



**TENNESSEE STATE FIRE MARSHAL'S OFFICE  
COMMISSIONER'S ANNUAL REPORT FOR 2017**

*Submitted in accordance with T.C.A. § 68-102-133*

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The commissioner shall, annually, on or before February 15, transmit to the governor a full report of the commissioner's proceedings under this chapter, and such statistics as the commissioner may wish to include in the report, for the year previous. The commissioner shall also recommend any amendments to the law that, in the commissioner's judgment, are deemed advisable. The report of the commissioner shall include a full and complete report of all collections made and all expenditures and for what purposes they were made and to whom paid.

## Overview of State Fire Marshal's Office Operations

The mission of the Division of Fire Prevention, also known as the Tennessee State Fire Marshal's Office (SFMO), is to reduce the loss of life and property from fire and explosions in Tennessee. The SFMO and its eight sections remain committed to protecting the safety of Tennesseans and their property through: fire prevention, education, codes enforcement, inspection, regulation and investigation. Each section of the SFMO incorporates one or more of these functions which aligns our focus and provides vision for the future.

The Education & Outreach Section assists the fire service, elected officials and the communities they serve to realize the potential economic incentives of prevention by measuring trends, setting benchmarks, analyzing data and compiling comprehensive loss reports. The section serves as a resource for fire prevention efforts and also oversees the registration and fire loss data reporting for fire departments across the state. The Fire Investigations Section provides expert assistance to local communities for investigations involving losses of property and life. This section assists other agencies, including local fire service and law enforcement, with specialized resources to determine the cause, origin and circumstance of all fires in Tennessee. The sections of Codes Enforcement, Electrical-Residential-Marina Inspections and Manufactured Housing & Modular Building work to ensure engineered environments are designed and constructed to applicable standards and codes which reduces the susceptibility of buildings to fire and lowers the likelihood of a related fatality. The Tennessee Fire Service and Codes Enforcement Academy (TFACA) and the Commission on Firefighting Personnel Standards and Education are task with the training and certification of firefighters in Tennessee. Both TFACA and the Commission serve to promote professionalism and competency throughout the fire service. Lastly, the Administrative Services Section provides support for the SFMO in the areas of budgeting and purchasing while overseeing the processing for over 20 types of permits, licenses and certificates.

In working towards our mission, the SFMO interacts with the general public, state and local elected officials, the fire service, and many regulated industries on a daily basis. The SFMO also works alongside the Tennessee Mutual Aid System and the Tennessee Emergency Management Agency (TEMA) to ensure resources are coordinated for fire service operations during widespread disasters.

### Fire Prevention Division Sections

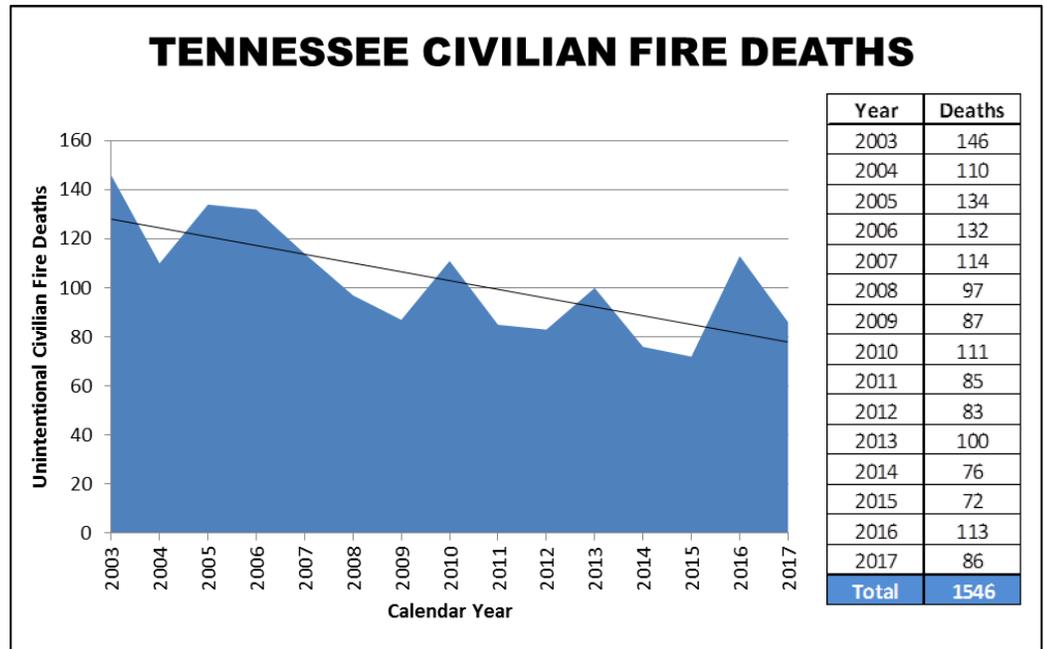
- Education & Outreach
- Fire Investigations
- Codes Enforcement
- Electrical-Residential-Marina Inspections
- Manufactured Housing & Modular Building
- TFACA
- Firefighting Commission
- Administrative Services

## State of the State

Tennessee has historically ranked among the highest states in the country in its rate of unintentional civilian fire deaths. The SFMO is committed to reducing the fire mortality rate and property loss caused by fire with the continued support of crucial stakeholders including the Governor, General Assembly, Commissioner and the Department, the fire service and the insurance industry, just to name a few.

Like most of the United States, Tennessee has experienced a reduction in fire deaths over the past several decades due, in part, to fire prevention programs. In 2017, the National Fire Protection Association (NFPA) released its report 'U.S. Fire Death Rates by State', which showed that Tennessee dropped from the 8<sup>th</sup> highest rate of fire deaths for the 2006-2010 period<sup>1</sup> to the 11<sup>th</sup> highest rate for the years 2011-2015<sup>2</sup>.

Additionally, preliminary results for 2017 fire data demonstrate a 24% reduction in unintentional civilian fire deaths from 2016. According to SFMO records, there were 86 such fire deaths in Tennessee during 2017, which is a decrease from the 113 fire deaths the previous year. This continues the overall downward trend of fire deaths in Tennessee.



**The vast majority of unintentional civilian fire deaths occur in residential structures. 77 (89.5%) of the 86 deaths last year were from household fires. More than 3 out of 4 fire deaths were in single family homes.**

| Structure Type        | Deaths    | %             |
|-----------------------|-----------|---------------|
| Single Family         | 69        | 80.2%         |
| Apartment/Condominium | 6         | 7.0%          |
| Duplex                | 2         | 2.3%          |
| Hotel/Motel           | 1         | 1.2%          |
| Other                 | 8         | 9.3%          |
| <b>Total</b>          | <b>86</b> | <b>100.0%</b> |

In 2017, there was also a reduction in the total number of fires and structure fires with 7,752 structure fires reported by fire departments to the SFMO. This is nearly 3,000 fewer structure fires than the 10,692 that were reported in 2016, which does not include the 2,042 structure fires from the Sevier County Wildfires. When reviewing fire statistics for trends and commonalities, outlier events like the Sevier County Wildfires are typically excluded as a single occurrence could drastically affect the overall statistics without demonstrating a pattern. While the 2017 data is anticipated to change marginally as reports from last year continue to be submitted to the SFMO, the preliminary data suggests a substantial 27% reduction when comparing the previous year.

<sup>1</sup> Tennessee's 2006-2010 rank, National Fire Protection Association's 2012 Report 'U.S. Fire Death Rates by State, 10/12

<sup>2</sup> Tennessee's 2011-2015 rank, National Fire Protection Association's 2017 Report 'U.S. Fire Death Rates by State, 7/17

The adjacent table represents all incidents and dollar loss, as reported via the Tennessee Fire Incident Reporting System (TFIRS), for the 2017 calendar year, but is considered preliminary until April 2018 to ensure that all fires reported are complete and accurate. TFIRS also requires reporting fire departments to identify the cause of the fire from 16 standard cause categories according to the reported heat source, equipment involved in ignition, and factors contributing to ignition. One category is “unknown” which reports the cause as undetermined.

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*Reported fires totaled 23,129 which resulted in an estimated \$246,473,819 in property loss for Tennesseans.*

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These loss estimates are from incident reports submitted by fire departments. As with the number of structure fires, the SFMO expects this number to increase slightly as fire departments are still submitting and updating incident reports from 2017. The preliminary property loss total of over \$246 million is down approximately 14% from the \$287 million reported in 2016. It’s important to note the quoted 2016 figure excludes the property loss from the Sevier County wildfires.

| Reported Incident Type                 | Reported Incidents   | % of Total    |
|--|----------------------|---------------|
| Fire: Structure                        | 7,752                | 1.5%          |
| Fire: Vehicle                          | 4,704                | 0.9%          |
| Fire: Other                            | 10,673               | 2.1%          |
| <b>Fire Subtotal</b>                   | <b>23,129</b>        | <b>4.5%</b>   |
| Explosions                             | 989                  | 0.2%          |
| Rescue: Medical Treatment              | 327,997              | 63.5%         |
| Rescue: Others                         | 3,421                | 0.7%          |
| <b>Rescue Subtotal</b>                 | <b>331,418</b>       | <b>64.2%</b>  |
| False Call: Malicious                  | 1,824                | 0.4%          |
| False Call: Other                      | 50,325               | 9.7%          |
| <b>False Call Subtotal</b>             | <b>52,149</b>        | <b>10.1%</b>  |
| Hazardous Condition                    | 14,887               | 2.9%          |
| Service Calls                          | 33,399               | 6.5%          |
| Good Intent Calls                      | 57,988               | 11.2%         |
| Severe Weather or Natural Disaster     | 1,071                | 0.2%          |
| Special Incident                       | 1,464                | 0.3%          |
| <b>2017 Total Reported Calls</b>       | <b>516,494</b>       | <b>100.0%</b> |
| <b>Total Fire Dollar Loss Reported</b> | <b>\$246,473,819</b> |               |
| <b>Total Dollar Loss Reported</b>      | <b>\$254,896,459</b> |               |

## Education & Outreach Section

The Education & Outreach Section provides fire safety educational materials and resources to citizens and fire departments across the state. The programs within the section include fire incident reporting, fire data analysis, fire department recognition, public education, community risk reduction and the “Get Alarmed Tennessee!” program that provides free smoke alarms for Tennessee residents. Education & Outreach works with its partners at both the national and local levels to share the latest information in fire prevention. By using strategies developed to address specific risks identified through data analysis, the section seeks to reduce fire loss in Tennessee through direct communication with the public and by empowering fire departments to educate the communities they protect.



In 2017, the SFMO launched a new statewide community risk reduction plan. As part of this plan, the Education & Outreach Section developed custom risk profiles for fire departments across the state that include the most common causes of fires in their communities along with maps showing where fires are most likely to occur. Risk profiles are available upon request to fire departments as the section continues to coordinate a range of fire prevention efforts. Providing risk assessments for fire departments allows them to focus on prevention and mitigation strategies to better serve and protect their communities.

## Get Alarmed Tennessee in 2017

- 18,559 smoke alarms were installed from Memphis to Mountain City
- 6,314 households received in-home fire safety education and free smoke alarms
- 14 door-to-door smoke alarm installation canvasses were conducted with local fire departments and partners
- At least 23 residents escaped home fires due to these smoke alarms this year



The goal of the “Get Alarmed Tennessee!” smoke alarm distribution and installation program is to provide a basic level of fire prevention education and smoke alarm protection for all residents. The program distributes and installs 10-year sealed battery smoke alarms in addition to SafeAwake smoke alarms for Tennesseans who are deaf or hard of hearing. Since “Get Alarmed” started in 2012, at least 218 individuals have been alerted to fires in their homes and escaped without serious injury thanks to these smoke alarms. The section looks forward to reporting an ever-growing number of lives saved due to this critical program in the future.

In 2017, the SFMO was awarded \$266,667 in funding from the Federal Emergency Management Agency’s Fire Prevention and Safety grants to continue the program.

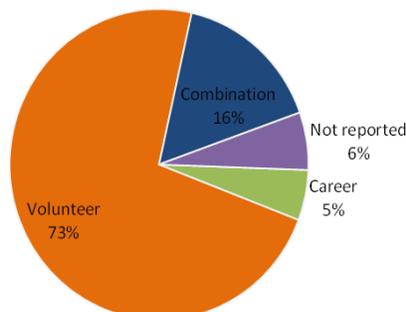
## Fire Department and Firefighter Statistics

There are 696 fire departments recognized by the SFMO; 685 of these fire departments protect public property with a fire response area designated by the local governing body and 11 protecting solely private property (such as an industrial or commercial facility), military facilities or airports. Detailed staffing information for 644 of these 685 fire departments have reported to the SFMO and of the 644 fire departments that provided staffing information, only 36 (5.6%) are career fire departments where all firefighters receive financial compensation for their services and 498 (77.3%) of the public fire departments are staffed entirely by volunteers. The remaining 110 (17.1%) of the public fire departments are staffed by a combination of volunteer and career firefighters.

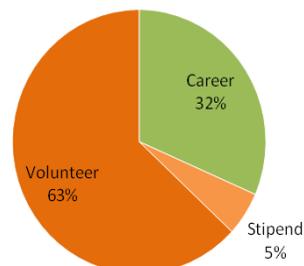


The volunteer spirit remains as the majority of firefighters in Tennessee are volunteers who receive either no compensation or a nominal fee for their services. 22,469 active firefighters have been reported to the SFMO in 2017 consisting of 15,381 (68.5%) volunteer firefighters and 7,088 (31.5%) career firefighters. 1,212 of the more than 15,000 volunteer firefighters receive a small payment or stipend for responding to calls.

**Fire Department Staffing Types**



**Firefighter Compensation**



## Fire Investigations Section

In 2016, the name of the Bomb & Arson Section was officially changed to the Fire Investigations Section which reflects the focus on the SFMO's core responsibility to determine the cause, origin and circumstance of all fires in Tennessee. A statutory change provides for concurrent jurisdiction with the Tennessee Bureau of Investigations (TBI) for incendiary fires. The SFMO and the TBI have signed a Memorandum of Understanding (MOU) to detail the new working partnership. The objective is to maintain a high level of collaboration between agencies allowing the most effective utilization of specialized resources to best protect the public.

The Fire Investigations Section continues to assist local fire service, law enforcement agencies, the TBI and the Bureau of Alcohol, Tobacco, Firearms, and Explosives (ATF) with specialized investigatory resources to determine the cause and origin of all fires across the state while assisting other agencies with investigating arson and related offenses as described in T.C.A. § 39-14-301. The section remains available to send special resources such as ATF trained accelerant detection K-9s to assist local jurisdictions in their investigations. Specialized equipment, ranging from a mini excavator to portable sifting screens, are also available to aid local jurisdictions. The section is working to expand training and education opportunities for local fire departments as well.



In order to carry out the statutory responsibilities of the Commissioner, T.C.A. §§ 68-102-101 - 68-102-111 outlines the duties of the deputies and assistants to the commissioner. Deputies to the Commissioner are the Fire Investigators of the section and they are tasked with assisting in the investigation process. The role of Assistant to the Commissioner is a delegated responsibility of authority to a local designee such as a fire chief or local fire marshal. The local designee has an obligation to investigate the cause, origin and circumstance of every fire occurring in any city or place in this state where property has been destroyed or damaged, and to notify the Commissioner immediately if a fire is of suspicious origin. The requirements also outline that a detailed written report of every fire must be submitted to the Commissioner within ten days of the occurrence of the fire. Most fire losses, property or life, are deemed accidental. Nonetheless, each occurrence of fire is still required to be investigated with the goal of reducing these occurrences of loss. Without continued assistance from the Fire Investigations Section, local fire chiefs and officials would not have the resources to meet the requirements of this statute.

### Case Statistics for 2017

- Cases Opened: 414 (216 Undetermined Fires, 115 Arsons, 62 Accidental Fires, 7 Explosives Recoveries, 5 Explosions, 4 Bomb Threats, 3 Natural Fires, 1 Suspicious Package, 1 Arson Threat)
- Cases Closed: 223

**A total of 75 arrests were made in cases the Fire Investigations Section worked/investigated; which included 62 adults and 13 juveniles.**

## Codes Enforcement Section

The Codes Enforcement Section enforces statewide adopted fire and building construction safety codes and standards to afford a reasonable degree of safety to life and property from fire and hazardous incidents. This section oversees the design, construction, alteration and repair of buildings or structures across the state including state buildings, commercial residential structures, high hazard occupancies, jails and prisons, covered malls, assembly spaces with 300 or greater occupants, schools and daycares. The section also conducts annual inspections for schools, daycares and other buildings requiring an inspection from the SFMO to receive an initial license from the Administrative Services Section and other state agencies.

Additionally, the Codes Enforcement section also investigates complaints relating to buildings under its jurisdiction or a complaint regarding a person or entity licensed by the Administrative Services Section.

### Plans Review and Inspections in 2017

- Plan Submittals Received: 879
- Inspections Performed: 13,702
- Blasting Inspections Performed: 886
- Blasting Complaints Received: 417

## Electrical, Residential and Marina Inspections Section

The Electrical, Residential and Marina Inspections Section is responsible for critical safety inspections across the state. The section issues permits and performs inspections to enforce the provisions of Tennessee's adopted electrical code, residential building code and energy conservation code. In 2017, all permits and inspection numbers increased compared to the previous year which reflects the growth in construction statewide.

### Permits and Inspections in 2017

- Total Residential Building Permits Issued: 1,037
- Total Residential Building Inspections Performed: 2,902
- Total Electrical Permits Issued: 124,431
- Total Electrical Inspections Performed: 195,375
- Total Marinas Inspected: 64

Following the passage of the Noah Dean and Nate Act, T.C.A. § 68-102-601 *et seq.*, this section added marina safety inspections to its operations. The law requires each public marina to be inspected once every 5 years. Since its implementation in 2015, a safety inspection has been performed at 204 marinas across the state and has found numerous safety violations. One such inspection included the discovery of a 480 volt electrical service which was energizing water at the marina. Other found safety violations include: energized electrical cords in water, no installed main disconnects at which power can be disconnected in the event of a situation, energized junction boxes in water, electrical wiring under docks not properly installed, no Ground Fault Indicators installed on some marinas and faulty electrical wiring in which the neutrals and grounds were not separated on subpanels installed on a marina. These violations, if not detected, could have caused serious injuries, even death, to persons entering the water in the vicinity of these hazards.



## Manufactured Housing & Modular Building Section

The Manufactured Housing & Modular Building Section administers portions of the Uniform Standards Code for Manufactured Homes Act related to U.S. Department of Housing and Urban Development (HUD) Labeled Manufactured Homes and the Tennessee Manufactured Home Installation Act. This section acts as HUD's State Administrative Agent (SAA) and exclusive Primary Inspection Agency (IPIA) to administer certain aspects of the National Manufactured Housing Construction and Safety Standards Act of 1974.

### Inspections and Activities in 2017

- Floors Inspected: 33,546
- HUD Labels Sold: 22,250
- Retail Lot Inspections: 16

## Tennessee Fire Service and Codes Enforcement Academy

The Tennessee Fire Service and Codes Enforcement Academy (TFACA) plans, develops, and facilitates education and training programs to promote professionalism and competency of fire service and codes enforcement personnel through a standardized statewide program. These programs enhance the individual and collective ability of those in the fire service to protect life and property of Tennesseans. TFACA's focus on both fire service and codes enforcement establishes it as a regional center for the training, testing, and certification of codes enforcement officials, firefighters, and other homeland security first responders.

### Training and Activities in 2017

- Total Students Enrolled: 16,440
- Total Classes Conducted: 1,105
- Fire Classes Conducted and Students Enrolled: 1,030/14,845
- Codes Classes Conducted and Students Enrolled: 75/1,595

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*For the year from July 2016-June 2017, TFACA set a new record with 67 fire departments exceeding 1,000 or more student contact hours.*

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The new record includes eight departments exceeding 4,000 hours as compared to only two fire departments the previous year. TFACA had two fire departments exceed 10,000 hours as compared with top ranking departments the previous year totaling 7,838 and 4,733 contact hours.



In June of 2017, TFACA also took possession of a new Custom 75' Quint Ladder Truck. This new addition to the fleet has been outfitted with hoses, appliances, tools and equipment to support and facilitate training. Four computer based pump simulators are expected to be placed into service in spring 2018. Contracts have been approved to purchase the new pump simulators with the assistance of a federal grant with the State of Tennessee providing 15% matching funds. The new simulators will reduce wear and tear on the vehicles and down time during training.



Throughout the year, several upgrades were made to the campus which enhance the positive learning environment and a more comfortable housing experience. Approximately 100 mattresses were replaced in the dorm rooms and sleeping quarters on campus. Backup generators were installed in March 2017, which will supplement power for the cafeteria and dorms during times of power outages. In November 2017, the replacement of all dorm room AC/heating units was completed. A project to upgrade audio visual equipment in the classrooms was completed in late in the year as well.

## Commission on Firefighting Personnel Standards and Education

The Commission on Firefighting Personnel Standards and Education is responsible for the certification of volunteer and paid firefighters in the State of Tennessee. The certification program is designed to be an incentive to firefighters to develop their skills and further their training and education. The Commission also manages and administers the daily operations for the In-Service Training and Educational Incentive Pay Programs.

### Testing and Activities in 2017

- Total Written Exams Applications Processed: 7,015
- Total Exams Administered: 8,624
  - Written Exams Administered: 5,573
  - Practical Exams Administered: 3,051
- Total Number of Test Events: 513
  - Written Exam Events: 349
  - Practical Exam Events: 164
- Reciprocities Granted: 460
- Fire Departments Audited: 18
- Fire Departments Participating in In-Service Training and Educational Incentive Pay Program: 105
- Fire Service Professionals Receiving Educational Incentive Pay: 6,064 (\$600 per qualified firefighter; totaling \$3,638,400.00)



## Administrative Services Section

The Administrative Services Section provides administrative support for the SFMO in the areas of budgeting, purchasing and personnel management. The section ensures that qualified applications are properly processed under the State's laws and regulations for various professions and annually issues over 4,000 professional permits, licenses and certificates of registration.

The Permits and Licenses unit specifically process regulatory permits, licenses and certificates of registration for the certified inspector program, explosives, fireworks, fire extinguisher, fire sprinkler and liquefied petroleum gas (LP gas) industries. Additionally, the unit processes complaints for related licenses and refers violations to our legal division for potential disciplinary action.

### Permits, Licenses, and Certification Programs in 2017

- **Portable and Fixed Fire Extinguisher Systems**

|             |     |
|-------------|-----|
| Firms       | 159 |
| Branches    | 9   |
| Specialists | 466 |
| Technicians | 45  |
  
- **Liquefied Petroleum Gas (LP Gas)**

|                               |     |
|-------------------------------|-----|
| Dealers                       | 549 |
| Managers                      | 32  |
| Responsible Managing Employee | 51  |
  
- **Fireworks**

|                    |     |
|--------------------|-----|
| Annual Retailers   | 60  |
| Seasonal Retailers | 430 |
| Operators          | 155 |
| Exhibitors         | 26  |
| Display Permits    | 428 |
  
- **Fire Protection Sprinkler Systems**

|                               |     |
|-------------------------------|-----|
| Contractors                   | 199 |
| Responsible Managing Employee | 259 |
  
- **Certified Inspectors (Building, Fire, Mechanical and Plumbing Inspectors)**

|            |     |
|------------|-----|
| Inspectors | 436 |
|------------|-----|
  
- **Explosives**

|                  |     |
|------------------|-----|
| Firm             | 52  |
| Handlers         | 542 |
| Blasters         | 163 |
| Limited Blasters | 17  |
  
- **Fire Safe Cigarettes**

|  |   |
|--|---|
|  | 3 |
|--|---|

**The benchmark for processing applications within 10 days of receipt was met in 2017. Transparency and efficiency are at the top of the priority list for the Administrative Services Section.**

## SFMO/Division of Fire Prevention Operating Cost

| Entire Division of Fire Prevention |                 |                 |
|------------------------------------|-----------------|-----------------|
| FY 2017                            |                 |                 |
|                                    | Budget          | Actual          |
| Expenditures                       | \$24,079,100.00 | \$19,956,476.13 |
|                                    | Budget          | Actual          |
| Revenues                           | \$24,079,100.00 | \$25,801,193.14 |

Revenues collected include funding from the Fire Insurance Premium Tax, pursuant to T.C.A. § 68-102-142, penalties, fees for services, or forfeitures collected under T.C.A. §§ 68-102-101 through 68-102-143, 68-102-147, or 68-102-148. Expenditures associated with the Fire Premium Tax is included in T.C.A. §§ 56-4-208, 56-4-205(c), 56-22-114, 68-102-142 and 68-102-203.

### Recommended Amendments

There are no recommended amendments or suggested statutory changes as current law provides the State Fire Marshal's Office/the Division of Fire Prevention the authority to carry out our mission in saving lives, reducing property loss and preventing injuries.

