



LEADING AND LIVING LIFE SAFETY LESSONS LEARNED

Myths, Misconceptions and Misinformation

February 2016





Introduction

President Harry Truman opened the 1947 Conference on Fire Prevention stating, “Safety from fire should not be a topic for discussion during only one or two weeks of the year. It is definitely a year-round public responsibility. I believe that the highest state and municipal officials must assume greater responsibility for leadership in this field. We in the Federal Government can give aid within the framework of existing agencies. But the impetus must come from the States and from every community and every individual in the land.”

Nearly 70 years later, President Truman’s words still ring true. Today’s fire protection improvements can be attributed to behavioral changes, technological innovations and legislative advances. However, there is still much to be done in each of these areas to ensure that there is no further loss of life, either firefighter or civilian, due to fire.

During my more than 40 years in the fire service, I have experienced firsthand the devastating tragedy that occurs when fire strikes an occupied home and the occupants do not have a clear exit route. In 2014 (the latest annual national statistic available), the National Fire Protection Association (NFPA) set the number of civilian fatalities in residential fires in the United States at 3,275. Most, if not all, of those deaths were likely preventable. Properly installed and maintained smoke alarms may have provided early warning to occupants to exit the structure. Even more essential, an appropriately designed residential sprinkler system would have bought precious time, enabling those citizens to escape the perils of fire.

In 2015, 50 citizens lost their lives in residential structure fires in Maryland. Out of those 50 lives, more than half were over the age of 60 and 25% were under the age of 18. Unfortunately, this is the norm in our country – the young and the old are the ones most likely killed in structure fires. This is unconscionable. We simply must give everyone, especially society’s most vulnerable individuals, the resources they need to escape the lethal effects of flames and smoke.

Today’s homes burn faster, hotter and more violently than in the past. Building materials and furnishings are manufactured from petroleum-derived base products. Manufactured lumber creates greater fuel loads, and open floor plans allow for rapid-fire advancement. Research shows us that contemporary building characteristics contribute to explosive fire conditions that dramatically reduce the window of time in which an occupant can exit the burning building.

There is no doubt that smoke alarms, carbon monoxide alarms and residential sprinklers can provide residents with additional seconds or minutes that can save lives. Ironically, the fire service has been often criticized for advocating legislation supporting use of these known life-saving strategies, as well as for improving building codes. Detractors have used a myriad of arguments to counter our efforts, often involving unsubstantiated economic impacts on individuals, businesses and communities. It is time to debunk these myths, misconceptions and



misinformation that have previously hindered our efforts, and prioritize the lives of our citizens—everyone deserves the greatest chance of survival from a fire.

As President Truman alluded to, the responsibility for fire prevention efforts is multi-faceted, and belongs to each of us. The National Fallen Firefighters Foundation and our partners are committed to taking the lead, and making a difference. We all play a role in ensuring our communities are safe from the horrors of fire. I look forward to working together with the fire service community, lawmakers and homebuilders to ensure that fewer people endure the painful loss of friends and family due to fire.

Chief Ronald J. Siarnicki
Executive Director
National Fallen Firefighters Foundation



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Background

Congress created the National Fallen Firefighters Foundation in 1992 to honor America’s fallen firefighters and to provide their survivors with the resources they need to rebuild their lives. In 2004, the Foundation expanded its mission to include the prevention of line-of-duty deaths and injuries, and delivers firefighter health and safety training, resources and advocacy under the Everyone Goes Home® program. The 16 Firefighter Life Safety Initiatives were created to support the goals of the Everyone Goes Home® program; each initiative is focused on one key area of firefighter health and safety. Two of these initiatives focus on fire prevention and community risk reduction efforts: Firefighter Life Safety Initiative #14 (Public Education) and #15 (Code Enforcement and Sprinklers). These efforts benefit the general public, as well as helping to keep firefighters out of harm’s way by preventing fires. A complete list of the 16 Firefighter Life Safety Initiatives is in [Appendix A](#).

In December 2015, the National Fallen Firefighters Foundation hosted a meeting, “Leading and Living Life Safety Lessons Learned,” in Annapolis, Maryland. The goal was to create a report to assist fire departments, legislative representatives and other partners who are working toward improving fire and life safety. The meeting attendees included individuals from fire departments, national organizations, industry experts and other partners, representing 14 states and Washington, DC, with a vested interest in fire and life safety. A list of attendees can be found in [Appendix B](#).

Guest speakers presented their experiences with state fire life safety issues in Arizona, Iowa, Maryland and Tennessee. Information from these presentations is included in this report beginning on [page 6](#). Afterwards, the meeting attendees were divided into breakout groups to discuss one of the following topics: smoke alarms, residential sprinklers, community risk reduction and building codes. Each group developed strategies and recommendations on addressing the various misconceptions regarding their topical area of expertise. The results of the small group work sessions begin on [page 13](#). In addition, [Appendix C](#) provides a list of resources developed at the conclusion of the meeting.

The National Fallen Firefighters Foundation thanks the attendees of this meeting, all of whom are dedicated to improving fire and life safety. We offer special thanks to the presenters, the facilitators and the scribes of the breakout groups.

Firefighter Life Safety Initiative #14—Public education must receive more resources and be championed as a critical fire and life safety program.

Firefighter Life Safety Initiative #15—Advocacy must be strengthened for the enforcement of codes and the installation of home fire sprinklers.



Lessons Learned from Around the Country

Arizona: Proactive Fire Protection

Presenter: Deputy Chief/Fire Marshal Jim Ford, City of Scottsdale (AZ) Fire Department

Scottsdale's Approach to Community Risk Reduction

Scottsdale, Arizona uses a two-pronged approach to keep their citizens safe:

1. Work to reduce the number of emergency incidents in Scottsdale through aggressive and proactive safety measures.
2. Reduce the impact on our community and citizens from the emergency incidents that do occur.

These strategies are accomplished through local safety code adoption, education, outreach opportunities and effective response capabilities. Requiring sprinkler installation in **all** new housing is a key component of Scottsdale's plan.

Scottsdale Sprinkler Ordinance

In September 1974, the City of Scottsdale adopted an ordinance mandating that all occupancies, larger than three stories or 7,500 square feet, be protected by automatic sprinkler systems. In June 1985, the Scottsdale City Council approved an ordinance stating that all new structures, including single-family homes, were required to be sprinklered. City planners and fire department officials worked closely with the building development community to allow builders, of fully sprinklered projects, design freedoms. These design freedoms included increased cul-de-sac lengths, increased development density, reduced water main sizes, increased fire hydrant spacing for developments and allowed builders to increase home density by 4%. This made the legislation fiscally viable for homebuilders, and garnered their support for the ordinance. As of June 2015, 61% of all single and multi-family homes are protected by automatic fire sprinklers.

Scottsdale's Success Story

Other states can reference Scottsdale's success in adopting the sprinkler ordinance to boost sprinkler advocacy efforts across the country. The valuable key to their success was working collaboratively to develop strong support from traditional opposition groups like homebuilders, realtors, water departments and building officials.

*Scottsdale Sprinklers Save Lives—
Scottsdale Fire Department
recorded 13 lives saved by
automatic fire sprinklers from
1987 to 2001.*



Iowa: Smoke Alarms Saving Lives

Presenters: Iowa State Fire Marshal Jeff Quigle and State Fire Inspector Dan Wood

Smoke Alarm Saves Family in Urbandale

In March 2011, Urbandale Fire Department was dispatched to a residential fire in the early morning hours. Upon arrival, crews found a fire on the deck of a home and the fire was extending into the lower level. The four occupants of the house, including two children ages 7 and 11, woke up when they heard the smoke alarms and exited the home on the second floor. Because of properly working smoke alarms, the four members of this family were not included in the Iowa's annual fatality statistics, which totaled 46 civilian fire fatalities.

From Tragedy to Prevention: The Clinton Smoke Detector Project:

Tyler Ward (age 6), Patrick Molitor (age 3), their mother and their grandmother died of smoke inhalation in January 2010 in Clinton, Iowa. The cause of the fire was never determined, but investigators did determine that the battery had been removed from the home's smoke alarm, and the family most likely would have had time to safely exit the house if there had been a working smoke alarm in the residence.

Following the fire, the fire department, business leaders, school officials and community organizations joined forces to install smoke alarms in the homes of all elementary-aged schoolchildren in Clinton. In the months after that tragic fire, smoke alarms were purchased, neighborhood surveys were conducted and smoke alarms were installed. In all, more than 500 homes received updated smoke alarms or batteries for disabled units. This is an excellent example of a proactive project that can be expanded into other communities. The Iowa Office of the State Fire Marshal and partner fire service organizations are now working toward replicating this project throughout the State of Iowa.

Successful Partnership: Iowa Statewide Smoke Alarm Project

The Iowa Firemen's Association received a grant from the U.S. Department of Homeland Security's Assistance to Firefighters Grant program to purchase and distribute smoke alarms in Iowa. The State Fire Marshal's Office and the Iowa Firemen's Association has partnered with the American Red Cross to manage city-wide and neighborhood-wide smoke alarm installation projects. In addition, the American Red Cross and fire departments go door-to-door installing smoke alarms and batteries. Since 2010, 33,000 smoke alarms have been installed in Iowa. In addition, 33,000 9-volt batteries have been installed in alarms. As a result, the State Fire Marshal's Office has documented 146 lives saved in 2010, 186 lives saved in 2011 and 217 lives saved in 2012.



Maryland: Navigating the Legislative Landscape

Presenter: Chief Marc Bashoor, Prince George's County Fire/EMS Department

Smoke Alarm Legislation (1987)

Since 1987, all one and two-family residential occupancies permitted for construction require smoke alarms on every level. Since then, the legislation has been amended to require hardwire-interconnected smoke alarms, smoke alarm installation in every sleeping area and the use of 10-year sealed lithium batteries in smoke alarms.

Residential Sprinkler Phase-In (1992) Final

All residential occupancies permitted since January 1, 1992, require residential sprinkler installations on all levels of the occupancy. This legislation is not retroactive.

There have been ZERO fire fatalities in sprinklered homes in Prince George's County, Maryland since the enactment of the legislation in 1992.

Carbon Monoxide Alarm Legislation (2015)

Since 2015, all residential occupancies permitted with gas/oil service, attached garages or a fireplace require carbon monoxide (CO) alarms on every level of the residence. Eventually, it is expected that this legislation will be retroactively required in older residential occupancies.

Impact of Fire Safety Legislation

From 1992 to 2014, there were 20,700 fire incidents in Prince George's County in unprotected structures – structures not impacted by the legislation listed above. In comparison, there were only 667 fire incidents in protected structures in that same time frame.

From 1992 to 2014, there were 621 injuries and 230 fatalities in unprotected structures. In protected structures, because of the legislation, there were 23 injuries and no fire fatalities.

The average dollar loss of a fire in an unprotected structure from 1992 to 2014 was \$69,662; average dollar loss of a fire in a protected structure during the same period was \$12,218.

Average cost of residential sprinklers in new construction served by public water in Maryland is \$1.44 per square foot as of February 2015. Cost to retrofit existing homes is two to three times this. Variations in expenses are related to style and size of homes, number of homes in a development to be sprinklered, etc.



Presenter: State Fire Marshal Brian Geraci, Maryland Office of the State Fire Marshal

Maryland Smoke Alarm Technology Task Force

Maryland has been on the forefront of smoke alarm legislation since 1974. The Maryland Smoke Alarm Technology Task Force (SATTFF) first met in April 2010 with the goal of reducing the number of fire fatalities in the state by using emerging smoke alarm technologies. The final report from SATTFF was issued in August 2012, and provided recommendations on smoke alarm use and recommendations on rewriting Maryland's Smoke Alarm Law. The following Task Force recommendations for new and existing constructions are included in the 2013 Maryland Smoke Alarm Law.

2013 Maryland Smoke Alarm Law – New Construction

- Smoke alarms shall be AC-power operated with a battery backup.
- Smoke alarms shall be provided on every level of the dwelling unit.
- A smoke alarm shall be provided in every sleeping room.
- All required smoke alarms within a dwelling unit shall be interconnected.

2013 Maryland Smoke Alarm Law – Existing Construction

- In homes built before 1975, smoke alarms may be battery operated.
- If the home was built from 1975 to 1990, smoke alarms must be AC-power operated.
- If the home was built after 1988, all smoke alarms within a dwelling unit must be interconnected.
- If the home was built after 1990, smoke alarms must be AC-power operated with a battery backup.

2013 Maryland Smoke Alarm Law – General

- Where battery-only operated smoke alarms are still permitted, they shall be sealed smoke alarms with long life batteries and hush button features.
- Smoke alarms need to be replaced when they are more than 10-years old from the date of manufacture.
- Properly located smoke detectors connected to a fire alarm control panel or a household fire warning panel are an acceptable alternative to the smoke alarms required in the law.
- Smoke alarm coverage shall be upgraded when any one of the following apply:
 - The existing smoke alarm is more than 10-years old; or
 - The smoke alarm fails to operate; or
 - There is a change of tenant; or
 - A building permit is issued for an additional residential unit or an alteration to an existing residential unit; or
 - January 1, 2018 at the absolute latest.
- Upgraded smoke alarm coverage in existing dwelling units shall include:
 - At least one smoke alarm on every level of the dwelling unit.



- Smoke alarms shall be AC-power operated with battery backup, except that:
 - Battery operated smoke alarms may be used in dwelling units constructed before 1975.
 - Battery operated smoke alarms may be installed in locations where smoke alarms did not previously exist.
- As previously noted, where battery only operated smoke alarms are still permitted, only sealed smoke alarms with long life batteries and silence/hush button features may be installed.
- Each sleeping room occupied by a deaf or hard-of-hearing individual shall be provided with a smoke alarm suitable to alert the deaf or hard-of-hearing individual.
- Landlords are responsible for smoke alarm installations in apartment buildings with more than two units, hotels, dormitories and lodging and rooming houses.

Case Study: The Town of Frostburg

In May 2012, Frostburg's mayor and city council voted unanimously in favor of a residential sprinkler mandate. The incentives for this mandate included a \$1,000 reduction for the water connection fee and an 80% reduction in property taxes for the first three years. The combined savings of those two incentives covered the expenses related to most, if not all, of the residential sprinkler installations. This is a model that could be replicated in other communities. For a timeline of events involving Maryland's sprinkler legislations, see [Appendix D](#).

Maryland's "Community Risk Reduction Weekend" encourages local fire departments to provide public outreach by properly installing new smoke alarms where needed to promote life safety. A few departments have successfully obtained grants to purchase 10-year-long life smoke alarms and CO alarms to support their efforts. Weekends scheduled in 2016 are May 14-15 and October 15-16.



Tennessee: Getting Alarmed about Alarms

*Presenter: Tennessee State Fire Marshal/Deputy Commissioner Gary West,
Tennessee State Fire Marshal's Office*

By the Numbers

- From 2006-2010, the national fire mortality rate was 9.8 per million people.
- Nine of the 10 highest fire death rates were in southern states.
- In Tennessee, there is one fatality for every 100 reported structure fires.
- There has been a 25% decrease in fire death rates between 2006-2010 and 2011-2015 in Tennessee.
- There has been a 2% reduction in dollar loss from property loss from 2006-2010 to 2011-2014.

Successful Partnership: Get Alarmed Tennessee

The Tennessee State Fire Marshal's Office, American Red Cross and other organizations launched "Get Alarmed Tennessee" in November 2012. The annual program installs on average about 19,400 smoke alarms per year (2013-2015). The campaign is a door-to-door education and awareness initiative, which includes the installation of 10-year sealed battery alarms. Statewide, nearly 450 fire departments and organizations are involved in this campaign, and online installation mapping enables fire departments to track the smoke alarm installations. "Get Alarmed Tennessee" targets high-risk populations prior to a fire event and populations affected by a fire fatality after a fire event. This campaign also offers an opportunity to educate people about fire sprinklers, home escape plans, the importance of closed doors to prevent the spread of fire and other home safety checks.

Get Alarmed Tennessee
*– 106 saved lives
documented since
November 2012*



A Community Perspective

Quality of life is what every community seeks. Strong building and fire codes, along with planning and zoning, lead to quality growth that is safe for all members of the community.

As the former fire chief of Pleasant View Volunteer Fire Department in Tennessee, I worked collaboratively with our community stakeholders to take a proactive approach to fire protection. The key to our success in Pleasant View was regular stakeholder meetings involving developers, builders, architects, engineers, planning and zoning members, council members, building officials, water purveyors and fire department representatives.

It is important to understand that the construction of a single home or building will have impacts that last for generations. It is short-sighted to allow immediate economic gains to overshadow the long-term impact on the quality of life in a community. It doesn't make sense to refer to "Economic & Community Development." Communities are people, and we should **never** put economics before the community. When you ask people who have lived in the community all their lives, they generally say that they are relatively happy. The quest for economic improvements hardly ever resulted in lower taxes—growth and development requires more infrastructure, which always increases the burden on the taxpayer. Making new growth safer reduces the burden on the existing community, and will reap benefits for future generations.

The balance of regulations is a quest worth seeking. The residential building code is at a minimum with smoke and carbon monoxide alarms and residential fire sprinklers. The built environment has changed tremendously since our parents' time. The same issues discussed today regarding fire sprinklers used to pertain to smoke alarms. In the past, when these debates took place over the need, cost and complications of installing smoke alarms, a fire in a single family home (averaging less than 1,600 square feet) took over 10 minutes to become untenable. We now know for a fact with real life scenarios and scientific tests that a 3,200 square foot house can become untenable (no one survives) in less than five minutes without smoke alarms and residential sprinklers.

Please don't let this argument cost people's lives while politics play out. My advice to communities committed to reducing civilian and firefighter injuries and fatalities is to be proactive. Bring all the stakeholders to the table for discussions and decisions related to community and economic development. Leading and living fire life safety requires that all of us must work together to make a difference. We can't do that by just maintaining the status quo. We need to focus on a future that places less of a burden in the community, while protecting property and saving lives!

Shane Ray
President
National Fire Sprinkler Association



Topic #1: Smoke Alarms

Myths, Misconceptions and Misinformation

1. **“Do I really need to put smoke alarms in my home? And, do I really need them in every bedroom?”**

Fact: According to the National Fire Protection Association (NFPA), more than one-third (37%) of home fire deaths result from fires in homes without smoke alarms. The risk of dying in a fire is cut in half in homes with working smoke alarms. Since more than 50% of all fire fatalities occur between 11:00 PM and 7:00 AM, it is crucial to have smoke alarms inside every bedroom and outside of every sleeping area on every level of your home.

2. **“It’s confusing to know when I need to replace them...so I just don’t worry about it.”**

Fact: Replace a smoke alarm when it is 10-years old or older, or if it no longer sounds when tested. To check the age of your smoke alarm, look for the manufacturer’s stamped or printed date on the back of the smoke alarm. If in doubt, err on the side of caution and replace it. There are 10-year smoke alarms available powered by sealed lithium batteries. These batteries do not need to be changed for up to 10 years. Remember that all smoke alarms should be tested every month.

3. **“I’ve always used battery-operated smoke alarms but I keep seeing 10-year alarms at the stores. What do I need to know about these?”**

Fact: Regardless of the type of smoke alarm sensing technology you use, at a minimum the alarm should be powered by a sealed battery that powers the unit for a minimum of 10 years. This allows for a continuous flow of power to the alarm for its life and eliminates the potential for a battery-operated smoke alarm to be tampered with or to become ineffective. If possible, your smoke alarms should also be interconnected to assist with notifying everyone in the home in case one of the smoke alarms is activated.

4. **“My smoke alarm goes off every time I cook bacon so I just don’t use a smoke alarm in the kitchen.”**

Fact: The website thekitchn.com asked users, “Do you disable your smoke alarm when you cook?” Forty-two percent (42%) of the responses reported “All the time. In fact, it may be battery-less right now.” It is not surprising then that between 2009 and 2013 there were an average of 162,400 fires per year that involved cooking. These fires resulted in an annual average of 430 civilian fatalities, 5,400 civilian injuries and \$1.1 billion in property damage. (Source: NFPA) In addition, many alarms are improperly placed within the home, ask your local fire service representatives to stop by and check for proper placement.



Topic #2: Residential Sprinklers

Myths, Misconceptions and Misinformation

1. “Residential sprinklers are so expensive to install.”

Fact: The cost of residential sprinklers varies across the country. The general estimate is that the cost of residential sprinklers is about \$1.35 per square foot. They typically cost 1 to 1 ½ percent of the total building price. (Source: NFPA and USFA)

2. “I’ve heard that residential sprinklers can be activated accidentally and they sometimes leak.”

Fact: Leaks in residential sprinklers are rare because they are only activated when a heat change is significant. The sprinkler is not going to be activated because of burnt bacon or steam from a shower. They will activate when needed to protect you and your family from fire. The likelihood of a sprinkler discharging accidentally due to a manufacturing defect is only 1 in 16 million sprinklers per year. (Source: National Fire Sprinkler Association)

3. “I don’t want a sprinkler system in my house. I heard they make a huge mess if they are activated. I rather take my chances.”

Fact: Roughly 85% of sprinkler activations involve only one sprinkler spraying water directly on the fire. Property damage done by activated sprinklers is much less severe than property damage directly caused by fire or indirectly by the fire department’s response to the fire. It is estimated that having a home fire sprinkler system reduces property damage from a fire by about 70%. (Source: Home Fire Sprinkler Coalition)

4. “I have a rural water supply so I don’t think I can have residential sprinklers.”

Fact: If a water system (rural or suburban) is able to provide enough water for general household needs (toilet, shower, dishwasher, laundry machine, etc.) then most likely it is adequate for residential sprinklers. In cases where it is not, a pump or tank may be needed for the home and the overall plumbing system for the house will be advanced. Additionally, in rural areas where there is limited water for manual fire suppression by the fire department, it is even MORE important to have fire sprinkler system. (Source: IRC Fire Sprinkler Coalition)



5. “I’ve heard I have to install an expensive system to prevent backflow.”

Fact: There are no national plumbing codes requiring backflow protection. However, there may be a local requirement requiring backflow protection. There are solutions to this that aren’t expensive and don’t require additional components of a system. For example, sprinklers and plumbing fixtures can be sourced from cold water plumbing pipes in the home. (Source: IRC Fire Sprinkler Coalition)

6. “I have a newly constructed home and I just don’t like the look of sprinklers in my home.”

Fact: Most new homes are built from lightweight construction which burns faster than older homes. Homes can be retrofitted for residential sprinklers but the most cost-efficient time to install sprinklers is during the new home building process. Residential sprinklers do not look like the ones seen in commercial buildings. Residential sprinklers can be mounted flush against the wall or ceiling and hidden by a decorative cover that matches the color of the wall or ceiling.

7. “I don’t want the government mandating that I have sprinklers in my house. Once they start mandating what goes on in my house, it will never end.”

Fact: Residential sprinklers are for life safety and property conservation. Sprinklers are another safety measure to keep citizens safe similar to seatbelts and airbags in cars, hurricane-proof windows in hurricane-prone areas of the country, handrails on stairways, or the type of wiring and electrical loads allowed on an electrical circuit.

8. “My insurance company won’t provide coverage if I have sprinklers.”

Fact: Residential sprinkler systems may lower home insurance rates between 5-15% by meeting code requirements. It is recommended you ask your homeowners insurance company for more information on the discounts available for your policy. (Source: USFA)

9. “I have smoke alarms all over my house. I don’t need sprinklers.”

Fact: Smoke alarms alert people but don’t do anything to extinguish fire and they provide valuable time to seek a safe location. Smoke alarms and residential sprinkler systems working together are the basis for keeping your family safe from the hazards related to fire and toxic smoke.



Topic #3: Community Risk Reduction

Myths, Misconceptions and Misinformation

- 1. “I’m just a firefighter. Community risk reduction is a job for fire prevention staff. I’ve got enough to do.”**

Fact: From day one of recruit school, every firefighter is engaged in community risk reduction. Instilling this during recruit school and reinforcing this throughout one’s career is the guideline to success. There is a myth that says that some firefighters don’t like to participate in fire prevention activities because it will “put them out of business.” This is a fallacy. The business of firefighting **IS** fire prevention and community risk reduction. There are many variations of the firefighter oath or pledge. However, the basic premise of all firefighter oaths is “service before self.” Every interaction with the public should be viewed as a “teachable moment,” and an opportunity to educate the local citizenry about how to keep themselves safe.

- 2. “Our fire department doesn’t have enough money to do community risk reduction.”**

Fact: There are many free resources available to fire departments and community groups interested in being involved with community risk reduction. [Appendix C](#) lists some available resources from both the National Fallen Firefighters Foundation and partner organizations.

- 3. “Community risk reduction is all about smoke alarms, right?”**

Fact: Community risk reduction is about smoke alarms, carbon monoxide alarms, fire sprinklers, codes, fire safety education, working with policy makers and community leaders and so much more. Community risk reduction is a very visible and powerful part of how a fire department serves its community. A holistic approach to community risk reduction will always be the most effective, because it uses multiple approaches to reduce the incidence and severity of fire, and thus the likelihood of death or injury to both the public and fire service personnel.

- 4. “It’s so hard to measure how successful a community risk reduction program is. How do you measure something that is a prevention strategy?”**

Fact: It is a perpetual conundrum – how do you measure something that didn’t happen? The answer is that you can’t. BUT, you can establish and track basic metrics as outcome indicators for your community risk reduction programs. These include:

Smoke Alarms:

Installed

of responses to fires with working smoke alarms



- # of responses to fires with no or non-functioning smoke alarms
- # of lives saved by smoke alarms
- # of lives lost in fires with no or non-functioning smoke alarms

It's important to note that there is now software available that allows departments to track each structure by whether or not there is a functioning smoke alarm present, date of installation, and other pertinent data. This information can be accessed en route to the incident.

Sprinklers:

- # of responses to sprinklered structures
- # of lives saved by sprinklers
- \$ loss in fires extinguished by sprinklers vs. potential \$ loss
- Average \$ loss in sprinklered structures vs. average \$ loss in non-sprinklered structures

These are some of the basic metrics that can be captured when tracking your community risk reduction programs. Remember to share this data with your public officials and your community. It is the best way to prove the case for strengthening your existing programs!

The National Fallen Firefighters Foundation has a community risk reduction program called Be a Hero, Save a Hero[®] offering many resources a fire department can easily adopt.

Visit www.beaherosaveahero.org for more information.



Topic #4: Building Codes

Myths, Misconceptions and Misinformation

1. **“Only the fire marshal’s office in a fire department needs to know about codes so they can enforce them. I’m a line firefighter. What do I need to know about codes?”**

Fact: Traditionally, fire department personnel involved in code enforcement were the only ones who were knowledgeable about codes. But in today’s fire department, it is becoming increasingly more important for all members of the department to have a general awareness of codes and code-related issues. This strengthens the department’s overall ability to serve within a community. Operational firefighters and company officers are regularly running medical calls and conducting pre-planning drills or other daily activities in their communities. If they know and understand building codes they can alert others, and will be prepared to act proactively to correct issues before they become problems.

The National Fallen Firefighters Foundation is in the process of creating a free virtual training course on fire life safety issues for firefighters, company officers and chief officers. The training program will be available on www.fireherolearningnetwork.com later this year.

2. **“The building industry and the fire service industry have different underlying interests so they just have to agree to disagree. “**

Fact: All stakeholders can agree that the safety of citizens is paramount. From that basic premise, it is important to keep the dialogue open regarding how best to collaboratively accomplish this. Increasing communication and building relationships is the pathway to understanding each other’s points of view and thus enabling negotiation. An excellent example of this is adoption of sprinkler legislation in Scottsdale, Arizona, described on page 6 of this report. By understanding the economics of code adoption, the city was able to provide design changes to developers to offset these financial impacts and ensure the passing of sprinkler legislation.

3. **“Do building codes have anything to do with firefighter safety?”**

Fact: Codes have EVERYTHING to do with firefighter safety. Battalion Chief Sean DeCrane, of the Cleveland (Ohio) Fire Department, likens buildings with battlegrounds in the military. It is the responsibility of the military to be knowledgeable about the conditions of their field of operation – terrain, the enemy, etc. The same holds true for firefighters but their field of operation is often-times buildings. Firefighters put themselves at risk for injury by going into their battleground without knowledge of how buildings are designed and built. The greater their awareness of building codes, the more likely they are to stay out of harm’s way.



Appendix A: 16 Firefighter Life Safety Initiatives

FLSI #1	Define and advocate the need for a cultural change within the fire service relating to safety; incorporating leadership, management, supervision, accountability and personal responsibility.
FLSI #2	Enhance the personal and organizational accountability for health and safety throughout the fire service.
FLSI #3	Focus greater attention on the integration of risk management with incident management at all levels, including strategic, tactical and planning responsibilities.
FLSI #4	All firefighters must be empowered to stop unsafe practices.
FLSI #5	Develop and implement national standards for training, qualifications, and certification (including regular recertification) that are equally applicable to all firefighters based on the duties they are expected to perform.
FLSI #6	Develop and implement national medical and physical fitness standards that are equally applicable to all firefighters, based on the duties they are expected to perform.
FLSI #7	Create a national research agenda and data collection system that relates to the initiatives.
FLSI #8	Utilize available technology wherever it can produce higher levels of health and safety.
FLSI #9	Thoroughly investigate all firefighter fatalities, injuries and near misses.
FLSI #10	Grant programs should support the implementation of safe practices and/or mandate safe practices as an eligibility requirement.
FLSI #11	National standards for emergency response policies and procedures should be developed and championed.
FLSI #12	National protocols for response to violent incidents should be developed and championed.
FLSI #13	Firefighters and their families must have access to counseling and psychological support.
FLSI #14	Public education must receive more resources and be championed as a critical fire and life safety program.
FLSI #15	Advocacy must be strengthened for the enforcement of codes and the installation of home fire sprinklers.
FLSI #16	Safety must be a primary consideration in the design of apparatus and equipment.

In March 2004, the National Fallen Firefighters Foundation invited all the major fire service organizations to the first Firefighter Life Safety Summit in Tampa, Florida to address the need for change within the fire service. Over 200 participants attended the Summit. At this meeting, the 16 Firefighter Life Safety Initiatives were developed and the Foundation's Everyone Goes Home® program was conceived.



Appendix B: Participants and their Organizations

Name	Organization
William Barnard	Maryland Office of the State Fire Marshal (Retired)
Marc Bashoor	Prince George's County (MD) Fire/EMS Department
John Bender	Aberdeen (MD) Fire Department
Matthew Biffen	NFFF Everyone Goes Home® Program
Bruce Bouch	Maryland Office of the State Fire Marshal
James Burns	Firemen's Association of the State of New York
Greg Cade	National Fire Protection Association
Zach Cahalan	American Red Cross
Peg Carson	Vision 20/20
Chip Carson	Carson Associates Inc.
David Cope	City of Laurel (MD)
Timothy Cowan	Oneida (NY) Fire Department
Stephan Cox	Maryland State Firemen's Association
Sean DeCrane	Cleveland (OH) Division of Fire
PJ Duncan	Pleasant View (TN) Volunteer Fire Department
James Ford	City of Scottsdale (AZ) Fire Department
Robert Frances	Howard County (MD) Department of Inspections, Licenses & Permits
John Dennis Gentzel	United States Fire Administration
Brian Geraci	Maryland Office of the State Fire Marshal
Marsha Giesler	Downers Grove (IL) Fire Department
Bill Gillespie	VFIS
Allan Graves	Anne Arundel County (MD) Fire Department
Sher Grogg	Common Voices
Howard Hopper	UL LLC
Michael Julazadeh	Charleston (SC) Fire Department
Matthew Kelleher	Gaithersburg (MD) Fire Marshal's Office
John Livingston	Livingston Fire Protection, Inc.
Michael Love	Fire and Burn Safety Coalition of Maryland
Paul Martin	New York State Office of Fire Prevention & Control
Richard Mason	National Fallen Firefighters Foundation
Michael McLeieer	Olivet (MI) Fire Department / Michigan State Firemen's Association
Molly Natchipolsky	National Fallen Firefighters Foundation
Rob Neale	International Code Council
Robert Needy	Queen Anne's County (MD) Department of Emergency Services
Susie Nicol	Firehouse.com, Cygnus Publishing
Kim O'Malley	Delaware State Fire School
Brenden Orth	NFFF Everyone Goes Home® Program
Vickie Pritchett	National Fire Sprinkler Association
Jeffrey Quigle	Iowa Department of Public Safety/State Fire Marshal Division
Shane Ray	National Fire Sprinkler Association



Kevin Roche	FACETS Consulting
Ron Siarnicki	National Fallen Firefighters Foundation
Richard Smith	Maryland State Firemen's Association
Tom Sri	UTC
John Steele	Tyco
W. Faron Taylor	The Overland Group, LLC
Amy Tippett	National Fallen Firefighters Foundation
Timothy Travers	National Fire Protection Association
Terry Victor	Capital Region Fire Sprinkler Association
Charles Walker	Maryland State Firemen's Association
Gary West	Tennessee State Fire Marshal's Office
David Whiting	Columbus (OH) Division of Fire
Dan Wood	Iowa State Fire Marshal's Office
Neal Zipser	Kidde Fire Safety



Appendix C: Additional Resources

NFFF-Related Resources:

Report of the 2014 National Firefighter Life Safety Summit (Tampa2).

The National Fallen Firefighters Foundation. March 10-12, 2014. See Chapters Initiative 14 (page 28) and Initiative 15 (page 29). The final reports from Tampa2 and the previous firefighter life safety summits may be found at:

<http://www.everyonegoeshome.com/resources/everyone-goes-home-firefighter-life-safety-summit-reports/>

NFFF Sprinkler and Code Enforcement Materials. <http://www.everyonegoeshome.com/16-initiatives/15-code-enforcement-sprinklers/>

NFFF FLSI Research Database: Initiative 15 (sub-category Automatic Fire Sprinklers)

<http://www.everyonegoeshome.com/category/initiative-15-life-safety-science-and-applications/fire-protection-engineering-initiative-15-life-safety-science-and-applications/automatic-fire-sprinklers-fire-protection-engineering-initiative-15-life-safety-science-and-applications/>

Other Resources (in alphabetical order):

American Fire Sprinkler Association: <http://www.firesprinkler.org>

California Study:

<http://osfm.fire.ca.gov/firelifesafety/pdf/Smoke%20Alarm%20Task%20Force/CSFM%20SATF%20Report%208-16-11.pdf>

Common Voices: <http://www.fireadvocates.org>

Fire Team USA: <http://www.fireteamusa.com>

Home Fire Sprinkler Coalition: <http://www.homefiresprinkler.org>

Home Fire Sprinkler Systems: Separating Fact from Fiction. Common Voices.

<http://www.homefiresprinkler.org/separating-fact-from-fiction>

Home Safety Council: <http://www.homesafetycouncil.org>



Homeowners Guide to Your Residential Sprinkler System. Society of Fire Protection Engineers. <http://www.csra-sfpe.org/Resources/Documents/Homeowners%20Guide%20toYour%20Residential%20Sprinkler%20System.pdf>

International Residential Code Fire Sprinkler Coalition: <http://www.ircfiresprinkler.org>

Kidde's Fire Safety for Homeowners: <https://www.kidde.com/home-safety/en/us/fire-safety/>

National Fire Protection Association: <http://www.nfpa.org>

National Fire Sprinkler Association: <http://www.nfsa.org>

NFPA's Home Fire Sprinkler Initiative Newsletter (November 2015)-includes a section on Maryland: http://f.e.nfpa.org/i/26/2086012716/20152415_FSI_allstaff.html

Phoenix Society for Burn Survivors: <http://www.phoenix-society.org>

Residential Fire Safety Institute: <http://www.firesafehome.org>

Underwriters Laboratories Inc.: <http://www.ul.com/consumers/>

United States Fire Administration: <http://www.usfa.dhs.gov>

USFA's Fire is Everyone's Fight®:
<https://www.usfa.fema.gov/prevention/outreach/fief/index.html>

Vision 20/20: <http://www.strategicfire.org>



Appendix D: Residential Fire Sprinklers in Maryland – A Brief History

