

Community Risk Reduction
A Model for Tucson Fire Department

Executive Summary

Community Risk Reduction (CRR) is the process of identifying and prioritizing risk to prevent and mitigate the potential loss that could result. This process isn't new to the fire service and while many firefighters and fire administrators view these activities as isolated prevention efforts, they are in reality an integral part of our core mission, which is: *"To protect the lives and property of the citizens of Tucson."*

Community Risk Reduction is much more than a fire prevention program. Community Risk Reduction is an integrated approach to community risk management. It requires everyone in the department from the firefighter to the Fire Chief to think critically about the risks facing their community and the interventions and resources implemented to address them.

It requires reflection, analysis and collaboration between divisions, agencies and community members to achieve a measurable reduction in loss. In essence, the Community Risk Reduction process requires fire professionals to critically reflect on how they provide services and challenges them to proactively develop station-based solutions to localized problems.

In order for our department to engage in this process we must collectively increase our capability to do so through on-going training, and the development of standardized tools, resources and processes. In addition to traditional training methods, station based training, facilitation and technical support should be provided to assist fire crews in developing and implementing their CRR plans. As these projects are implemented, outcomes should be documented and evaluated to determine the most effective strategies for Community Risk Reduction.

Effective Community Risk Reduction also requires collaboration with outside agencies and concerned citizens who share the goal of public safety. The problems facing our community are too big to tackle alone. By working together we can ensure that our community is a safer place to live.

INTRODUCTION TO COMMUNITY RISK REDUCTION

“Any person who is at all conversant with fire safety knows that at least eighty-five percent of fires could be prevented. It is the duty of the Fire Chief to assume leadership and point out the way for the protection of life and conservation of property of our citizens. If the fire loss of the country is to be reduced, we must get away from the out-of-date methods of the old-time, red-shirt brigade. They thought the duties of the firemen were to sit around the engine houses waiting for an alarm of fire and then proceed to extinguish it as best they could; but the modern Fire Chief knows that he must be up and doing and prevent fires from starting, if he is to be successful in reducing the loss”

Chief W.D. Brosnan

Albany, Georgia, 1928

Nearly nine decades have passed since Chief W.D. Brosnan made this statement at the Southeastern Association of Fire Chiefs first annual gathering. Since that time the fire service has changed drastically. Science, technology and training have improved our emergency response capabilities and informed our efforts to mitigate loss, but the underlying frustrations captured in his words still ring true. The culture of the profession still remains in many ways an obstacle to progressive fire prevention and a modernized view of the fire service. Despite the stated importance of prevention as a core service of the modern fire department, prevention is still seen as a peripheral service, subject to the whims of budgetary constraints, politics and the biases of individual administrators. The notion that the fire service should be, in the words of Chief Brosnan, “Up and doing to prevent fires” is still far from the core values of most

departments and this is evident when the scope of our nation's fire problem is examined alongside other developed nations.

Statistics show that the United Kingdom, Australia and New Zealand have been far more effective at preventing fire loss than the U.S. fire service; but why, what are they doing differently?

One key factor in their success, and in recent years, the success of a handful of forward thinking US cities, is the incorporation of a Community Risk Reduction Plan into every facet of service. The Community Risk Reduction model is intended to engage every member of the department in localized, targeted risk management. The Community Risk Reduction model bridges the divide between the Prevention Division and the Operations Division which traditionally have worked in isolation from one another.

Community Risk Reduction (CRR) is simply the process of identifying and prioritizing potential risk so that a proactive plan can be implemented to prevent or mitigate it. This can only be accomplished through a collaborative partnership between fire professionals, partner agencies and community members. The CRR process is comprised of six steps:

1. Step 1: Identify Risk
2. Step 2: Prioritize Risk
3. Step 3: Develop Strategies to Prevent and Mitigate Risk
4. Step 4: Prepare the Community Risk Reduction (CRR) plan
5. Step 5: Implement the Plan
6. Step 6: Monitor, Evaluate and Modify the CRR plan

Fire Departments that have made this process a core function of their mission and have invested the staffing, training and resources to prepare and facilitate CRR projects across their departments, have seen dramatic success.

For example, the Philadelphia Fire Department whose fire death rate was nearly double that of the national rate, undertook a project entitled “Operation Staying Alive.” This project involved training every firefighter on the department to inspect and install smoke alarms in residential buildings. The program resulted in 8,000 home visits and more than 7,000 smoke alarm installations (Vision 20/20, 2011, p.28).

Merseyside Fire District in the United Kingdom set the ambitious goal of inspecting every home within their fire district and installing smoke alarms wherever they were needed. As a result of their efforts they realized a 40% reduction in fire loss (Vision 20/20, 2011).

Wilmington N.C. faced with budgetary constraints and staffing limitations took a more targeted approach, using GIS technology to pinpoint specific “hot spots” within the city. These “hot spots” became the initial focus of their CRR efforts and ensured that they were applying their resources where they would have the most direct impact on their city’s fire problem (Vision 20/20, 2014).

Tucson has also had positive results implementing a collaborative CRR project with the Sonoran Environmental Research Institute (SERI). During this program TFD educators taught the ABC’s of Home Safety class to nearly a thousand parents at local Head Start and PACE early childhood centers. At the conclusion of each class, parents were provided the opportunity to sign up for a home visit provided by SERI. During the visit, safety issues were identified and

corrected, smoke alarms were installed and families were counseled on safety and emergency planning (Vision 20/20, 2012).

I. BACKGROUND

The Tucson Fire Department has developed many effective and popular fire and injury prevention programs. The department's Public Education Section provides high quality education programs serving thousands of children, parents, and seniors each year. Our educators are also in attendance at many community events and sponsor smoke alarm installation projects and bike helmet fittings. Each year, this section, which is comprised of three educators and a fire inspector, teach close to 500 classes and reach roughly 20,000 residents.

To augment and support these programs Tucson firefighters provide station tours and apparatus displays at community events and our inspectors work with local business owners to ensure that they maintain compliance with fire codes. Additionally, our department provides safety resources such as child passenger seats, smoke alarms and bike helmets to needy families throughout the city. These programs make our community a safer place to live, make the fire department a safer place to work and build rapport and trust within the community. A summary of this outreach is included in the tables below.

Public Education Outreach Final Numbers (FY: 2010-2014)

Fiscal Year	Presentations	Participants
2010-2011	489	22,625
2011-2012	508	24,219
2012-2013	355	18,342
2013-2014	365	21,687

Safety Resources Distributed (FY: 2010-2014)

Fiscal Year	Car Seats	Smoke Alarms	Bike Helmets
2010-2011	559	446	365
2011-2012	415	457	424
2012-2013	612	217	376
2013-2014	444	536	312

Fire Suppression Outreach Totals (FY: 2010-2014)

Fiscal Year	Apparatus Display	Station Tour	Adopt-A-School
2010-2011	116	152	61
2011-2012	110	123	63
2012-2013	110	83	56
2013-2014	N/A	N/A	56

The success and popularity of these programs has resulted in a demand for services that cannot be met with current resources. In order to take our prevention efforts to the next level, we need to engage both commissioned staff at the station level and community partners who share a vested interest in safety.

We need to prepare, support and encourage every member of the department to take ownership of prevention projects and solutions and acknowledge them for doing so. Furthermore a sustainable, long-term plan must be put into place to adequately train staff, secure resources, build community partnerships, and evaluate the impact that CRR projects have on the community.

Engaging the department in these efforts will not be easy. It will require a cultural paradigm shift at all levels of the organization and it will take time, energy and support. It will also require what the authors of the *Community Risk Reduction Planning Report* (Vision 20/20, 2011.) refer to as a Community Risk Reduction "Champion." This is someone who possesses

the “Public Administration skills” and “the skills, knowledge and personality to engage in public education (pg.21).” to plan, facilitate, implement and evaluate these projects effectively.

The proposal that follows will outline a potential model for building and sustaining a long-term Community Risk Reduction program for the Tucson Fire Department.

II. COMMUNITY RISK REDUCTION GOALS AND OBJECTIVES

Goal 1: Identify and articulate Tucson’s fire and injury problem.

Objective 1: Analyze fire and medical data in order to identify trends and issues specific to Tucson.

Objective 2: Survey field personnel both fire and medical to obtain a qualitative perception of Tucson’s fire problem.

Objective 3: Work with IT to create “hot-spot maps” to accurately identify parts of the city most at risk for specific hazards.

Objective 4: Author a report detailing Tucson’s fire and injury problem.

Goal 2: Prioritize the risk in our community and develop a targeted approach to the prevention and mitigation of those risks.

Objective 1: Prioritize Tucson’s risk by both frequency of occurrence and potential for loss.

Objective 2: Identify feasible interventions to prevent and mitigate loss.

Objective 3: Analyze the cost/benefit of potential interventions and strategies.

Objective 4: Define the notion of acceptable risk and determine which potential risks are acceptable.

Objective 4: Create a prioritized list of hazards that could be prevented or mitigated.

Goal 3: Organize, train and develop a volunteer base that can assist with CRR projects.

Objective 1: Recruit and organize a volunteer base that can be utilized for CRR projects.

Objective 2: Develop a process for screening potential volunteers.

Objective 3: Develop a training module to prepare volunteers for CRR projects.

Goal 4: Develop standardized tools, processes, and directives to facilitate and encourage CRR projects department wide.

Objective 1: Develop planning templates and guides to assist field crews in planning CRR projects.

Objective 2: Develop project expectations, timelines, reporting and record keeping templates.

Objective 3: Collaborate with Fire Administration to communicate program goals and expectations to the department.

Goal 5: Increase the capacity and capability of our department to prevent and mitigate risk.

Objective 1: Develop a training program for firefighters to assist them in planning and implementing CRR projects.

Objective 2: Develop CRR program planning tools and resources that can be used at the station level to plan, implement and evaluate CRR projects.

Objective 3: Develop a coaching/facilitation process that can be used to provide station-based, personalized training and technical assistance for planning, implementing and evaluating CRR projects.

Goal 6: Develop working relationships with other agencies committed to safety in the community.

Objective 1: Identify potential partner agencies that may collaboratively assist with CRR projects.

Objective 2: Solidify relationships with existing partners.

Objective 3: Re-engage with other consortiums, coalitions and committees focused on prevention efforts.

Goal 7: Identify and develop sustainable financial support through grants, donations and sponsorships.

Objective 1: Identify potential grants and create a timeline for submitting applications.

Objective 2: Identify and solicit donated funds from charitable organizations.

Objective 3: Identify and solicit potential sponsors willing to provide long-term sustainable support for annual projects.

THE COMMUNITY RISK REDUCTION PROCESS: PLANNING, ACTION & ASSESSMENT

Step 1: Identify Risk

During the initial phase, data is collected and analyzed to identify which fire and life safety risks are most prevalent in the community and where and to whom they are occurring.

Step 2: Prioritize Risk

Once potential risks are identified it is necessary to prioritize which of those risks are most important to address. This includes, weighing the severity of the loss against the probability of it actually occurring. During this phase potential interventions are analyzed for feasibility and the cost v. benefit is considered.

Step 3: Develop Strategies to Prevent and Mitigate Risk

In order to put an effective plan in place best practices must be identified. Vision 20/20 provides many case studies of model programs which have worked in the past.

Conducting a meta-analysis of those case studies should provide a working list of best practices for CRR.

It is also important to identify which of the 5 E's are most appropriate for preventing or mitigating the risk. The 5 E's include: Emergency Response, Education, Engineering, Enforcement, and Economic Incentives. Most often a combination of these strategies is required to adequately address the targeted problem. However correctly identifying the appropriate strategy will ensure that efforts and resources are applied in an efficient and effective manner. Additionally, during this phase it is critical to engage community partners who may provide needed staffing and resources to make the plan viable.

Step 4: Prepare the CRR Plan

During the planning phase strategies are identified to prevent or mitigate a targeted risk and the resources are put in place to make the plan viable. During this phase participants are trained and assistance is provided to organize and manage project activities.

Step 5: Implement the Plan

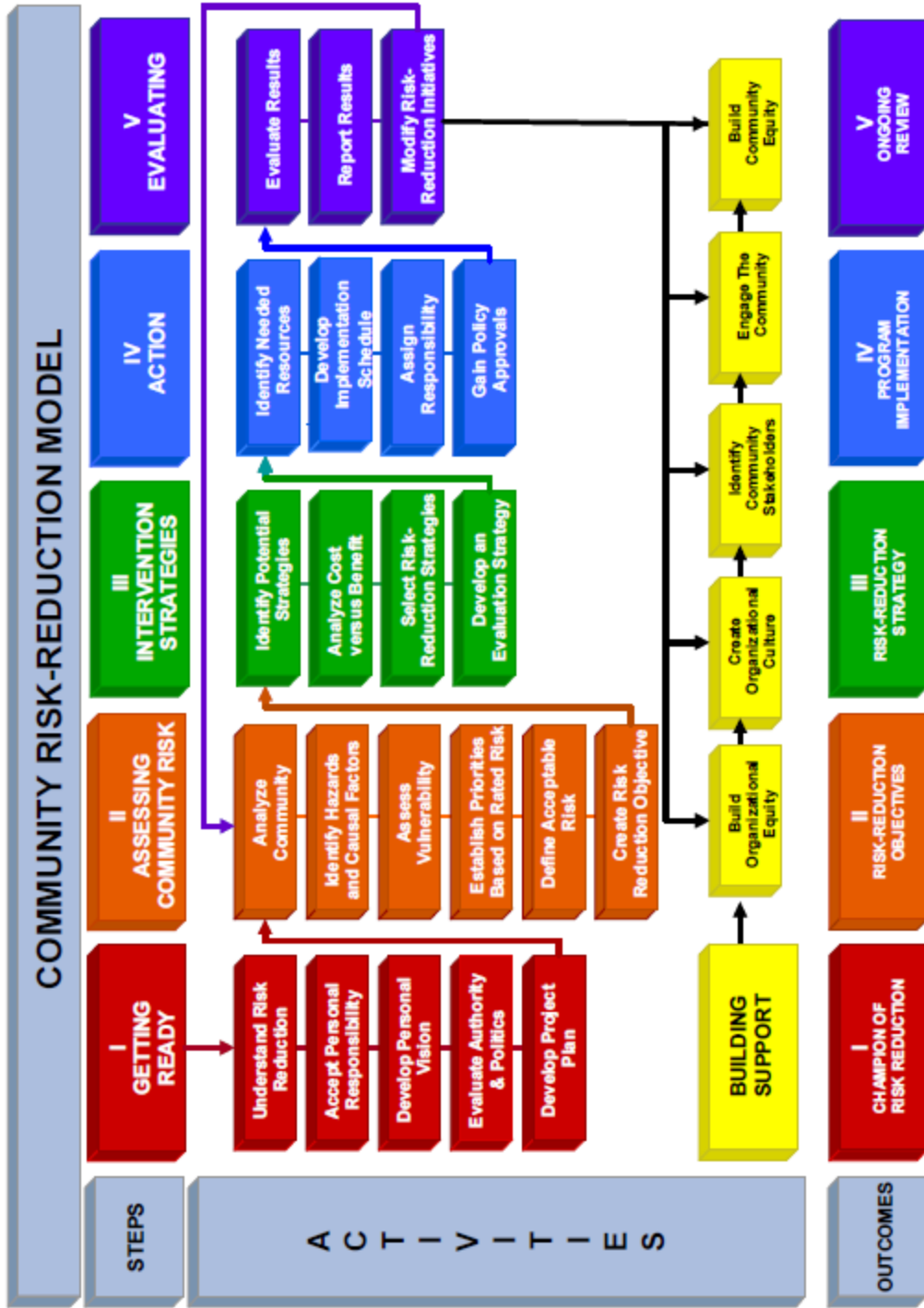
Staff is provided with the tools and support to carry out the planned project and ensure that accountability measures are in place. During this phase technical support may be provided to assist staff with proper implementation. All efforts, resources and outcomes are documented, reported and reviewed.

Step 6: Monitor, Evaluate and Modify

Data is continuously collected to ensure that predetermined goals and metrics have been met. Multiple forms of assessment are put in place including process, impact and

outcome measures to determine the effectiveness of CRR projects both in the short term and over the long-term. Upon conclusion, staff is surveyed to identify which aspects of the project worked best and which required improvement. Program tools, resources and processes should be continuously reviewed and improved to ensure that best practices are being utilized.

The flow chart that follows provides a graphic model of this process and identifies the outcomes that result from each activity.



Executive Analysis of Community Risk Reduction .Vision 20/20. Oct. 2014

THE COMMUNITY RISK REDUCTION PROGRAM

The Tucson Fire Department's Community Risk Reduction Program would originate along three main branches: 1) Station based projects; 2) Department wide initiatives and 3) Prevention based projects.

- 1) **Station based projects** are originated in the field and strive to solve localized issues encountered by fire crews in their day-to-day activities. These projects are facilitated and supported by the Community Risk Reduction Manager who works directly with the fire crews at the station, planning, implementing and evaluating their projects.
- 2) **Department wide initiatives** are directives from Administration intended to solve a community wide issue that is brought to the forefront by a large scale disaster, a spike in a particular fire or injury cause; or concerns from other City leaders. The Community Risk Reduction Manager would be responsible for planning and implementing an intervention designed to prevent or mitigate the targeted risk. The CRR Manager would also work with local partners to pull resources and staff to ensure that the project could be effectively carried out. The CRR Manager would mobilize and train volunteers who would augment the department's ability to carry out the plan.
- 3) **Prevention based initiatives** include projects that are initiated by the Public Education Section, Fire Inspections, Fire Cause or the Public Information Officer. This may include a new education program to target a specific risk in the community, a code enforcement push, a targeted hazard focus, a Youth Fire Setting initiative, or the creation of a public service announcement or a social marketing campaign. The Community Risk Reduction Manager would assist with the creation of program materials, messaging, and logistics to facilitate projects that develop.

PROGRAM STAFFING

Assign a CRR “Champion”

The Vision 20/20 Community Risk Reduction Planning Report (2011) states that for a Community Risk Reduction program to succeed a local “champion” must be assigned to manage the program; and adequate training of firefighters must be provided (pg.9). The report goes on to say that while firefighters are essential for carrying out CRR projects, a manager will often require skills that typical firefighters lack such as: “business and public administration skills”(pg.20) and “skills, knowledge and personality necessary for public education”(Pg.21). It is essential to assign a qualified manager to facilitate CRR projects and train those who will carry them out.

The Community Risk Reduction Manager

The Community Risk Reduction Manager will be responsible for the following tasks:

- Gathering, analyzing, prioritizing and summarizing all relevant data
- Creating the CRR plan
- Identifying fire and life safety concerns, issues and trends that require CRR intervention
- Developing program tools and resources
- Training fire department staff and community volunteers in CRR methods and strategies
- Representing the department on civic boards, safety coalitions and other public safety consortiums dedicated to prevention
- Managing all CRR program efforts
- Providing technical support, coaching and mentoring to support field personnel

- Grant writing and sponsor development
- Managing the Public Education Section
- Collaborating with and supporting the Public Information Officer in social marketing efforts
- Providing Public Education programs and classes to the community
- Recruiting, Organizing, Training and Managing volunteers
- Reporting of Community Risk Reduction efforts

The Role of the Public Safety Education Specialists

The Public Educators will continue to grow their current public education programs and increase participation annually. They will continue to provide support to field crews when requested and will represent the department at community events throughout the year. Additionally, the Public Education Section will continue to provide safety resources and materials to needy families who participate in their education programs. Funding and resources will be continually sought and solicited to meet the demand. The Public Education Section has engaged in Community Risk Reduction efforts for well over a decade. This group will be able to provide technical expertise and facilitate CRR projects that originate in the field.

The Role of Field Personnel

Field personnel will be directly and intimately involved in the CRR process. CRR projects will originate in many cases from the concerns, observations and interactions of field units. As stations begin to think critically about the problems facing their specific service areas they will also begin to develop potential solutions. The crews will be provided with the tools,

resources and support to plan and implement these solutions. As firefighters grow comfortable with the process and as they see the results of their efforts, they will begin to recognize the value of engaging in this work. This will eventually lead those involved to take ownership of CRR projects and will encourage them to invest their time and efforts into these projects. Success breeds success, and the only way to foster a shift in culture is to encourage, support, nurture and reward it.

The Role of Volunteers

Engaging the general public is an important aspect of effective Community Risk Reduction. One way that this can be accomplished is by recruiting and training a volunteer group of citizens that can be utilized to staff outreach events and projects. Volunteers could support department efforts in a number of ways including:

Smoke Alarm Installation Drives – This involves canvassing targeted neighborhoods to check smoke alarms and install them when necessary. During this process volunteers may also provide educational resources and materials to assist homeowners in maintaining a safe environment.

Post Emergency Public Outreach – In the event of a major fire or significant event such as a drowning. Volunteers could canvas the neighborhood in the days following providing safety information to residents. This outreach is intended to raise awareness of a specific hazard when residents are most receptive and concerned about it occurring. The immediate aftermath of a traumatic event provides an opportunity to prevent it from happening to others.

Localized Neighborhood Outreach – Volunteers could organize to target specific issues of concern related to their own neighborhoods. Training and resources could be provided to assist

neighborhood associations, faith-based groups or school groups in carrying out their own Community Risk Reduction projects.

TIME LINE/ 5 YEAR WORK PLAN

Year 1 Focus: Assessment & Development

Risk Assessment	Program Development	Volunteers	Fund Development	Community Partnerships
Review and analyze all relevant data	Develop planning tools and templates	Recruit and organize a volunteer group	Grant search	Identify potential partners
Create GIS Hot Spot Map	Compile Resources	Develop a process for screening volunteers	Apply for grants	Solidify existing partnerships
Conduct field surveys	Literature review and meta-analysis to identify best practices	Train volunteers to carry out CRR projects		Re-engage with other committees, coalitions and consortiums
Create “Data Dashboards”	Develop standardized processes and protocols			
Articulate Tucson’s Fire and Preventable Injury Problem				

Year 2 Focus: Pilot Projects & Development

Pilot Projects	Analyze Results	Program Development	Community Partnerships
Select areas for pilot projects	Review data from pilot projects	Edit and revise program materials and strategies based on results	Incorporate community partners when possible
Prepare fire crews for pilot projects	Conduct focus groups	Edit and revise program tools and templates based on results	Share findings and results with partners
Assist stations in planning pilot projects	Conduct surveys	Make process improvements based on feedback from crews	
Assist stations in implementing pilot projects	Analyze pilot results		
	Report pilot results		

Year 3 Focus: Training & Capacity Building

Training	CRR Projects	Fund Development	Evaluation	Community Partners
Roll out program department wide	Assist stations in identifying risk	Grant search	Collect data from CRR projects	Incorporate community partners when possible
Station based training, coaching and facilitation	Assist planning and implementation	Apply for grants	Analyze data	
	Create a schedule to rotate projects through entire department station by station		Report outcomes	

Year 4 Focus: Full Implementation & Capacity Building

CRR Projects	Fund Development	Evaluation	Community Partnerships
Assist stations in identifying risk	Grant search	Collect data from CRR projects	Incorporate community partners when possible
Assist planning and implementation	Apply for grants	Analyze data	
Work with Battalion Chiefs to refine scheduling processes and work load concerns		Report outcomes	

Year 5 Focus: Full Implementation & Sustainability

Training	CRR Projects	Fund Development	Evaluation	Community Partners
Continue training for new recruits and volunteers	Assist stations in identifying risk	Grant search	Collect data from CRR projects	Incorporate community partners when possible
Station based training, coaching and facilitation	Assist planning and implementation	Apply for grants	Analyze data	
	Work with Battalion Chiefs to refine scheduling processes and work load concerns		Report outcomes	
			Author a 5 year summative report of CRR program processes and outcomes	

NECESSARY RESOURCES AND LIMITATIONS

There are three key resources necessary to successfully begin the Community Risk Reduction process.

- 1) Administrative Commitment and Support
- 2) Adequate Staffing
- 3) Financial Resources

Administrative Commitment and Support

In order to foster a department wide cultural shift from reactive to proactive, buy in and support from everyone in leadership will be essential. This includes everyone from the Fire Chief to the Battalion Chief on each shift. The fire crews involved in the CRR process at any given time will need the space, time and resources to carry out their projects. The BCs will need to understand the potential impacts that these projects will have on the residents living in their districts and also the value that proactivity can have on firefighter preparation and safety.

The hope is that once the individual crews engage in this process, provided with the support and tools necessary to make it a positive and effective experience; they will find value in the outcomes and satisfaction with the success of their efforts. After working through the process with support a few times, eventually their increased comfort level will lead them to seek solutions on their own and to take ownership of the issues they encounter within their area on a regular basis.

It is naïve to believe however that this change in behavior and perspective will happen overnight and simply putting a program in place and requiring compliance does not guarantee

“buy-in”. A cultural shift from reactive to proactive will take a long time and it will most likely cause discomfort and backlash in some cases; patience, perseverance, empathy and support will be required to see this through.

Due to the demands of this process and the time commitment and focus that may be required it may also make sense to excuse the crews involved in CRR from additional prevention duties such as Adopt-A-School and Requests for Service until the conclusion of their project. It may be necessary for BCs to think carefully about the workload distribution within their battalion before assigning a unit to one of these events.

Adequate Staffing

Adequate staffing for CRR projects requires that those involved are trained and supported and that they have the requisite skills to carry out program activities. For this reason ongoing training, coaching and technical support will be required to ensure that those involved have the knowledge and skills necessary to do so.

In order to prepare the department to undertake Community Risk Reduction a qualified manager will need to be assigned. This should be someone who has experience managing outreach programs, training and mentoring staff, interacting with the public and collaborating with other agencies. The Community Risk Reduction manager should also have the ability to communicate effectively and develop usable tools and resources that are understandable and accessible to all.

Financial Resources

Given the current economic environment this may be the most difficult resource to secure. However there are federal grants available through the Department of Homeland Security that could provide enough funding for a multi-year department wide project.

TFD is also currently working with various partners such as the Sonoran Environmental Research Institute and the Arizona Burn Foundation to install smoke alarms in the homes of low-income residents and they solicit funding from philanthropic foundations and corporate donors for public education resources and materials.

As the CRR process begins to gain momentum resources must be available and sustainable to prevent it from burning out. If great ideas and effective plans are unfunded or impossible to implement due to lack of resources, field crews will become discouraged and will no longer want to participate.

This program should have a designated fund to be used for the funding of station based projects and initiatives. It would also make sense to provide each project with a budget limit to protect the integrity of the fund.

CONCLUSION

The Community Risk Reduction process provides an opportunity for communities to work together to take care of one another. Department's that have engaged in the process have seen dramatic results such as significant reductions in fire loss, improved community relations, greater access to hard to reach demographics and more targeted and efficient deployment of precious resources.

The CRR process is a powerful tool for preventing fire and injury, which results in a much safer community, a potential reduction in call volumes and the prevention of firefighter death and injury. The simple process of getting out of the station and connecting with people proactively has the potential to reduce and even eliminate some of the most common and deadly hazards facing our community, such as kitchen fires, smoking fires, electrical fires and drowning. It also provides a process for fire crews to think critically about the challenges they face. It encourages them to consider the potential hazard before the emergency surfaces and it allows them to incorporate concrete data and first hand observation to enhance their ability to solve the problems proactively.

Changing the way people view their work and requiring them to work outside their comfort zone will be a long and difficult process. It will require commitment and patience and it will be uncomfortable and contentious. But it is important for every member of the department to realize that Community Risk Reduction is not a "prevention thing", it is a "department thing". The safety of the community is our job and the 5 E's involve us all. It is important for those working in the field to realize that these efforts not only prevent the preventable but they improve the safety and effectiveness of their emergency response. We all have a responsibility

to the public and each other to prevent and mitigate rather than react and respond whenever possible.

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