



# THE NFPA URBAN FIRE AND LIFE SAFETY TASK FORCE

JUNE  
2016

# COMMUNITY RISK REDUCTION: DOING MORE WITH MORE







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## Authors

Derrick Sawyer  
Fire Commissioner  
Philadelphia Fire Department

Derrick Phillips  
Battalion Chief  
St. Louis Fire Department

Dana Catts  
Education Specialist  
Seattle Fire Department

David Sawyer  
Liaison Officer  
The City of Columbus  
Division of Fire

## NFPA Staff

Karen Berard-Reed  
Task Force Staff Liaison and  
Senior Project Manager

Lisa Braxton  
Associate Project Manager



# Executive Summary

Fire service leaders face a number of challenges getting the job done — protecting and serving the public, keeping up staff morale, maintaining safety standards for the department and community, facing budget cutbacks — all as resources become more limited. At times the job can seem daunting. However, there is a tool available to help fire service leaders keep pace with a constantly changing social, environmental, economic, and political climate: Community Risk Reduction. It's the all-hazards solution to the all-hazards response that the modern fire service needs.

Many fire service organizations are hesitant to adopt a Community Risk Reduction approach because of the changes required within an organization. Fire service leaders need to keep in mind that Community Risk Reduction will make any fire service organization more efficient and effective in saving lives and property.

## Community Risk Reduction

Community Risk Reduction is defined in NFPA 1035, *Standard on Fire and Life Safety Educator, Public Information Officer, Youth Firesetter Intervention Specialist and Youth Firesetter Program Manager Professional Qualifications*, as “programs, actions, and services used by a community, which prevent or mitigate the loss of life, property, and resources associated with life safety, fire, and other disasters within a community.”

## The “More” of Community Risk Reduction Fire service leaders must

Adoption of Community Risk Reduction allows a fire department to:

- Fully integrate all fire protection strategies
  - Involve the community in problem solving and strategic implementation
  - Prevent line-of-duty deaths and injuries
  - Ensure the survival of the organization
- Incorporate Community Risk Reduction into the department’s strategic plan.
  - Form partnerships with agencies across the municipality that can play important roles in the success of the Community Risk Reduction plan.
  - Enlist the services of public policy experts and advocates to assist with legislation geared toward risk reduction.
  - Meet periodically with fire and life safety educators, officers, and managers in the department to track measurable benchmarks as established in the Community Risk Reduction plan.

The community-based approach increases public safety because of the collective work with the community to understand, assess, and provide inclusive solutions to community safety issues.





# The NFPA Urban Fire and Life Safety Task Force

## Community Risk Reduction: Doing More with More

### Introduction

After finishing a 12-hour work day, you head home to relax, have some dinner, and watch the evening news before going to bed early so that you can have a good start the next day. As you are falling asleep, here comes that dreaded ringtone and your pulse quickens. You reach for your cell phone. You know it isn't someone calling just to see how you're doing. The emotion in the voice on the other end of the call is palpable.

"Chief, just wanted to give you a heads up. There's a three-alarm fire and one of our men fell through the roof."

Or, "We're at 123 Johnson Street. We just did a secondary search and found a body on the first floor in the front of the house."

Or, "Just wanted to let you know we've had a train derailment. First reports are that there are 200 passengers on board. We've already struck the third alarm. Oh, and we currently have a two-alarm fire in the Northwest section of the city."

As you end the call, you're starting to think about how you'll be able to restore your companies. You're hoping that there won't be any other major incidents in the city for the rest of the night. You don't want any gaps in coverage, or that dreaded phone call you know you're going to get from the mayor.

There are many things that keep a fire chief up at night — safety concerns, the budget, and resources are just a few that come to mind. According to a survey by the International Association of Fire Chiefs conducted during the 2015 Fire-Rescue International Conference, safety is the number one concern of fire chiefs — the safety of the public, the safety of firefighters, and safety in general.<sup>1</sup>

Cutbacks are becoming common practice as municipal leaders work to close budget deficits and appeal to the public with their strategies for fiscal responsibility. Municipal leaders expect fire departments to do more with less. Firehouses are shuttered, sometimes indefinitely, drawing headlines in the media and the concern of residents. Resources, such as staff, apparatus, equipment, and funding for service delivery are at a premium. As a result, limited resources make it difficult for you to accomplish your department's mission.

So how do you as a fire chief get the job done in the face of all of these challenges? How do you adequately provide the services required by your community, keep up staff morale and safety standards in the face of cutbacks, while maintaining the best possible resources?

### *You have a tool at your disposal: Community Risk Reduction.*

Community Risk Reduction is community focused and employs the full spectrum of risk-reduction tools. It allows you to identify your high-risk neighborhoods, determine your hazards, build partnerships, improve safety, and form effective strategies with limited resources.

We know the job is heavy. It weighs on you. The aim of this paper is to provide you, the fire service leader, with tools to ease the load, reduce your number of sleepless nights, reduce the level of stress when you get that call from the mayor. Community Risk Reduction is the all-hazards solution to the all-hazards response that the modern fire service needs to keep pace with a constantly changing social, economic, and political climate.

## Historical Overview

By tradition, the fire service has understood the need to build and maintain a rapid and effective emergency response capability. But over the years, individuals, organizations, and countries have concluded that while this approach is essential, it's not enough. To truly mitigate risk requires a proactive approach and community-organized collaboration. One result is that Community Risk Reduction has received worldwide attention through efforts in the United Kingdom, Australia, New Zealand, and the United States. <sup>2</sup>

As early as 1914, the fire department of Portland, Oregon, implemented home safety inspections to identify and correct home fire hazards. Other departments used the same tactic or similar ones for years.

In 1947, President Harry Truman called a conference known as "The President's Conference on Fire Prevention."<sup>3</sup> Upon recommendations of the conference, in 34 of the 48 states in the Union at the time, the governors established state fire safety committees, and 18 states held conferences. Various programs for improvement in fire prevention and protection began to be implemented.

In 1973, a report, *America Burning* — President Richard Nixon's initiative to investigate the effects of fire — was written by the National Commission on Fire Prevention and Control.<sup>4</sup> It evaluated fire loss in the United States and made recommendations to reduce loss and increase the safety of citizens

and firefighting personnel. The report concluded that fire prevention and fire safety education were critical to reducing the losses associated with fire, and that firefighters needed to be better educated for their jobs as firefighters.

During this time, fire departments began taking pivotal steps to provide fire safety education to an elementary school-age audience.

The National Fire Protection Association (NFPA), a global, nonprofit organization devoted to eliminating death, injury, property and economic loss due to fire, electrical, and related hazards, provided such an educational program for fire service use with the launch of the *Learn Not to Burn® Curriculum* (LNTB) in 1976<sup>5</sup>. LNTB became the gold standard in providing proven educational strategies that incorporated the philosophy of teaching positive, practical fire safety messaging to children. Safe Kids USA was founded in 1988 with the mission to protect children from preventable injuries. NFPA's *Risk Watch®*, the first comprehensive injury prevention program available for use in schools, was launched in 1998 <sup>6</sup>.

In the United Kingdom, the concept of Community Risk Reduction had been implemented in some areas since the late 1990s. Fire and life safety experts point to Tony McGuirk, retired chief from Meyerside Fire and Rescue in a suburb of Liverpool, England, as a Community Risk Reduction visionary. He was an early advocate of using marketing management for public

safety and big data for pinpointing hazard locations. Chief McGuirk pioneered the use of civilian personnel in fire department auxiliary uniforms to perform the in-home inspections for Community Risk Reduction. Meyerside has a large population of ethnic minorities. Chief McGuirk brought in civilians from those ethnic groups, trained them, and had them go to targeted neighborhoods.

*Community Risk Reduction inspectors uncovered additional problems — medical conditions, addiction, childhood obesity, domestic violence — which led to the development of other programs.*

In the United States after 9/11, a philosophical shift got underway. Educational curricula made a move toward providing to all target groups an all-hazards approach. The recession played a role, as well as a shift in FEMA's National Preparedness Goal. With the help of different groups, such as NFPA and the U.S. Fire Administration (USFA), strategies have been developed. The National Fire Academy through the Executive Fire Officer Program and NFPA 1021, *Standard for Fire Officer Professional Qualifications* for Fire Officer Level I and Fire Officer Level II — have emphasized the importance of a Community Risk Reduction model. <sup>7</sup>



Additionally, NFPA has developed other standards and a guide that help shape the framework of Community Risk Reduction.

- NFPA 1300, *Standard on Community Risk Assessment and Community Risk Reduction Plan Development*,<sup>8</sup> (scheduled to be presented at the August 2016 Standards Council Meeting and enter the fall 2019 revision cycle) covers requirements on the process to conduct a Community Risk Assessment and to develop, implement, and evaluate a Community Risk Reduction plan.
- NFPA 1452, *Guide for Training Fire Service Personnel to Conduct Community Risk Reduction*,<sup>9</sup> helps fire departments design and implement a dwelling fire safety survey effort as part of a communitywide, all-hazards risk reduction program to protect lives and property. The guide applies in both rural and urban communities and serves as a manual for establishing a locally prepared Community Risk Reduction program designed to address specific problems faced by local fire service organizations.
- NFPA 1730, *Standard on Organization and Deployment of Fire Prevention Inspection and Code Enforcement, Plan Review, Investigation, and Public Education Operations*,<sup>10</sup> contains the minimum requirements relating to the organization and deployment of code enforcement, plan review, fire investigation, and public education operations to the public.

Vision 20/20 – a federally funded steering committee composed of noted fire service and related agency leaders – began forming a national strategic planning process for fire prevention in the late 2000s.

## Community Risk Reduction in Action

Many fire service organizations are slow to adopt Community Risk Reduction practices because of the changes necessary within an organization. Tradition has deep roots. Historically, the fire service has been resistant to challenging existing norms, policies, and procedures. However, a successful organization must be dynamic. It requires a strong, visionary leadership and effective management to champion needed change and navigate the process.

Community Risk Reduction is a gateway to the reinvention of the fire service culture, utilizing a data-driven process to change how fire service organizations handle the responsibilities of public safety. The initiatives developed under Community Risk Reduction require a new approach at organizational and community levels. As improbable as it may sound, change, in the Community Risk Reduction sense, will make any fire service organization more efficient and effective in saving lives and property.

## The following case studies illustrate the merits of a Community Risk Reduction approach.

### Get Alarmed Tennessee

Fewer structure fire fatalities occurred in 2015 than in any year in recorded Tennessee history, according to the Tennessee Fire Marshal's office.<sup>11</sup>

Seventy-two people died in unintentional home fires across the state in 2015 — down from 76 fatalities in 2014. Both years represented record-breaking improvements compared to the fire fatality total of 100 in 2013.

The three leading causes of fire fatalities in 2015 were smoking, electrical distribution — wiring and outlets — and heating, according to the Tennessee Fire Incident Reporting System, which indicates that nearly 80 percent of state fire deaths in 2015 took place in homes where no smoke alarm was known to have been present.

"The loss of life in a fire is a tragic event that we are committed to stopping," Tennessee Department of Commerce and Insurance (TDCI) Commissioner and State Fire Marshal Julie Mix McPeak is quoted as stating in a TDCI press release.

*"Our partners in the Tennessee fire service community have worked diligently to prevent loss of life, and our teamwork is paying off. Going forward, we will not be complacent, and we will continue to make risk-reduction initiatives our top priority," McPeak added.*

Tennessee has seen a 28 percent reduction in fire fatalities during the past five years (2011–2015) compared to the previous five-year average (2006–2010) when NFPA ranked Tennessee as number six in the nation for fire deaths.

"The continued reduction of fire fatalities in our state is a result of the dedication and commitment of the entire Tennessee fire service," said Gary West, TDCI Deputy Commissioner for Fire Prevention. "A key part of the State Fire Marshal's Office's lifesaving mission is promoting the importance of smoke alarms. Our Get Alarmed program continues to see great success due to partnerships with local fire departments and agencies like the Red Cross."

Launched in November 2012, the Get Alarmed Tennessee program is responsible for more than 100,000 smoke alarms being distributed by the State Fire Marshal's Office. More than 450 fire service partners work to install the smoke alarms with nonreplaceable (long-life) batteries designed to be effective for up to 10 years in homes statewide. This program, along with focused fire prevention in high-risk areas of the state, has helped increase awareness about the dangers of fire. The smoke alarms provide the basic level of protection in homes (early detection) and have directly prevented tragedies from occurring. Smoke alarms installed as part of the Get Alarmed program are credited with saving 121 Tennesseans from fire danger thus far. Thirty-six of those saves occurred in 2015 alone.

Officials say the 2015 reduction in loss of life could not have happened without the support of local, state, and national groups and organizations, including:

- The American Red Cross
- The National Fire Protection Association
- The National Association of State Fire Marshals
- The U.S. Fire Administration
- Vision 20/20
- Local fire departments, code inspectors, the Tennessee Fire Service and Codes Enforcement Academy, the manufactured housing community, and the Tennessee Firefighting Personnel Standards and Education Commission

## Meeting Neighbors and Saving Lives

In 2005, the St. Louis Fire Department – which protects a city that is 66.2 square miles with a population of 320,000 and a daytime population that swells to 1 million – launched a Community Risk Reduction program called Meeting Neighbors and Saving Lives. The program was the department’s first attempt at a true Community Risk Reduction program. Meeting Neighbors and Saving Lives was centered on meeting residents face-to-face to address fire safety issues within their homes as a proactive approach to help prevent fires and fire-related injuries.

The project initially focused on targeted high-risk areas in two ZIP Codes. To reach the community and get feedback, the department held open house events at neighborhood fire stations. These events allowed for the exchange of information between the department and community. Firefighting personnel went door to door the following week to offer fire safety and prevention services:

- Smoke alarms with nonreplaceable (long-life) batteries designed to be effective for up to 10 years
- Home fire safety surveys and fire escape plans
- Fire prevention information
- Home fire extinguishers and training

*Since the inception of Meeting Neighbors and Saving Lives, the department realized a 25 percent reduction in structure fire calls.*

In addition, the severity of the fires has dropped dramatically because of the early detection and alerting provided by installed smoke alarms. The most exceptional change has been the reduction in loss of life.

Meeting Neighbors and Saving Lives has been credited with saving more than 1,500 lives. In statistical terms, the project helped St. Louis realize an 83 percent decline in fire fatalities. Firefighters have been overheard stating that when they arrive at fires now, everybody is already out of the building: a credit to the work they put into installing smoke alarms.

The program was well received, paving the way for developing community partnerships with ward aldermen,

the Federation of Block Units, the International Institute of St. Louis, the Missouri Department of Health and Senior Services, and other groups and organizations.

The partnerships assisted the department in accessing funding, referrals, and economic incentives to expand the project to two additional ZIP Codes per year and assisted with establishing community equity. Essential to the success of Community Risk Reduction programs, community equity took the form of ongoing relationship building within the community. The “equity” was built over time through positive interactions with the department during emergency and non-emergency situations. The expanded program evolved to a wider, all-hazards plan by incorporating multilanguage prevention materials; child safety seats and installations; free or reduced-price bicycle helmets for children; blood pressure, glucose, and cholesterol screenings; energy assistance through Heat Up/ Cool Down St. Louis; carbon monoxide alarm installations; disaster preparedness kits; and smoke alarm systems for people who are deaf or hard of hearing.

The department followed up with each of the targeted families twice a year by sending postcards with seasonal safety information, follow-up home safety surveys, and reminders to test their smoke alarms.

The results of the program are as follows:

- Number of homes enrolled – 22,543
- Number of occupants in program homes – 58,036
- Total percentage of homes originally without working alarms – 74.93
- Total number of smoke alarms installed – 51,556
- Total number of lives saved in program homes – 1,525
- Total number of cardiovascular health screenings completed (blood pressure, glucose, and cholesterol) – 8,484
- Child safety seat inspections and installations – 2,315
- Other fire and life safety presentations, including neighborhood gatherings, community events, and back-to-school festivals – 4,317



The partnership with Heat Up/Cool Down St. Louis assisted with reducing the occurrence of fires initiated by the use of alternative heating sources. This partnership was also beneficial in reducing the number of heat-related illnesses during warmer months. The cardiovascular disease program received numerous awards in providing preventive health screenings at local fire stations. The program also impacted the survivability of cardiac arrest patients, aiding the department in receiving the Mission Lifeline Gold Award from the American Heart Association.

## Text to Pledge

In 2012, then Philadelphia Mayor Michael Nutter attended the annual Insurance Society of Philadelphia's (ISOP) Independence Gala. He was approached by the president of ISOP, who asked what his organization could do to help the city. The mayor responded that the organization could help by raising money to purchase smoke alarms for residents who couldn't afford them. This marked the birth of the Text to Pledge campaign.

The Text to Pledge campaign takes place annually at the Gala. During the event, attendees text the amount of money they are going to donate. The text pledge appears on a big screen, along with the name of the company making the donation. This encourages a competitive spirit and increases the amount of donations. The first year of the campaign, ISOP raised \$45,000. During the first three years of fundraising, ISOP raised \$150,000, with donations exceeding \$80,000 in 2015 alone. Total donations since the inception of the Text to Pledge campaign exceed \$230,000.

In addition to the Text to Pledge campaign, members of ISOP participate in an annual day of giving, in which they partner with the Philadelphia Fire Department (PFD) to conduct home visits to install smoke alarms purchased with the donations made. While firefighters install the alarms,

members of the ISOP provide fire and life safety literature to the residents.

What was already a rewarding experience for ISOP members was enhanced due to the documentation that eight lives were saved in April of 2014 as a result of their annual day of giving in October of 2013. The PFD targeted the high-risk block based on the previous years' fire fatality data. One of the high-risk blocks identified was the 3000 block of North Marshall Street, which yielded 150 smoke alarm installations along with distribution of fire and life safety literature. Six months later, the PFD received notification of a house fire on one of the high-risk blocks where the smoke alarms had been installed. The first fire company to arrive reported a three-story dwelling with smoke coming from the two lower floors. The eight people who were home escaped from the fire because of the early warning of the smoke alarms and educational materials they were given on how to prepare and practice a home escape plan.

The PFD has 2,486 members, serves a population of 1.5 million in a community of 130 square miles. The Text to Pledge campaign is an excellent example of how community partnerships, home visits, and public education can help save lives and reduce risk in this large metropolitan community.

## City of Columbus Initiative

The City of Columbus Division of Fire began its smoke alarm installation program in the late 1990s in the wake of fire deaths directly related to a lack of smoke alarms in high-risk areas. Stations funded the initiative themselves to satisfy the need in their response areas. The division also received funding from in-kind donations. In 2007, a hotline was established so residents could register for a free smoke alarm.

For years, the division had been searching for funding to maintain the program consistently. In January 2015 the division formed a collaboration with the American Red Cross. This collaboration began under the leadership of Fire Prevention Assistant Chief David Whiting, fire marshal for the City of Columbus.

The Red Cross agreed to supply smoke alarms with nonreplaceable batteries designed to be effective for up to 10 years and made volunteers available for canvassing neighborhoods. That year, more than 1,300 smoke alarms were installed in targeted areas through the collaboration. Fire suppression, the public education office, and Red Cross volunteers collaborated, canvassing the targeted areas, installing smoke alarms, checking batteries, and providing fire safety information.

The Ohio State Fire Marshal's Office has been part of this initiative as well, participating in one of the smoke alarm installation drives. During this "boots on the ground" phase, certain ZIP Codes and census tracts have been identified as having a higher number of fatalities and injuries from fires than other areas (see Figures 1, 2, and 3). Figure 1 shows ZIP Codes in high-risk areas of Columbus and the number of smoke alarms installed during a drive in the ZIP Codes in 2015. Figure 2 shows the number of structure fires in those same ZIP Codes in 2015. Figure 3 shows the number of smoke alarms installed in single and multi-family homes listed in the areas shown in Figures 1 and 2. Officials knew where the high-risk communities were based on National Fire Incident Reporting System (NFIRS) data and fire service calls.

### Number of Smoke Alarms Installed during a Drive

Top 5 ZIP Codes for 2015

- 43223
- 43219
- 43211
- 43207
- 43204

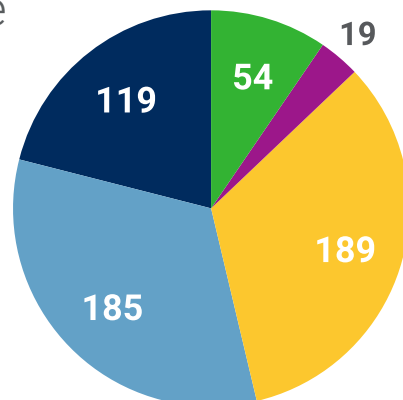


Figure 1

The City of Columbus covers approximately 223 square miles and has a population of around 850,000. The Columbus Division of Fire responds to more than 175,000 emergency incidents each year. Through the collaboration on the smoke alarm initiative, the division was able to dramatically increase the number of residents receiving alarms. It anticipates installing 2,500 smoke alarms in 2016. Before the collaboration, an average of 200 to 300 alarms were installed per year.

*“Ohio’s firefighters have a strong influence in their communities when it comes to making a difference, and we are thrilled to join this partnership with the Columbus Division of Fire and American Red Cross to promote fire safety,” said Ohio Fire Marshal Larry Flowers.* <sup>12</sup>

“Canvassing neighborhoods to install and inspect smoke alarms has proven to be a very effective line of defense in preventing fatal fires from happening.”

## Number of Structure Fires

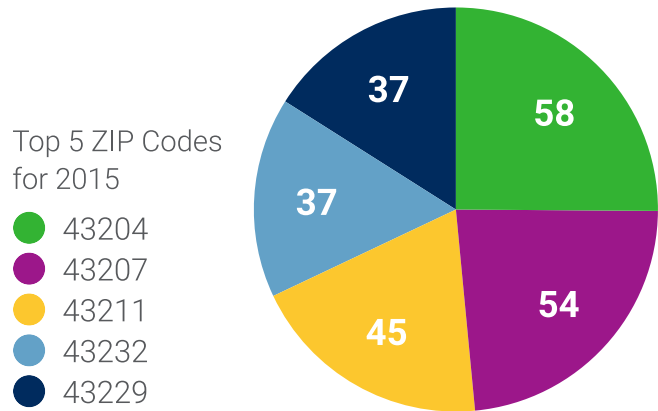


Figure 2

## Number of Smoke Alarms

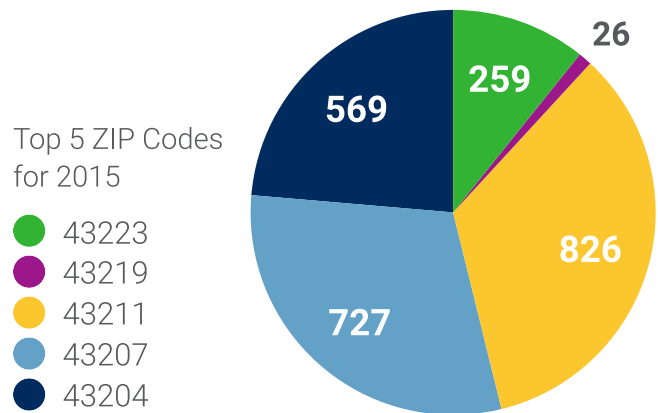


Figure 3



## Community Fire Safety Advocate Program

The Seattle Fire Department serves a population of 662,400 and a daytime population of 1.5 million within an 84-square-mile city that has 193 miles of waterfront. In 2015, the department responded to 92,852 emergency calls – 84 percent medical and 16 percent fire. The department has five battalions and 33 stations. Additionally, a Medic One program provides Advanced Life Support (ALS) services to residents.

***Approximately 25 percent of residents speak languages other than English and have limited English skills, which makes providing equitable service and prevention programs a challenge.***

The Seattle Fire Department's Community Fire Safety Advocate (CFSA) Program, which educates people in multicultural communities about fire and life safety, was developed in response to a fatal house fire that occurred in the home of an East African family on June 12, 2010. Four children and their aunt died. It was Seattle's deadliest fire in more than 30 years. Both the local community and fire department members were greatly affected by the tragedy.

Shortly thereafter, department leadership and public educators met with East African community leaders to develop a strategy for conducting fire safety education within the community. There was interest in training native

language speakers to conduct the educational sessions. The resulting CFSA program became the primary fire department educational vehicle for this initiative. With assistance from community leaders, individuals were selected who had standing within Seattle's East African community and a commitment to the overall East African population. The trainees represented all four major East African language groups – Amharic, Oromo, Somali, Tigrinya. They underwent an intensive, department-led training on fire safety and community outreach, and assisted in the development of culturally relevant fire safety materials.

Evaluating the effectiveness of a multilanguage, culturally relevant, and community-based fire prevention program is a challenge. Reporting on fire occurrence is not a viable measure of effectiveness due to the high number of variables, the low number of fires that occur per population, and the lack of statistical relevance that can be determined. Therefore, evaluation efforts focused on the following:

- Closely evaluating the fire safety skills and knowledge of each advocate, both during their training and over time
- Conducting targeted assessments on program participants' knowledge gain and skills development for two specific fire safety behaviors
- Gathering anecdotal information as it became available

The evidence collected affirmed the worth and effectiveness of this fire safety program model for multicultural communities. Detailed measurement of two brief fire safety instructional activities – putting out a small kitchen pan fire and sequencing the steps of a home fire evacuation plan – showed significant short-term knowledge gain within a diverse adult participant group. Additionally, behavior change was observed related to extinguishing a pan fire, both from direct observation of the outreach activity itself and from interviewing community members for anecdotal accounts of home kitchen fires being correctly extinguished after participating in the activity.

In 2012, due to the success of the program, the department expanded its outreach to more immigrant and refugee communities, training five additional CFSA's within the Asian community. In 2015, the department partnered with the Seattle Office of Emergency Management to cross-train community members in both fire safety education and disaster preparedness education. By doing so, the pool of trained CFSA's increased to 25, giving the program an even greater reach into immigrant and refugee and low-income communities.

## What Is the “More” of Community Risk Reduction?

### Community Risk Reduction

Community Risk Reduction is defined in NFPA 1035, *Standard on Fire and Life Safety Educator, Public Information Officer, Youth Firesetter Intervention Specialist and Youth Firesetter Program Manager Professional Qualifications*: “Programs, actions, and services used by a community, which prevent or mitigate the loss of life, property, and resources associated with life safety, fire, and other disasters within a community.”<sup>13</sup>

### The “More” of Community Risk Reduction

A fire department can reap numerous benefits by adopting Community Risk Reduction. These include being able to:

- Fully integrate all fire protection strategies
- Get the community involved in problem solving and strategic implementation
- Prevent line-of-duty deaths and injuries
- Ensure the survival of the organization

Community involvement serves as a force multiplier. The effect is realized by collectively working with the community to understand, assess, and provide the best possible solution to community safety issues. It also allows the fire service to connect with the tremendous capacity of other public, private, and nonprofit organizations to increase the efficiency and effectiveness of its Community Risk Reduction efforts. In turn, the fire department can increase public safety without the need for additional internal resources.

A model for Community Risk Reduction may be used to assist in developing the plan. Plans are unique to each jurisdiction and are based on the types of risks associated within the particular community. Fire service leaders should utilize the five-step process in the guide, *Public Fire Education Planning for Urban Communities*.<sup>14</sup> The five key steps are illustrated in Figure 4. These steps are similar to those included in NFPA 1300, *Standard on Community Risk Assessment and Community Risk Reduction Plan Development*, which also includes the Five E’s (see Figure 5).

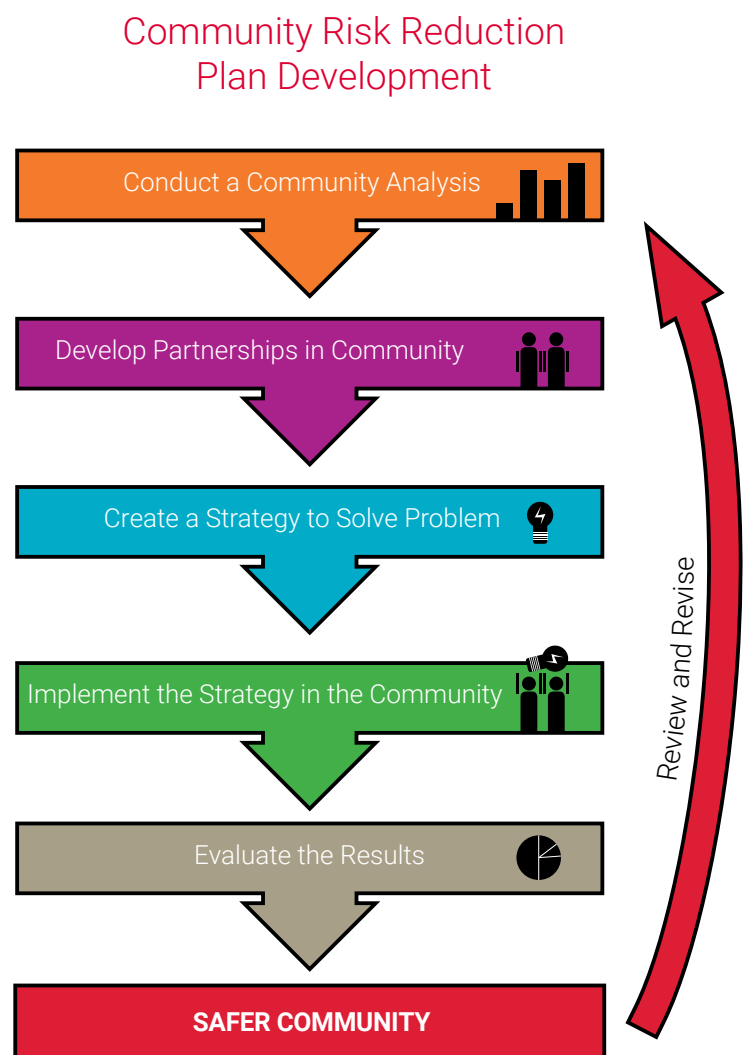


Figure 4

Strategic and tactical development for the Community Risk Reduction plan should be constructed by utilizing the Five E's of Community Risk Reduction. The Five E's are a combination of the original Three E's – education, engineering, and enforcement – noted by President Truman at The President's Conference on Fire Prevention in 1947. Two additional E's – economic incentive and emergency response – were added by the National Fire Academy due to their importance in Community Risk Reduction.<sup>15</sup> The Five E's, shown in Figure 5, are as follows:

### The 5 E's

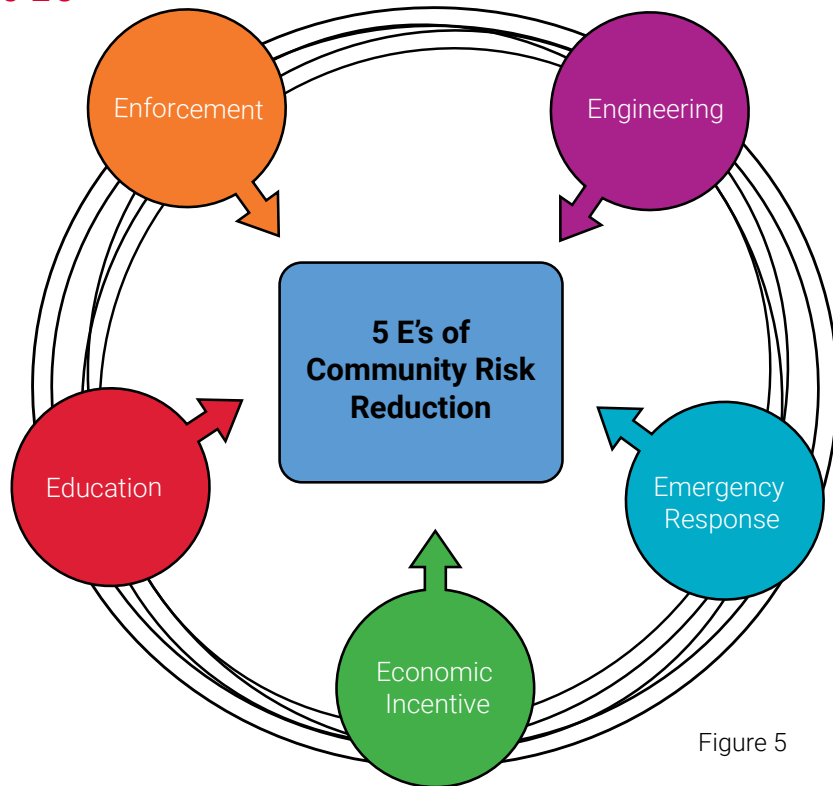


Figure 5

Education involves determining the appropriate type and mix of educational messages necessary to inform the public and effect behavioral change.

- Education influences audiences to refrain from risky or unhealthy behavior or take positive action to reduce risk. Effective education:
  - Increases knowledge regarding community risks
  - Changes attitudes
  - Encourages behavioral changes
  - Is measurable in evaluations

Enforcement involves identifying whether stronger enforcement is necessary or if newer codes and standards need adoption.

- Enforcement reduces risks through enforcing legislation through inspections and fines for noncompliance. Enforcement activities to consider include:
  - Adopting and enforcing fire and life safety codes
  - Requiring sprinklers in residential occupancies
  - Requiring smoke alarms in residential occupancies

Engineering involves determining whether there are any engineering or technological solutions available to address the identified risk.

- Engineering includes incorporating new products and technology to modify the environment to prevent or mitigate injuries and deaths. Examples of engineering products/technology:
  - Fire sprinklers
  - Smoke alarms
  - Ground fault circuit interrupters
  - Child safety seats
  - Bicycle helmets

Economic Incentives involve identifying whether financial incentives will improve compliance or aid in increasing awareness to community needs.

- Economic incentives are typically offered to encourage better choices and changes in behavior. Economic incentives may include any of the following:
  - Fines and penalties for violations
  - Free smoke alarm and carbon monoxide alarm installations
  - Tax credits for installing home fire sprinkler systems
  - Reduced-cost child safety seats
  - Free bicycle helmets

Emergency Response involves changes to emergency response protocols to better meet a specific risk or need.

- Effective emergency response can mitigate the effects of unintentional injuries and save lives. Matters to consider with emergency response include:
  - Determining the appropriate mix of equipment
  - Training of personnel
  - Staffing levels
  - Response time of day

Each of the Five E's contribute to the development of comprehensive Community Risk Reduction programs. When combined, the synergistic effect makes them more effective than if utilized individually. In addition to the Five E's, fire departments may enlist the services of public policy experts and advocates to assist with legislation geared toward risk reduction. Utilizing the Five E's will ensure that the Community Risk Reduction plan is deliberate, cost-effective, and sustainable.

## Recommendations/Call to Action

A successful Community Risk Reduction program requires top-down management support. The advocacy and support of fire service leaders is critical for launching a Community Risk Reduction program and maintaining it. Here are ways you can move Community Risk Reduction forward in your department:

- Incorporate Community Risk Reduction into your department's strategic plan.
- Form partnerships with agencies across the municipality that can play important roles in the success of the Community Risk Reduction plan.
- Develop partnerships with leaders of community organizations, hospitals, universities, and agencies.
- Enlist the services of public policy experts and advocates to assist with legislation geared toward risk reduction.
- Oversee the development of a Community Risk Reduction plan that covers an entire fiscal or calendar year.
- Meet periodically with fire and life safety educators, officers, and managers in the department to keep track of measurable benchmarks established in the Community Risk Reduction plan.
- Ensure that adequate staffing, training, and general support are provided for the Community Risk Reduction plan.
- Share the outcomes of the Community Risk Reduction projects through presentations at agency functions, conferences, and events.
- Share outcomes of the Community Risk Reduction projects with internal and external communications such as the media.

## Conclusion

Community Risk Reduction is a gateway to the reinvention of the fire service culture. It requires buy-in from the top and strong visionary leadership to champion needed change and navigate the process.

The continued goal of reducing risks within communities is particularly challenging in the face of increased growth demands, changing demographics, emerging hazards, and budget constraints.

Implementing a successful Community Risk Reduction program brings additional resources to the effort through partnerships within the fire department as well as the community served. This community-based approach increases public safety because of the collective work with the community to understand, assess, and provide inclusive solutions to community safety issues.

## End Notes

1. "What Keeps You Up at Night?" Survey distributed at the International Association of Fire Chiefs Fire-Rescue International Conference, Atlanta, GA. 27 August 2015.
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