

## 2017 FP&S Grant Support Documentation

### Project #1: Smoke Alarm/ Carbon Monoxide Alarms

#### Vulnerability

The first significant vulnerability the Gainesville community must address is the lack of working smoke alarms installed in the homes of the high-risk population, whether related to age, disability or economic status. There are approximately 23,000 single family dwellings within the City of Gainesville. Reports generated through data obtained during emergency responses by Gainesville Fire Rescue for both fire and emergency medical calls indicate numerous single family dwellings lack working smoke alarms. Between 2013- 2015 Gainesville Fire Rescue responded to an average 41 confirmed building fires in single family dwellings. Of those responses, an average of 13 (32%) homes per year were found not to have working smoke alarms. Smoke alarms were either present but did not work, installed so as provide incomplete coverage or nonexistent.

Nearly thirty six percent (35.6%) of Gainesville's population lives below the poverty line, which is 14.7% higher than the national average. Additionally, the Gainesville community is home to a higher than average population that faces an increased fire risk based on several additional characteristics, such as elementary school children under the age of eleven, seniors over the age of 55, college students and a significant foreign immigrant population. Citizens at increased risk due to age represent 17. 5% of the population, with 9.3% (3,692) being of elementary school age between 0-10 years old and 8.2% (3,315) seniors 55 years of age or older. According to the Gallaudet Research Institute, approximately 1.8% of Florida's population is deaf, with 211,049 residents ages 18- 64 being hard of hearing. Working the local school board, Gainesville Fire Rescue has gathered data on the number of hearing impaired children of school age in the community. Currently, there are 20 children enrolled at the local public school designated to serve students with hearing disabilities. Elementary school aged children are a high risk segment of the population for house fire deaths, and having a disability further increases that risk. Gainesville Fire Rescue currently has no resources to provide smoke alarms for citizens with a hearing disability.

Not only does the absence of properly working smoke alarms present a life safety threat to occupants, but delayed notification results in additional fire growth and greater property loss. Historically, fire deaths that occurred in homes without proper smoke alarm coverage account for 60 percent of all home fire deaths. In 2015 alone, Gainesville Fire Rescue received 122 requests for smoke alarms in single family dwellings. The average home requires five smoke alarms to provide full coverage, resulting in an estimated need for 610 smoke alarms. According to the National Fire Protection Association, a working smoke alarm and a family escape plan can increase the chance of survival during a fire dramatically.

As the local utility purveyor, Gainesville Regional Utilities reports they provide natural gas service to 19,300 homes. From 1999–2010 a total of 5,149 deaths from unintentional carbon monoxide poisoning occurred in the United States, which is an average of 430 deaths per year. Annually, Gainesville Fire Rescue responds to an average of fifteen residential carbon monoxide emergency calls. Although Gainesville Fire Rescue discovers many homes in need of carbon monoxide alarms and receives regular requests, to date, resources available to address this need have been very limited. The focus of this program will be to remove all barriers to ensure adequate carbon monoxide alarm coverage for citizens at higher than average risk. Unfortunately, many in our community are either unaware of the dangers their families face without working smoke and carbon monoxide alarms or lack the financial resources. This program will serve to bolster GFR's efforts to fill this critical gap.

The key factor in Gainesville Fire Rescue's ability to maintain an effective smoke alarm and carbon monoxide program is funding needed to secure adequate resources. Frequently Gainesville Fire Rescue's supply of donated smoke alarms is depleted, requiring creative solutions and developing community partnerships with charitable agencies like the North Florida Chapter of the American Red Cross. Often, smoke alarm supplies for both agencies are exhausted, creating a back log of unfulfilled smoke alarm requests. Gainesville Fire Rescue has shown a commitment to the smoke alarm program, but the persistent challenge continues to be adequate funding for supplies. Additional resources will place Gainesville Fire Rescue in a position to address both smoke and carbon monoxide alarm deficiencies discovered during emergency responses, as well as door to door targeted outreach efforts.

### **Evaluation**

Gainesville Fire Rescue will conduct informal pre-event and post-event surveys for educational programs. Gainesville Fire Rescue will compare the number of smoke alarm requests to requests from previous years. Gainesville Fire Rescue will also track alarm installations for 5 years to determine whether homes that have had smoke and CO alarms installed through our program experience emergencies involving fire or CO. If so, GFR will attempt to determine whether either the smoke or CO alarm provided early warning and safe evacuation, resulting in an improved outcome. Gainesville Fire Rescue will also evaluate whether the presence of smoke or CO alarms resulted in an overall decrease in fire injuries or fire deaths.

In support of Project Get Alarmed, Gainesville Fire Rescue firefighters will conduct a brief home safety evaluation with each visit to install required smoke alarms and will provide safety recommendations and education to homeowners. The intent is to facilitate an immediate change in risk behaviors and increase their overall level of safety. Gainesville Fire Rescue's efforts will also be coordinated and supported by American Red Cross staff members. While on site, staff will instruct homeowners on the importance of having a home escape plan and assist with developing or improving their plan.

## **Sustainability**

At the conclusion of the grant period, Gainesville Fire Rescue will continue its commitment to both the smoke alarm and carbon monoxide installation programs. It is hoped this grant will facilitate Gainesville Fire Rescue's efforts to stabilize funding to these programs through either developing community partnerships or achieving a budget increment for supplies and equipment. The duration of coverage for smoke alarms is dictated by their lifespan which is 10 years. The duration of coverage for carbon monoxide alarms is typically 7 years. Based on the number of citizens in need of free smoke alarms and CO alarms in the Gainesville community, Gainesville Fire Rescue is committed to maintaining these programs indefinitely.

## **Implementation Plan**

This program will closely resemble Gainesville Fire Rescue's previous efforts. For more than twelve years Gainesville Fire Rescue has maintained a free smoke alarm installation program, which is entitled, Project Get Alarmed. GFR receives numerous requests for smoke alarms and carbon monoxide alarms from private citizens, community associations, the local utility purveyor, VA Hospital caseworkers, Alachua County Health Department caseworkers and various church groups, for families in need. Requests for smoke alarms appropriate for citizens with hearing disabilities are received from the local community public school designated to educate children with disabilities.

This program is coordinated by Gainesville Fire Rescue's Fire and Life Safety Educator. Emergency response crews are assigned installations scheduled by the Fire and Life Safety Educator. On average 3-5 five smoke alarms are required for each home to ensure complete coverage. Smoke alarms are installed in each sleeping room, in all common areas near the sleeping rooms and at least one on each level. This grant will not only provide the funding needed to revive Gainesville Fire Rescue's smoke alarm program, but will provide the resources needed to create a reliable carbon monoxide alarm program. Previous attempts to address citizen requests for carbon monoxide alarms have been very inconsistent due to funding and resources. Resources provided by this grant will provide carbon monoxide alarms for the homes of low income residents that utilize fossil fueled appliances, such as natural gas or LP gas, or with an attached garage. Carbon monoxide alarms will be installed outside of each sleeping area and on every occupiable level. During all home visits to install smoke alarms and carbon monoxide alarms, Gainesville Fire Rescue will conduct an enhanced home fire safety survey and make recommendations to address other fire and life safety concerns discovered.

Based on the average number of requests received during each of the previous three years, the supply of alarms requested is sufficient to fulfill program needs for one year. On average Gainesville Fire Rescue receives 122 smoke alarm requests annually, and a typical home requires five alarms, which equates to 610 smoke alarms needed per year to sustain our program. In preparation for this grant application, Gainesville Fire Rescue reached out to the local public school that serves children with disabilities. After reviewing previous requests and

data received from the school board, Gainesville Fire Rescue projects 20 smoke alarms with ADA hearing strobes and 20 bed shakers will be needed to address the needs of hearing impaired citizens in the community. Evaluating previous requests and working the local utility purveyor, Gainesville Fire Rescue anticipates 120 carbon monoxide alarms requests within the next year. An average home requires two alarms, which equals a total of 240 alarms.

Target populations for the smoke alarm program include low income homes with young children, senior citizens and people with disabilities. The target populations for carbon monoxide alarms will be low income residents whose homes are equipped with gas appliances, fire places or an attached garage. The importance of smoke alarm and carbon monoxide alarm protection is discussed during all fire and life safety education presentations. Currently, GFR conducts averages over 300 public education events per year, educating over 20,000 citizens.

### **Cost Benefit**

All funding requested will be utilized to acquire the equipment and supplies that will be delivered to citizens in our community. Gainesville Fire Rescue is prepared to incur all personnel and labor costs for delivering the program. No administrative costs are requested. Based on data obtained from Gainesville Fire Rescue records, this grant will safeguard high risk populations in our community by protecting at least 122 homes with smoke alarms and 120 homes with carbon monoxide alarms. Traditional smoke alarms cost an average of \$100 per home. The cost for Gainesville Fire Rescue to respond to a single residential house fire is \$3,794.50. The mean cost of a burn injury requiring a hospital stay in 2004 was \$17,300. The real value of an effective community smoke alarm program is measured in lives saved, which provides value to the community that far exceeds any figure quantified in dollars.

The cost of installing carbon monoxide alarms averages \$54 per home. The economic value of Gainesville Fire Rescue's response to a residential carbon monoxide emergency without injuries is \$758.90. GFR's response to a residential carbon monoxide emergency with injuries is \$1,517.80. The mean hospital cost per admission for CO poisoning in 2007 was \$15,769. As with smoke alarms, the true value of carbon monoxide alarm protection is measured in lives saved, which provides value to the community that far exceeds any figure quantified in dollars.

### **Financial Need**

Gainesville Fire Rescue's Project Get Alarmed smoke alarm program has never benefited from a dedicated funding source and has relied solely on donations from private organizations and businesses. Consequently, the program has seldom met community needs and most often lacked necessary resources. In 2014 Gainesville Fire Rescue received a Florida State Fire Marshal's Office grant that supplied smoke alarms intended to meet the needs of senior citizens only. Gainesville Fire Rescue successfully utilized resources provided by this program to

install 250 alarms in 9 months. GFR's smoke alarm supplies have been exhausted for the last two years.

### **Grant Project Budgets**

#### Traditional SA

Last year's requests-122 homes

Average Amount of Alarms per House- 5

Total Alarm Requests- 610

Cost per Alarm- Approx. \$20

Total Cost- \$12,200

#### Deaf, Hard of Hearing, Blind SA

Students at Sydney Lanier- 20

Plug in ADA Strobe with Battery Backup (T3)- \$140

Bed Shaker- \$150

Total Cost- \$5,800

#### Provide Homes with Gas- 120

Average amount of alarms per home- 2

Total alarm requests- 240

Cost per alarm- \$27

Total Cost- \$ 6,480

## **Project #2: Inflatable Fire Safety House**

### **Vulnerability**

Another serious vulnerability our community faces is the reality that most families have not developed a home escape plan. Gainesville Fire Rescue has identified this deficiency by

interviewing and surveying public education event participants. During fire and life safety education presentations members of Gainesville Fire Rescue ask participants of all ages whether their family has a home escape plan. Results are clear that most families have either not considered or followed through with this life saving activity. Additionally, home safety surveys conducted by Gainesville Fire Rescue and the Florida Chapter of the American Red Cross while installing smoke alarms in fifty-four homes in 2015 also confirmed that very few homeowners had developed a home escape plan. According to NFPA statistic, only one of every three homes have developed and practiced a home escape plan. Although 71% of Americans claim to have developed a home escape plan, only 47% have practiced it. One-third of American households surveyed believed they would have at least 6 minutes before a fire in their home would become life-threatening. The time available is much less. Only 8% of those surveyed said their first thought upon hearing a smoke alarm would be to get out!

A portable fire safety house will serve as the centerpiece to an effective public educational program designed to raise community awareness and educate citizens about the need to develop and practice a home escape plan. The most vulnerable people in the community, including elementary aged children, stand to benefit most. The Gainesville community is home to over 6,000 elementary school aged children, many of whom live below the poverty line. The inflatable safety house's portability will allow it to be taken to various public education events throughout the community, to provide an interactive experience at schools and special events of all sizes. This program will help Gainesville Fire Rescue demonstrate the need for developing a home escape plan and provide a venue to assist citizens with developing and practicing their plan. GFR has previously utilized a fire safety trailer in a similar manner to address this concern. However, once the trailer reached the end of its lifespan and was no longer safe, it had to be removed from service and surplused. Due to financial constraints faced by the City's, previous Capital Improvement Requests have gone unfulfilled.

### **Evaluation**

When utilizing the inflatable fire safety house Gainesville Fire Rescue will invite participants to complete a short pre-lesson survey. Next, the fire and life safety program will be presented. Participants will then be asked to complete a short post-lesson survey. After exiting the home, Gainesville Fire Rescue will provide a station for participants to develop a preliminary home escape plan with staff assistance.

After one to two months, school aged children who attended Safety City for an inflatable safety house event, or through a school based program, will participate in post-event survey to evaluate their retention of educational messages. Attendees who participate in inflatable safety house programs during community events will also be contacted by email to complete a survey. Gainesville Fire Rescue will track residential building fire incidents for 5 years to evaluate whether residents previously participated in a Home Fire Safety Program utilizing the inflatable

safety house. If so, we will ask them to complete a brief survey to measure whether their successful evacuation was attributed to or influenced by Gainesville Fire Rescue's program.

### **Sustainability**

Based on the manufacturer's statements related to longevity, GFR expects to continue using the inflatable fire safety house for five to seven years, well after the grant period ends. The fire safety house provides a life size interactive tool for learning that has proven valuable for any age. Considering the inflatable fire safety house does not have an inflatable floor that will receive significant wear and tear from foot traffic, so long as it is well taken care of, the house should last at least ten years. Based on 10 years of use and serving at least 20,000 citizens per year, the life safety house is expected to educate at least 200,000 citizens.

### **Implementation Plan**

The inflatable fire safety house will serve as the focal point of Gainesville Fire Rescue's overall fire safety education programming. This equipment will facilitate a greater emphasis on home evacuation plan development and practice. The inflatable safety house is very portable and can be deployed for even small events by Gainesville Fire Rescue's sole Fire and Life Safety Educator. During large community events, such as our annual Touch-A-Truck event (average attendance of 4,500+), Gainesville Fire Rescue will assign emergency response crews to assist with delivering lessons and helping citizens develop and practice home escape plans. The fire safety house is also designed with an interchangeable message board, which will be utilized to deliver messages adapted to the needs of individual audiences. Finally, the fire safety house will be utilized to enhance programming delivered inside of Gainesville Fire Rescue's Safety City facility, which hosts an average of 25 events each year, with over 1,200 attendees.

Additionally, the proposed fire safety house is an all abilities teaching tool, which will allow Gainesville Fire Rescue to develop programs tailored to reach citizens with disabilities, including children, adults and seniors. The safety house will be utilized to simulate conditions in the home during normal conditions, which will then be compared to the same environment after it is filled with smoke to simulate fire conditions. Program attendees will learn about many home fire safety practices, will have opportunities to develop and practice home escape drills and will receive numerous educational materials designed to be taken home to reinforce safety messages.

### **Cost Benefit**

All funding requested will be utilized to acquire the equipment and supplies that will be delivered to citizens in our community. Gainesville Fire Rescue is prepared to incur all personnel and labor costs for delivering the program. No administrative costs are requested. The inflatable safety house will be utilized to augment numerous Gainesville Fire Rescue safety messages and programs, with a primary focus on home emergency planning development and practice. Utilization of an inflatable fire safety house is anticipated to not only improve public education program effectiveness, but will likely result in additional community contacts.

Gainesville Fire Rescue's public education program averages over 20,000 local citizen contacts per year. The anticipated cost of the inflatable fire safety house is \$23,920 (before shipping). Based on previous educational program performance, which is conservative, the average cost per contact is \$1.19. If as expected this equipment leads to an increase in the number of citizen contacts, the cost per contact will decrease further. The true value of this program is measured in lives saved, which provides value to the community that far exceeds any figure quantified in dollars.

### **Financial Need**

Gainesville Fire Rescue's Risk Reduction Bureau has made several attempts to obtain the necessary equipment, such as fire safety trailer or building, for conducting interactive public education presentations on home escape plans. However, due to budgetary constraints, all attempts have proven unsuccessful. The current annual budget for all materials and supplies for community outreach and education is \$7,800. We consistently educate over 20,000 citizens a year. This provides less than \$0.40 per citizen educated for materials and supplies. Additional funding will be utilized to not only improve GFR's ability to address community needs for home escape planning, but to broaden the program's reach.

### **Grant Project Budgets**

Fire Safety House (with interchangeable wall safety graphics, custom wrapped trailer, generator, and dolly) = \$ 20,925

Inflatable Firefighter Costume= \$2,995

Total Cost- \$23,920 (before shipping)

## **Project #3: Residential Fire Sprinkler Initiative**

### **Vulnerability**

Currently in our community residential fire sprinkler systems are not commonly offered or endorsed as an option for newly built single family homes or during remodels. Gainesville Building Department records show that only six permits have been issued since 2010 to install fire sprinkler systems in single family dwellings. Such a low number of requests demonstrate a distinct lack of community awareness for the lifesaving benefits of fire sprinkler protection. In anticipation of an emerging industry movement toward more stringent fire and building code requirements mandating fire sprinklers for an ever growing list of occupancies, Gainesville Fire Rescue has spoken about the benefits of fire sprinklers to many community groups. Efforts are often met with resistance and misinformation about the perils presented by fire sprinkler protection. Not only are citizens unaware of the value home fire sprinklers provide, but many local Contractors, Developers and public officials appear to be unconvinced the benefits



outweigh the costs. We have come to understand there is limited support for home fire sprinkler protection outside of Gainesville Fire Rescue, due to many unwarranted myths and concerns. Gainesville Fire Rescue has received reports from citizens that their inquiries about installing a home fire sprinkler system in new single family homes have been met with resistance from Contractors and Developers.

As evidenced by the requirement for one and two family dwellings to be protected by a fire sprinkler system in NFPA 101 since the 2006 edition, it is widely accepted in that fire sprinkler systems save lives. However, the state of Florida has removed the mandatory fire sprinkler requirement from all editions of NFPA 101 adopted by the Florida Fire Prevention Code. This program intends to increase residential sprinkler awareness by utilizing all fire department and City resources to conduct a home fire sprinkler campaign. All opportunities to conduct community outreach, including public education events, special events, community association meetings and professional association meetings will be utilized. The goal is to increase the frequency consumers request fire sprinkler systems in newly constructed single family homes. Over time, as new homes are built, Gainesville Fire Rescue anticipates a dramatic increase in fire sprinkler protection provided in single family dwellings.

### **Evaluation**

Prior to launching the Home Fire Sprinkler Initiative Gainesville Fire Rescue will utilize social media platforms to conduct polls to identify the level of community awareness about the benefits of home fire sprinklers. The goal is to identify and gain an understanding of what people already know about fire sprinklers, any concerns people might have, as well as any commonly accepted myths. GFR will reach out to local home builders, general contractors, plumbers and fire sprinkler contactors attempting to cultivate an understanding of the benefits of home fire sprinklers and to measure the frequency homebuyers inquire about installing home fire sprinklers.

Once home fire sprinkler lessons are delivered, pre-event and post event surveys will be compared. Survey results will be utilized to measure the effectiveness of programs and to uncover areas in need of improvement.

At the conclusion of the Home Fire Sprinkler Initiative Gainesville Fire Rescue will collect data to determine whether efforts result in an increase in the number of homebuyers who either seek information about home fire sprinklers or install a system. Gainesville Fire Rescue will research City of Gainesville Building Department records to determine how many residential sprinkler system permits have been requested.

### **Sustainability**

The City of Gainesville and Gainesville Fire Rescue are committed to advocating home fire sprinklers in our community. Our commitment was reinforced by the City Commission

approving a \$25,000 increment for conducting a community home fire sprinkler economic impact study. The goal of the economic impact study portion of the fire sprinkler initiative is to identify all potential incentives available locally to absorb the full cost of installing a home fire sprinkler system in newly constructed single family dwellings. This grant will help Gainesville Fire Rescue utilize findings included in the final report to raise community awareness about home fire sprinklers. Once a system is installed, with minimum maintenance, a home fire sprinkler system provides protection for the life of the home. While the funding for marketing obtained is of limited duration (1 year), Gainesville Fire Rescue's commitment to education and outreach involving home fire sprinklers will continue as long as there is a community need. The lesson plans designed and developed during the grant period will be utilized during education and awareness programs well into the future. Community partnerships created with fire sprinkler contractors, general contractors, local developers, the real estate community, civic organizations, and citizen groups/community associations during the home fire sprinkler initiative will be maintained for many years to come. Literature, such as flyers and brochures developed and distributed during the grant period, will be used for future public education and awareness activities as well.

### **Implementation Plan**

Gainesville Fire Rescue is currently conducting an Economic Impact study to explore all local opportunities or potential opportunities available to homeowners for recouping the costs of installing home fire sprinklers in newly constructed single family dwellings. Since our last grant submittal, the City of Gainesville has demonstrated support for a Home fire Sprinkler Campaign by approving a budget increment of \$25,000 to conduct the Economic Impact Study. Step two of the Home Fire Sprinkler Campaign will be to conduct a comprehensive public outreach and education program, which is the portion of the program currently lacking adequate resources. This effort will employ resources and support from not only the fire department but the entire city. The first priority and effort will be directed to recruit support from city officials and leadership, outside Gainesville Fire Rescue, by presenting data and information pertaining to the lifesaving benefits of home fire sprinklers. Gainesville Fire Rescue emergency responders will also be educated on the benefits of home fire sprinklers and recruited to exploit all opportunities to deliver messages and literature. Fire Inspectors will deliver messages about home fire sprinklers during inspections. A grant will help Gainesville Fire Rescue design and purchase professional products that are most effective for marketing the campaign. The first 2-3 months will be utilized to design and develop programming and products needed to deliver the effective messages to the intended audience. The Economic Impact Study will be completed by the end of phase one. Home fire sprinkler messages will be incorporated into all appropriate public education events. Commercials will be broadcast on the City's local government access channel, as well as on local network channels. Gainesville Fire Rescue will develop lesson plans and PowerPoint presentations to be used by all department personnel. Ads will also be delivered using social media and local radio stations.

The goal of the Home Fire Sprinkler Initiative will be reach all citizens, resulting in an increase in requests for home fire sprinkler systems in new homes and less resistance from local home

builders, general contractors, as well as subcontractors, such as plumbers. Ideally, owners of existing homes will also consider installing a fire sprinkler system.

### **Cost Benefit**

Funding requested for a community Home Fire Sprinkler Initiative will be utilized to acquire the resources needed to deliver messages about the benefits of home fire sprinklers utilizing all methods of communication available. Current Gainesville Fire Rescue employees will be utilized to manage efforts and deliver safety messages. GFR will incur all personnel and labor costs for delivering the program.

The estimated cost of the home fire sprinkler initiative is \$29,350. Based on previous education program performance, which is conservative, the average cost per person is \$1.47. If as expected a full department commitment leads to a dramatic increase in the number of citizen contacts, the cost per person will plummet.

As evidenced by several recent economic impact studies, the value of a home fire sprinkler system can be assigned a dollar figure. Although the studies for communities in Florida have successfully expressed the benefit in dollars, but in reality, the value of injuries prevented and lives saved is incalculable. The first study conducted by Newport Partner LLC determined the economic impact of a home fire sprinkler system in Cape Coral Florida is \$6,237 per home. A second study completed by CCM Economics LLC on the economic impact of home fire sprinklers for Estero Florida estimates the average value to be \$9,301 per home. Both studies considered and attempted to quantify the value home fire sprinklers offer to a communities and families, but the greatest benefit is the saving of lives.

### **Financial Need**

Gainesville Fire Rescue has endeavored to conduct a home fire sprinkler initiative for the last 2-3 years, but has experienced difficulty obtaining the necessary resources and funding. In October of 2015 the City Commission showed a commitment to Gainesville Fire Rescue's effort and community needs by approving a budget increment of \$25,000 dollars for an economic impact study. Although the commitment of the City Commission should be recognized, as evidenced by costs associated with this grant application, \$25,000 falls well short of the funding needed to engineer a comprehensive home fire sprinkler campaign. If Gainesville Fire Rescue's grant application is selected, the increased funding will greatly improve our efforts and chances of success.

### **Grant Project Budgets**

Social Media Boosted Posts (1 yr. and estimated 65,000 reach) - \$10,000

Radio (100 spots) - \$1050

170810

Printed Brochures (FedEx- 1,000) - \$1,200

2 sided Aluminum Signs with metal frames (FedEx- 8 @\$ 101.99) - \$900

Vendor spot at the North Florida Home Show- \$750

Custom Bean Bag Educational Game for events- \$450

TV Ads-\$15,000

Total Cost- \$29,350

**Total Grant Request- \$77,750**

**Cities 5% Match- \$3,887.50**