorized by title 5, chapter 17;

(b) (6) Within the bounds of any county but outside any municipality contained therein, the chief of any incorporated fire department whose geographic fire response district has been established and approved by the county mayor of such county.

Subdivision (b) (6) refers to the independent fire departments that provide services in counties that are not a function of the county government. These departments may be volunteer or career, as well as non-profit or fee/subscription based services. They must, however, be a charted incorporated department and not just merely an association of members. This can be verified by checking with the Secretary of State's office in Nashville.

RULES AND REGULATIONS

The Department of Commerce and Insurance is currently promulgating the rules and regulations in regard to the administration of this act.

VII. FIRE DEPARTMENT FUNDING

The sources of funding of county fire services are limited. Fire protection in counties can be funded based upon the type of fire services structure that the county has allowed to exist or has created. In counties that do not have a countywide fire department created in accordance to T.C.A. § 5-17-101, the source of county funding is limited to a donation to the independent fire department.

The issue of how to fund and how much to fund is an area of contention in many jurisdictions. Many

county governments choose to give a "donation" to the departments in order to reduce liability. This method of funding is allowed by T.C.A. § 5-9-101. An unfortunate trade-off for the liability reduction is the limited input that a county might have in regard to how the funds are spent, management/organizational issues, strategic planning, and interagency cooperation.

According to T.C.A. § 5-17-101 (d) counties may fund a countywide fire department by 1) property tax levied for a fire tax district according to T.C.A. § 5-17-105, § 5-17-106, § 5-17-107, or 2) situs-based revenues from the unincorporated areas of the county, or 3) revenues that have already been shared with municipalities. The countywide fire department may contract with independent and municipal fire departments for coverage within unincorporated portions of the county. T.C.A. § 5-17-101 (d) (4) allows the local government to receive donations or charitable contributions for fire protection regardless of the mechanism of funding selected.

If a countywide fire department is formed but works only or chiefly through independent volunteer fire departments (IVFD), T.C.A. § 5-17-102(a) (7) and (12) require contracts (agreements) between the county fire department and IVFD. The contracts should specify the services that the IVFD will provide and the terms by which the IVFD will receive financial aid from the county.

FIRE TAX DISTRICTS

A county that chooses to fund fire protection using fire tax districts must create one or more districts comprising of the entire county outside of the municipal limits, per T.C.A. § 5-17-105. However, cities may elect to be included in the fire tax districts. The fire tax is to be assessed in the same manner as the property tax and collected as an addition to it. T.C.A. § 5-17-106(b) requires that the rate set shall be sufficient to pay for each district's share of the total county fire department budget.

VIII. FORMATION OF A COUNTYWIDE FIRE DEPARTMENT

The need to form a countywide fire department can arise from various situations within a county: desire to decrease duplication of services, inadequate or non-existent coverage of geographic areas, loss of existing departments, need to convert to a partial or complete career department and/or mechanism to fund fire protection through adequate fire tax districts. Whatever the reason, T.C.A. § 5-17-101 *et. seq.* does allow for counties to create a Countywide Fire Department. The process of creating the fire department requires careful study and planning with all stakeholders (citizens, elected leaders, emergency personnel) having an opportunity to participate in the process. Several phases of the process must be undertaken in order to create the best possible transition.

DETERMINE THE NEED

Several factors must be explored when determining the need for a countywide fire department. These generally will surface over time. Some of these factors include

- Areas of the county without fire protection or inadequately protected. Just because all areas of the county are located within a department's response zone does not necessarily mean that the property owners are receiving the necessary protection.

- Existing departments struggling at dangerous levels due to factors associated with being independent from each other or from internal conditions.
- ISO ratings at unacceptable levels. Consolidation of fire protection capabilities will generate a better ISO score and lower insurance premiums.
- Growth and lack of volunteers causing counties to consider a combination fire department with some level of career personnel. This often begins with a Fire Marshal to increase fire prevention activities, a Chief Officer for administrative duties, a Training Officer to provide and coordinate training, and/or, as several counties area considering, personnel to offset the absence of volunteers during daytime hours.
- Need to restructure current funding mechanism. Growth in a county can exceed the ability to provide adequate training, equipment, etc. for some counties that only make donations to volunteer departments. As funding is increased, a point is eventually crossed that the county feels like they are contributing more than a donation and should have more accountability and establish criteria for performance from the fire department.

ESTABLISH FIRE PROTECTION COMMITTEE

Once the need is identified, a Fire Protection Committee should be formed. Committee members should include the County Mayor and members of the County Commission Fire or Public Safety Committee, municipal and volunteer fire chiefs, insurance representatives, County Planner, emergency management and EMS representatives, and citizens. Additional assistance from CTAS can be obtained either as a representative to the committee or as the technical evaluator and advisor to the committee.

DETERMINE THE EXISTING CONDITIONS

Once a committee has been chosen, the objectives should be established. At times, additional objectives will be identified during the evaluation process and will need to be added. The process of determining the objectives should include evaluating the current fire protection system.

- Acquire maps of existing response areas and fire station locations. Develop maps that show actual driving miles from each fire station and structures located outside of the designated distance. The maximum distance evaluated should be five driving miles; this is due to the fact that ISO does not recognize fire protection beyond the five miles. Additional maps should showing automatic and mutual aid areas should also be included.
- Obtain water maps including the water distribution system with pipe sizes, above ground storage locations and capacity, and hydrant locations. Maps are needed showing static water sources, dry hydrant locations, and river/creek locations that can be accessed for drafting operations.
- Determine existing levels of fire prevention activities.
  - o Public Education
  - o Codes Enforcement/Fire Prevention Inspections
  - o Change of occupancy notifications and follow-up
  - o Fire Investigations
- Evaluate existing fire department infrastructure.
  - o Fire stations
  - o Apparatus
  - o Fire equipment (hoses, ladders, breathing apparatus, turn-out gear, communication equipment, etc.)

- o Consumable supplies (foam, spare parts, medical supplies, etc.)
- Determine number of existing personnel and levels of training.
  - o Officers
  - o Paid personnel
  - o Volunteer personnel
  - o Emergency medical personnel
  - o Maintenance
  - o Others
- Identify existing laws and regulations that affect fire operations.
  - o Local city and county
  - o State Fire Marshal's office
  - o State laws
  - o Federal regulations
- Identify existing agreements.
  - o Mutual/Automatic aid with nearby jurisdictions
  - o Contracted services (private fire departments, utility districts, contracts with cities, etc.)
- Evaluate budgets from at least the past three years of all existing departments that will comprise the new county response department, including operating and capital outlay expenses.
- Determine level of citizen's interest. Unfortunately this may not reflect the actual need unless the citizens have been affected by a loss of property or life due to a fire and/or an insurance premium increase.
- Evaluate previous fire losses. (This is an excellent opportunity to use the Geographic Information System "GIS" software to perform a thorough analysis.)
  - o Location of fires
  - o Types of fires (structure, vehicle, brush, etc.)
  - o Determine time of day and day of week
  - o Cause of the fires
- Determine overall fire and hazardous condition risk. Free software is available from the United States Fire Administration called RHAVE. This tool can be used to determine risk versus response capabilities.

Once these criteria have been identified and evaluated, a commitment to proceed must be obtained from the County Officials for a Master Plan to be formulated.

MASTER PLAN

For the formulation of a Master Plan, the information obtained during the evaluation phase is vital in order to determine needed resources. It may also be beneficial to add or change out some of the members from the original Fire Protection Committee in order to obtain a fresh perspective from the information obtained. If changing out committee members, it is important to plan for this prior to any of the evaluation being performed to avoid the appearance that the changing of the members is politically motivated.

The master planning sessions should be held in an open forum to allow for citizen input and to establish the acceptable level of community risk.

Components of a master plan should address at least the following information:

- Goals and objectives needed to provide the level of service that will commensurate with the acceptable level of community risk.
- Existing fire protection, emergency medical and rescue capabilities.
- Necessary upgrades and additions to
  - o Fire station locations.
  - o Fire department staffing.
  - o Apparatus.
  - o Training.
  - o Equipment.
  - o Fire prevention objectives.

- Estimated capital outlay and operating costs.
- Financing.
- Mutual/Automatic Aid agreements.
- Water supply.
- Building/Fire Codes.

Once this plan is formulated, presentation can be given to the County Commission. The plan should also be presented to as many civic groups as possible to educate/inform the public about the benefits that will be realized once the plan is implemented, prior to it being voted on by the Commission.

Other parts of this handbook are great resources to identify goals and objectives for improving fire protection services.

COUNTY FIRE DEPARTMENT REQUIREMENTS

T.C.A. § 5-17-101 specifies how a countywide fire department shall be formed and the funding mechanisms authorized. The powers and duties of the county fire department are addressed in T.C.A. § 5-17-102. A county fire department must have a fire chief that is appointed by the County Mayor and approved by the County Commission per T.C.A. § 5-17-103. T.C.A. § 5-17-103 (b) grants to the county fire chief all of the emergency powers that are afforded to a municipal fire chief in T.C.A. § 6-21-703 when responding to, operating at, or returning from an emergency incident.

The countywide fire department must prepare an annual budget of anticipated receipts and expenditures that must be submitted to the legislative body (T.C.A. § 5-17-104).

ALTERNATE COUNTY FIRE DEPARTMENT

Some counties in the state have found it necessary to fund fire protection services at a higher level through a fire tax, but want to keep the fire protection delivery from the independent volunteer fire departments. These counties have created a Countywide Fire Department by Resolution that contracts with the local volunteer, municipal and/or private fire departments to provide service. The statute does require that a Fire Chief be appointed by the County Mayor and approved by the Commission. This can be an actual position that performs the needed administrative functions of a fire chief or may be a figurehead for the purpose of being in compliance with the statute.

SAMPLE RESOLUTION

Attached is a sample resolution that can be used to fund a fire service district without the implementation of a fire tax. Additional assistance can be obtained from CTAS to develop more specific resolutions with or without the implementation of fire tax districts.

RESOLUTION TO ESTABLISH A COUNTY FIRE SERVICES DISTRICT

WHEREAS, *Tennessee Code Annotated*, Title 5, Chapter 17 authorizes counties to form a county-wide fire department which may serve the entire county area with the agreement of the incorporated municipalities and the county, or which may be organized to serve only the unincorporated areas of the county; and,

WHEREAS, _____ County has a need for a county fire department to provide fire protection services in the unincorporated areas of _____ County; and,

WHEREAS, Chapter 125 of the Public Acts of 1999 amends *Tennessee Code Annotated*, Title 5, Chapter 17 to allow the county legislative body of any county in Tennessee to establish a fire service district for the unincorporated areas of a county as an alternative to fire tax districts; and,

WHEREAS, when such a fire service district for the unincorporated areas of a county is established, the county is authorized to allocate revenues to such fire service district and county fire department from revenues generated by situs-based taxes collected in unincorporated areas of the county, revenues from other sources which have already been shared with municipalities or from donations or charitable contributions to fund the activities of the county fire department; and,

WHEREAS, _____ County does not wish to form fire tax districts or use county property taxes to fund the county fire department, nor does _____ County wish to use any funds contributed to the county by taxes generated in the incorporated areas of _____ County to fund the county fire department;

NOW THEREFORE, BE IT RESOLVED by the Board of County Commissioners of _____ County, Tennessee meeting in regular session in _____, Tennessee as follows:

1. A county fire department for the unincorporated areas of _____ County is hereby re-established in accordance with *Tennessee Code Annotated*, Title 5, Chapter 17, as amended.
2. The unincorporated area of _____ County is designated a fire service district.
3. The county fire department shall be funded exclusively from revenues generated by situs-based taxes collected in unincorporated areas of the county, revenues from other sources which have already been shared with municipalities or from donations or charitable contributions. Beginning July 1, 20_____, funds for the use of the county fire department shall be allocated to a special fund which shall be created and established and which shall be known as the _____ County Fire Protection Fund. Revenues shall be allocated to the_____ County Fire Protection Fund and appropriated to the use of the county fire department through the regular budgetary and appropriation process of _____ County, Tennessee subject to the restrictions provided by this Resolution.

Adopted this _____ day of _____, 20_____.

APPROVED: _____
County Mayor

ATTEST: _____
County Clerk

IX. RECRUITMENT AND RETENTION

The availability of fire department personnel plays a key role in improving fire protection capabilities, as well as in achieving an improved ISO rating. A concentrated effort must be focused on recruiting and retaining those personnel. As with any volunteer type of agency, the fire service is susceptible to burnout of its most valuable resource–people. This is a costly problem due to the fact that each person will have obtained a fair amount of training and experience that is not easily replaced. With increased personnel on each fire department's roster, the workload (both emergency and routine activities) can be reduced, thus eliminating a certain amount of stress.

Additional personnel should be recruited in the community who may not have an interest in performing actual firefighting or rescue activities, but would like to contribute to the department. These resources can be administrative in nature (bookkeeping, report filing, clerical support, etc.), help with special fund-raisers, or assistance with maintenance of apparatus and facilities. Fire service equipment must be tested and maintained on a regular basis. These people can help with this process, reducing the amount of work that the emergency responders must perform. This in turn will allow for more time in training, emergency responses, and most importantly, personal time for all members of the department.

Each department should have an assigned person that is responsible for recruitment and retention of personnel. The recruiters from all of the departments should meet at least quarterly to discuss recruitment/retention issues and coordinate campaigns that all of the departments can benefit from.

An additional source of future fire fighters should be the establishment of a chartered Fire Explorer Post. A Fire Explorer Post will benefit your fire department directly, improve your community, and make better citizens of the people who are involved. Exploring is designed to bring career and special interest programs to young men and women, 14 to 20 years of age. At the very least, you will want to find out more about how Fire Exploring can help you recruit volunteer firefighters, build a basis of community support for your fire department and at the same time provide a character-building, citizenship-training, personal-fitness, and career-awareness program for the young people of the county. This is a project that could be jointly sponsored by the City and County fire departments.

One final note that should be considered is how to retain dedicated personnel and reward them for their efforts. An excellent program that departments and even some counties are beginning to provide for their volunteer firefighters is a Length of Service Award Program (LOSAP). The Volunteer Fireman's Insurance Service and other vendors offer a LOSAP system that can be configured to meet local standards. The county and the departments agree upon the performance criteria (typically a certain amount of monthly activity calls, training, stand-by time, etc.) and after a specified time period of 10-15 years the firefighter is vested. At a specified age, the firefighter is eligible to draw a monthly stipend from the program.

Another retention tool that jurisdictions are beginning to use is a monthly stipend program. It is becoming increasingly necessary to compensate volunteers for the use of their time and fuel, etc. A monthly stipend program can increase response rates, training, and certifications, and give

volunteers extra money near the holidays and vacation time. The stipend can be tied to monthly responses (usually 40 percent or higher) for the individual, a dedicated shift of 12 hours each month, a minimum of four hours training, etc. The stipend is set up on a step program based upon tenure, rank, etc. The amount that each member earns is then paid in June and December. For counties or departments that are interested in this process, the CTAS Fire Consultant can develop an individual program.

The personnel policies of the county should reflect the specific programs that are adopted to assist with the needs of the county fire department. Other programs that have assisted counties and fire departments include

- Firefighter of the Year award,
- Annual family picnic,
- Leadership retreats,
- Service awards: 5, 10, 15 years, etc.
- Jackets, t-shirts, etc.,
- Disability insurance,
- Income replacement insurance
- Volunteer retirement program (see above),
- Monthly allowance tied to rank, participation, training (see above)
- Established rank system, not election,
- Firefighter of the month/quarter,
- Life Insurance,
- Trips to National Fire Academy and national fire conferences and expos,
- Memberships paid to fire organizations.

It is important analyze the local needs and develop a program that will recruit quality personnel and retain members. This will greatly improve the service delivery and competencies within the community.

X. TRAINING

Training is one of the most critical functions that a fire department will conduct. The type and effectiveness of the training will be the basis of a life-or-death decision made by most members of the fire service at least once in their career. That decision could affect their lives, the life of a citizen whom they are summoned to help, or an innocent bystander who becomes involved in a collision with a fire truck while responding or returning from a call if the emergency vehicle driver has not been properly trained. With these points in mind, fire departments and counties that operate fire departments must have an aggressive, highly qualified, and accessible training program in place from the very beginning of a firefighter's career. Fire departments and local jurisdictions must do everything possible to make it feasible for every member of the fire department to obtain the maximum amount of training available.

ISO AND TRAINING REQUIREMENTS

ISO places a high level of emphasis on training requirements in fire departments. Training accounts for 9 percent of the total points that can be obtained in the grading process. ISO recognizes that even if a jurisdiction has good water supply and fire equipment, if the necessary training has not been completed, then the fire department will continue to see significant losses from structure fires.

The minimum amount of training that each fire department personnel must complete monthly is 20 hours for paid firefighters and four hours for a volunteer. Documentation of the training is essential. The following information must be documented, for the training to be credited:

- Where the training was conducted,
- Who attended,
- Length of the session,
- What was studied and learned, and
- Instructor's name.

A copy of this information must be placed in each firefighters personal training record.

Each department must have a basic complement of training materials available. These materials should include IFSTA training manuals, lesson plans from various sources and drill guides. A county wide training facility should also be planned for to include a drill area, smoke/burn areas, and a drill tower. These facilities can be constructed for a reasonable amount of money on a piece of centrally located county-owned land, to maximize usage.

ISO recognizes the minimum amount of training per session to be three hours. The ISO rating schedule also states when the training will occur, and requires a certain amount of topics to be addressed annually. They include

- eight half -day (three hours) drills per year.
- four half-day (three hours) multi-company drills per year.
- two night drills (three hours) per year.

Other required topics include

- Officer training–two days per year for all officers.
- Driver and operator training–four half-day sessions per year.
- New driver and operator training–40 hours.
- Radioactivity–half day per member per year.
- Recruit training.
- Pre-fire planning–each commercial occupancy, twice a year.

INTER-DEPARTMENTAL TRAINING

Mistrust or distrust of other departmental training practices cause many jurisdictional rivalries. Joint departmental training sessions will make significant progress toward operating as a more unified force. With proper planning and implementation over a reasonable time period, the fire personnel will be in a better position to effectively and safely handle most emergencies that will occur in the county.

A county wide training officers association should be formed with representatives from each department and the Emergency Management Office attending a meeting at least once every two months. Following are some of the issues that the association could address.

- Create a year in advance monthly training topic plan. Personnel with specialties in a training topic may travel around the county to conduct the sessions.
- Plan joint training sessions to increase proficiency among departments.
- Plan a joint training facility that all departments may use independently and from which to conduct joint department training sessions.
- Determine which field classes are needed and schedule with the State Fire Academy.
- Plan for annual defensive driver training and refresher courses.

Training for emergency services can be obtained from several sources. Unfortunately, some of those conducting the training may not be qualified to do so. Some credible sources of training are

- A qualified in-house training program.
- The State of Tennessee Fire and Codes Enforcement Academy.

- National Fire Academy.
- Local Community Colleges.
- Private training providers.

IN-HOUSE TRAINING PROGRAMS

Every fire department should have a qualified individual who functions as the training officer for the agency. In larger organizations, several members may conduct training courses, but the training officer plans, coordinates, and ensures that the training is being conducted according to the applicable standards. The training officer should have received courses in fire and emergency service instruction, as well as being certified (or working to be certified) as a minimum Fire Instructor I from the State Commission on Firefighting.

Training must be planned to address the requirements needed for ISO criteria, OSHA, or other Federal regulations and local hazards that are unique to the community. Training should also be designed to meet the minimum performance standards published by the National Fire Protection Association (see NFPA Standard appendix). A needs assessment should be conducted to determine current and potential hazards present within the response areas, current levels of training, and the minimum level of training needed to safely mitigate the hazards.

Technology today provides for multiple aids to training that were not available a few years ago. Fire departments now subscribe to satellite-fed training directly in their stations, monthly video magazines that highlight current issues and lessons learned from actual incidents, and CD/DVD programs that allow consistent training among multiple users at different times.

Fire departments can use a "Development Tract" approach to meeting training needs and tracking progress of individual members in order to achieve standardized competencies. Development tracts can be created for basic (rookie) firefighter training, senior firefighter, driver operations, officer development, hazardous materials personnel, emergency medical services, fire prevention/investigation, and specialized rescue services. This list is not intended to be all-inclusive. As hazards change, the training program must always attempt to "stay current" and plan for the future. In addition to the development tracts, monthly mandatory training must also be conducted. The training sessions must be conducted in a manner that allows most members of the department to attend. Work schedules of volunteers must be taken into account, as well as allowing for family time. Some examples of courses that should be included in the development tracts follow.

BASIC FIREFIGHTING

This category should be mandatory for all new members (NO EXCEPTIONS). Very few departments have the equipment, facilities, or personnel to conduct a rookie school program that meets the standards of NFPA 1001: Firefighter Professional Qualifications. The State Fire Academy is an excellent and cost efficient means to obtain this necessary training.

- Basic and Live Firefighting–Volunteer members
- Recruit Firefighting (Minimum 240 hours)–Career personnel
- Incident Command System
- Initial Response to Hazardous Materials: Basic Concepts/Concepts Implementation
- Emergency Response to Terrorism: Basic Concepts
- Weapons of Mass Destruction

SENIOR FIREFIGHTER

Courses in this tract should be designed to meet the Level II requirements in NFPA 1001 as well as strengthen and reinforce the basic firefighting training already achieved.

- SCBA Using It
- Ventilation
- Tennessee Incident Reporting System
- Incident Safety Officer
- Strategy and Tactics
- Smoke Divers
- Building Construction I and II
- Managing Company Tactical Operations
  - o Preparation
  - o Decision Making
  - o Tactics
- Firefighting Safety and Survival
- Conducting Basic Fire Prevention Inspections
- Arson Detection for First Responders
- Rapid Intervention Team Operations

DRIVER OPERATIONS

The driver operation tract is very critical to ensure safe response and reduce liability. Too often apparatus do not make it to the scene of an incident because of improperly (or not at all) trained personnel. Each department will have a different tract depending upon type of department and apparatus type. Following is a sample of possible programs.

- Emergency Vehicle Driver Training (should be mandatory)
- Introduction to Fire Department Pumpers
- Pumper Hydraulics
- ISO and Tanker Operations
- Pump Operations: I, II and III
- Aerial Apparatus Operations
- Fire Apparatus Maintenance

OFFICER DEVELOPMENT

An officer development program should not only address emergency operations, but also leadership and planning issues. This is vital because too often in the fire service, those who rise through the ranks are the best firefighters, but have no people skills or abilities to lead a department through progressive change. In addition to the courses listed, many additional courses are offered at the National Fire Academy. Non-credit management/supervision classes conducted at community colleges and universities can also be very beneficial.

- Fire Instructor I
- Leadership I, II and III
- Fire Officer I, II, III and IV
- Volunteer Fire Service Management
- Managing in a Changing Environment
- Inspection for Company Officers
- Initial Response to Terrorism for Company Officers
- Basic and Advanced Fire Origin and Cause Investigation
- Instructional Techniques for Company Officers
- Fire Service Supervision I and II
- Preparing for Incident Command
- Commanding the Initial Response
- Intro to Wildland Firefighting for Structural Company Officers
- Shaping the Future
- ICS for Structural Collapse Incidents

HAZARDOUS MATERIALS PERSONNEL

Hazardous materials training in the Homeland Security era involves more than just preparing for traditional haz-mat incidents like transportation incidents, chlorine leaks, and laboratory mishaps, to name a few. Today's fire service must prepare for terrorist activity (both foreign and domestic in origin) that includes chemical, biological, and radiological devices that are intentionally created

and placed to cause the maximum amount of damage.

- Initial Response to Hazardous Materials: Basic Concepts/Concept Implementation
- Recognizing and Identifying Hazardous Materials
- Hazardous Materials Incident Analysis
- Basic Life Support and Hazardous Materials Response
- Emergency Response to Terrorism: Basic Concepts
- Emergency Response to Terrorism: Tactical Considerations Hazardous Materials
- Weapons of Mass Destruction
- Radiological Monitoring
- Hazardous Materials Team Operations

FIRE PREVENTION/INVESTIGATION/ PUBLIC EDUCATION

The fire prevention activities of a fire department are some of the most critical and effective operations that a department will conduct. All personnel should receive a certain amount of the training from this category, regardless of the fact that they may or may not concentrate in it. Fire prevention and public education is the responsibility of every member of the fire service.

- Public Fire Education
- Building Construction I and II
- Basic and Advanced Fire Origin and Cause Investigation
- Conducting Basic Fire Prevention Inspections
- Fire Inspector I and II
- Fire Safety Plans Review
- Introduction to Codes
- Legal Aspects of Codes Enforcement
- Building Fire Protection Systems
- Fire Proofing Methods and Protection of Rated Assemblies
- Life Safety Code Principles
- Storage Tanks for Combustibles
- Fire Sprinkler Design and Plans Review

SPECIALIZED RESCUE SERVICES

Departments must determine the type of specialized rescue hazards associated with their area. Due to the fact that these specializations require expensive equipment and high levels of initial/continual training, it may be more feasible to form regional teams or allow different departments within a region/county to specialize in the given field and be supported by the other departments.

- Vehicle Extrication (probably needs to have more than one department conducting in a county, due to the amount of incidents and "Golden Hour" situations)
- High-Angle Rescue
- Confined Space Rescue
- Farm Rescue
- Swift Water/Dive Rescue
- Ground Search and Rescue
- Structural Collapse
- Trench Rescue

STATE FIRE ACADEMY

The State Fire Academy is located in Bell Buckle (Bedford County), Tennessee. It is a new state-of-the-art facility that very few states in the country can match. A host of classes are offered including basic recruit (both career and volunteer) training, apparatus operator courses, maintenance of fire equipment, officer development, inspections/investigations, and leadership courses, to name a few. In its first year of operation (2002-03) the academy provided training to over 4,900 students producing approximately 116,000 student contact hours. The academy projects growth in both students and contact hours for this year and those to follow, barring fiscal cuts.

The State Fire Academy also provides a significant number of field programs that they will bring into local departments across the state. A minimum of 15 students is needed and can be from various departments to achieve this number if necessary. These courses include, but are not limited to basic firefighting (rookie school), pump operations, ISO and tanker operations, tactical courses, leadership, arson investigations, various terrorist related courses, and management courses. This service is a tremendous aid to local volunteer firefighters that cannot afford to take off from their full-time jobs to go away to the academy. The courses can be scheduled at a time that is convenient (evenings and weekends) and are very affordable. The basic firefighting courses should be mandatory for all new members that join the volunteer fire service and those that have not attended it previously.

The State Fire Academy coordinates the Tennessee Weekend activities at the National Fire Academy in Emmitsburg, Maryland. This is a great opportunity for departments from across the state to give members the chance to experience the NFA for the highest level of instruction in the country. The state academy also conducts the Smoky Mountain Weekend held each spring in Sevier County. Last year over 700 fire department personnel from across the state received instruction at this event.

NATIONAL FIRE ACADEMY

The National Fire Academy, in addition to conducting the state weekend programs, offers a number of courses designed for both career and volunteer fire personnel. The courses at the academy are generally geared toward personnel that are in management positions or are "up and coming" members of their departments. Courses involve subjects such as Executive Development, Hazardous Materials, Inspection/Code Enforcement, Arson Investigation, Command and Control, Financial and Data Analysis, etc. Most of the courses and lodging is of no charge, and the travel is reimbursed as well. The length of the courses is generally two weeks, but programs geared toward volunteer fire personnel are one week.

In addition to the on-site courses, the NFA provides many courses as hand-off programs to state and local fire agencies in order to reach as many personnel as possible. The NFA has also created a Degrees at a Distance program that offers a bachelor's degree curriculum administered through seven universities across the country to local fire personnel without having to go away for college.

LOCAL COMMUNITY COLLEGES

A number of community colleges across the state offer fire and/or emergency medical related courses and degrees. These programs are regionalized and can be of benefit to existing or aspiring leaders in the emergency services. The emergency services fields in general are becoming more specialized and the hazards faced are more complex. The community college programs can benefit departments and counties by assisting with the broader, more in-depth studies beyond the basic fire curriculum, at a reasonable cost.

TRAINING SUMMARY

The county has a strategic interest in making sure that all emergency personnel operating within the county have the ability and support to obtain the maximum amount of training. The positive effects of an aggressive training program are increased morale among responders, higher retention rates of personnel, reduced injury rates of the responders and citizens, decreased loss of life

and property, and a community that is in a better position to handle the emergency situations that will occur over time.

XI. MUTUAL AND AUTOMATIC AID

The Mutual Aid and Emergency and Disaster Assistance Agreement of 2004 (TCA § 58-8-101 et seq.) is a complete overhaul and vast improvement in the laws regarding mutual aid and other emergency assistance in Tennessee. In recent years, changes at the federal and state level had created some confusion regarding the law on providing assistance between local governments. Under previous laws governing mutual aid, a written agreement must have been signed and in effect prior to the occurrence of the emergency in order for local governments to be eligible for reimbursement from FEMA for costs related to providing mutual aid.

This act actually puts in place a basic state-wide mutual aid agreement for all Tennessee local governments effective July 1, 2004. Your county and/or independent volunteer fire department does not need to take any action if you want to be part of this statewide mutual aid agreement. All of the existing mutual aid agreements in effect prior to this date were replaced with the basic mutual aid agreement contained in the Mutual Aid and Emergency and Disaster Assistance Agreement Act of 2004 (hereafter called the Act).

This new law now provides that you can have a mutual aid relationship with every governmental entity in the State of Tennessee without the need of cumbersome and complicated contractual agreements. It does not require anyone to provide mutual aid, but if you choose to provide assistance in someone else's emergency or request assistance for your own local emergency, there will now be statutes in place to govern reimbursement, liability and management issues related to the disaster. Keep in mind however, that because this is a Tennessee law, it does not have any effect on out-of-state agreements and you must continue to have other written, signed agreements with any out-of-state entities.

The act defines "governmental entity" as follows:

> "Governmental entity" means any political subdivision of the state, including, but not limited to, any incorporated city or town, metropolitan government, county, utility district, school district, nonprofit volunteer fire department receiving public funds and recognized under Title 68, Chapter 102, Part 3, rescue squad, human resource agency, public building authority, airport authority, and development district, or any instrumentality of government created by one (1) or more of these named governmental entities or the general assembly, or any entity otherwise recognized by state law as a local governmental entity;

The Act greatly simplifies the mutual aid process in Tennessee and provides the security and legal clarity that was often lacking when a jurisdiction sent help to another local government without a clear agreement on the terms of such assistance. With this new act, for the first time in Tennessee law a distinction is made between providing mutual aid in the event of an emergency and other interlocal service agreements. The Act does not prohibit you from having contracts or interlocal agreements that provide for services with specific neighboring jurisdictions such as automatic aid agreements, joint ventures (such as a special operations team with members from

multiple jurisdictions), or service agreements that allow one city or county to provide specific services to another city or county either free or for an agreed upon price. But in disasters and emergencies, the Act provides clear legal authority for local government personnel to work outside their home jurisdiction and specifies how worker's compensation and governmental tort liability laws apply to these personnel outside their jurisdiction.

The mutual aid and reimbursement provisions of the Act allow for a great degree of local control. Local officials decide who to ask for assistance and how much assistance they need. Responding entities decide whether they can provide assistance at all, the level of assistance they can provide and how long they can stay. The reimbursement provisions even have a local triggering mechanism. While the Act establishes a clear framework for how one local government reimburses another for assistance, those provisions do not kick in until a designated local official (the county mayor or executive in the case of counties or his or her designee) makes a determination that a local state of emergency exists. Prior to that determination, the law does not provide for reimbursement for assistance that is provided.

As an example, if a storm causes flooding in a localized area, one county may request that a neighboring highway department and sheriff's office send some personnel over to help control traffic and clear streets and highways. If the responding jurisdiction is willing, this assistance would be provided for free as routine assistance. If the storm worsens, causing wide-spread flooding and damage and requiring significant amounts of additional personal and equipment for an extended period of time, the county mayor may then declare a state of emergency. At that point, the reimbursement provisions are triggered and any responding jurisdictions are entitled to reimbursement for their expenses in providing assistance. Since the law requires reimbursement at that point, if federal funds later become available for the disaster from FEMA, the federal reimbursement can include not only the direct costs of the damaged jurisdiction, but also the costs of reimbursement that the damaged jurisdiction owes to responding governments that provided assistance.

The Act clearly states that no entity has a duty to respond. Therefore, if you are unable to send requested mutual aid, you are not liable for refusing to send assistance when requested. Liabilities are further reduced by providing that all parties enjoy the same protections when operating outside their city as they have when they are in their home jurisdiction. For an entity to respond under true mutual aid, there must be another governmental entity requesting assistance, not just a citizen calling for service or a police officer or firefighter hearing an incident going down on their radio and responding as an un-requested backup to another jurisdiction. Mutual aid must be requested by one governmental entity to another, not from one person to another. It is important to note that this act is intended for non-routine events. Routine events such as house fires and other "daily" occurrences should be addressed using an interlocal agreement.

Interlocal agreements are an integral part of providing adequate fire and emergency services in many jurisdictions. Fire departments must evaluate response capabilities, manpower, and

equipment limitations in order to determine the ability to respond to anticipated emergencies. Once this evaluation is completed, interlocal agreements can be constructed to enhance areas that the local jurisdiction cannot adequately provide response capabilities. T.C.A. § 12-9-104 provides for the ability to enter into interlocal agreements with other local agencies for services. Additionally, the use of Automatic Aid agreements carry an extra benefit in the fact that often the local jurisdiction can receive ISO credit for using the Automatic Aid department in specified response areas. Attached is an example that can be used when drafting an interlocal agreement.

INTERLOCAL MUTUAL AID AGREEMENT FOR FIRE, RESCUE AND EMS SERVICES PURSUANT TO T.C.A. SECTION 6-54-601 AND T.C.A. SECTION 12-9-104

THIS AGREEMENT entered as of the _____ day of _____,20_____, by and among:
The City of _____,
The Town of _____,
The City of _____ and
The County of _____.

Pursuant to *Tennessee Code Annotated*, Section 6-54-601 relative to fire fighting assistance and in consideration of the mutual covenants contained herein, the parties agree as follows:

1. The parties will respond to calls for fire fighting, rescue and EMS assistance (provided by the respective fire departments) only upon request for such assistance made by the senior Fire official on duty of the fire department of the respective city or county, except as otherwise provided in paragraph 9. All requests for assistance shall be made only to the E-911 dispatch center by radio or telephone.

2. Upon request for aid received as provided for in paragraph (1), the senior fire officer of the responding party will authorize response as follows:

3. (a) Each of the parties to this Agreement will attempt to provide, when requested, either an Engine, Tanker, Ladder or Service truck and other specialized equipment in response to the specific request for such equipment or vehicle dispatch may be based upon specific requests or assignments as agreed in a separate operations guideline worked out in advance by the individual department heads. Each vehicle shall have, when available, the following minimum crew sizes:

Engine	three firefighters
Tanker	two firefighters
Extrication Vehicle	two firefighters
Manpower Squad	four firefighters
EMS/Rescue	two EMS trained firefighters
Other Vehicles	two firefighters

The maximum response of any fire department will be no more than 50 percent of the total personnel and resources of the department.

Each party's response will be determined by the severity of the emergency in the requesting party's jurisdiction as determined by the senior fire officer of the agency from which the request is made.

(b) If there is also an emergency in the jurisdiction of the responding party at the time a request is made, or one occurs in the course of responding to a request under this agreement and the senior fire officer of the responding party reasonably determines, after a consideration of

the severity of the emergency in both jurisdictions, that the responding party cannot comply with the minimal requirements under this agreement without endangering life or incurring significant property damage in his jurisdiction, or both, he may choose to use all equipment and personnel in his own jurisdiction. In this case, the senior fire officer of the responding party shall attempt to inform the senior fire officer of the requesting party of the decision as soon as possible. In cases where two or more requests for mutual aid assistance are made at the same time, thereby making compliance with the minimum requirements of this agreement impossible for the responding party, the senior fire officer of the responding party shall determine, based upon a reasonable appraisal of the emergencies of the requesting jurisdictions, how best to respond to the requests. The senior fire officer may determine to send all available resources under this agreement to the jurisdiction with the direst emergency, or he may send some resources to each requesting jurisdiction. The senior fire officer shall inform the requesting officer of the requesting parties of his decision. In both situations outlined in this subsection (b) where compliance with the minimal duties of this agreement is impossible, the requesting party or parties will not expect full compliance with those minimal duties but will expect a fair appraisal of the emergencies involved and a commensurate response.

3. When fire department personnel are sent to another community pursuant to this agreement, the jurisdiction, authority, rights, privileges and immunities, including coverage under the Workers' Compensation Laws, which they have in the sending Department shall be extended to and include any geographic area necessary as a result of the request when these personnel are acting within the scope of the authority conferred by this agreement.

4. The party who requests mutual aid shall in no way be deemed liable or responsible for the personal property of the members of the Department of the responding party that may be lost, stolen, or damaged while performing their duties in responding under the terms of this agreement.

5. The party responding to the request for mutual aid under the terms of this agreement assumes all liabilities and responsibility as between the parties for damage to its own apparatus and/or equipment. The party responding also assumes all liability and responsibilities as between the parties for any damage caused by its own apparatus and/or negligence of its personnel while enroute to or returning from a specific location.

6. Pursuant to *Tennessee Code Annotated*, 29-20-107(f), for liability purposes only, employees of the responding party shall be considered employees of the requesting party while at the scene of the emergency and undertaking operations pursuant to this agreement.

7. The parties will pay compensation Except as otherwise provided below, it is understood that the requesting party shall pay to responding party all documented costs and expenses incurred by responding party as a result of extending aid and assistance to responding party. Requesting party shall be ultimately responsible for reimbursement of all eligible expenses.

Reimbursement of Emergency Aid and Assistance – Responding party shall only be entitled to reimbursement by requesting party for aid and assistance provided in excess of four (4) hours and shall only receive payment for one-half (1/2) of its reimbursable costs and expenses for aid and assistance provided for a time period of between four and eight hours. Responding party shall be entitled to 100 percent of its reimbursable costs and expenses for all aid and assistance provided in excess of eight hours. The time periods herein shall be calculated from the time the responding party leaves its jurisdiction to the time it returns to its jurisdiction.

Personnel - During the period of assistance, responding party shall continue to pay its employees according to its then prevailing wages, including benefits and overtime. Requesting party shall reimburse responding party for all direct and indirect payroll costs and expenses, including travel expenses, incurred during the period of assistance, including, but not limited to, employee retirement benefits as provided by Generally Accepted Accounting Principles (GAAP). However, requesting party shall not be responsible for reimbursing any amounts paid or due as benefits to responding party's personnel under the terms of the Tennessee Workers' Compensation Act.

Equipment - Responding party shall be reimbursed by requesting party for the use of its equipment during the period of assistance according to either a pre-established local or state hourly rate or according to the actual replacement, operation and maintenance expenses incurred.

Materials and Supplies - Responding party shall be reimbursed for all materials and supplies furnished by it and used or damages during the period of assistance, except for the costs of equipment, fuel and maintenance materials, labor and supplies, which shall be included in the equipment rate described above, unless such damage is caused by gross negligence, willful and wanton misconduct, intentional misuse, or recklessness of responding party's personnel. The measure of reimbursement shall be determined in accordance with 44 C.F.R. part 133 and applicable Office of Management and Budget (OMB) Circulars.

Record Keeping - Responding party shall maintain records and submit invoices for reimbursement by requesting party. For those instances in which the Federal Emergency Management Agency (FEMA) reimburses costs, requesting party is responsible for submitted requests for reimbursement to TEMA on forms required by FEMA publications, including 44 C.F.R. part 13 and applicable Office of Management and Budget (OMB) Circulars.

Payment and Other Miscellaneous Matters as to Reimbursement -The reimbursable costs and expenses with an itemized invoice shall be forwarded by responding party to requesting party as soon as practicable after the costs and expenses are incurred, but not later than 60 days after the provision of aid and assistance has ended.

- The respective parties agree that no claim for compensation will be made by either against the other for loss, damage, or personal injury occurring in consequence of mutual aid assistance rendered under this agreement and all such rights or claims are hereby expressly waived.

- The senior fire officer in whose community the emergency exists and who places the request for assistance, shall in all instances be in command of the emergency as to strategy, tactics and overall direction of the operations. All orders or directions regarding the operations of the responding party shall be relayed to the senior fire officer in command of the responding party.

- In addition to the foregoing provisions, the parties agree to provide automatic mutual aid to the specific industrial, commercial and selected other properties as listed on Exhibit B – "Automatic Aid property or zone", attached to this document. Adding or subtracting properties when agreed to by all the fire chiefs of the parties to this agreement may amend Exhibit B. Automatic aid is defined as the simultaneous dispatch and response of two or more fire departments to the same property, area, or zone regardless of the actual location or jurisdiction of the property.

- This agreement shall continue from year to year from _____, 20_____, through _____, 20_____, unless either party gives written notice of termination hereto at least sixty (60) days prior to July 1 of any year. No further obligations or liabilities shall be imposed upon the withdrawing party after termination. This agreement shall continue in effect with respect to all parties that have not withdrawn unless the number of active parties is reduced so that only one party remains.

- This agreement shall be valid between the signed parties when it is executed by any two of the Mayors and fire chiefs of the respective political jurisdictions pursuant to the ordinance/resolution of each jurisdiction authorizing the Mayors to execute it.

IN WITNESS WHEREOF, the parties hereto have executed this agreement as of the day and year written above.

City of: _____

By: _____
Mayor

By: _____
Fire Chief

Town of: _____

By: _____
Mayor

By: _____
Fire Chief

County of: _____

By: _____
County Mayor

By: _____
Fire Chief

Approved as to form: _____

_____
City and/or County Attorneys

XII. TENNESSEE STATUTES REGARDING FIRE PROTECTION

The following is a list of the more common references to fire protection in Tennessee Code Annotated.

T.C.A. SECTIONS	EXPLANATION
4-24-101 through 111	Addresses the Tennessee Commission on Firefighting Personnel Standards and Education members, duties, powers, funds and assistance to local fire departments.
5-9-101	States in part that county legislative bodies may appropriate moneys to non-profit volunteer fire departments to non-profit countywide departments as authorized by 5-17-101, upon such terms as may be agreed to by the county legislative bodies.
5-17-101	States in part that the county legislative body or other governing body of any county in this state is authorized to form a new agency to be known as the countywide fire department for the purpose of providing fire protection service to the entire county outside of the corporate limits. States that the countywide fire department may be funded by fire tax districts, situs-based taxes that have been collected in unincorporated portions of the county, or taxes that have already been shared with municipalities. Allows for the local governing body to receive donations or charitable donations for fire protection regardless of the funding mechanism in place.
5-17-102	Sets out the powers and duties of the countywide fire department to do all things necessary to provide coordinated fire protection to all areas of the county. To recommend the boundaries of fire tax districts or districts to the county legislative body relative to costs.
5-17-103	States in part that an official to be known as the county fire chief shall head the agency. The county mayor, subject to confirmation by the county legislative body, appoints the county fire chief.
5-17-104	States that the countywide fire department shall prepare an annual budget and determine what share of the total annual expenses must be allocated to each fire tax district.
5-17-105	States in part that the county legislative body shall determine the boundaries of fire tax districts with proper notice being given to property owners in the district. The fire tax districts shall be comprised of the entire county outside of the incorporated limits; however, municipalities may contract to participate in the districts.
5-17-106	States in part that the county legislative body shall levy an annual fire tax rate upon the property owners of each district. The fire tax of each fire tax district shall be set at a rate sufficient to pay that district's share of the total budget of the countywide fire department.

T.C.A. SECTIONS	EXPLANATION
5-17-107	States in part that the fire tax shall be assessed in the same manner as the county property tax and collected as an addition thereto. The fire tax shall in all ways be treated as a part of the county property tax.
5-17-108	Permits coordination and cooperation with other fire protection services in the county such as municipal and/or utility districts.
6-21-701 through 704	These sections pertain to municipal fire departments, fire chiefs, fire marshals, emergency powers, and calls outside of their fire service district.
6-54-601	Authorizes incorporated cities and towns to enter into contracts with other incorporated cities and towns, counties, and/or organizations of residents and property owners of unincorporated communities to furnish fire-fighting assistance.
6-54-602	States in part that fire departments answering calls outside the corporate limits shall be considered as acting in a governmental capacity.
7-38-101	Permits the formation of private fire companies.
7-51-204	Pertains to the collection of dues for a fire department association from the employee's paycheck.
7-82-302	States that a utility district may be established for the purpose of furnishing fire protection services.
8-36-205	States in part that a mandatory retirement age shall apply to firefighters who participate in the Tennessee Consolidated Retirement System.
55-8-108	Pertains to the operation of emergency vehicles in response to emergency calls.
55-8-132	Pertains to operation of a vehicle when approached by or approaching an emergency vehicle that is making use of the appropriate emergency signaling equipment.
62-32-321	States in part that a county or municipality may impose penalties for false alarm activations up to $25 per incident.
63-6-218	"Good Samaritan Law" addresses the rendering of first aid in good faith.
68-102-108	States in part the positions that shall be Assistants to the Commissioner of Commerce and Insurance and the process for obtaining this designation. This designation is now required of the fire chief of every duly recognized fire department by the Fire Department Recognition Bill.
68-102-111	States in part that assistant to commissioner shall investigate every fire occurring within the respective jurisdiction to determine cause and origin. These fires are to be reported to the commissioner within 10 days of occurrence. The assistant shall order structures found to be beyond repair to be demolished.
68-102-201 through 204	Establishes the Tennessee Fire and Codes Academy and addresses the duties of the academy.

68-102-303	States in part that all fire departments must be registered with State's Fire Marshal's Office, and no entity can operate a fire department without such registration.
68-102-304	States in part procedures for registration, assigns a fee not to exceed $50 and states that the registration period shall be effective for three years.
68-102-305	States in part that the fire agency must be in compliance with T.C.A. 68-102-208 by properly requesting designation as an assistant to the Commissioner of Commerce and Insurance.
68-102-306	States in part that no fire department may be started after July 1, 2003, without the approval of the local elected governing body including the approval of the geographic response area. Forbids any fire department from soliciting or receiving local, state, or federal funds without being properly registered with the state fire marshal's office.
68-102-307	Any person violating the provisions of this part shall be guilty of a Class C misdemeanor punishable by a fine only.
68-120-101	Addresses the adoption and enforcement of fire and building codes and issuance of permits by the state and local jurisdictions.
68-212-121	States in part that the employer's liability for employee's motor vehicle accidents involving hazardous materials. Provides for a means to recover cost associated with response and recovery of the incident scene by the local government agency.

XIII. FEDERAL REGULATIONS ADDRESSING FIRE AND EMERGENCY SERVICES

Fire and emergency service organizations are not exempt from Federal Regulations. Increasingly, fire departments are coming under increased scrutiny after a line of duty fatality or serious injury occurs. A city in Oregon was recently fined $50,450 after an investigation revealed 16 violations of Federal Regulations during a fire that killed three firefighters.

The Occupational Safety and Health Administration (OSHA) regulates workplace safety issues. Generally speaking, the OSHA rules apply when an employee/employer relation exists. Volunteer fire and emergency agencies are considered to have the employee/employer relation when workers' compensation coverage is provided or when any type of compensation is provided for training, responding to a call, or any other type of activity.

Following is a condensed version of a list compiled by Steve Street from the University of Tennessee's Center for Industrial Services of the more common federal regulations that affect fire and emergency departments, along with a brief explanation of the requirements and penalties for violations. The complete rules and regulations can be reviewed from the Code of Federal Regulations. These regulations also apply to any department of county government that may face similar hazards, i.e. general office staff, public works, etc.

OSHA 29 C.F.R. – OSH ACT OF 1970 GENERAL DUTY CLAUSE
Effective Date: 1970

NON-COMPLIANCE FINE

- ❑ De minimis violations ..... no penalty
- ❑ Non-serious violations..... up to $7,000 per violation
- ❑ Serious violations..... up to $7,000 per violation
- ❑ Failure to correct a prior violation ..... up to $7,000 per violation
- ❑ Repeated violations ..... up to $70,000 per violation
- ❑ Criminal violations ..... fine plus prison time

TO COMPLY

- ❑ Provide a safe and healthy workplace
- ❑ Comply with all applicable OSHA standards
- ❑ Post an OSHA poster informing employees of their rights
- ❑ Maintain appropriate illness and injury records and post these at least annually
- ❑ Post OSHA citations when they are received
- ❑ Post any Notice of Contest and employee's right to participate
- ❑ Post any Notice of Employee Consent until a hearing begins or a settlement is made
- ❑ Post any Notices of Imminent Danger
- ❑ Display signs and labels regarding potential or actual exposure to toxic substances or harmful physical agents
- ❑ Assure that employee rights are protected

Compliance Resources: TOSHA and www.osha.gov/Publications

OSHA 29 C.F.R. 1904 – RECORDING AND REPORTING OCCUPATIONAL INJURIES AND ILLNESSES
Effective Date: Updated January 2001

TO COMPLY

- ❑ Inform each employee how to report an injury or illness
- ❑ Obtain a report on every injury requiring medical treatment (other than first aid)–OSHA Form 301
- ❑ Record each injury within seven calendar days after receiving information on the injury–OSHA Form 301 or TOSHA C20 Form;
- ❑ Prepare annual summary report and post it from February 1 through April 30 of each year—OSHA Form 300A
- ❑ Retain these records for at least five calendar years following the end of the year to which it relates
- ❑ Report work-related incidents resulting in the death of an employee or hospitalization of three or more employees and all fatal heart attacks to TOSHA within eight hours after learning of the incident (TOSHA Hotline 1-800-249-8510)
- ❑ Whether or not an incident is immediately reportable, if it results in the death of an employee or the inpatient hospitalization of three or more employees within 30 days of the incident, the employer must report the fatality/ multiple hospitalization within eight hours of learning of it
- ❑ Protect these records and provide access to them only to authorized personnel (see OSHA 1910.1020)
  - Provide copy of OSHA Form 300 by end of next business day
  - Provide copy of " tell us about the case" section of OSHA Form 301 within seven calendar days

OSHA 29 C.F.R. 1910.120 – ACCESS TO EMPLOYEE EXPOSURE AND MEDICAL RECORDS
Effective Date: Updated June 20, 1996

TO COMPLY

- ❑ Inform employees upon initial hire and annually thereafter, of:
  - Existence, location, and availability of records
  - Responsible person
  - Employee's rights
- ❑ Make copy of standard available for employees
- ❑ Preserve and maintain each employee's medical records, exposure records, and supporting documents for at least 30 years
- ❑ Provide access to the employee within 15 days of a request or apprise the employee of the reason for the delay and the earliest date the records will be available
- ❑ Provide access to an employee representative with written permission from the employee
- ❑ Provide one free copy of the record to the employee or employee representative
- ❑ Provide access to OSHA representatives with a written access order
- ❑ Transfer all medical and exposure records to the director of NIOSH or TOSHA if employer ceases to do business
- ❑ Employer must inform employees upon initial hiring and at least annually thereafter of:
  - Existence, location and availability of records covered
  - Responsible person to contact
  - Employee rights
  - Make available copies of the standard

OSHA 29 C.F.R. 1910.35 – MEANS OF EGRESS
Effective Date: Updated November 7, 2002

TO COMPLY

- ❑ Exit routes must be a permanent part of the workplace
- ❑ Exits separated by fire resistant materials
- ❑ Openings into exits are limited to those necessary for exit
- ❑ Openings are protected by approved fire-doors that remain closed or are self-closing
- ❑ At least two exits located remote from each other
- ❑ Exit routes unobstructed
- ❑ Exit discharges into safe area
- ❑ Dead-end hallways labeled with NOT AN EXIT sign
- ❑ Employees must be able to open exit doors from inside at all times without keys, tools, or special knowledge
- ❑ Side hinged doors used and swing in direction of travel
- ❑ Capacity of exits adequate for number of people in workplace
- ❑ Exit width at least 28 inches and height at least 6 feet, 8 inches at narrowest point
- ❑ Outdoor exit routes clear, and open sides have guardrails if fall hazard exists
- ❑ Each exit clearly visible and marked with lighted EXIT sign
- ❑ Exit routes lighted and direction of travel signs visible
- ❑ Employee alarm system (see 1910.165)

Compliance resources: TOSHA, www.osha.gov and NFPA 101-2000 edition *Life Safety Code*

OSHA 29 C.F.R. 1910.38 – EMPLOYEE EMERGENCY ACTION PLANS
Effective Date: Update November 7, 2002

TO COMPLY

Planning Requirements

❑ Develop a written (may be communicated orally for employers with 10 or fewer employees) Emergency Action Plan detailing those actions employers and employees must take to ensure employee safety from fire and other emergencies

The following elements, at a minimum, shall be included in the plan.

❑ Emergency escape procedures and emergency escape route assignments
❑ Procedures to be followed by employees who remain to operate critical plant operations before they evacuate
❑ Procedures to account for all employees after emergency evacuation has been completed
❑ Rescue and medical duties for those employees who are to perform them
❑ The preferred means of reporting fires and other emergencies
❑ Names or regular job titles of persons or departments who can be contacted for further information or explanation of duties under the plan
❑ The employer shall establish an employee alarm system which complies with 1910.165

Develop a written Fire Prevention Plan detailing the fire hazards of the materials and processes in the workplace including

❑ List of major fire hazards
❑ Proper handling and storage procedures for hazardous materials
❑ Potential ignition sources and their control
❑ Type of fire protection equipment necessary for each major hazard
❑ Procedures to control accumulations of flammable and combustible waste materials
❑ Procedures for regular maintenance of safeguards installed on heat-producing equipment
❑ Name or job title of employee(s) responsible for maintaining equipment to prevent or control ignition sources
❑ Name or job title of employee(s) responsible for control of fuel sources

Training Requirements

❑ Before implementing the emergency action plan, the employer shall designate and train a sufficient number of persons to assist in the safe and orderly emergency evacuation of employees (rule of thumb is one warden for every 20 employees)
❑ The employer shall review the plan with each new employee covered by the plan at the following times:
  - Initially when the plan is developed
  - Whenever the employee's responsibilities or designated actions under the plan change
  - Whenever the plan is changed
  - Upon initial assignment
❑ The employer shall apprise employees of the fire hazards of the material and processes to which they are exposed

OSHA 29 C.F.R. 1910.95 – HEARING PROTECTION
Effective Date: June 1993

TO COMPLY

Hearing Conservation Program

❑ Establish a Hearing Conservation Program if any employee is exposed to noise at or above an eight-hour time weighted average of 85 decibels (dB) including
- Monitoring program
- Audiometric testing program
- Hearing protection equipment selection training, and use
- Training program
- Recordkeeping program

Training Requirement

❑ The employer shall ensure that each employee exposed to noise at or above an eight-hour time weighted average of 85 decibels is informed of the following:
- Effects of noise on hearing
- Purpose of hearing protectors
- Instructions on selection, fitting, use, and care of issued equipment
- Purpose of audiometric testing and procedures
- Training shall be repeated annually and kept updated

Record Keeping

❑ For employees who exceed the eight-hour TWA noise level of 85 dB:
- Workplace noise exposure records must be kept for two years
- Records of audiometric test results must be maintained for the duration of employment and include
  - Employee name
  - Job classification
  - Date of exam
  - Examiner's name
  - Date of last acoustic or exhaustive calibration measures of background sound pressure levels in audiometric test rooms
  - Employee's most recent noise exposure measurement

Equipment

❑ Hearing protectors must be available at no cost to employees exposed to eight-hour TWA levels of 85 dB or above

OSHA 29 C.F.R. 1910.120 – HAZARDOUS WASTE OPERATIONS AND EMERGENCY RESPONSE (HAZWOPER)
Effective Date: June 1993

TO COMPLY
Overview

Section (q) covers employers whose employees are engaged in emergency response no matter where it occurs.

Planning Requirements

- ❑ A written emergency response plan shall be developed and implemented to handle anticipated emergencies prior to the commencement of emergency response operations
- ❑ Minimum elements of the plan are
  - Pre-emergency planning and coordination with outside parties
  - Personnel roles, lines of authority, training, and communications
  - Emergency recognition and prevention
  - Safe distances and places of refuge
  - Site security and control
  - Evacuation routes and procedures
  - Decontamination
  - Emergency medical treatment and first aid
  - Emergency alerting and response procedures
  - Critiques of response and follow-up
  - PPE and emergency equipment
- ❑ Emergency response organizations may use local emergency response plan or the state emergency response plan or both as part of their emergency response plan to avoid duplication (Those items of the emergency response plan that are being properly addressed by the SARA Title III plans may be substituted into their emergency plan or otherwise kept together for the employer and employee's use)
- ❑ The plan shall be available for inspection and copying by employees, their representatives and OSHA personnel.
- ❑ Employers who will evacuate their employees from the workplace when an emergency occurs and who do not permit any of their employees to assist in handling the emergency are exempt if they provide an emergency action plan in accordance with 1910.38

Training and Requirements

- ❑ Training requirements for all classifications are based on the duties and function to be performed by each responder
- ❑ Training must develop certain competencies in an individual regardless of how long it takes
- ❑ Those hired after the effective date of this standard shall be trained before they are permitted to take part in actual emergency operations

Classifications:

- ❑ **First Responder Awareness Level**–Individuals who are likely to witness or discover a hazardous release and who have been trained to initiate an emergency response sequence by notifying the proper authorities of the release. The standard sets no minimum number of hours, but most courses run four to 12 hours covering the following as a minimum:
  - o An understanding of what hazardous substances are and the risks associated with them in an incident
  - o An understanding of the potential outcomes associated with and emergency created when hazardous substances are present
  - o The ability to recognize the presence of hazardous substances in an emergency

- The ability to identify the hazardous substance, if possible
- An understanding of the role of the first responder awareness individual in the employer's response plan, including site security and control and the U.S. Department of Transportation's Emergency Response *Guidebook*
- The ability to realize the need for additional resources and to make appropriate notifications to the communication center

❑ **First Responder Operations Level**–Individuals who respond to releases of hazardous substances as part of the initial response to the site for the purpose of protecting nearby persons, property, or the environment form the effects of the release. First responders at the operations level shall have received awareness level training and at least eight hours of training covering as a minimum:

- Knowledge of the basic hazard and risk assessment techniques
- Know how to select and use proper personal protective equipment provided to the first responder operation level
- An understanding of basic decontamination procedures
- An understanding of the relevant standard procedures and termination procedures

❑ **Hazardous Materials Technician** – Individuals who respond to releases of the purpose of stopping the release. In addition to operations level training, technicians shall have received at least 24 hours of training covering the following as a minimum:

- Know how to implement the employer's emergency response plan
- Know the classification, identification and verification of known and unknown materials by using field survey instrumentation and equipment
- Be able to function within an assigned role in the Incident Command System
- Know how to select and use proper specialized chemical personal protective equipment provided to the hazardous materials technician
- Understand hazardous and risk assessment techniques
- Perform advanced control, containment. and/or confirmation operations within the capabilities of the resources and personal protective equipment available with the unit
- Understand and implement decontamination procedures
- Understand termination procedures
- Understand basic chemical and toxicological terminology and behavior

❑ **Hazardous Materials Specialist**–Individuals who respond with and provide support to hazardous materials technicians. Their duties parallel those of the hazardous materials technician; however, those duties require a more directed or specific knowledge of the various substances they may be called upon to contain. The hazardous materials specialist would also act as the site liaison with federal, state, local, and other government authorities in regard to site activities. In addition to technician level training, specialists shall have received at least 24 hours of training covering the following as a minimum:

- Know how to implement the local emergency response plan
- Understand classification, identification, and verification of known and unknown materials by using advanced survey instruments and equipment

- Knowledge of state emergency response plan
- Select and use proper specialized chemical personal protective equipment provided to the hazardous material specialist
- Understand in-depth hazard and risk techniques
- Be able to perform specialized control, containment, and/or confinement operations within the capabilities of the resources and personal protective equipment available
- Determine and implement decontamination procedures
- Have the ability to develop a site safety and control plan
- Understand chemical, radiological, and toxicological terminology and behavior

❑ **On Scene Incident Commander**—Individuals who assume control of the incident scene beyond the first responder level. They shall receive operations level training and at least 24 hours of training covering the following as a minimum:

- Know and be able to implement the employer's incident command system
- Know how to implement the employer's emergency response plan
- Know and understand the hazards and risks associated with employees working in chemical protective clothing
- Know how to implement the local emergency response plan
- Know of the state emergency response plan and of the Federal Regional Response Team
- Know and understand the importance of decontamination procedures

Refresher Training

❑ Those employees who are trained in accordance with this section shall receive annual refresher training of sufficient content and duration to maintain their competency in those areas at least yearly.

❑ A statement shall be made of the training or competency and if a statement of competency is made, the employer shall keep a record of the methodology used to demonstrate competency

Other Areas of Interest

NOTE: Any department having technician or specialist level personnel or an organized HAZMAT team should review the entire 1910.120 standard, not just section (q). There are other requirements you must meet, such as written SOP's, mandatory medical surveillance programs, etc.

OHSA 29 C.F.R. 1910 SUBPART I – PERSONAL PROTECTIVE EQUIPMENT

1910.132	General Requirements
1910.133	Eye and Face Protection
1910.134	Respiratory Protection
1910.135	Head Protection
1910.136	Foot Protection
1910.137	Electrical Protective Equipment
1910.138	Hand Protection
1910.139	Sources of Standards
1910.140	Standards Organizations

Effective Date: Updated December 2003

TO COMPLY

Hazard Assessment and Equipment Selection

The employer shall assess the workplace to determine if hazards are present or are likely to be present, and which necessitate the use of personal protective equipment (PPE). If such hazards are present, the employer shall

- ❑ Select and have each affected employee use the types of PPE that will protect the affected employee from the hazards identified in the hazard assessment
- ❑ Communicate selection decisions to each affected employee
- ❑ Select PPE that properly fits each affected employee
- ❑ Where employees provide their own PPE, the employer is responsible for assuring its adequacy, maintenance. and sanitation
- ❑ Defective and/or damaged equipment shall not be used.

NOTE: Non-mandatory Appendix B contains an example of procedures that would comply with the requirements for a hazardous assessment.

The employer shall verify that the required workplace hazard assessment has been performed through a written certification that identifies

- ❑ The workplace evaluated
- ❑ The person certifying that the evaluation has been performed
- ❑ The date(s) of the hazard assessment
- ❑ What identifies the document as a certification of hazard assessment

Training

The employer shall provide training to each employee who is required by this section to use PPE. Each such employee shall be trained to know at least the following:

- ❑ When PPE is necessary
- ❑ What PPE is necessary
- ❑ How to properly don, doff, adjust, and wear PPE
- ❑ The limitation of PPE
- ❑ The proper care, maintenance and useful life and disposal of PPE
- ❑ Each affected employee shall demonstrate an understanding of the training and ability to use PPE properly, before being allowed to perform work requiring PPE
- ❑ When the employer has reason to believe that any affected employee who has already been trained does not have the understanding and skill required, the employer shall retrain such employee. Circumstances where retraining is required include, but is not limited to, situations where
  - ❑ Changes in the workplace render previous equipment obsolete
  - ❑ Changes in the types of PPE to be used render training obsolete
  - ❑ Inadequacies in an affected employee's knowledge or use of assigned PPE indicate that the employee has not retained the requisite understanding or skill

❑ The employer shall verify that each affected employee has received and understood the required training through a written certification that contains

❑ The name of each employee trained
❑ The date(s) of training
❑ Subject of the certification

OSHA 29 C.F.R. 1910.146 – CONFINED SPACE ENTRY

Effective Date: Updated December 1998

TO COMPLY

General Requirements

❑ The employer shall evaluate the workplace to determine if confined spaces exist (Appendix A to 1910.146)

❑ Determine if the workplace contains permit-required confined spaces

❑ All non-permit required confined spaces must be

- Clearly labeled
- Monitored during entry
- Follow other applicable OSHA standards (fall protection, PPE, noise, etc.)
- If conditions change to permit-required then follow permit-required entry procedures

❑ All permit-required spaces must be clearly labeled

❑ Develop and implement a written Permit-Required Confined Space Program

A written permit-required confined space program includes:

- Unauthorized entry prevention
- Pre-entry hazard evaluation
- Safe entry procedures
- Equipment required
- Role designation
- Emergency situations
- Permit system
- Termination procedures
- Multiple employer entries
- Plan review and revision

The employer shall provide the following equipment at no cost to the employees:

- Monitoring equipment for oxygen, combustible gases and toxic vapors as a minimum
- Ventilation equipment
- Communication equipment
- Appropriate personal protective equipment
- Lighting equipment as needed
- Barriers and shields as needed
- Safe entrance and egress equipment
- Rescue and emergency equipment as needed or arrange with outside rescuers

Training

❑ The employer shall provide training so that all employees acquire the knowledge and skills necessary for the safe performance of the duties assigned under this section

❑ Training shall be provided to each affected employee

❑ Before the employee is first assigned duties

❑ Before there is a change in assigned duties

❑ Whenever there is a change in permit space operations that present a hazard about which an employee has not been previously trained

❑ Whenever the employer has reason to believe there are deviations from the permit space entry procedures

❑ There are inadequacies in the employee's knowledge or use of these procedures

Rescue Services

❑ In plant teams must

- o Have appropriate PPE needed for rescue work
- o Be trained on
  - PPE
  - Required rescue duties
  - As authorized entrant
  - Basic first aid
  - CPR
- o Perform one simulated rescue per year

❑ Outside rescue services

- o Must be able to respond in a timely manner
- o Be trained in confined space rescue
- o Be equipped for confined space rescue
- o Be informed of hazards
- o Provided access to develop rescue plans and practice

❑ It is now the employer's responsibility to ensure the outside rescue agency can provide service

OSHA 29 C.F.R. 1910.1030 – BLOODBORNE PATHOGENS
Effective Date: Updated January 2001

NOTE: Work related sticks and cuts contaminated with a person's blood or other potentially infectious material are OSHA 300 Log recordable

TO COMPLY

General Requirements

- ❑ Each employer having an employee(s) with occupational exposure shall establish a written Exposure Control Plan designed to eliminate or minimize employee exposure
- ❑ The Exposure Control Plan shall contain at least the following elements:
  - ❑ Designate a person to be in charge of the program
  - ❑ Make an exposure determination for all employees who have a possible exposure to blood or possible infectious materials
  - ❑ Use UNIVERSAL PRECAUTIONS. Treat all exposures to blood as if they are infectious
  - ❑ Train all new employees to the written program
  - ❑ Provide personal protective equipment: gloves, gown, goggles/masks, and resuscitation equipment to affected employees at no cost
  - ❑ If personal protective equipment is non disposable, cleaning must be done at no cost to the affected employees
  - ❑ Establish a hand washing policy
  - ❑ Use an EPA approved disinfectant after cleaning blood spills
  - ❑ Place all infectious waste and contaminated linen in the leak proof bags properly labeled BIOHAZARD
  - ❑ Ensure the person(s) handling and transporting the soiled linen wears gloves
  - ❑ Make sure all waste receptacles are covered and leak proof
  - ❑ Make sure the following are labeled until properly cleaned or disposed of: waste, equipment, rooms, linen
  - ❑ Provide sharps containers in the areas where sharps are used and never recap needles by hand
  - ❑ Dispose of infectious or medical waste according to all local, state and federal regulations
  - ❑ Offer Hepatitis B vaccinations to all affected employees at no cost to the employee
  - ❑ Establish a follow-up procedure for person(s) who may have been exposed to any potentially infectious material
  - ❑ Maintain an OSHA 300 log and ensure a TOSHA poster has been posted at your place of employment
  - ❑ Each employer shall ensure that a copy of the Exposure Control Plan is accessible to employees and shall enforce its contents
- ❑ The Exposure Control Plan shall be reviewed and updated at least annually and whenever necessary to reflect new or modified tasks and procedures which affect occupational exposure and to reflect new or revised employee positions with occupational exposure

Training

Employers shall ensure that all employees with occupational exposure participate in a training program, which must be provided at no cost to the employee and during working hours. Training shall be provided as follows:

- ❑ At the time of initial assignment to tasks where occupational exposure may take place
- ❑ Within 90 days after the effective date of the standard and at least annually thereafter
- ❑ Annual training for all employees shall be provided within one year of their previous training

- ❑ Employers shall provide additional training when changes such as modifications of tasks or procedures or institution of new tasks or procedures affect the employee's occupational exposure. The additional training may be limited to addressing the new exposures created
- ❑ Material appropriate in content and vocabulary to educational level, literacy, and language of employees shall be used
- ❑ Annual training records shall be maintained

The training program shall contain at a minimum the following elements:

- ❑ An accessible copy of the regulatory text of this standard and an explanation of its contents
- ❑ A general explanation of the epidemiology and symptoms of blood borne diseases
- ❑ An explanation of the modes of transmission of blood borne pathogens
- ❑ An explanation of the employer's control plan and the means by which the employee can obtain a copy of the written plan
- ❑ An explanation of the appropriate methods for recognizing tasks and other activities that may involve exposure to blood and other potentially infectious materials
- ❑ An explanation of the use and limitations of methods that will prevent or reduce exposure including appropriated engineering controls, work practices and personal protective equipment
- ❑ Information on the types, proper use, location, removal, handling, decontamination and disposal of personal protective equipment
- ❑ An explanation of the basis for selection of personal protective equipment
- ❑ Information on the Hepatitis B vaccine, including information on its efficiency, safety, method of administration, the benefits of being vaccinated and that the vaccine and vaccination will be offered free of charge
- ❑ Information on the appropriate actions to take and persons to contact in an emergency involving blood or other potentially infectious materials
- ❑ An explanation of the procedure to follow if an exposure incident occurs, including the method of reporting the incident and the medical follow-up that will be made available
- ❑ Information on the post-exposure evaluation and follow-up that the employee is required to provide for the employee following an exposure incident
- ❑ An explanation of the signs and labels and/or color-coding required
- ❑ An opportunity for interactive questions and answers with the person conducting the training session

Recording of Exposure Incidents

For OSHA 300 record keeping purposes, an occupational blood borne pathogens exposure incident (i.e. needle stick, laceration, or splash) shall be classified as an injury since it is usually the result of an instantaneous event or exposure. It shall be recorded if it meets on of the following recordable requirements:

- ❑ The incident is a work-related injury that involves loss of consciousness, transfer to another job, or restriction of work or motion
- ❑ The incident results in the recommendation of medical treatment beyond first aid (e.g. gamma globulin, Hepatitis B immune globulin, Hepatitis B vaccine, or zidovudine) regardless of dose
- ❑ The incident results in a diagnosis of seroconversion
- ❑ If the date of the event or exposure is known, the original injury shall be recorded with the date of the event or exposure in column B

❑ If there are multiple events or exposures, the most recent injury shall be recorded with the date that seroconversion is determined in column B

PERSONAL PROTECTIVE KITS

When there is occupational exposure, the employer shall provide, at no cost to the employee, appropriate personal protective equipment such as, but not limited to, gloves, gowns, laboratory coats, face shields or masks and eye protection and mouthpieces, resuscitation bags, pocket masks, or other ventilation devices. Personal protective equipment (PPE) will be considered "appropriate" only if it does not permit blood or other potentially infectious materials to pass through to or reach the employee's work clothes, street clothes, undergarments, skin, eyes, mouth, or other mucous membranes under normal conditions of use and for the duration of time which the protective equipment will be used.

PPE Kits should contain a complete set of disposable items

- latex gloves
- gown
- face mask
- eye protection
- boot covers

OSHA 29 C.F.R. 1910.1200 – HAZARD COMMUNICATION STANDARD

Tennessee Hazardous Chemical Right-to-Know Act (HCRTK)

Effective Date: May 1986

TO COMPLY

Planning Requirements

❑ Determine the person(s) responsible for implementing the HCRTK law in the workplace and keeping it maintained

❑ Prepare a workplace chemical inventory and update it annually

❑ Obtain current MSDS(s) for workplace chemicals and make them available to employees

❑ Ensure that all chemical containers are properly labeled, tagged, or marked

❑ Provide employees with training relative to the hazard communication plan content, MSDS hazards and how to protect themselves from foreseeable workplace chemical emergency

Training

Employee training shall include at least the following:

❑ Methods and observations that may be used to detect the presence of releases of a hazardous chemical in the work area

❑ The physical and health hazards of the chemicals in the work area

❑ The measures employees can take to protect themselves from these hazards, including specific procedures the employer has implemented to protect employees from exposure to hazardous chemicals, such as appropriate work practices, emergency procedures and personal protective equipment to be used

- ❑ The details of the hazard communication program developed by the employer, including an explanation of the labeling system and the material safety data sheet and how employees can obtain and use the appropriate hazard information
- ❑ Instruction shall be provided whenever a new hazardous chemical is introduced into the workplace
- ❑ New or newly assigned employees shall be provided training before working with hazardous chemicals
- ❑ Training records must be kept and annual refresher training is required

ADDITIONAL SECTIONS OF THE STATE LAW TO KNOW (T.C.A.)

50-3-2003	A "hazardous chemical" means any element, chemical compound, or mixture of elements and/or compounds that is a physical hazard, health hazard, or hazardous substance as defined by the OSHA standard in 29 C.F.R. 1910.1200 (c) and (d).
50-2-2005 (a)	The employer shall post adequate notice at locations where notices are normally posted informing employees about their rights under this act.
50-3-2008	Non-manufacturing employers shall maintain the most current MSDS(s) received from the chemical manufacturer or distributor for each hazardous chemical in the workplace.
50-3-2009	All containers must be labeled. Original labels cannot be removed, obscured, or defaced until the container is empty and purged of any hazards. If an employee transfers a hazardous chemical from its original container to another container, all information from the original container label must be transferred to the other container.
50-3-2012	All employees exposed to hazardous chemicals shall have access to the workplace chemical list and MSDS(s). All employees have the right to file a complaint with TOSHA without fear of retaliation by the employer.
50-3-2013	Employers who use or store a hazardous chemical in excess of 55 gallons or 500 pounds shall provide the fire department with workplace emergency contact names and numbers; a copy of the workplace chemical list and MSDS(s); and shall place one NFPA 704 placard on the outside of any building where Class A or B explosives, Poison A, water reactive flammable solids, radioactive materials, or any hazardous chemical in excess of 55 gallons or 500 pounds is stored.

50-3-2018	Exemptions A lab under direct supervision or guidance of a technically qualified individual provided (1) Labels on containers of incoming chemicals shall not be removed or defaced. (2) MSDS(s) maintained and accessible to employees. (3) Provisions of § 50-3-2010 and § 50-3-2015 are met. (4) Labs are not used to produce hazardous chemicals in bulk for commercial purposes.
50-3-2014	The employer shall compile a workplace chemical list containing the chemical name, common name, CAS number and the work area in which it is used and stored. This list shall be filled with the TOSHA Commissioner and updated annually. The list shall also be maintained by the employer for at least 30 years.

OSHA 29 C.F.R. 1910.134 – RESPIRATORY PROTECTION PROGRAM
Effective Date: Updated 2002

TO COMPLY

Program Requirements

- ❑ Employers must designate a qualified program administrator to oversee the program
- ❑ Program must be worksite specific, including
  - o Respiratory hazards of the workplace
  - o Procedure for selecting respirator(s)
  - o Medical evaluation procedure
  - o Fit testing procedure
  - o Routine and emergency situations use
  - o Doffing and donning procedures
  - o Proper use and limitations
  - o Sanitation, maintenance and storage
  - o Procedure to ensure adequate air flow and quality in supplied air respirators
  - o Procedure for routinely evaluating program effectiveness
- ❑ Program must provide respirators, training and medical evaluations at no cost to the employee
- ❑ Program must select a respirator certified by the National Institute for Occupational Safety and Health (NIOSH) that must be used in compliance with the conditions of its certification
- ❑ Program must identify and evaluate the respiratory hazards in the workplace, including a reasonable estimate of employee exposures and identification of the contaminant's chemical state and physical form

Where exposure cannot be identified or reasonably estimated, the atmosphere shall be considered immediately dangerous to life or health (IDLH). All interior structure fire situations are considered an IDLH atmosphere.

Medical Evaluations

Employer must

- ❑ Provide free of charge at a time and location convenient to employee
- ❑ Provide a medical evaluation to determine employee's ability to use a respirator, before fit testing and use
- ❑ Identify a physician or other licensed health care professional (PLHCP) to perform medical examinations using a medical questionnaire or an initial medical examination that obtains the same information as the medical questionnaire
- ❑ Provide PLHCP with the following information before medical evaluation:
  - o Type and weight of respirator used
  - o Duration and frequency of use
  - o Expected physical work
  - o Additional PPE worn
  - o Temperature and humidity encountered
  - o A copy of the standard
- ❑ Obtain a written recommendation regarding the employee's ability to use the respirator from the PLHCP
- ❑ Additional medical evaluations are required under certain circumstances
  - o Employee reports medical signs or symptoms related to ability to use respirator
  - o PLHCP, program administrator, or supervisor recommends reevaluation
  - o Information from the respirator program, including observations made during fit testing and program evaluation, indicates a need
  - o Change occurs in workplace conditions that may substantially increase the physiological burden on an employee
  - o Annual review of medical status is not required

Fit Testing

- ❑ All employees using a negative or positive pressure tight-fitting face piece respirator must pass an appropriate qualitative fit test (QLFT) or quantitative fit test (QNFT)
- ❑ Fit testing is required prior to initial use, whenever a new respirator face piece is used and at least annually thereafter. Additional test is required if changes in the employee's physical condition that could affect respirator usage occurs
- ❑ The fit test shall be administered using an OSHA-accepted QLFT or QNFT protocol
- ❑ The fit test must use the same make, model, and size the employee will use

Use of Respirators

- ❑ Tight-fitting respirators shall not be worn by employees who have facial hair or any condition that interferes with the face-to-face piece seal or valve function
- ❑ Personal protective equipment shall be worn in such a manner that does not interfere with the seal of the face piece to the face of the user
- ❑ Employees shall perform a user check each time they put on a tight-fitting respirator
- ❑ Interior structural firefighting requires the use of SCBAs and a protective practice known as "two-in/two-out." At least two employees must enter and remain in visual or voice contact with one another at all times and at least two employees must be located outside. The "two-out" must have appropriate PPE on and SCBA ready to affect a rescue in case the "two-in" needs assistance exiting the structure. (An exception to this rule exists when a known rescue must be initiated prior to the full team being assembled.)

Maintenance and Care of Respirators

- ❑ Must clean and disinfect respirators using procedures in Appendix B-2, or per manufacturer's specifications at the following intervals:
  - o As often as necessary to maintain a sanitary condition for exclusive-use respirators,
  - o Before being worn by different individuals when issued to more than one employee, and
  - o After each use for emergency use respirators and those used in fit testing and training.
- ❑ Store in clean, sanitary condition in a manner to prevent damage
- ❑ Respirators used for emergency situations must be inspected monthly and documented with date, inspectors name, serial number and findings

Training

Must provide effective training to respirator users before they are allowed to used the respirator, including

- ❑ Why the respirator is necessary and how improper fit, use, or maintenance can compromise the protective effects of the respirator
- ❑ Limitations and capabilities of the respirator
- ❑ Use in emergency situations
- ❑ How to inspect, put on and remove, use and check seals
- ❑ Procedures for maintenance and storage
- ❑ Recognition of medical signs and symptoms that may limit or prevent effective use
- ❑ General requirements of this standard

Retraining required annually and when

- ❑ Workplace conditions change
- ❑ New types of respirators are used
- ❑ Inadequacies in the employee's knowledge or use indicates need

Program Evaluations

❑ Must conduct evaluations of the workplace as necessary to ensure proper implementation of the program and consult with employees to ensure proper use.

Record Keeping

❑ Records of medical evaluations must be retained and made available per 29 C.F.R. 1910.1020

❑ A record of fit tests must be established and retained until the next fit test

❑ A written copy of the current program must be retained

XIV. FIRE DEPARTMENT PERFORMANCE EVALUATION CRITERIA

As with any function of government or contractual government functions (including independent volunteer fire departments), a means for evaluating effective performance must be established. Through this evaluation, strengths and weaknesses may be identified and improvement plans established. Below is a list of various criteria that can be used to evaluate the various functions of fire, emergency medical response, and emergency management activities that may take place within county jurisdictions.

FIRE PROTECTION

- Incidence of building fires per 1,000 population
- ISO fire insurance rating
- Median dollar value property loss per building fire
- Number of civilian casualties per 100 fires
- Number of firefighter casualties per 100 fires
- Ratio of fire loss compared to total assessed valuation of all jurisdiction property
- Annual property value saved as a percentage of market value in the jurisdiction protected
- Number of pre-plans completed semi-annually
- Percentage of pre-plans completed/ pre-plannable structures
- Fire hydrants tested semi-annually
- Percentage of hydrants tested
- Percentage of fire hose tested annually
- Percentage of ladders tested annually
- Percentage of annual pump test completed and passed annually

FIRE SUPPRESSION

- Average dollar loss per fire
- Average fire response time (minutes)
- Average response time for engine companies (minutes)
- Fire loss per capita
- Fire related deaths–civilian
- Fire related deaths–fire service
- Fire related injuries–civilian
- Fire related injuries–fire service
- Number of fire service vehicles involved in accidents while en route to emergency calls
- Number of minutes to deploy fire equipment
- Percent of time arrive at the location of fires within three to five minutes from time of dispatch within jurisdiction
- Ratio of fire loss compared to potential fire loss
- Response time average–commercial fires
- Response time average–residential fires
- Response time average–vehicle fires

FIRE PREVENTION

- Arson fires leading to arrest/juvenile involvement
- Average value property loss–commercial
- Average value property loss–residential
- Cases cleared
- Construction plan reviews–percent reviewed in one work day
- Correction of identified fire safety violations

- Fire code compliance rate
- Fire investigation–determination of cause and origin rate
- Hydrant flow test
- Number of apartment and commercial establishment inspections assigned and percent inspected
- Number of cases of city caused contamination and percent cleaned within accepted limits
- Number of facilities requiring annual operational permits and percent having validated permits
- Number of fires investigated by fire prevention and percent in which fire cause was identified by fire prevention
- Number of hazardous material team responses and percent where incidents were successfully controlled
- Number of hazards detected and percent corrections achieved
- Number of hazards found
- Number of new construction plans and percent that conform to fire code requirement
- Number of re-inspections generated and percent re-inspected
- Number of violations found
- Violations corrected
- People reached/educational programs
- Percent reduction in needless alarms compared to previous level
- Ratio inspections complete/inspectable buildings
- Reduction in fire loss
- Suspicious/incendiary fires
- Fires investigated/investor
- Inspections/inspector

TRAINING

- Firefighters with state certificates
- Percent of fire department training needs assessed
- Percent of participating personnel receiving special/advanced program training
- Percent of personnel basic life support training
- Percent of recruits completing academy training
- Percent of suppression personnel receiving in-service training
- Percent of volunteers certified
- Percent of drivers completing initial and refresher driver training course
- Hours of training at company level/month/firefighter
- Personnel hours of training per instructor
- Total hours per personnel of training annually
- Percent of personnel compliant with training hours requirements

DISPATCH/COMMUNICATIONS

- Average active hours per 24-hour period
- Average answer speed (seconds)
- Average talk time
- Communications transmitted/received clearly by all fire companies
- Percent of 911 calls answered within 10 seconds
- Percent alarms dispatched with proper first-due company
- Percent of calls with average answer speed of five seconds
- Percent of calls with average talk time of 60 seconds
- Total number of emergency calls for service and percent in which on-scene services were provided in five minutes or less from time of dispatch
- Total number of emergency calls for service and percent in which on-scene services were provided in six minutes or less from receipt of call

VEHICLE/EQUIPMENT OPERATIONS

- Average downtime day–fire apparatus
- Average repair time per piece of equipment
- Hours downtime/repairs work order
- Percent radio or siren problems corrected within two days of reported difficulties
- Percent vehicle up-time (average)
- Percent preventative maintenance completed as scheduled

MEDICAL

- Average medical response time (minutes)
- Emergency medical complaints/month
- Minutes to respond within–city, rural, suburban
- Number of defibrillation "saves"
- Number of volunteers with EMT or paramedic training
- Percent of responses–eight minutes or less
- Percent of time arrive at emergency scene with advanced life support capability within 10 minutes from time of notification
- Percent person trapped by motor vehicle accidents, industrial mishaps, or other emergencies rescued/extricated within 15 minutes of arrival
- Percent pre-hospital time at major trauma less than 36 minutes
- Resuscitation success rate
- Time call received to time arriving at location
- Time call received to time arriving at medical center
- Responses/medic unit

EMERGENCY MANAGEMENT

- Percent direction, control and warning systems operational
- Percent of Local Emergency Planning Committee and minutes attended
- Percent of disaster preparedness plan update
- Percent of disaster situations responded to immediately after notification
- Percent of emergency management activities and reports completed on schedule
- Percent of exercises successfully completed
- Percent of facility chemical inventories reports processed
- Percent of hazard analyses and risk assessments completed
- Percent of public information requests filled within one hour
- Percent of responses to emergency incidents completed within 30 minutes
- Percent of special projects accomplished on schedule
- Meetings attended/administrative reports (hours spent per item)
- Training exercises/sessions conducted (hours spent per item)
- Warning system improvements/installations (hours spent per item)
- Warning system testing and maintenance (hours spent per activity per month)
- Weather watches/disasters coordinated (hours spent per item)

XV. NFPA STANDARDS AND COUNTY FIRE OPERATIONS

The National Fire Protection Association (NFPA) produces a tremendous amount of documents related to fire and emergency services. The span of topics that are covered range from fire prevention codes and standards to professional qualifications for responding to a hazardous materials incident. All NFPA documents are created using a "consensus based" adoption process in which all parties that may be involved have an opportunity to make changes or additions to a new or existing document. This process has established NFPA as the standard bearer in regards to fire protection and technical fire prevention standards. Both the NFPA and the International Code Council (ICC) produce fire and building codes.

Below is a list of NFPA documents of which all fire departments and counties should be aware. This list is not all-inclusive, but does give a quick reference point to the more common standards that fire departments should be operating under.

NFPA 1	Uniform Fire Code™
NFPA 13	*Standard for the Installation of Sprinkler Systems*
NFPA 13D	*Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes*
NFPA 13E	*Recommended Practice for Fire Department Operations in Properties Protected by Sprinkler and Standpipe Systems*
NFPA 13R	*Standard for the Installation of Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height*
NFPA 20	*Standard for the Installation of Stationary Pumps for Fire Protection*
NFPA 22	*Standard for Water Tanks for Private Fire Protection*
NFPA 24	*Standard for the Installation of Private Fire Service Mains and Their Appurtenances*
NFPA 25	*Standard for the Inspection, Testing and Maintenance of Water-Based Fire Protection Systems*
NFPA 30	*Flammable and Combustible Liquids Code*
NFPA 58	*Liquefied Petroleum Gas Code*
NFPA 70	*National Electrical Code®*
NFPA 72	*National Fire Alarm Code®*
NFPA 99	*Standard for Health Care Facilities*
NFPA 101®	*Life Safety Code®*
NFPA 101A	*Guide on Alternative Approaches to Life Safety*
NFPA 101B	*Code for Means of Egress for Buildings and Structures*
NFPA 220	*Standard on Types of Building Construction*
NFPA 291	*Recommended Practice for Fire Flow Testing and Marking of Hydrants*
NFPA 295	*Standard for Wildfire Control*
NFPA 422	*Guide for Aircraft Accident Response*
NFPA 471	*Recommended Practice for Responding to Hazardous Materials Incidents*
NFPA 472	*Standard for Professional Competence of Responders to Hazardous Materials Incidents*

NFPA 473	*Standard for Competencies for EMS Personnel Responding to Hazardous Materials Incidents*
NFPA 501A	*Standard for Fire Safety Criteria for Manufactured Home Installations, Sites and Communities*
NFPA 502	*Standard for Road Tunnels, Bridges and Other Limited Access Highways*
NFPA 704	*Standard System for the Identification of the Hazards of Materials for Emergency Response*
NFPA 901	*Standard Classifications for Incident Reporting and Fire Protection Data*
NFPA 906	*Guide for Fire Incident Field Notes*
NFPA 921	*Guide for Fire and Explosion Investigations*
NFPA 1001	*Standard for Fire Fighter Professional Qualifications*
NFPA 1002	*Standard for Fire Apparatus Driver/Operator Professional Qualifications*
NFPA 1006	*Standard for Rescue Technician Professional Qualifications*
NFPA 1021	*Standard for Fire Officer Professional Qualifications*
NFPA 1031	*Standard for Professional Qualifications for Fire Inspector and Plan Examiner*
NFPA 1033	*Standard for Professional Qualifications for Fire Investigator*
NFPA 1035	*Standard for Professional Qualifications for Public Fire and Life Safety Educator*
NFPA 1041	*Standard for Fire Service Instructor Professional Qualifications*
NFPA 1051	*Standard for Wildland Fire Fighter Professional Qualifications*
NFPA 1061	*Standard for Professional Qualifications for Public Safety Telecommunicator*
NFPA 1071	*Standard for Emergency Vehicle Technician Professional Qualifications*
NFPA 1123	*Code for Fireworks Display*
NFPA 1124	*Code for the Manufacture, Transportation, Storage and Retail Sales of Fireworks and Pyrotechnic Articles*
NFPA 1126	*Standard for the Use of Pyrotechnics before a Proximate Audience*
NFPA 1141	*Standard for Fire Protection in Planned Building Groups*
NFPA 1142	*Standard on Water Supplies for Suburban and Rural Fire Fighting*
NFPA 1144	*Standard for Protection of Life and Property from Wildfire*
NFPA 1145	*Guide for the Use of Class A Foams in Manual Structural Fire Fighting*
NFPA 1201	*Standard for Developing Fire Protection Services for the Public*
NFPA 1250	*Recommended Practice in Emergency Service Organization Risk Management*
NFPA 1401	*Recommended Practice for Fire Service Training Reports and Records*
NFPA 1402	*Guide to Building Fire Service Training Centers*
NFPA 1403	*Standard on Live Fire Training Evolutions*
NFPA 1404	*Standard for Fire Service Respiratory Protection Training*
NFPA 1410	*Standard on Training for Initial Emergency Scene Operations*
NFPA 1451	*Standard for a Fire Service Vehicle Operations Training Program*
NFPA 1452	*Guide for Training Fire Service Personnel to Conduct Dwelling Fire Safety Surveys*
NFPA 1500	*Standard on Fire Department Occupational Safety and Health Program*
NFPA 1521	*Standard for Fire Department Safety Officer*
NFPA 1561	*Standard on Emergency Services Incident Management System*

NFPA 1581	*Standard on Fire Department Infection Control Program*
NFPA 1582	*Standard on Medical Requirements for Fire Fighters and Information for Fire Department Physicians*
NFPA 1583	*Standard on Health-Related Fitness Programs for Fire Fighters*
NFPA 1584	*Recommended Practice on the Rehabilitation of Members Operating at Incident Scene Operations and Training Exercises*
NFPA 1600	*Standard on Disaster/Emergency Management and Business Continuity Programs*
NFPA 1620	*Recommended Practice for Pre-Incident Planning*
NFPA 1670	*Standard on Operations and Training for Technical Rescue Incidents*
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*
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*
NFPA 1851	*Standard on Selection, Care and Maintenance of Structural Fire Fighting Protective Ensembles*
NFPA 1852	*Standard on Selection, Care and Maintenance of Open-Circuit Self-Contained Breathing Apparatus (SCBA)*
NFPA 1901	*Standard for Automotive Fire Apparatus*
NFPA 1906	*Standard for Wildland Fire Apparatus*
NFPA 1911	*Standard for Service Tests of Fire Pump Systems on Fire Apparatus*
NFPA 1912	*Standard for Fire Apparatus Refurbishing*
NFPA 1914	*Standard for Testing Fire Department Aerial Devices*
NFPA 1915	*Standard for Fire Apparatus Preventive Maintenance Program*
NFPA 1932	*Standard on Use, Maintenance and Service Testing of Fire Department Ground Ladders*
NFPA 1936	*Standard on Powered Rescue Tool Systems*
NFPA 1961	*Standard on Fire Hose*
NFPA 1962	*Standard for the Inspection, Care and Use of Fire Hose, Couplings and Nozzles and the Service Testing of Fire Hose*
NFPA 1971	*Standard on Protective Ensemble for Structural Fire Fighting*
NFPA 1975	*Standard on Station/Work Uniforms for Fire and Emergency Services*
NFPA 1977	*Standard on Protective Clothing and Equipment for Wildland Fire Fighting*
NFPA 1981	*Standard on Open-Circuit Self-Contained Breathing Apparatus for Fire and Emergency Services*
NFPA 1982	*Standard on Personal Alert Safety Systems (PASS)*
NFPA 1989	*Standard on Breathing Air Quality for Fire and Emergency Services Respiratory Protection*
NFPA 1991	*Standard on Vapor-Protective Ensembles for Hazardous Materials Emergencies*
NFPA 1992	*Standard on Liquid Splash-Protective Ensembles and Clothing for Hazardous Materials Emergencies*

NFPA 1994	*Standard on Protective Ensembles for Chemical/Biological Terrorism Incidents*
NFPA 1999	*Standard on Protective Clothing for Emergency Medical Operations*
NFPA 5000™	*Building Construction and Safety Code™*

XVI. HOMELAND SECURITY THREAT LEVEL RESPONSES

A significant amount of confusion has arisen lately about what fire and emergency service units should do when the Homeland Security level changes. The following table has been adapted from information released by the Department of Homeland Security and the American Red Cross and is intended as a general guide. Each jurisdiction must determine the appropriate responses to the current threat condition.

SEVERE (RED): SEVERE THREAT OF TERRORIST ATTACKS

COMPLETE RECOMMENDED ACTIONS AT LOWER LEVELS AND

- Work with local community leaders, emergency management, government agencies, community organizations, and utilities to meet immediate needs of the community
- Assign emergency response personnel and pre-position and mobilize specially trained teams or resources
- Be prepared to work with a dispersed or smaller work force
- Increase or redirect personnel to address critical emergency needs
- Monitor, redirect, or constrain transportation systems
- Adhere to any travel restrictions announced by local governmental authorities
- Contact businesses/schools to determine status of work/school day
- 100 percent identification check (i.e. driver's license retained at front office) and escort anyone entering fire station
- Close public and government facilities
- Be alert to suspicious activity and report it to proper authorities immediately
- Ensure mental health counselors available for employees
- Listen to radio/TV for current information/instructions

HIGH (ORANGE): HIGH THREAT OF TERRORIST ATTACKS

COMPLETE RECOMMENDED ACTIONS AT LOWER LEVELS AND

- Contact other key emergency response organizations to confirm their emergency response plan procedures
- Coordinate necessary security efforts with federal, state, and local law enforcement agencies or any National Guard or other appropriate armed forces organizations

- Have emergency supplies on hand, shelters readied and review procedures
- Ensure communication plan is understood/practiced by all department members
- Review emergency plans to include continuity of operations and media materials
- Determine need to restrict access to fire department property, fire stations, and other key local business facilities.
- Determine whether private security firm support/reinforcement is required
- Take additional precautions at public events and possibly consider alternative venues or even cancellation
- Prepare to execute contingency procedures, such as moving to an alternate site or dispersing workforce
- Be alert to suspicious activity and report it to proper authorities
- Exercise caution when traveling

ELEVATED (YELLOW): SIGNIFICANT RISK OF TERRORIST ATTACKS

COMPLETE RECOMMENDED ACTIONS AT LOWER LEVELS AND

- Coordinate emergency plans as appropriate with nearby jurisdictions
- Assess whether the precise characteristics of the threat require the further refinement of preplanned Protective Measures
- Implement, as appropriate, contingency and emergency response plans
- Check telephone and pager numbers and e-mail addresses in your communication plan and update as necessary
- Develop alternate routes of transit for emergency evacuation and practice them
- Contact private security firm for security risk assessment and to determine availability of support/reinforcement
- Increase surveillance of critical locations
- Be alert to suspicious activity and report it to proper authorities

GUARDED (BLUE): GENERAL RISK OF TERRORIST ATTACKS

COMPLETE RECOMMENDED ACTIONS AT LOWER LEVEL AND

- Establish alternate staging locations
- Ensure emergency communication plan updated and needed equipment is purchased
- Check communications with designated emergency response or command locations
- Review and update emergency response procedures
- Provide the public with any information that would strengthen its ability to act appropriately
- Be alert to suspicious activity and report it to proper authorities

LOW (GREEN): LOW RISK OF TERRORIST ATTACKS

- Develop a comprehensive disaster/emergency response plan
- Refine and exercise as appropriate preplanned Protective Measures
- Ensure personnel receive proper training on the Homeland Security
- Advisory System and specific preplanned department or agency
- Protective Measures
- Institutionalize a process to assure that all facilities and regulated sectors are regularly assessed for vulnerabilities to terrorist attacks and all reasonable measures are taken to mitigate these vulnerabilities.

XVII. FIRE PROTECTION RESOURCES

It is very important for counties and fire departments to have readily available list of resources that they can use to assist with planning, organizing, and running a fire protection program. The following is a list of the more common agencies that can be of assistance (many of these Web sites have links to numerous other resources).

County Technical Assistance Service
www.ctas.utk.edu
615-532-3555

Tennessee State Fire Marshal's Office
www.state.tn.us/commerce/sfm/index.html
615-741-6007

Tennessee State Fire and Codes Academy
www.state.tn.us/commerce/sfm/tfaca/index.html
931-294-4111

United States Fire Administration
www.usfa.fema.gov
301-447-1000

National Fire Academy
www.usfa.fema.gov/nfa
301-447-1000

National Fire Protection Association
www.nfpa.org
617-770-3000

International Code Council
www.iccsafe.org
205-591-1853

National Volunteer Fire Council
www.nvfc.org
888-ASK-NVFC

Tennessee Fire Chief's Association
www.tnfire.org
Contact information provided at web site

Volunteer Fire Insurance Service
www.vfis.com
800-233-1957

Insurance Services Office
www.isomitigation.com
800-888-4476

OSHA
www.osha.gov
615-781-5423

TOSHA
www.state.tn.us/labor-wfd/
615-741-2793

International Association of Fire Chiefs
www.ichiefs.org
703-273-0911

International Association of Arson Investigators
www.firearson.com
314-739-4224

National Association of Fire Investigators
www.nafi.org
877-506-NAFI

Home Fire Sprinkler Coalition
www.homefiresprinkler.org
888-635-7222

Tennessee Firemen's Association
www.tnfiremensassociation.org
1-800-782-3138

APPENDIX A

ISO INVENTORY SHEETS

The following checklists allow for a county or department to inventory apparatus to determine if all of the equipment that is needed for maximum points is located on each apparatus. This will assist with planning and budgeting to improve the ISO rating. This is the minimum per ISO standards and does not necessarily suggest that because a piece of equipment is not listed, it is not needed to perform effective fire operations within a specific jurisdiction.

MINIMUM ENGINE COMPANY INVENTORY LIST
ISO AND NFPA 1901 MINIMUM STANDARDS

F.D. _____

Engine # _____

Date: _____
Station: _____
Tank Size: _____
Pump Size: _____

ITEM	REQUIRED	ONBOARD
Booster Tank minimum 300 gallon	1	
Booster Hose (feet)	200	
2.5" or larger Hose (Can be 1,200' of 2.5" or larger supply hose; or, a combination of 2", 2.5", or 3" hose up to 400' and 2.5" or larger hose up to 800') (feet)	1,200	
1.75" Hose (feet)	600	
Spare 2.5" Hose (feet)	200	
Master Stream Device	1	
Gallons Foam on truck	10	
Gallons Foam in reserve	15	
1.5" or 1.75" combination nozzle	2	
2.5' Solid Stream Nozzle	2	
2.5" Combination Nozzle (1 of which must be playpipe with 1", 1 1/8" and 1 1/4" tip)	2	
1.5" minimum foam nozzle	1	
SCBA units	4	
Spare SCBA bottles	4	
24' extension ladder	1	
12' or 14' roof ladder	1	
Mobile Radio	1	
Portable Radio	1	
Burst Hose Jacket	1	
Distributor Nozzle	1	
Hose Clamp	1	
2.5" to 1.5" Gated Wye	1	
Salvage Covers	2	
2.5" Hydrant Valve	1	
Hand Lights	2	
Attic ladder	1	
Wheel Chocks	2	
6lb. Mounted Flat Head Axe	1	
6lb. Mounted Pick Head Axe	1	
6' Pike Pole Mounted	1	
8' Pike Pole Mounted	1	
80B:C Dry Chemical Extinguisher	1	
2.5 Gallon PW Can	1	
First Aid Kit	1	
Mounted Spanner Wrenches	4	
Mounted Hydrants Wrenches	2	
2.5" Double Females	2	
2.5" Double Males	2	
Rubber Mallet	1	

ISO PUMPER EQUIVALENT EQUIPMENT LIST

FSRS ITEM	NEEDED	EQUIVALENCY
Booster Tank	300 gal.	300 gal. or larger
Booster Hose	200 feet	1-1/2" or 1-3/4" Preconnected Hose
1-1/2" Hose	400 feet	1-3/4" or 2" Hose
2-1/2" or Larger Hose	1,200 feet	First 400 feet — 2", 2-1/2", or 3" Remaining 800 feet — 2-1/2" or larger hose
Heavy Stream Appliance	1,000 gpm	Not needed when Basic Fire Flow is less than 1,500 gpm. Mounted, elevated, or portable is acceptable.
Distributing Nozzle	1	1-1/2" or 2-1/2" piercing nozzle, 1-1/2" distributing nozzle
Foam Nozzle	1	1-1/2" or 2-1/2" eductor is acceptable. Built-in proportioning or CAFS system is acceptable.
Foam Supply	25 gal.	Any foam listed in UL Fire Protection Equipment Directory as foam liquid concentrate (GFGV). Class A foam is also acceptable. Wetting agents, emulsifiers, and surfactants are not acceptable for credit as foam.
Combination Nozzle 2-1/2"	2 @ 250 gpm	2 @ 200 gpm or 1-3/4" combination vari nozzle tip with 2-1/2" adapter
Combination Nozzle 1-1/2"	2	1-3/4" combination nozzle with 1-1/2" coupling
SCBA	4 @ 30 minute	4 @ 30 minute or longer duration
Spare SCBA Cylinders	4 @ 30 minute	4 @ 30 minute or longer duration. Portable air cascade or air filling station is not equivalent.
Salvage Covers	2 @ 12' x 18'	2 @ 12' x 14' canvas or rip-stop plastic is acceptable.
Handlights	2 @ 4v wet or 6v dry	Rechargeable handlight 6v
Hose Clamp	1	2-1/2", 3", or LDH hose clamp is acceptable.
Hydrant Hose Gate 2-1/2"	1	4-way valve is acceptable; LDH manifold; trimese
Burst Hose Jacket 2-1/2"	1	2-1/2", 3", or LDH hose clamp
Gated Wye 2-1/2" x 1-1/2"x 1-1/2"	1	Water Thief or 2-1/2" gated wye w/1-1/2" reducers
12' or 14' Roof Ladder	1	16' Roof Ladder
24' Ext. Ladder	1	28', 30', or 35' Ext. Ladder

ISO SERVICE COMPANY EQUIPMENT LIST

Truck: _____ Date: _____

EQUIPMENT	NEEDED	ONBOARD	DIFFERENCE
Large spray nozzle (500 gpm minimum)	1		
SCBA equipment (30 minute minimum)	6		
Extra cylinders (carried)	6		
Salvage covers (12 ft x 18 ft)	10		
Electric generator (2500 watt)	1		
Floodlight (500 watt)	3		
Smoke ejector	1		
Oxyacetylene cutting unit	1		
Power saw	1		
Handlight (4V wet or 6V dry)	4		
Hose roller (equipment Hoist)	1		
Pike pole (plaster hook):			
6-foot	2		
8-foot	2		
12-foot	2		
Radio:			
Mounted	1		
Portable	1		
Ladder:			
10-ft collapsible	1		
14-ft extension	1		

ADDITIONAL EQUIPMENT FOR LADDER COMPANY

EQUIPMENT	NEEDED	ONBOARD	DIFFERENCE
Ladder	1		
16′ Roof	1		
20′ Roof	1		
28′ Roof	1		
35′ Extension	1		
40′ Extension	1		
Elevated Stream Device	1		
Aerial ladder/elevating platform	1		

LADDER EQUIPMENT EQUIVALENT LIST

FSRS ITEM	NEEDED	EQUIVALENCY
Elevated Stream Device	1,000 gpm	1,250, 1,500 gpm
Large Spray Nozzle	500 gpm	500 gpm (may be carried on pumper)
Breathing Equipment	6 @ 30 min.	6 @ 30 min. or longer duration
Extra Cylinders	6 @ 30 min.	6 @ 30 min. or longer duration
Salvage Covers	10 @ 12′ x 18′	10 @ 12′ x 18′ canvas or rip-stop plastic
Electric Generator	1 @ 2.5 kw	PTO driven inverter — capacity prorated Mini-generator floodlight — each 500w prorated
		Mini-generator ventilation fan — 1,000w prorated
Portable Floodlights	3 @ 500 w	Tripod floodlight or mini-generator floodlight
Smoke Ejector	1	Positive pressure ventilation (ppv) fan
		Mini-generator ventilation (ppv) fan
		Thermal imaging device
Oxyacetylene Cutting Unit	1	Hydraulic or pneumatic cutting tool or plasma cutting tool
		Circular saw with composite blade
		Thermal imaging device
Power Saw	1	Chain saw with carbide tip cutting blades
		Thermal imaging device
Handlights	4 @ 4v wet or	Rechargeable handlight 6v
	4 @ 6v dry	
Pike Poles	2 @ 6′	6 @ various lengths (pike poles, plaster hooks, or similar hooks)
	2 @ 8′	
	2 @ 12′	
Ladders	1 @ 10′ collapsible	1 @ 10′ folding
	1 @ 14′ ext.	1 @ 14′ combination
	1 @ 20′ roof	1 @ 16′ roof (additional)
	1 @ 28′ ext.	1 @ 24′ ext.
	1 @ 40′ ext.	1 @ 35′ ext. (additional)

ISO TESTING CYCLE FOR EQUIPMENT

Average Interval Between Three Most Recent Tests	Maximum Points Credit
1 year	100
2 years	75
3 years	50
4 years	25
5 years	0

AERIAL LADDER/ELEVATING PLATFORM TEST

Average Interval Between Three Most Recent Tests	Maximum Points Credit
1 year	50
2 years	37
3 years	25
4 years	12
5 years	0

HOSE SERVICE TEXT

Average Interval Between Three Most Recent Tests	Maximum Points Credit		
	250 psi	200 psi	150 psi
1 year	50	37	25
2 years	37	27	18
3 years	25	18	12
4 years	12	9	6
5 years	0	0	0

APPENDIX B

LIVE FIRE EVOLUTION SAMPLE CHECKLIST

Each jurisdiction and/or department must decide if they are willing to accept the risk associated with benefits of live fire training evolutions. Additional evaluations must involve current environmental regulations compliance. The following is a checklist from the 2002 edition of NFPA 1403 Live Fire Training Evolutions that is now available for free from NFPA's Web site (www.nfpa.org). This should only be used as a checklist to ensure that the information contained in the document has been properly completed. While no document or checklist can identify and remedy all hazards associated with live fire training, compliance with this document will dramatically reduce those hazards and provide a means to approach live fire training from a systematic perspective.

B.1 PERMITS, DOCUMENTS, NOTIFICATIONS, INSURANCE

- ❑ 1. Written documentation received from owner
  - ❑ Permission to burn structure
  - ❑ Proof of clear title
  - ❑ Certificate of insurance cancellation
  - ❑ Acknowledgment of post-burn property condition
- ❑ 2. Local burn permit received
- ❑ 3. Permission obtained to utilize fire hydrants
- ❑ 4. Notification made to appropriate dispatch office of date, time, and location of burn
- ❑ 5. Notification made to all affected police agencies
  - ❑ Received authority to block off roads
  - ❑ Received assistance in traffic control
- ❑ 6. Notification made to owners and users of adjacent property of date, time. and location of burn
- ❑ 7. Liability insurance obtained covering damage to other property
- ❑ 8. Written evidence of prerequisite training obtained from participating students from outside agencies

B.2 PREBURN PLANNING

- ❑ 1. Preburn plans made, showing the following:
  - ❑ Site plan drawing, including all exposures
  - ❑ Building plan, including overall dimensions
  - ❑ Floor plan detailing all rooms, hallways, and exterior openings
  - ❑ Location of command post
  - ❑ Position of all apparatus
  - ❑ Position of all hoses, including backup lines
  - ❑ Location of emergency escape routes
  - ❑ Location of emergency evacuation assembly area
  - ❑ Location of ingress and egress routes for emergency vehicles
- ❑ 2. Available water supply determined
- ❑ 3. Required fire flow determined for the burn building and exposure buildings
- ❑ 4. Required reserve flow determined (50 percent of fire flow)
- ❑ 5. Apparatus pumps obtained that meet or exceed the required fire flow for the building and exposures
- ❑ 6. Separate water sources established for attack and backup hoselines
- ❑ 7. Periodic weather reports obtained
- ❑ 8. Parking areas designated and marked
  - ❑ Apparatus staging
  - ❑ Ambulances
  - ❑ Police vehicles
  - ❑ Press vehicles
  - ❑ Private vehicles
- ❑ 9. Operations area established and perimeter marked
- ❑ 10. Communications frequencies established, equipment obtained

B.3 BUILDING PREPARATION

- ❑ 1. Building inspected to determine structural integrity
- ❑ 2. All utilities disconnected (acquired buildings only)
- ❑ 3. Highly combustible interior wall and ceiling coverings removed
- ❑ 4. All holes in walls and ceilings patched
- ❑ 5. Materials of exceptional weight removed from above training area (or area sealed from activity)
- ❑ 6. Ventilation openings of adequate size precut for each separate roof area
- ❑ 7. Windows checked and operated, openings closed
- ❑ 8. Doors checked and operated, opened or closed, as needed

❑ 9. Building components checked and operated
❑ Roof scuttles
❑ Automatic ventilators
❑ Mechanical equipment
❑ Lighting equipment
❑ Manual or automatic sprinklers
❑ Standpipes
❑ 10. Stairways made safe with railings in place
❑ 11. Chimney checked for stability
❑ 12. Fuel tanks and closed vessels removed or adequately vented
❑ 13. Unnecessary inside and outside debris removed
❑ 14. Porches and outside steps made safe
❑ 15. Cisterns, wells, cesspools and other ground openings fenced or filled
❑ 16. Hazards from toxic weeds, hives, and vermin eliminated
❑ 17. Hazardous trees, brush and surrounding vegetation removed
❑ 18. Exposures such as buildings, trees and utilities removed or protected
❑ 19. All extraordinary exterior and interior hazards remedied
❑ 20. Fire "sets" prepared
❑ Class A materials only
❑ No flammable or combustible liquids
❑ No contaminated materials

B.4 PREBURN PROCEDURES

❑ 1. All participants briefed
❑ Building layout
❑ Crew and instructor assignments
❑ Safety rules
❑ Building evacuation procedure
❑ Evacuation signal (demonstrate)
❑ 2. All hoselines checked
❑ Sufficient size for the area of fire involvement
❑ Charged and test flowed
❑ Supervised by qualified instructors
❑ Adequate number of personnel
❑ 3. Necessary tools and equipment positioned
❑ 4. Participants checked
❑ Approved full protective clothing
❑ Self-contained breathing apparatus
❑ Adequate SCBA air volume
❑ All equipment properly donned

B.5 POST-BURN PROCEDURES

❑ 1. All personnel accounted for
❑ 2. Remaining fires overhauled, as needed
❑ 3. Building inspected for stability and hazards where more training is to follow (see Section B.3, Building Preparation)
❑ 4. Training critique conducted
❑ 5. Records and reports prepared, as required:
❑ Account of activities conducted
❑ List of instructors and assignments
❑ List of other participants
❑ Documentation of unusual conditions or events
❑ Documentation of injuries incurred and treatment rendered
❑ Documentation of changes or deterioration of training center burn building
❑ Acquired building release
❑ Student training records
❑ Certificates of completion
❑ 6. Building and property released to owner, release document signed

RESPONSIBILITIES OF PERSONNEL

C.1 INSTRUCTOR-IN-CHARGE

❑ 1. Plan and coordinate all training activities
❑ 2. Monitor activities to ensure safe practices
❑ 3. Inspect building integrity prior to each fire
❑ 4. Assign instructors
❑ Attack hoselines
❑ Backup hoselines

- ❑ Functional assignments
- ❑ Teaching assignments

❑ 5. Brief instructors on responsibilities

- ❑ Accounting for assigned students
- ❑ Assessing student performance
- ❑ Clothing and equipment inspection
- ❑ Monitoring safety
- ❑ Achieving tactical and training objectives

❑ 6. Assign coordinating personnel, as needed

- ❑ Emergency medical services
- ❑ Communications
- ❑ Water supply
- ❑ Apparatus staging
- ❑ Equipment staging
- ❑ Breathing apparatus
- ❑ Personnel welfare
- ❑ Public relations

❑ 7. Ensure adherence to this standard by all persons within the training area

C.2 SAFETY OFFICER

❑ 1. Prevent unsafe acts

❑ 2. Eliminate unsafe conditions

❑ 3. Intervene and terminate unsafe acts

❑ 4. Supervise additional safety personnel, as needed

❑ 5. Coordinate lighting of fires with instructor-in-charge

❑ 6. Ensure compliance of participants' personal equipment with applicable standards

- ❑ Protective clothing
- ❑ SCBA
- ❑ Personal alarm devices, where used

❑ 7. Ensure that all participants are accounted for, both before and after each evolution

C.3 INSTRUCTOR

❑ 1. Monitor and supervise assigned students (no more than five per instructor)

❑ 2. Inspect students' protective clothing and equipment

❑ 3. Account for assigned students, both before and after evolutions

C.4 STUDENT

❑ 1. Acquire prerequisite training

❑ 2. Become familiar with building layout

❑ 3. Wear approved full protective clothing

❑ 4. Wear approved self-contained breathing apparatus

❑ 5. Obey all instructions and safety rules

❑ 6. Provide documentation of prerequisite training when from an outside agency

APPENDIX C

FIRE DEPARTMENT DIRECTORY

The attached is a directory of fire departments listed by county. Many sources were used to compile this information. In the future, when the Fire Department Recognition Act is fully implemented, it will be easier to obtain this information. Updates are planned at least once every two years and will be sent to the appropriate officials.

COUNTY	DEPARTMENT	CITY	CHIEF	ISO RATING
Anderson		**(Surveys Returned: 56%)**		
	Andersonville VFD	Andersonville	Richard Boods	7/9
	Briceville Fire Dept.	Briceville	Mitch Wade	9/9
	Claxton VFD	Powell	Richard Pollard	7/10
	Clinton Fire Dept.	Clinton	Archie Brummitt	4
	Lake City Fire Dept.	Lake City	Ricky G Ferguson	6
	Marlow VFD	Clinton	Dale Lesniak	7/10
	Medford VFD	Lake City	Ronnie Braden	9/10
	Norris Fire Dept.	Norris	Danny Humphrey	5
	Oak Ridge Fire Dept.	Oak Ridge	Mack Bailey	3/9
Bedford		**(Surveys Returned: 75%)**		
	Bell Buckle VFD	Bell Buckle	Mary Lokey	7, 7/9
	Shelbyville Fire Dept.	Shelbyville	John A. Habel	4
	Volunteer Fire Service Inc.	Shelbyville	Mark Thomas	7/9, 9
	Wartrace Fire Dept.	Wartrace	Roy Ferguson Jr.	7/9
Benton		**(Surveys Returned: 13%)**		
	Big Sandy VFD	Big Sandy	Larry Waters	6, 9/10
	Camden Fire Dept.	Camden	Tom Bordanaro	7, 9/10
	Chalk Level VFD	Camden	Richard H. Kee	9/10
	Eva VFD	Eva	Kenny Kennison	8/9
	Holloday-Mcillwain VFD	Holloday	Raymond Palen	9/10
	Morris Chapel VFD	Camden	Ronnie Clark	9/10
	Sandy River VFD	Camden	Tony Patterson	9/10
	South 40 VFD	Holladay	Franklin H Parks	10
Bledsoe		**(Surveys Returned: 56%)**		
	Brayton VFD	Graysville	Kenneth L Rogers	9/10
	Brockdell VFD	Pikeville	Ronnie Myers	9/9
	Griffith VFD	Pikeville	Leonda Smith	9/9
	Hendon Fire Dept.	Graysville	Potts Otis	10
	Luminary Frost Bite VFD	Spring City	David Main	9
	Mt. Crest VFD	Pikeville	Dennis Frazier	9/9
	Nine Mile VFD	Pikeville	Wendell Worthington	9/9
	Pikeville VFD	Pikeville	Paul Swafford	6, 6/9
	Rigsby Fire Dept.	Pikeville	Alfred Irwin	9/9

COUNTY	DEPARTMENT	CITY	CHIEF	ISO RATING
Blount		**(Surveys Returned: 80%)**		
	Alcoa Fire Department	Alcoa	Larry Graves	5
	Blount County Fire District	Maryville	H Robert McCammon	8/9, 8/10
	Friendsville VFD	Friendsville	John Coffey, Jr.	7, 7/9
	Maryville Fire Dept.	Maryville	Ed Mitchell	3
	Townsend Area VFD	Townsend	Terry Bryant	9/10
Bradley		**(Surveys Returned: 100%)**		
	Bradley County VFD	Cleveland	Dewey Woody Jr.	7/10
	Charleston VFD	Charleston	Johnny Stokes	6/9
	Cleveland Fire Dept.	Cleveland	Bob Gaylor	3, 3/9
Campbell		**(Surveys Returned: 63%)**		
	Campbell County Rural FD	Lafollette	Lonnie Wilson	7/9
	Caryville VFD	Caryville	Eddie Hatmaker	6/9
	Jacksboro FD	Jacksboro	Shayne Green	8/9
	Jellico Fire Dept.	Jellico	Johnny Perkins	7
	Lafollette Fire Dept.	Lafollette	Wayne Gregg	5
	Pinecrest Community VFD	Jacksboro	Jerry Moat	7/9
	Ridgewood VFD	Caryville	E L Symons	10
	White Oak VFD	Duff	Jimmy Pack	9/9
Cannon		**(Surveys Returned: 67%)**		
	Auburntown VFD	Auburntown	Frank Patrick	9/10
	Cannon County VFD	Woodbury	Mike Buchanan	9
	Woodbury VFD	Woodbury	Bill Johnston	6, 6/9
Carroll		**(Surveys Returned: 22%)**		
	Atwood Fire Dept.	Atwood	James Marshall	7
	Bruceton VFD	Bruceton	James Sloan	6
	Carroll County Rural FD	Huntingdon	Janice Newman	9/9
	Hollow Rock VFD	Hollow Rock	Bobby Brotherton	8, 8/9
	Huntingdon Fire Dept.	Huntingdon	Robert Brewer	5, 9/10
	McKenzie Fire Dept.	McKenzie	Larry Cook	3/9
	McLemoresville FD	McLemoresville	William B. Younger	6, 6/9
	Pillowville VFD	McKenzie	Johnny C Sexton	10
	Trezevant Fire Dept.	Trezevant	Danny Curtis	6, 9/10

COUNTY	DEPARTMENT	CITY	CHIEF	ISO RATING
Carter		**(Surveys Returned: 88%)**		
	Central VFD	Johnson City	Robert Jones	7
	Elizabethton Fire Dept.	Elizabethton	Mike Shouse	5
	Elk Mills Poga VFD	Butler	Eddie Clawson	9/9
	Hampton/ Valley Forge VFD	Hampton	Johnny Isaacs	9/9
	Roan Mountain VFD	Roan Mountain	Terry Proffitt	9/9
	Stoney Creek VFD	Elizabethton	Jason Shaw	7/10
	Watauga VFD	Watauga	Benny Colbaugh	9/10
	West Carter County FD	Johnson City	Conley Jones	7/10
Cheatham		**(Surveys Returned: 83%)**		
	Ashland City FD	Ashland City	Chuck Walker	5
	Henrietta VFD	Ashland City	Jeffrey T. Bagwell	9/10
	Kingston Springs FD	Kingston Springs	Eugene Ivey	4
	Pegram Fire Dept.	Pegram	Brent Stuart	7/9
	Pleasant View VFD	Pleasant View	Shane Ray	7/9
	Two Rivers VFD	Ashland City	Chris Toler	9/10
Chester		**(Surveys Returned: 100%)**		
	Chester County FD	Henderson	Jimmy R. Vest	9/10
	Enville VFD	Enville	Danny Johnson	8, 8/9
	Henderson Fire Dept.	Henderson	Jimmy Carter	5
Claiborne		**(Surveys Returned: 63%)**		
	Clear Fork VFD	Clairfield	Walter J Washam	10
	Cumberland Gap VFD	Cumberland Gap	John O Adams	6/9
	North Claiborne County VFD	Harrogate	Rick Long	9/10
	North Tazewell VFD	Tazewell	Austin Sandefur	9/10
	South Claiborne VFD	New Tazewell	Anthony Fultz	9/10
	Speedwell VFD	Speedwell	Dexter Bean	9/10
	Springdale VFD	Tazewell	Bruce Myers	9/10
	Tazewell/New Tazewell FD	Tazewell	Barron D Kennedy III	6
Clay		**(Surveys Returned: 0%)**		
	Celina Fire Dept.	Celina	Terry Scott	5, 5/9
	East Clay County VFD	Allons	Roger Nelson	9/9
	Moss VFD	Moss	Dale Reagan	8/9
	Mt. Vernon VFD	Red Boiling Springs	Doug Browning	9/9
	Pea Ridge VFD	Celina	Wendell Key	9/9
	West End VFD	Red Boiling Springs	Bilbrey Keith	10

COUNTY	DEPARTMENT	CITY	CHIEF	ISO RATING
Cocke		**(Surveys Returned: 25%)**		
	Centerview VFD	Newport	Donald Holt	10
	Cocke County Fire Dept.	Newport	Willard Taylor	6/9
	Cosby VFD	Cosby	Mickey Valentine	7/10
	Del Rio VFD	Del Rio	Tim Turner	9/10
	Grassy Fork VFD	Hartford	Danny Hall	10
	Long Creek VFD	Parrottsville	Johnny Franklin, Sr.	10
	Newport Fire Dept.	Newport	Roger Butler	4
	Parrottsville VFD	Parrottsville	Jimmy Hensley	6
Coffee		**(Surveys Returned: 57%)**		
	Hickerson Station VFD	Tullahoma	Paul Hogan	9/9
	Hillsboro VFD	Hillsboro	Jimmy Boyd	9/10
	Manchester Fire Dept.	Manchester	J Sam Miller	4
	New Union VFD	Manchester	Sam Morton	8/10
	North Coffee County VFD	Manchester	Leon Arnold	9/9
	Summitville VFD	Summitville	Dewayne Pinegar	9/9
	Tullahoma Fire Dept.	Tullahoma	C B Watkins	4
Crockett		**(Surveys Returned: 50%)**		
	Alamo Fire Department	Alamo	Jimmy Wheeler	6, 6/9
	Bells Fire Department	Bells	Lee Hickman	6, 6/9
	Friendship Fire Dept.	Friendship	Casey Burnett	6, 6/9
	Maury City Fire Dept.	Maury City	Lloyd Nolen Johnson	8, 8/9
Cumberland		**(Surveys Returned: 33%)**		
	Crossville Fire Dept.	Crossville	Mike Turner	4
	Cumberland County FD	Crossville	Jeff Dodson	6/9
	Fairfield Glade VFD	Fairfield Glade	Dave Allstaedt	5/9
Davidson		**(Surveys Returned: 100%)**		
	Goodlettsville Fire Dept.	Goodlettsville	Phillip Gibson	5/9
	Nashville Fire Dept.	Nashville	Steven Halford	3, 5/9, 6/9

COUNTY	DEPARTMENT	CITY	CHIEF	ISO RATING
Decatur		**(Surveys Returned: 33%)**		
	Bath Springs VFD	Decaturville	Melvin Brasher	9/10
	Decatur County FD Station 1	Parsons	Johnny R. Maness	8/9, 9/10
	Decaturville VFD	Decaturville	Kenny Fox	6
	Jeanette VFD	Parsons	Teddy Williams	9/10
	Parsons Fire Dept.	Parsons	Johnny R. Maness	6
	Woodlawn Shores VFD	Sugar Tree	Joe Foust	9/10
Dekalb		**(Surveys Returned: 33%)**		
	Alexandria FD	Alexandria	Eddie Tubbs	7
	Dekalb County Fire Dept.	Smithville	Donny Green	9/10
	Smithville Fire Dept.	Smithville	Charles Parker	7
Dickson		**(Surveys Returned: 18%)**		
	Burns Fire Dept.	Burns	Kenny Sullivan	6, 6/9
	Charlotte VFD	Charlotte	Dennis Geisler	8/9
	Claylick VFD	White Bluff	Ricky Chandler	9/9
	Cumberland Furnace VFD	Cumberland Furnace	Ralph E Lee	9/9
	Dickson County Rescue Squad	Dickson	Johnny Tummins	9/10
	Dickson Fire Dept.	Dickson	Clay Tidwell	4/9
	Harpeth Ridge VFD	Charlotte	Chris Kullman	9/9
	Sylvia-Yellow Creek VFD	Dickson	Ricky Keith	10
	Tennessee City VFD	Dickson	Mike Grant	9/10
	Vanleer VFD	Vanleer	Donald L Tinsley	9/9
	White Bluff VFD	White Bluff	William B Potts	7
Dyer		**(Surveys Returned: 50%)**		
	Dyer County Fire Dept.	Dyersburg	James Medling	6/9, 9
	Dyersburg Fire Dept.	Dyersburg	Bob Veal	3
	Newbern VFD	Newbern	Bill Berry	6, 6/9
	Trimble Fire Dept.	Trimble	Tim Isbell	7/9

COUNTY	DEPARTMENT	CITY	CHIEF	ISO RATING
Fayette		**(Surveys Returned: 30%)**		
	Braden Fire Dept.	Mason	Steve Davis	8
	Fayette County FD	Somerville	Byron Smith	5/9, 6/9, 7/9, 8/9, 9/9
	Gallaway Fire Dept.	Gallaway	Brad Johnson	8
	Lagrange Fire Dept.	Lagrange	Chad Green	8
	Moscow VFD	Moscow	Arnold Smith jr.	7
	Oakland Fire Dept.	Oakland	Donnie Spicer	5
	Piperton Fire Dept.	Piperton	Steve Kellett	6/9
	Somerville Fire Dept.	Somerville	E.H. Steinert	5
	Williston VFD	Williston	Wesley Cannon	9
Fentress		**(Surveys Returned: 0%)**		
	Jamestown/Fentress County VFD	Jamestown	Frank Campbell	7, 7/9, 9
Franklin		**(Surveys Returned: 73%)**		
	Alto Oak Grove FD	Dechard	Bobby Henley	9/10
	Belvidere Vol. Rural Fire	Belvidere	Jess Salcido	7/9
	Broadview VFD	Winchester	Brent Cates	8/9
	Capitol Hill VFD	Winchester	Tom Edwards	6/9
	Cowan Fire Dept.	Cowan	Tommy Myers	6, 6/9
	Crow Creek Valley VFD	Sherwood	Lonnie Bohannon	
	Decherd Fire Dept.	Dechard	Harold Perry	5, 5/9
	Estill Springs VFD	Estill Springs	Anthony Lowhorn	5, 5/9
	Fourth District VFD	Winchester	Tom Baskin	9
	Huntland VFD	Huntland	Thomas Simmons	6, 9/9
	Keith Springs VFD	Belvidere	William T Gordon	9/9
	Lexie Crossroads VFD	Belvidere	Mike Moore	9/9
	North Franklin County VFD	Tullahoma	Billy T Faulkner II	8/9
	Sewanee Fire Dept.	Sewanee	Jimmy David Green	6/9
	Winchester Fire Dept.	Winchester	Wayne Morris	4

COUNTY	DEPARTMENT	CITY	CHIEF	ISO RATING
Gibson		**(Surveys Returned: 60%)**		
	Bradford VFD	Bradford	Tim Taylor	5, 5/9
	Dyer Fire Dept.	Dyer	Bob Moore	6/9
	Gibson County Fire Dept.	Trenton	Curtis Walker	9/9
	Gibson VFD	Gibson	David Gitterman	7
	Humbolt Fire Dept.	Humbolt	Chester B Owens	5, 5/9, 9/9
	Medina Fire Dept.	Medina		7
	Milan Fire Dept.	Milan	Paul Wallace	5
	Rutherford Fire Dept.	Rutherford	Bob Blankenship	7
	Trenton Fire Dept.	Trenton	Barry Green	5/9
	Yorkville Fire Dept.	Yorkville	Andy Johnson	8
Giles		**(Surveys Returned: 40%)**		
	Ardmore Fire Department	Ardmore	Gearl Smith	7/9
	Elkton Fire Dept.	Elkton	Dan Yant	6/9
	Giles County Fire & Rescue	Pulaski	Dennis Gooch	9/10
	Minor Hill Fire Dept.	Minor Hill	Ted Burdette	8, 8/9
	Pulaski Fire Dept.	Pulaski	Jimmy S. Thompson	5
Grainger		**(Surveys Returned: 0%)**		
	Bean Station VFD	Bean Station	Rodney Rich	8/9
	Blaine VFD	Blaine	Kenneth Fisher	9/9
	Rutledge VFD	Rutledge	Scott Wynn	9/10
	Thorn Hill VFD	Thorn Hill	Greg Collins	9/9
	Washburn VFD	Washburn	Drafus Davidson	9/10

COUNTY	DEPARTMENT	CITY	CHIEF	ISO RATING
Greene		**(Surveys Returned: 38%)**		
	Camp Creek VFD	Greeneville	David Thompson	9/9
	Caney Branch VFD	Greeneville	Ryan Holt	7/10
	Cedar Creek VFD	Greeneville	Gary Compton	9/10
	Debusk VFD	Greeneville	Jeff Kelley	9/9
	Greeneville Fire Dept.	Greeneville	James W Bowman	4, 4/9
	McDonald VFD	Mohawk	Robert Sapp	8/9
	Midway VFD	Midway	Anthony Morrison	9/10
	Mosheim VFD	Mosheim	Mark A Higgins	6/9
	Newmansville VFD	Chuckey	Dale Collette	9/9
	Ore Bank VFD	Mosheim	Joe Shelton	9/9
	South Greene VFD	Greeneville	Johnny Powers	9/9
	St. James VFD	Greeneville	Kevin Ayers	9
	Sunnyside VFD	Greeneville	Melvin Seaton	9/10
	Town of Mosheim VFD	Mosheim	Ronnie Brown	6/9, 9/10
	Tusculum VFD	Greeneville	Alan Corley	7, 7/9
	United VFD	Greeneville	Brad Ball	7/9
Grundy		**(Surveys Returned: 60%)**		
	Altamont VFD	Altamont	Chris Boyd	9, 9/10
	Beersheba Springs VFD	Beersheba Springs	Jackie Eubanks	8/9
	Coalmont Fire Dept.	Coalmont	Eugene Richards	7/9
	Gruetli-Laager Fire Dept.	Gruetli-Laager	Allen Joslyn	8/9
	Monteagle Fire & Rescue	Monteagle	David Meeks	7
	Palmer VFD	Palmer	Eric Birdwell	7/9
	Pelham Valley VFD	Pelham	William Henley	8/9
	Southeast Grundy County Rescue	Palmer	Michael Birdwell	
	Tracy City VFD	Tracy City	Michael Myers	8
	White City VFD	Tracy City	Timothy Andrews	
Hamblen		**(Surveys Returned: 40%)**		
	East Hamblen County VFD	Russellville	Jeff Wisecarver	8/9
	Morristown Fire Dept.	Morristown	Bill Honeycutt	3
	North Hamblen County VFD	Morristown	Michael Hicks	9/9
	South Hamblen County VFD	Russellville	Kevin Jarnigan	9/9
	West Hamblen County Fire Dept.	Talbott	Tom Livesay	6/9

COUNTY	DEPARTMENT	CITY	CHIEF	ISO RATING
Hamilton		**(Surveys Returned: 71%)**		
	Chattanooga Fire Dept.	Chattanooga	Jim Coppinger	3
	Dallas Bay VFD & Rescue, Inc.	Hixson	Alvin Rosamond	6/9
	East Ridge Fire Dept.	East Ridge	Eddie Phillips	4
	Flat Top VFD	Soddy-Daisy	Danny Welch	9/9
	Highway 58 VFD	Harrison	Charles Harris	7/10
	Lookout Mountain FD	Lookout Mountain	Ray Farmer	4
	Mowbray VFD	Soddy-Daisy	Olen Harris	9/9
	Red Bank Fire Dept.	Red Bank	Mark A Mathews	4
	Sale Creek Vol Fire & Rescue	Sale Creek	R Glenn Aslinger	5/9
	Sequoyah Fire Dept.	Soddy-Daisy	Scott Jones	9/9
	Signal Mountain FD	Signal Mountain	Larry P Eddings	5
	Soddy Daisy Fire Dept.	Soddy-Daisy	Jim Coleman	5
	Tri-Community VFD	Collegedale	Duane R Pitts	4/10
	Waldens Ridge Emergency Services	Signal Mountain	James W. Hillis	7/10
Hancock		**(Surveys Returned: 0%)**		
	Blackwater Vardy VFD	Sneedville	Willie O Grohse	10
	Camps VFD	Sneedville	Freddie Mullins	10
	Panther Creek VFD	Sneedville	Samuel Smith	10
	Snake Hollow VFD	Sneedville	Joe Margues	10
	Sneedville VFD	Sneedville	Ben Hopkins	7
	Treadway VFD	Treadway	Edward Gulliver	10
Hardeman		**(Surveys Returned: 18%)**		
	Bolivar Fire Dept.	Bolivar	Jake Baker	5, 5/9
	Grand Junction Fire Dept.	Grand Junction	Adrian Simmons	8, 8/9
	Grand Valley Fire District	Middleton	Richard Schaub	9/10
	Hickory Valley VFD	Hickory Valley	Ray Markle	7, 7/9
	Hornsby VFD	Hornsby	Benny Wiggins	8/9
	Middleton VFD	Middleton	Tommy Seever	5, 5/9
	New Castle Fire Dept.	Whiteville	Wilson Rodney	10
	Saulsbury Fire Dept.	Saulsbury	Terry Stanford	9, 9/9
	Silerton District 7	Henderson	Graves Glen	8/9
	Toone Vol. Fire Dept.	Toone	Jerry Siler	8/9
	Whiteville Vol. Fire Dept.	Whiteville	Kel Blanton	7, 7/9

COUNTY	DEPARTMENT	CITY	CHIEF	ISO RATING
Hardin		**(Surveys Returned: 67%)**		
	Hardin County Fire Dept.	Savannah	Michael Lewis	9/9
	Saltillo Vol. Fire Dept.	Saltillo	Don Fields	7, 7/9
	Savannah Fire Dept.	Savannah	Willie Benson	5, 5/9
Hawkins		**(Surveys Returned: 25%)**		
	Bulls Gap VFD	Bulls Gap	Dennis Robinson	9/10
	Carters Valley VFD	Church Hill	Jimmy Housewright	6/9
	Church Hill Fire Dept.	Church Hill	David Wood	6/9
	Clinch Valley VFD	Edison	Dave Knight	9/10
	Goshen Valley Fire Dept.	Church Hill	Charles McInturff	9/10
	Lakeview VFD	Rogersville	Jim Klepper	9/10
	Mt. Carmel VFD	Mt. Carmel	Junior Cradic	7/9
	Persia VFD	Rogersville	Charles Sanders	9/10
	Rogersville Fire Dept.	Rogersville	Hal Price	6
	Stanley Valley VFD	Surgoinsville	Danny Alvis	9/10
	Stiggersville VFD	Rogersville	Bob Mallory	9/10
	Surgoinsville VFD	Surgoinsville	Chris Sandidge	7, 9/10
Haywood		**(Surveys Returned: 100%)**		
	Brownsville/Haywood County FD	Brownsville	Mark Foster	3, 7/9
Henderson		**(Surveys Returned: 67%)**		
	Henderson County FD	Lexington	Joseph L. Murphy	6/10
	Lexington Fire Dept.	Lexington	Danny Barker	5
	Scotts Hill VFD	Scotts Hill	Vernice Broadway	7
Henry		**(Surveys Returned: 88%)**		
	Cottage Grove VFD	Cottage Grove	Bill Pullen	9/10
	Henry Fire Dept.	Henry	Marvin Klopfenstein	7
	Mansfield Fire Dept.	Mansfield	Wayne Webb	9/9
	Oakland Fire Dept.	Paris	John Krezinski	9/10
	Paris Fire Dept.	Paris	Don Cox	4, 4/9
	Paris Landing VFD	Buchanan	Reggie Coles	9/10
	Puryear VFD	Puryear	John Walters	8, 8/9
	Springville VFD	Springville	Larry Russell	9/9

COUNTY	DEPARTMENT	CITY	CHIEF	ISO RATING
Hickman		**(Surveys Returned: 0%)**		
	Bon Aqua VFD	Bon Aqua	Bobby Campbell	10
	Centerville VFD	Centerville	Alfred Baltz	7
	Hickman County Rescue Squad	Centerville	Billy J Henley	10
	Pinewood VFD	Dickson	Robert L Cannon	10
Houston		**(Surveys Returned: 0%)**		
	Erin Fire Dept.	Erin	David Hardin	7, 7/9
	Tennessee Ridge FD.	Tennessee Ridge	James Tolley	8, 8/9
Humphreys		**(Surveys Returned: 60%)**		
	Bold Springs/ Poplar Grove FD	McEwen	Robert Oliver	10
	Humphreys County Fire Dept.	Waverly	Steve McCoy	7/9, 8/9, 9/10
	McEwen Fire Dept.	McEwen	Darrell B Brown	8
	New Johnsonville Fire Dept.	New Johnsonville	Steve McCoy	7
	Waverly Fire Dept.	Waverly	Joseph M Traylor	5
Jackson		**(Surveys Returned: 44%)**		
	Fairview VFD	Gainesboro	Eugene Carmack	9/9
	Flynns Lick VFD	Gainesboro	Jeeb Meadows	9/9
	Gainesboro City Fire Dept.	Gainesboro	Reggie Phann Jr.	6
	Granville Co-Op VFD	Granville	Thomas Shinn	9/9
	Jackson County Central VFD	Gainesboro	Gary W Jones	9/9
	Jennings Creek VFD	Whitleyville	Stephen Spivey	9/9
	Nameless VFD	Bloomington Springs	Don Chinoy	10
	Southside VFD	Gainesboro	Carl Call	9
	West End VFD	Gainesboro	Jeff Huddleston	10
Jefferson		**(Surveys Returned: 43%)**		
	Chestnut Hill VFD	Dandridge	George Ownby	10
	Dandridge VFD	Dandridge	Garland McCoig	6, 7/9
	Jefferson City Fire Dept.	Jefferson City	Robert Turner Jr.	5
	Kansas Talbott VFD	Talbott	Billy John Cureton	10
	Lakeway Central VFD	Jefferson City	Joe Devotie	9/9
	New Market VFD	New Market	Frank Solomon	9/9
	White Pine VFD	White Pine	Tracey Taylor	6, 6/9

COUNTY	DEPARTMENT	CITY	CHIEF	ISO RATING
Johnson		**(Surveys Returned: 33%)**		
	Butler VFD	Butler	Paul Campbell	9/9
	Doe Valley VFD	Mountain City	Gary Odam	9/9
	Dry Run VFD	Butler	Jake Storey	9/9
	First District VFD	Laurel Bloomery	Eugene Campbell	9/9
	Mountain City Fire Dept.	Mountain City	Danny Cullop	6
	Neva VFD	Mountain City	Jim Shull	9/9
	Second District VFD	Mountain City	James Brown	9/9
	Shady Valley VFD	Shady Valley	Charles McQueen	9/9
	Trade VFD	Trade	Roger Brock	9/9
Knox		**(Surveys Returned: 75%)**		
	Heiskell VFD Inc.	Heiskell	Steve Duncan	9/9
	Karns VFD	Knoxville	Jake H Stafford	7/10
	Knoxville Fire Dept.	Knoxville	Ed Cureton	3
	Rural/Metro Fire Dept.	Knoxville	Karl Keierleber	4/9, 4/10, 5/9 6/9, 6/10
Lake		**(Surveys Returned: 0%)**		
	Ridgely Fire Dept.	Ridgely	Aubrey C Wood Sr.	7, 7/9
	Tiptonville Fire Dept.	Tiptonville	Evan Jones	7, 7/9
Lauderdale		**(Surveys Returned: 57%)**		
	East Lauderdale County VFD	Ripley	Paul Reynolds	9/9
	Gates Fire Dept.	Gates	Gene Patton	7/9
	Halls Fire Dept.	Halls	Don Patton	6, 6/9
	Henning VFD	Henning	Johnny Laton	7, 7/9
	NW Lauderdale County VFD	Ripley	Dan Beard	9/9
	Ripley Fire Dept.	Ripley	Jim Jarrett	5, 5/9
	West Lauderdale County VFD	Ripley	Paul W Newman	9/9

COUNTY	DEPARTMENT	CITY	CHIEF	ISO RATING
Lawrence		**(Surveys Returned: 31%)**		
	Center Point VFD	Leoma	Scott Moore	9/10
	Crossroads Fire Dept.	Leoma	Barry Luffman	9/10
	Ethridge Fire Dept.	Ethridge	David Workman	9/9
	Gandy VFD	Lawrenceburg	Thomas Jaco	9/9
	Henryville Fire Dept.	Summertown	Sam Washburn Jr.	9/9
	Iron City Fire Dept.	Iron City	Eddie D Brewer	9/9
	Lawrence County Rescue Squad	Lawrenceburg	Tim Davis	9/10
	Lawrenceburg Fire Dept.	Lawrenceburg	Barry Don Kelley	4
	Leoma Fire Dept.	Leoma	Pat Mashburn	8/10
	Loretto Fire & Rescue	Loretto	Douglas Troup	7
	New Prospect Fire Dept.	Lawrenceburg	Don Cheatwood	7/9
	SE Lawrence County VFD	Five Points	Randy Richter	9/9
	St. Joseph Fire Dept.	St. Joseph	Tom Bottoms	7
	Summertown VFD	Summertown	Phillip McCrory	9/9
	West End Fire Dept.	Lawrenceburg	Dennis Raines	9/9
	West Point VFD	West Point	Brandon McLain	9/9
Lewis		**(Surveys Returned: 100%)**		
	Hohenwald VFD	Howenwald	Terry Cotham	5
	Lewis County Fire Dept.	Howenwald	Terry Cotham	9/10
Lincoln		**(Surveys Returned: 33%)**		
	Fayetteville Fire Dept.	Fayetteville	Robert Strope	4
	Lincoln County VFD	Fayetteville	Mike Hall	7/9, 8/9, 9/10
	Petersburg Fire Dept.	Petersburg	Charles E Zeigler	8
Loudon		**(Surveys Returned: 67%)**		
	Greenback VFD	Greenback	Jack Lett	6/9
	Lenoir City Fire Dept.	Lenoir City	Richard Martin	6
	Loudon County Fire & Rescue	Lenoir City	John Parris	7/10
	Loudon Fire Dept.	Loudon	Rondel Branam	6
	Philadelphia Fire Dept.	Philadelphia	Jim Nelms	9
	Tellico Village VFD	Loudon	Wayne M Doster	7/9
Macon		**(Surveys Returned: 100%)**		
	Lafayette Fire Dept.	Lafayette	Keith Scruggs	6, 9/9
	Red Boiling Springs FD	Red Boiling Springs	Danny Knight	6, 6/9

COUNTY	DEPARTMENT	CITY	CHIEF	ISO RATING
Madison		**(Surveys Returned: 0%)**		
	Jackson Fire Dept.	Jackson	Kenneth Lay	3
	Madison County FD	Jackson	Kelly Homes	6/10
Marion		**(Surveys Returned: 41%)**		
	Battle Creek Fire Dept.	South Pittsburg	Don Mcewen	10
	Crossroads VFD	Whitwell	Frank Kimsey	6/9
	Foster Falls VFD	Jasper		9/10
	Haletown VFD	Guild	James Hayes	9/9
	Jasper VFD	Jasper	Paul West	6
	Kimball VFD	Kimball	Jeff Keef	7
	Mullins Cove Fire Dept.	Whitwell	Jackie Blankenship	9/9
	New Hope VFD	South Pittsburg	Jerry Crosslin	10
	Orme Fire Dept.	South Pittsburg	Boyd Burks	10
	Sequatchie VFD	Sequatchie	Ryan Meeks	5/9
	South Pittsburg Mountain VFD	South Pittsburg	Milton Vanallman	9/10
	South Pittsburg VFD	South Pittsburg	Neil Thomas	6
	Suck Creek Mountain VFD	Chattanooga	David Howard	9/9
	Sweetens Cove VFD	South Pittsburg	David McBay	9/9
	West Valley VFD	Whitwell	Billy Powell	9/9
	Whitwell Mountain Fire & Rescue	Whitwell	Buddy Richardson	9/9
	Whitwell VFD	Whitwell	Michael Dillow	8/9
Marshall		**(Surveys Returned: 50%)**		
	Belfast Fire Dept.	Belfast	Jeff McPherson	9/10
	Berlin Fire Dept.	Lewisburg	Joe Greer	9/10
	Chapel Hill VFD	Chapel Hill	Paul Rigsby	8/9
	Cornersville Fire Dept.	Cornersville	Steve Calahan	6
	Farmington/Richcreek FD	Lewisburg	Doug Orr	9/10
	Five Points Fire Dept.	Lewisburg	Edward Garrett	9/9
	Lewisburg Fire Dept.	Lewisburg	Wayne A. Coomes	5
	Mooresville Fire Dept.	Culleoka	Jimmy Flowers	9/9

COUNTY	DEPARTMENT	CITY	CHIEF	ISO RATING
Maury		**(Surveys Returned: 57%)**		
	Columbia Fire Dept.	Columbia	Don Martin	4/9
	Culleoka Fire Dept.	Culleoka	Edward Martin	5/9
	Duck River Basin Fire & Rescue	Culleoka	Doug Wooten	10
	Maury County Rural FD	Columbia	J C Inman	9
	Mt. Pleasant Fire Dept.	Mt. Pleasant	M H Massey	7
	Spring Hill VFD	Spring Hill	David Bell	7/9
	Theta VFD	Columbia	Thomas R Jarratt Jr.	10
McMinn		**(Surveys Returned: 11%)**		
	Athens Fire Department	Athens	Robert Miller	3
	Calhoun VFD	Calhoun	Gary Knight	5
	Claxton Community	Athens	Patrick Alan Dyke	9/9
	Englewood Rural FD	Englewood	Billy R Roach	7
	Etowah City FD	Etowah	Dale Ammons	5
	Etowah Rural Fire Dept.	Etowah	Mike Frost	9/10
	McMinn County Fire Dept.	Athens	Scott Thompson	7/10, 9/10
	Niota VFD	Niota	William H Slack	9/10
	Riceville	Riceville	Darrin Sherrill	9/10
McNairy		**(Surveys Returned: 75%)**		
	Adamsville FD	Adamsville	Terry Thrasher	7, 7/9
	Bethel Springs Fire Dept.	Bethel Springs	David McCullar	8
	Crump VFD	Crump	Dan Henson	10
	Eastview VFD	Ramer	Elvis Butler	8/9
	Finger VFD	Finger	Melvin Martin	5
	Guys VFD	Guys	Raymond Price	8/9
	McNairy County VFD	Selmer	Darrell Goodrum	9/9
	Michie Fire Dept.	Michie	Frankie Rushing	8, 8/9
	Milledgeville VFD	Milledgeville	Jimmy Tuberville	7
	Ramer VFD	Ramer	Bobby Wardlow	7, 7/9
	Selmer Fire Dept.	Selmer	David Dillingham	4/9
	Stantonville VFD	Stantonville	John Thomas	7, 7/9
Meigs		**(Surveys Returned: 100%)**		
	Decatur VFD	Decatur	Edgar A Jewell Jr.	7
	Meigs County Emergency Services	Decatur	Wayne Green/Tony Finnell	9/9

COUNTY	DEPARTMENT	CITY	CHIEF	ISO RATING
Monroe		**(Surveys Returned: 56%)**		
	Ball Play VFD	Madisonville	Henry Sloan	9/9
	Christenburg Fire Dept.	Sweetwater	Danny Watson	9/9
	Citico VFD	Vonore	Jeff Haynes	9/9
	Coker Creek VFD	Tellico Plains	Tim Watson	9/10
	Conasauga Valley Fire Dept.	Tellico Plains	Danny H Yarberry	9/9
	Hopewell VFD	Madisonville	Charlie Miller	9/9
	Madisonville Fire Dept.	Madisonville	John F Tallent	5
	Monroe Tri-Community VFD, Inc.	Madisonville	Dwayne Leming	9/10
	Mt. Vernon VFD	Tellico Plains	Steve Teague	9/9
	North Monroe VFD	Sweetwater	Tom Hoskin	9/9
	Notchey Creek VFD	Madisonville	Wayne Whitener	9/9
	Rafter VFD	Tellico Plains	Art Kroll	9/9
	Sweetwater Fire Dept.	Sweetwater	Jack Powell	5
	Tellico Plains VFD	Tellico Plains	Gary Barnes	8, 9/9
	Turkey Creek VFD	Tellico Plains	Kenneth Miller	10
	Vonore VFD	Vonore	Glen Davis	6
Montgomery		**(Surveys Returned: 100%)**		
	Clarksville Fire Dept.	Clarksville	Mike Roberts	3
	Montgomery County VFD	Clarksville	Steve Jones	9/9
Moore		**(Surveys Returned: 100%)**		
	Metro Moore County VFD	Lynchburg	Mike Tipps	9/10
Morgan		**(Surveys Returned: 50%)**		
	Burrville VFD	Sunbright	Clovis Cooper	9/10
	Chestnut Ridge VFD	Deerlodge	Vacant	10
	Clear Fork Fire Dept.	Rugby	William E Jones	9/10
	Coalfield VFD	Oliver Springs	Terry Rice	9/10
	Deer Lodge VFD	Deer Lodge	Allen Brown	9/10
	Joyner Fire Dept.	Oliver Springs	C J Tapscott	9/10
	Oakdale VFD	Oakdale	John M Roddy	10
	Petros VFD	Petros	Richard L Brown, Sr.	10
	Sunbright Area Fire Dept.	Sunbright	Joe Sexton	7/9
	Wartburg VFD	Wartburg	Glen Moore	8/9

COUNTY	DEPARTMENT	CITY	CHIEF	ISO RATING
Obion		**(Surveys Returned: 20%)**		
	Hornbeak VFD	Hornbeak	Robert A Reavis	7, 7/9
	Kenton Fire Dept.	Kenton	James Damon Campbell	5, 9/9
	Obion County Rescue Squad	Union City	James C Moore	10
	Obion Fire Dept.	Obion	Alan G Jordan	7
	Rives VFD	Rives	David W Kendall	8, 8/9
	Samburg-Reelfoot VFD	Samburg	Guy Hogg	7, 7/9
	South Fulton Fire Dept.	South Fulton	Tommy Smith	6, 6/9
	Troy Fire Dept.	Troy	Mark Watson	7, 7/9
	Union City Fire Dept.	Union City	Kelly E Edmison	4, 4/9
Overton		**(Surveys Returned: 20%)**		
	Allons VFD	Allons	Donald Wells	9
	Alpine VFD	Alpine		9/10
	Fairground VFD	Livingston	Jerry Dale	9
	Hardys Chapel VFD	Cookeville	Brent Shake	7/9
	Hilman VFD	Hilman	Leonard Copeland	9
	Livingston VFD	Livingston	A B Coleman	6
	Monroe Fire Dept.	Monroe	Bill Smithers	9
	Mountain Fire & Rescue	Crawford	Bobby Bowman	10
	Muddy Pond VFD	Monterey	Amos Bauman	9
	Rickman VFD	Rickman	Chris Neal	9
Perry		**(Surveys Returned: 43%)**		
	Cedar Creek VFD	Linden	Melinda Reeves	10
	Flatwoods Fire Dept.	Linden	Terry Skelton	9/9
	Linden Fire Dept.	Linden	Gary Rogers	8
	Lobelville VFD	Lobelville	Dale Barber	8/9
	Perry County Rescue Squad	Linden	Ralph Black	10
	Pineview VFD	Linden	Brad Burgess	9/9
	Pope VFD	Linden	Frank A Wise Jr.	9/9
Pickett		**(Surveys Returned: 100%)**		
	Byrdstown/Pickett County VFD	Byrdstown	Robert Bond	8/9
Polk		**(Surveys Returned: 33%)**		
	Copperhill VFD	Copperhill	R Dale Ray	8
	East Polk County Fire & Rescue	Copperhill	Dale Ray	6/9, 9/10
	West Polk County Fire & Rescue	Benton	Danny Stinnett	6/9

COUNTY	DEPARTMENT	CITY	CHIEF	ISO RATING
Putnam		**(Surveys Returned: 83%)**		
	Algood VFD	Algood	Lloyd Norris	7
	Baxter VFD	Baxter	Richard McBroom	8
	Cookeville Fire Dept.	Cookeville	Gene Schmid	4
	Dodson Branch VFD	Cookeville	Earl Bean	9/9
	Monterey Fire Dept.	Monterey	Richard Milligan	6
	Putnam County VFD	Cookeville	Daryl Blair	9/10
Rhea		**(Surveys Returned: 75%)**		
	Dayton Fire Dept.	Dayton	Jack Arnold	5, 9/9
	Graysville VFD	Graysville	Jimmy Miles	7
	Rhea County Fire Dept.	Evensville	Billy Cranfield	6/9, 7/9, 9/9
	Spring City VFD	Spring City	Greg Jolley	7, 9/9
Roane		**(Surveys Returned: 44%)**		
	Blair VFD	Oliver Springs	Clarence Nelson	9/9
	East Roane County VFD	Kingston	Donnie R Eblen	9/10
	Harriman Fire Dept.	Harriman	Wendell M Stout	5
	Kingston Fire Dept.	Kingston	William Gordon	6
	Midtown VFD	Harriman	Keith Farmer	9/9
	Oliver Springs Fire Dept.	Oliver Springs	Terry Lee Phillips	7
	Rockwood Fire Dept.	Rockwood	J W Cisson	4
	South Roane County VFD	Kingston	Buddy Hill	7/10
	West Roane County VFD	Rockwood	Charlie Redwine	9/9
Robertson		**(Surveys Returned: 60%)**		
	Adams VFD	Adams	Ray Brown	10
	Cross Plains VFD	Cross Plains	Roy Hulsey	7/9
	Greenbrier Fire Dept.	Greenbrier	Jackson Woodard	7, 7/9
	Orlinda VFD	Orlinda	Dusty Johnson	5/9
	Ridgetop VFD	Ridgetop	Tony Reasoner	7
	Robertson County Rescue & FD	Springfield	Terry Edwards	7/9
	South Forks Services Inc.	Springfield	Ken Nelms	10
	Springfield Fire Dept.	Springfield	David N Greer	4
	White House Community VFD	White House	Joe Williams	7/9
	White House Fire Dept.	White House	Joe Palmer	5

COUNTY	DEPARTMENT	CITY	CHIEF	ISO RATING
Rutherford		**(Surveys Returned: 43%)**		
	Almaville VFD	Smyrna	Greg Capps	7/10
	Christiana VFD	Christiana	Tony Snook	9/9
	Eagleville Fire Dept.	Eagleville	Joseph Jackson	7, 7/9
	Fosterville Fire Dept.	Christiana	Ricky Rigney	9/9
	Kittrell VFD	Readyville	George Curray	5/9
	Lascassas VFD	Lascassas	Larry G Farley	9/9
	LaVergne Fire Dept.	Lavergne	James C Gafford	5
	Murfreesboro Fire Dept.	Murfreesboro	David Baxter	3/9
	Rockvale VFD	Rockvale	Marvin P Walls	9/9
	Rutherford County FD Inc.	Murfreesboro	Steven Yates	8/9
	Salem-Blackman VFD	Murfreesboro	Joe Johnson	7/10
	SE Rutherford FD Inc.	Murfreesboro	Steven Yates	7/9
	Smyrna Fire Dept.	Smyrna	William Culbertson	3
	Walter Hill VFD	Murfreesboro	Robert Jenkins	8/9
Scott		**(Surveys Returned: 33%)**		
	East 63 VFD	Huntsville	Michael Silcox	9/9
	Huntsville Fire Dept.	Huntsville	Dean King	8, 8/9
	Mid County Fire Dept.	Helenwood	Rick Russ	9/9
	Oneida Fire Dept.	Oneida	Mike Stringer	7
	Paint Rock Fire Dept.	Oneida	A Duncan Jr.	9/9
	Pine Hill VFD	Oneida	Bennie Newport	9/9
	Seventh District VFD	Oneida	R T Walden	9/9
	South Scott County VFD	Robbins	John Tate	9/9
	Winfield VFD	Winfield	Scott King	8/9
Sequatchie		**(Surveys Returned: 67%)**		
	Cagle Fredonia VFD	Chattanooga		8/9
	Dunlap Fire Dept.	Dunlap	Raymond Walker	5, 5/9
	Lewis Chapel VFD	Dunlap	John Hensley Jr.	9/9
	Lone Oak VFD	Signal Mountain	Will Zimmerman	9/9
	Lusk VFD	Dunlap	Glendol Rains	9/9
	Southend VFD	Dunlap	Bobby Gene Turner	6/9

COUNTY	DEPARTMENT	CITY	CHIEF	ISO RATING
Sevier		**(Surveys Returned: 64%)**		
	Catons Chapel VFD	Sevierville	Jerry McGill	6/9
	English Mountain VFD	Sevierville	Steve Tackett	9/9
	Gatlinburg Fire Dept.	Gatlinburg	Gary West	3
	Northview VFD	Kodak	Phil Johnson	9/10
	Pigeon Forge Fire Dept.	Pigeon Forge	Denny Clabo	5, 5/9
	Pittman Center VFD	Gatlinburg	Joe Galentine	7/9
	Sevier County VFD	Sevierville	Allen Ottinger	7/9
	Sevierville Fire Dept.	Sevierville	Mike Rawlings	6, 6/9
	Seymour VFD	Seymour	Darryl Kerley	7/9
	Walden Creek VFD	Sevierville	Tim Baker	5/9
	Wears Valley VFD	Sevierville	Michael Huskey	9/9
Shelby		**(Surveys Returned: 86%)**		
	Arlington FD	Arlington	Ben Wolfe	6
	Bartlett Fire Dept.	Bartlett	Paul Smith	3
	Collierville Fire & Rescue	Collierville	Dennis Rutledge	4
	Germantown Fire Dept.	Germantown	Dennis Wolf	3
	Memphis Fire Services	Memphis	Chester Anderson	2
	Millington Fire Dept.	Millington	Charles A Carter	4
	Shelby County Fire Dept.	Memphis	William H. Hiner	5, 5/9, 6/9
Smith		**(Surveys Returned: 33%)**		
	Carthage Fire Dept.	Carthage	Ed Stallings	7
	Forks River Fire Dept.	Elmwood		9/9
	Gordonsville Fire Dept.	Gordonsville	Bill Martin	8
	Rock City-Rome FD	Carthage	John E Meredith	7/9
	Smith County Civil Defense FD	Carthage	Jacky Carver Sr.	9/9
	South Carthage FD	South Carthage	Bruce Grigg	7
Stewart		**(Surveys Returned: 40%)**		
	Bumpus Mills VFD	Bumpus Mills	Eric Watkins	10
	Dover VFD	Dover	Dan Dill	8
	Indian Mound VFD	Indian Mound	Brian Leese	10
	Leatherwood/Brownfield VFD	Dover	Owen Wallace	10
	Stewart County VFD, Inc.	Bumpus Mills	Eric Watkins	8/9, 9/10

COUNTY	DEPARTMENT	CITY	CHIEF	ISO RATING
Sullivan		**(Surveys Returned: 100%)**		
	Area 421 Emergency Services	Bristol	Dan King	9
	Avoca VFD	Bluff City	David Taylor	6/10
	Bloomingdale VFD Inc.	Kingsport	Roger W. Perkins, Jr.	7/10
	Bluff City Fire Dept.	Bluff City	Michael Carrier	6
	Bristol Fire Dept.	Bristol	Phil Vinson	3
	East Sullivan County VFD	Bristol	Brian K Gentry	9/10
	Hickory Tree VFD Inc.	Bluff City	Tim Leonard	9/10
	Kingsport Fire Dept.	Kingsport	Charles A. White	3/9
	Piney Flats VFD	Piney Flats	Travis Justice	9/10
	Sullivan County VFD	Blountville	Brad Tate	8/9
	Sullivan West County VFD	Kingsport	Harry Cleek	8/10
	Warriors Path VFD	Kingsport	Jay Burdle	7/10
Sumner		**(Surveys Returned: 63%)**		
	Gallatin Fire Dept.	Gallatin	Joe M Womack	4
	Hendersonville Fire Dept.	Hendersonville	Jamie H Steele	5, 5/9
	Millersville Fire Dept.	Goodlettsville	Rich Suffridge	6
	Mitchellville VFD	Portland	Bobby Sloan Jr.	6
	Number One VFD	Hendersonville	Don Allen	6/9
	Portland Fire Dept.	Portland	Robert A West	6
	Shackle Island VFD	Hendersonville	Martin Bowers	9/10
	Westmoreland Fire Dept.	Westmoreland	Mark Jenkins	8, 9/9
Tipton		**(Surveys Returned: 89%)**		
	Brighton Fire Dept.	Brighton	Kinney Bridges	8/9
	Charleston VFD	Covington	Jerry L. Hulen	9/9
	Covington Fire Dept.	Covington	Jerry Craig	4
	Garland VFD	Covington	Tommy Gay, Sr.	7, 9/10
	Gilt Edge VFD	Gilt Edge	Steve Fletcher	7, 7/10
	Mason Fire Dept.	Mason	Wendle Trimble	7/9
	Munford Fire Dept.	Munford	J R Bonson	5
	Quito/ Drummonds VFD	Millington	David Jones	9/9
	Three Star VFD	Brighton	Adler G Jones	9/9
Trousdale		**(Surveys Returned: 100%)**		
	Hartsville-Trousdale Co. Fire Dept.	Hartsville	Jimmy Anthony	6, 9/10

COUNTY	DEPARTMENT	CITY	CHIEF	ISO RATING
Unicoi		**(Surveys Returned: 0%)**		
	Erwin Fire Dept.	Erwin	David W Street	6
	Limestone Cove VFD	Unicoi	Victor Lewis	9/9
	Southside VFD	Erwin	Howard Townsend	8/9
	Unicoi VFD	Unicoi	Robert Adams	9/9
Union		**(Surveys Returned: 100%)**		
	Luttrell VFD	Luttrell	Steve Devault	9/9, 9/10
	Maynardville VFD	Maynardville	Danny W. Smith	8/9
	Paulette VFD	Maynardville	Matt Lovitt	9/10
	Sharps Chapel VFD	Sharps Chapel	Chris L Upton	9/10
Van Buren		**(Surveys Returned: 67%)**		
	Cedar Grove Fire Company	Bone Cave	Larry J White	9/10
	Fall Creek Falls FD	Pikeville	Ernest Beard	9/9
	Spencer VFD	Spencer	Eddie Yates	8/9
Warren		**(Surveys Returned: 43%)**		
	Campaign & Rock Island VFD	Rock Island	Burton Grissom	10
	Centertown Fire Dept.	McMinnville	Perry Mathis	9/10
	Collins River VFD	McMinnville	Dwite Woodlee	9/10
	McMinnville Fire Dept.	McMinnville	Kevin Lawrence	5
	Morrison Fire Dept.	Morrison	Bobby L Prater	9/10
	North Warren County VFD	McMinnville	Dennis Mayfield	9/10
	Viola Community Fire Dept. Inc.	Viola	Kevin Lawrence	9/10
Washington		**(Surveys Returned: 78%)**		
	Embreeville VFD	Erwin	Earl Greene	9/9
	Fall Branch VFD	Fall Branch	Roger Phillips	8/9
	Gray VFD	Gray	Joey Harrison	9/9
	Johnson City Fire Dept.	Johnson City	Paul Greene	3/9
	Jonesborough Fire Dept.	Jonesborough	Craig Ford	6, 6/9
	Limestone VFD	Limestone	Stephen Archer	9/9
	Nolichuckey Valley VFD	Chuckey	Harmon D Mathes	7/9
	Old Town VFD	Jonesborough	Willard Metcalf	10
	Sulphur Springs VFD	Jonesborough	Bruce Brocklebank	9/9

COUNTY	DEPARTMENT	CITY	CHIEF	ISO RATING
Wayne		**(Surveys Returned: 18%)**		
	Beech Creek VFD	Waynesboro	Herbert Pulley	9/9
	Clifton VFD	Clifton	Jerry Warren	7
	Collinwood Fire Dept.	Collinwood	Sherman Martin	7
	Cypress Inn VFD EMA 10	Cypress Inn	Tony Morgan	9/9
	Highway 69 VFD	Lutts	Johnny White	8
	Lutts VFD	Lutts	Keith Wilbanks	9/9
	Ovilla VFD	Lawrenceburg	Mike Gower	9/10
	Southgate VFD	Iron City	Stanley Bailey	9/9
	Topsy VFD	Waynesboro	Alvin Creecy	9/9
	Wayne County EMA	Waynesboro	Robert Farris	8/10
	Waynesboro City FD	Waynesboro	Doug Gobble	6, 6/9
Weakley		**(Surveys Returned: 90%)**		
	Dresden Fire Dept.	Dresden	Dickie Hart	6, 6/9
	Gleason Fire Dept.	Gleason	Jerry Connell	7, 7/9
	Greenfield Fire Dept.	Greenfield	Bob Dudley	4, 4/9
	Latham/Dukedon FD	Dresden	James T. Legars	9/10
	Martin Fire Dept.	Martin	Jerry Baker	4, 4/9
	Ore Springs-Como VFD	Paris	Donald Wright	9/9
	Palmersville VFD	Palmersville	Joe David Laws	9/9
	Sharon Fire Dept.	Sharon	Stacey L Bostwick	4, 4/9
	Sidonia VFD	Sharon	David Lackey	9/9
	Weakley County Rescue Squad	Dresden	Joe David Laws	10
White		**(Surveys Returned: 30%)**		
	Bon De Croft VFD	Sparta	Danny Brock	7/10
	Cassville VFD	Sparta	Teddy Stockton	7/10
	Central View VFD	Walling	Randy Conatser	9/9
	Cherry Creek Fire Dept.	Sparta	Lew Betterton	8/10
	Doyle VFD	Doyle	Graig Dial	6, 6/9
	Eastland Fire Dept.	Sparta	Bill Smith	9/9
	Hickory Valley VFD	Sparta	Danny Copeland	8/10
	Mt. Gilead VFD	Sparta	Edward L. Hensley	9/9
	North End Fire Dept.	Sparta	Tim Eldridge	6/10
	Sparta Fire Dept.	Sparta	Ed Kay	5

COUNTY	DEPARTMENT	CITY	CHIEF	ISO RATING
Williamson		**(Surveys Returned: 67%)**		
	Arrington VFD	Arrington	John Watts	7/9
	Brentwood Fire Dept.	Brentwood	Kenny Lane	4
	College Grove Fire Dept.	College Grove	Allen Lovett	9/9
	Fairview Fire Dept.	Fairview	Keith Crowell	6, 6/9
	Flat Creek/ Bethesda VFD	Thompson Station	Frank Purvis	9/9
	Franklin Fire Dept.	Franklin	Don Claiborne	4/9
	Nolensville VFD	Nolensville	Presley Hughes	5/9
	Peytonsville VFD	Thompson Station	Kevin Green	10
	Williamson County Rescue Squad	Franklin	Todd Bowman	6/9, 9/9
Wilson		**(Surveys Returned: 67%)**		
	Lebanon Fire Dept.	Lebanon	Wayne Driver	5/9
	Watertown VFD	Watertown	Ken Fuston	7, 7/9
	Wilson County EMA	Lebanon	Jerry McFarland	7/9, 9/9, 9/10

APPENDIX D

NFPA 1720 MATRIX

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 is a document that is intended as a guide for organizing and delivering emergency services by volunteer and combination departments.

Attached is a compliance matrix adapted from one created by the International Association of Fire Chiefs and the Volunteer Firemen's Insurance Service that will make it easier for departments to determine if they are in compliance. This matrix is not intended to replace NFPA 1720 but should be used to assist with the compliance of procedures and operations. In order to completely comply with the provisions of this matrix, a complete copy of NFPA 1720, 1500, 472, 1221, 1561, 1600, and 1621 should be acquired from the National Fire Protection Association (NFPA) and used.

NFPA 1720 COMPONENT		CURRENTLY MEET	PARTIALLY MEET	FAIL TO MEET
4.1	Suppression operations, adequate personnel, equipment, sufficient/ efficient/effective resources			
4.1.1	Organization, operations, deployment, written R & R, SOPs, orders			
4.1.2	Develop community risk management plan			
4.1.3	Procedures clearly state succession of command responsibilities			
4.1.4	Organized into company units on response teams and have appropriated apparatus and equipment			
4.1.5	Identify minimum staffing required for safe and efficient operations			
4.1.6	Maintain standard reports for responses, including location, nature of incident and operations performed, members responding, etc.			
4.1.7	Mutual aid response and agreements, predetermined locations, regulate dispatch of companies, response groups, command to fire and other responses			
4.1.8	Number and type of units assigned to respond by risk analysis and pre-fire plans			
4.2.1	Incident commander assignments			
4.2.1.1	Assumption and identification communicated to all responding units			
4.2.1.2	Incident command shall be responsible for coordination and direction of all activities			
4.2.1.3	Incident commander ensures accountability system is used immediately			
4.2.1.4	Company officer/crew leader aware of identity, location, and activity of every member assigned			

NFPA 1720 COMPONENT		CURRENTLY MEET	PARTIALLY MEET	FAIL TO MEET
4.2.1.5	Each member of a company aware of the identity of the company officer/crew leader			
4.2.1.6	Orders to members, verbal at incident transmitted through company officer/crew leader			
4.2.2.1	Upon assembling necessary resources, shall have the capability to safely initiate attack within 2 minutes, 90 percent of the time			
4.2.2.2	Initial attack operations shall be organized so at least 4 members are assembled before an interior attack is made			
4.2.2.2.1	Hazardous materials incidents shall have two people work as a team			
4.2.2.2.2	Outside hazardous materials area, two people present for assistance on rescue, one person may be engaged in other activities			
4.2.2.2.3	No assignment can be made if abandoning the critical tasks of rescue			
4.2.2.3	Initial attack can occur if life-threatening situation is imminent			
4.2.2.4	Fire department has capability for sustained operations, suppression, search, rescue forcible entry, ventilation, preservation of property, accountability, rapid intervention team, support activities			
4.3.1	Mutual aid, automatic aid, fire protection agreements in writing and liability issues, injury, death, retirement, cost and authorization for support services			
4.3.2	Procedures for personnel training within all agreements for response or support			

NFPA 1720 COMPONENT		CURRENTLY MEET	PARTIALLY MEET	FAIL TO MEET
4.3.3	Companies responding to mutual aid incidents shall be equipped with communications equipment to communicate with various officers			
4.4.1	EMS capability (people, equipment, resources) initially on arrival, utomatic or mutual aid			
4.4.1.1	Do you deliver emergency medical service?			
4.4.1.2	Maintain clear document of rule, responsibilities, function, and objectives for delivering EMS			
4.4.2	Basic treatments levels within system • First Responder • Basic Life Support • Advanced Life Support			
4.4.3.1	Five Basic Functions • _____ First Responder with AED • _____ Basic Life Support • _____ ALS Response • _____ Patient Transport • _____ Assurance of Response Quality Management			
4.4.3.2	Department shall be involved in any or all functions identified in 4.4.3.1 through 4.4.3.1.5			
4.5.1	Fire department has a quality management program			
4.5.2	All responders and basic life support programs are reviewed and documented			
4.5.3	Advanced Life Support systems have named Medical Director with responsibility to oversee and ensure quality medical care within state law			
4.5.4	Advanced Life Support system provides immediate communication with supervisor and medical oversight			

NFPA 1720 COMPONENT		CURRENTLY MEET	PARTIALLY MEET	FAIL TO MEET
4.6.1	Special Operations consist of: _____ Sufficient people _____ Equipment _____ Resources Initial and subsequent deployments			
4.6.1.1	Involved in special operations response			
4.6.2	Have adopted plan for operations response specifying role and responsibilities for hazardous materials and trained to NFPA 472			
4.6.3	All members who respond beyond first responder level for hazardous materials are trained to NFPA 472			
4.6.4	Fire department shall have capacity to implement rapid intervention crew during all special operations to meet NFPA 1500			
4.6.5	If higher level emergency response is needed beyond department, department has determined availability and capability of other responses			
5.1	Health and Safety provided in accordance with NFPA 1500			
5.2.1	Incident Management System provided in accordance with NFPA 1561			
5.2.2	Use of incident command designed for structures, wildland, hazardous materials, EMS, and other type incidents			
5.3	Department has training program for competency–effective, efficient and safe			
5.4.1	Department has reliable communication system to facilitate prompt delivery of suppression, EMS, and special operations			
5.4.2	All communication facilities, equipment, staffing, and operating procedures comply with NFPA 1221			

NFPA 1720 COMPONENT		CURRENTLY MEET	PARTIALLY MEET	FAIL TO MEET
5.4.3	Radio communications have standard protocols and terminology			
5.4.3.1	Radio terminology is in compliance with NFPA 1561			
5.5	Department does pre-incident planning and especially for target hazards			

CTAS

County Technical Assistance Service

In cooperation with the Tennessee County Services Association and the County Officials Association of Tennessee

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