

This document was prepared to help interested US fire department personnel better understand Community Risk Reduction (CRR).

I. What is CRR and Why is it Important?

Community Risk Reduction (CRR) is the identification and prioritization of risks¹ followed by the coordinated application of resources to minimize the probability or occurrence and/or the impact of unfortunate events.

Within the fire service context, this means that fire departments exist not only to respond to emergencies after the fact, but to prevent or reduce the effects of their occurrence in the first place. It assumes that the fire service will act proactively as a risk Reduction entity for their community. It also assumes they will partner with other community organizations as needed to accomplish their risk reduction objectives.

By working proactively and with community partners, the fire service will be able to provide the highest level of protection.

CRR is not a new concept for the fire service. For years fire departments have been involved in some community risk reduction through building inspections and public education. But this concept needs to be applied in a focused manner, and truly integrated into the mindset of staff and the mission of the fire department.

II. Historical and International Experience

Traditionally fire services all over the world have recognized the need to build and maintain a rapid and effective emergency response capability. Over the years however, many individuals, organizations, and countries, have recognized that this approach, while absolutely necessary, is no longer sufficient. They understand that to truly mitigate risk requires being proactive, collaborating with community organizations, and working with

¹ A risk is a measure of the probability and severity of adverse effects. Adverse effects result from exposure to some type of hazard (NFPA 1500)

other service areas. From this realization, CRR for the fire service has received international attention through efforts in the United Kingdom, Australia and New Zealand and elsewhere.

For example, in the United Kingdom, the national government mandated the development of CRR plans in 2006 through the Fire Safety Act, but the concept has been implemented in some places (like Merseyside Fire) since the late 1990's. Data from these jurisdictions are indicating a significant reduction in fire deaths and fire incidents. Other nations have had similar experiences with CRR.

More complete international reports on these studies conducted by CDC and System Planning Corporation's TriData Division are available at:

http://www.sysplan.com/capabilities/fire_ems/publications.html#capabilities.

In the US, as early as 1914, the fire department in Portland, Oregon implemented home safety inspections to identify and correct home fire hazards. Other departments used the same or a similar process for many years, and in the early 1980's Edmonds, Washington implemented a home inspection program for two years, dropping their fire incident rates by 62%. Two years later when they stopped the program the fire incident rates rose back to pre-program levels.

Fire departments in the U.S. have been offering fire prevention and community risk reduction programs for years in an effort to minimize risks in their community. But these efforts have often been peripheral and not part of the core work of the department. In some cases they have even been "farmed out" to other governmental agencies.

III. Why is Implementing CRR so Challenging?

To fully accomplish CRR requires a significant change in the way we view of the role of emergency responders. Most people who gravitate toward being firefighters would not list fire prevention or community risk reduction as their primary motivation for joining the fire service. And in any organizational culture, there tends to be great resistance to what's new and deep investment in old ways of doing things.

Buy in from the top is critical, as is having enough resources in place to support the change over time.

Some specific challenges include:

- Role and image of firefighters. There is a long history of firefighters as fearless heroes. Even though fire fighting is less of the job than it once was, that image is held onto tightly so finding rewarding ways to look at prevention roles is challenging.
- Skills and knowledge necessary to prepare CRR plans. More business/public administration skills are needed. These are not currently generally required or needed from firefighters.
- Skills, knowledge and personality necessary for public education. This would include community presentations, working with school teachers in classrooms, and participating on community boards and associations.
- The fragmented infrastructure of fire service in the U.S. Though various national organizations provide specific leadership aspects, the fire service in the U.S. is not nationalized so mandating compliance with a specific set of operating guidelines (like CRR) is impossible.
- CRR will look different at every fire department and each station depending on the risks for that particular community. It's a process/approach vs. an outcome that can be copied/duplicated.

While there is no clear blueprint for how to do CRR in US fire departments, there are some common/essential steps that could be taken over the course of a year or incrementally adopted over a longer period of time. What's important is that fire departments begin to shift their thinking and start on the path, because expectations for local government, the fire service included, have already changed.

IV. A Model for CRR

An CRR cycle has six main steps or stages. Ideally these would be completed annually at the station level, reflecting available resources and staffing as well as needs of the community. But they can also be done centrally and adopted incrementally. Those just starting the process, may benefit from having trained facilitators guide them through the planning stage.

- 1. Identify Risks**
- 2. Prioritize Risks**
- 3. Develop Strategies and Tactics to Mitigate Risks**
- 4. Prepare an CRR Plan**
- 5. Implement the CRR Plan**
- 6. Monitor, Evaluate, and Modify the CRR Plan as Needed**

Each step is described in more detail on the next few pages.

1. Use Data to Identify Risks

Use data to identify both a current snapshot and trends in risks based on historical call volume and other sources to describe potential risks such as:

- Emergency incidence rates and types
- Presence of target hazards (*hospitals, hazardous materials operations, etc.*)
- Demographics (*i.e. age, race, income levels, etc*)
- Housing type, age, and density
- Businesses by occupancy classification/construction type
- Crime rates

Based on the data identify risk areas. (*For example: fires caused by smokers, false alarms, falls to the elderly, spraying booths, poisonings, etc*). If possible map those risks using graphical information technology (GIS).

2. Assess and Prioritize Risks

Look at the probability of an event occurring and the potential consequences if it did occur (*i.e. its impact*). Bring in anecdotal information and feedback from staff. Consider assigning weights and probabilities to come up with a scoring method for prioritizing risks.

3. Develop Strategies and Tactics to Mitigate Risks

For each risk identified, think about what could be done to reduce that risk. We suggest using the **Five E 's framework** which looks at: emergency response, engineering, education, economic incentives, and enforcement. Ask yourself:

- **E** **mergency Response:** *Would changes in our emergency response protocols help?*
- **E** **ngineering:** *Are there engineering/technology solutions that could help?*
- **E** **ducation:** *Would educating the public help – if so who, what, when, how?*
- **E** **conomic Incentives:** *Could economic incentives improve compliance and/or raise awareness?*
- **E** **nforcement:** *Is stronger enforcement required?*

For some risks, work in all of these areas may be called for (although not necessarily feasible); for others, work in only one or two areas may be necessary.

Policy advocacy or legislative work may also be needed. *Are there mandates, model codes, tax differentials, appropriations, penalties/fees that would enable the fire department to better use the 5 Es to mitigate risk?*

Fire departments do not need to do this work alone. Given limited resources, fire departments will likely need to work with other local service organizations to mitigate risk. Developing an “assets map” of the community can help when it comes time to make these decisions. It's important to remember that fire departments do not need to do this work alone. CRR, in its fullest form, would include coordinating efforts with community partners to help address identified risks.

The shaded box below presents some examples of risks and mitigation strategies.

EXAMPLES	
<u>Risks</u>	<u>Strategies</u>
Fires caused by smokers	<ul style="list-style-type: none"> • Effective Emergency Response Capabilities • A media and/or public education campaign designed to raise awareness for careful smoking habits and to change behaviors • Placement of proper smoking containers in apartment complexes to avoid disposal of smoking materials in planting material (containing cellulose) • Partner with community programs such as meals on wheels or public health visiting nurses to identify smokers for targeted outreach efforts • Legislation requiring distribution and/or use of proper smoking containers in multi-family housing • “Fire safe cigarettes” required by law
False Alarms (generating high and unnecessary call volumes for emergency responders)	<ul style="list-style-type: none"> • Legislative requirements for alarm contractor competence and reporting • Enforcement of the legislative requirements • Education of contractors and businesses on how to reduce false alarms • New technologies designed to prevent false fire alarms • Relocate detectors
Falls to the elderly	<ul style="list-style-type: none"> • Education of target audiences to reduce falls hazards in their homes • Partnership with organizations to install fall protection devices (rails, stair lighting, etc.) in target audience homes

4. Prepare CRR Plan

A CRR plan can represent a multiyear strategy and/or an annual one. Ideally it is reflected in the department's mission and part of its overall strategic plan.

Ideally, CRR plans would be prepared at the station level and reflect the resources and staffing available at that station as well as the needs of the community it serves. Planning at this level empowers and engages staff, increases interactions with community, facilitates the improvement of safety behaviors on the part of residents and businesses, and ultimately enhances ability of the fire department to manage risk. But CRR plans can also be effectively prepared at a more centralized level within the fire department or even as a coordinated effort among various

community partners. This may not only be more realistic/feasible in the US, but it may have the added advantage of facilitating collaborations within local government.

To prepare the plan, work with all levels of staff. Share risk data, perceived priorities, proposed strategies, and likely costs, and solicit feedback and new ideas. Invite community partners to also provide input. Plan preparation will require balancing competing priorities and making hard choices about which risks and strategies to include and how to prioritize them.

5. Implement CRR Plan

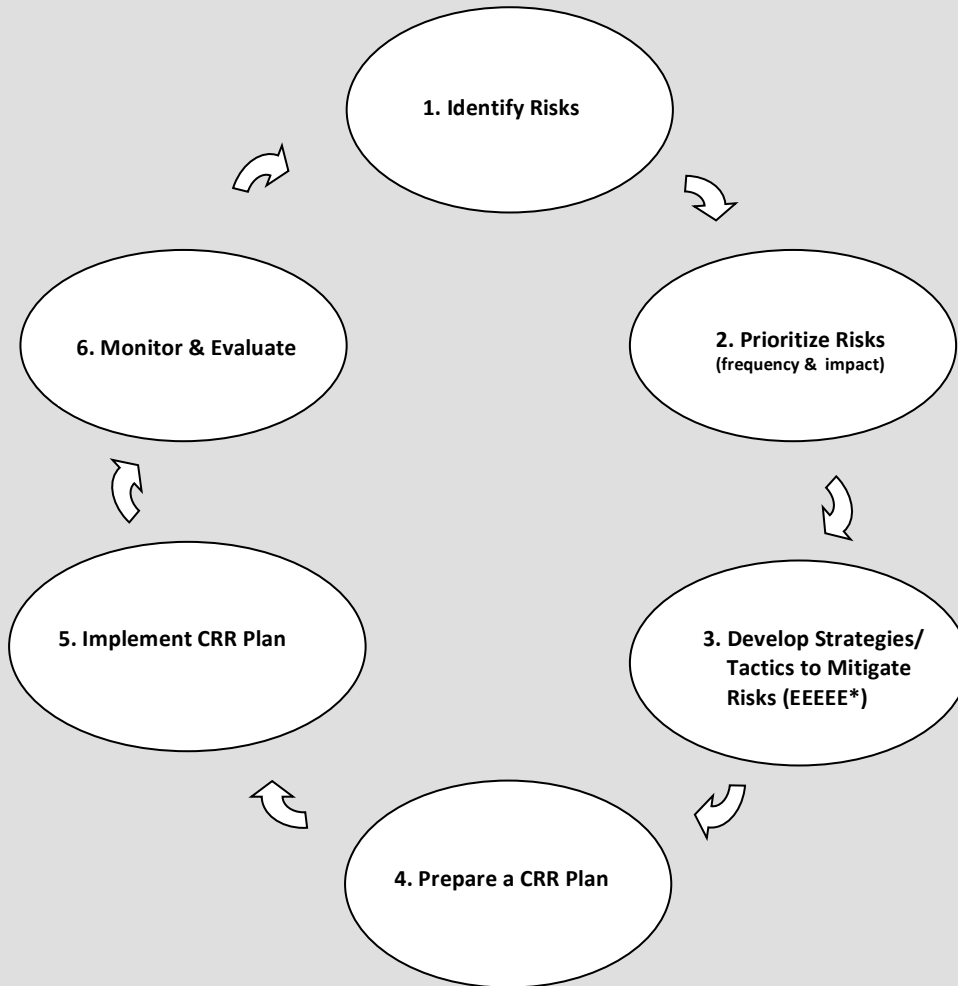
Once you have the blueprint for what you want to do, focus on allocating the necessary resources, assigning responsibilities, developing and offering trainings, preparing timelines, identifying milestones, developing periodic reporting processes, etc. Keep in mind that both the long term and the one year plan are working organic documents that will need to be revisited and revised as circumstances require. But they provide a vision and a guide for action.

6. Monitor, Evaluate and Modify

Prior to implementing the plan, define success and identify key measures that can be readily collected and used to track progress. Be sure to use incorporate what you learn in the next iteration of the planning cycle and to share successes with staff and the community at large.

To summarize – CRR is community focused and employs the full spectrum of risk reduction tools. It integrates both emergency response capabilities and preventive strategies into one overall approach to provide fire protection. Because the tools are the same regardless of risk, it integrates fire and other hazards any community may face into a multi-hazard approach that provides an overall protection strategy to mitigate risks.

THE SIX STAGES OF THE COMMUNITY RISK REDUCTION PLANNING PROCESS



*EEEE = Emergency Response, Engineering, Education, Economic Incentives and Enforcement