**FY 2008 Assistance to Firefighters Grant Program Fire Prevention And Safety Grant**

**FINAL REPORT**

Integrated Risk Management/

Home Safety Visits – 5 City Experience

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State of Washington, but also nationally.

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# executive summary

Five cities with wide geographic distribution tested the concept of integrated risk management (IRM), with a focus on making visits to high risk homes. The visits were made by two- person teams usually consisting of two line firefighters, two people from the community, or one firefighter and one volunteer. Some prevention bureau personnel also were used, but most of the implementation was by other personnel, which was one of the aspects to be tested in this project.

The core of each home visit consisted of testing each smoke alarm in the home, and installing new ones as needed to bring the homes up to code. In a few cases batteries were changed. The visiting team also provided one on one safety education to the household, and left safety materials. They also documented the results of the visit, including background information on the nature of the home and demographics on its occupants, which helped indicate its risk level.

This effort was funded by a grant to the Washington State Fire Marshals Association, by the FEMA Assistance to Firefighters Grant program (AFG). WASFM coordinated and guided the project, and supplied grant-funded smoke alarms and some additional resources to each participating city.

The participating cities were Vancouver, Washington; Portland, Oregon; Dallas, Texas; Wilmington, North Carolina; and Tucson, Arizona. In each city except Portland, the vast majority of smoke alarms were installed by a project team. In Portland, the same approach was started, but the fire department had to switch modes to giving the smoke alarms to households to install themselves because of labor and logistical issues.

In round numbers, the number of smoke alarms available to the cities for this project was as follows:

Dallas 2,500

Portland 4,500

Tucson 2,800

Vancouver 1,000

Wilmington 1,500 (+100 from other sources)

**Total 12,300 (+100)**

The sections and table below summarize the key results, based on the data collected on each household visited and information provided by the cities. The data generally was excellent, and the results below are a good indication of what was accomplished. There were some smoke alarms kept in reserve by each city for additional calls and follow-ups; some smoke alarms were defective; and a small fraction of the visits were not documented or had blanks in some data fields. There also were a few hundred smoke alarms installed and documented, but after the grant period closed and the data analysis was completed. Thus the total number of smoke alarms documented as given to households and analyzed here, about 11,560 is slightly less than the number purchased through the grant, and slightly less than the number distributed. But detailed data was provided on the vast majority of the alarms, and we believe the picture painted of the high risk households and the overall study is highly accurate.

## Homes Targeted

Each city was supposed to identify individual homes or areas of homes that were considered of higher than average fire safety risk. They were highly successful in their choices. Three of the cities focused on single family dwellings; one focused on mobile homes; and one focused about half and half on houses and mobile homes. “Multi-family dwellings were not generally targeted because the local laws required smoke alarms to be provided by the landlord – however some flexibility was available for smoke alarm installations in these occupancies.”

About two-thirds of the homes approached were entered. People not at home and people who did not want to be bothered were the main reasons for non-entry. Some cities had almost 100% entry success because they responded to requests for visits. Over 7500 people lived in the slightly under 2600 homes visited by the project. Over two-thirds of the homes visited had at least one demographic high risk factor (children under 5, elderly, smokers, people with disabilities), and the majority of the homes were occupied by minorities.

## Situation Found

Perhaps the most important indicator that the right homes were selected, and the most important reason for making home visits, was that an astonishing **51% of the homes visited had no working smoke alarm—not a single one.** And of the alarms present in the homes, over a third (35%) were not working. Almost two-thirds of the homes admitted they had no escape plan.

## Actions Taken

Over 7,600 smoke alarms were actually installed in the homes, an average of just under 3 per home visited. Portland distributed an additional 2,400 for self-installation. The total number of smoke alarms given out and documented was over 11,560. Last minute data entry and tracking issues account for the difference between that number and the 12,300 provided to all jurisdictions.

At least 95% of the homes were instructed on the testing and maintenance of alarms, and escape planning. About 86% received written material on alarm testing and escape planning, and about an equal number received written safety material.

## Results

Ninety-eight (98%) percent of the homes visited had at least one working smoke alarms at the conclusion of the visits. There were an average of almost 4 working smoke alarms per home. At least 94% of the homes met code on completion of the visits, and most of the others were informed as to what additional alarms would be needed to meet code.

## Changes in Approaches to Prevention

This project promoted the strategy of getting more firefighters involved in prevention, especially in making home fire safety visits. This is one of the prevention concepts that are proving most effective in other nations, notably the UK, Canada, Australia, and New Zealand. Getting the line firefighters more involved in prevention allows many more of the needy homes to be reached than is possible with just prevention bureau personnel. In a time with tight municipal budgets, this program demonstrates a way that the fire service can deliver more value for money.

Another feature of this project was getting the cities to use data for targeting the households that were high risk, and thinking in terms of integrated risk management. They used statistics on fire incidence s and risk demographics to identify high risk homes, and further identified some by asking the public to self-identify them, and call the fire department for assistance, or come to a station for free smoke alarms (Portland).

The body of the report describes the approach used by each city, and the variety of approaches by which the basic concepts can be implemented. There are many ways of moving toward the goal of having all homes with working smoke alarms in adequate numbers and locations; this report demonstrated multiple ways it can be done. Several of the cities used more than one approach.

Other communities hopefully can learn from this experience, and make adaptations to fit their own environments but reach the same end of making homes safer from fire.

Table 1: Smoke Alarm Visit Results from Homes Entered

|  | **Dallas** | **Portland** | **Tucson** | **Vancouver** | **Wilmington** | **Total** |
| --- | --- | --- | --- | --- | --- | --- |
| **HOMES VISITED** |  |  |  |  |  |  |
| Number visited/entered | 1,025 / 1,025 | 105 / 93 | 564 / 564 | 784 / 436 | 1,389 / 570 | **3,867 / 2,688** |
| Leading type of home visited | House (97%) | House (80%) | House (51%); mobile home (44%) | Mobile Home (99%) | House (74%) | **–** |
| Number of people living in the homes visited | 2,965 | 262 | 2,191 | 762 | 1,367 | **7,547** |
| Percent of homes with at least one risk factor (elderly, young children, smokers, disabilities) | 71% | 77% | 65% | 79% | 62% | **69%** |
| Leading ethnic group in homes visited (percent of homes) | African American (62%) | White  (66%) | Hispanic/ Latino (99%) | White  (76%) | African American (42%) | **–** |
| **SITUATION FOUND** |  |  |  |  |  |  |
| Percent of homes with no working smoke alarm | 56% | 30% | 78% | 17% | 42% | **51%** |
| Percent of smoke alarms not working | 44% | 29% | 37% | 17% | 35% | **35%** |
| Percent of homes with no fire escape plan | 64% | 86% | 97% | 40% | 40% | **63%** |
| **ACTIONS TAKEN** |  |  |  |  |  |  |
| Total number of smoke alarms installed | 2,500 | 280+ | 2,490+ | 985+ | 1,351+ | **7,606+** |
| Average number of smoke alarms installed per home | 2.4 | 3.0 | 4.4 | 2.1 | 2.4 | **2.8** |
| Percent of homes given one-on-one instruction on maintaining smoke alarms | 100% | 100% | 100% | 99% | 76% | **95%** |
| Percent of homes given written safety materials (escape planning / general home safety) | 93% / 93% | 99% / 99% | 100% / 100% | 99% / 99% | 49% / 48% | **86% / 86%** |
| **RESULTS AFTER THE VISITS** | |  |  |  |  |  |
| Percent of homes with at least one working smoke alarm | 100% | 100% | 100% | 100% | 91+% | **98%** |
| Average number of working smoke alarms per home | 3.7 | 4.6 | 4.8 | 3.8 | 3.3 | **3.9** |
| Percent of homes meeting code for alarms | 100% | 99% | 100% | 100% | 75% | **94%** |
|  | | | | | | |

# I. INTRODUCTION

This report describes how a group of five cities implemented an integrated risk management (IRM) program which featured home visits for smoke alarm testing and installation. The program was supported by a grant from the FEMA Assistance to Firefighters Grant (AFG) program.

The purpose of the program was to demonstrate how an innovative approach that had been used in several other nations to reduce residential fire deaths and injuries could be adapted to U.S. fire departments. This was a pioneering effort in several ways, though not the first program of its kind in the U.S. It was coordinated by the Washington State Association of Fire Marshals (WSAFM).

## Background

A series of research reports on international best practices in residential fire prevention was funded by the FEMA AFG program in 2006–2009.[[1]](#footnote-2) The research was undertaken by the Centers for Disease Prevention and Control (CDC) Division of Injury Prevention, and the TriData Division of System Planning Corporation.

The very best practice found to significantly reduce fire deaths and injuries was an IRM approach which started with identification of areas and individual households at highest risk from fire, and continued with home visits to test smoke alarms and install new ones where needed, and in the process do some one-on-one safety education in the household. When implemented on a citywide scale, these programs often reduced fire deaths by as much as 40–60 percent, such as in Liverpool, England; Ottawa, Ontario; and Longueil, Quebec. These cities started with fire death rates lower than their counterparts in the U.S. Making further dramatic reductions was difficult, and so their approaches are therefore even more noteworthy to consider.

A key concept in IRM is for fire stations to help plan and implement the prevention program in their area. Households in the highest risk areas are the first visited, usually by line firefighters and/or volunteers from the community to test and, where needed, install new smoke alarms. While visiting households, firefighters provided safety education verbally and with written materials left behind. In some cases, smoke alarms are given to the households to install themselves.

About the same time this international research was being undertaken, Vision 20/20 came to life. It is a grassroots effort to develop a national fire prevention strategy. The current project fit well with the Vision 20/20 goals to help demonstrate and disseminate effective strategies for prevention.

## Project Concept

The WSAFM project was intended to implement and demonstrate a similar IRM approach to that proven successful in other nations, with adaptations to U.S. fire departments and their varied environments. The WSAFM applied to AFG for a 2008 grant to test the concept in three cities: Vancouver, WA; Portland, OR (which is across the river from Vancouver); and Dallas, TX. Dallas had been undertaking a similar project on a partial scale, in concert with CDC, and was selected in part to build on a successful program and in part to act as an advisor and exemplar for the other communities new to the process. We also wanted to use the home visit questionnaire developed in Dallas.

WSAFM was awarded the grant on September 9, 2009. It was originally to end August 27, 2010, but was extended six months, to February 27, 2011.The project budget was $516,965, with the majority of the money going to buy smoke alarms. After winning the grant, funds were reallocated with AFG approval to widen the project to include two more communities: Tucson, AZ and Wilmington, NC.

Basic Idea ***—*** The core of this project was the identification of individual high risk households or groups of such households by each participating city, followed by visits to these households. On the visit, which usually was made by a two-person team of fire department representatives, the smoke alarms were tested and new ones installed as needed to meet code. In some cases the smoke alarms were given to the household to install by itself. The two-person team discussed fire and injury prevention advice with the household, and provided safety brochures or other written material. The team making the visits was drawn from line firefighters, prevention personnel, and community volunteers. We discuss later how each participating city chose to implement the project.

Project Management –The fire marshal of Vancouver, Jim Crawford, who also had previously served as fire marshal of Portland, was designated project manager by WSAFM.[[2]](#footnote-3) Mr. Crawford was a founder and project manager of Vision 20/20. Philip Schaenman, lead researcher of the global best practices research on which the project was based, was asked to assist in advising the WSAFM project and evaluating its results. Mr. Schaenman also is a member of the Vision 20/20 steering committee. Mr. Crawford and Mr. Schaenman were able to serve as bridge between those projects. CDC, which had participated in the international research and also had conducted its own home smoke alarm program for several years, agreed to advise the project. So this project management and advisory team fit together nicely.

Goals – A critical goal of the project was to demonstrate how the IRM concept could be adapted in a variety of U.S. fire department environments. There are many ways to implement the basic IRM concepts of finding high risk households, bringing their smoke alarm system up to code, reviewing with them what to do when the alarms goes off, and imparting other safety information, one-to-one. This report describes how the concept was implemented in five cities, using a variety of approaches.

A second goal was to explore station-based risk management, and use of line firefighters in implementing a major prevention program directed at home fire safety. The project was more successful in meeting this goal in some the test cities than others. In some cities, unions balked at full participation without extra compensation or a quid pro quo.

The participating cities had the opportunity to comment on every aspect of the project as it proceeded. Each had leeway in how they implemented the concept so long as the core of the project was maintained: installation of the grant-purchased smoke alarms in high risk households, and the collection of data on the visits.

## Evaluation Concept

The AFG program requires that all of its grantees have a plan to evaluate the outcomes of the funded project. In fact, such a plan must be part of the grant application. In addition, AFG funded CDC to provide guidance on evaluating the collective results of the AFG program.

The evaluation concept for this project was initially formulated by TriData in the grant application. It was further developed with feedback from the participating cities and a subcommittee formed by WSAFM that included CDC and University of Washington evaluation specialists.

The basic evaluation concept was to measure changes wrought by the project in the household safety environment, safety education outreach, and ultimately the bottom line of fires, deaths and injuries. The results were to be evaluated in light of the relative risks of the households visited. Also to be evaluated was whether the project helped stimulate any changes in the fire department’s approach toprevention, especially the role of the line firefighters.

Changes to Physical Household Safety Environment – The principal aspect measured was the pre- and post-visit status of the system of smoke alarms in the residences visited. Smoke alarms repeatedly have been proven to significantly improve fire safety over the past 30 years, in particular the death rate from residential fires. If the household has an adequate set of working smoke alarms, and knowledge of what to do if the alarm sounds, it is fair to assume it will be safer than it is without a set of smoke alarms that meet modern codes.

Changes in Safety Information (Knowledge) – The fire safety information delivered verbally and with written materials was reported for each household visit. Also reported were some risk factors of the household, including the number of smokers, children, elderly, and people with disabilities. Also recorded was whether the household previously had practiced an escape plan. We did not measure retention or comprehension of the safety information, but the one-on-one nature of the presentation, including the ability of the household members to ask questions on the spot, was presumed to improve comprehension. At the minimum, we could measure delivery of the information.

Home Visit Questionnaire **–** To collect data on the status of smoke alarms and the other data desired about each household visited, the project developed a questionnaire which was to be filled out by the team visiting the household. The data was then put into either an Access data base or Excel spreadsheet by the city, and forwarded to TriData for analysis. The questionnaire and instructions for completing it may be found in the appendix. The starting point for developing the questionnaire was the form used by the City of Dallas in its previous CDC smoke alarm installation program. The Dallas form was slightly revised for this project. Some communities made their own further slight revisions. Each community added a liability release for the household to sign.

Outcomes **–** The ideal outcome measures for a project such as this are the changes in fires, deaths, injuries and dollar loss that resulted from the physical changes made in the household environment (more working smoke alarms) and the provision of safety education to the household. Ideally these effectiveness measures would be computed over time for the households or areas visited—that is, what were the fire rates, deaths injuries and dollar loss before and after the visits. Another desirable measure is to compare results for similar households not visited in the same city or other cities.

It would also be desirable to see if there were changes to the fire experience of the area of the city not targeted. Sometimes a program has a global effect beyond the households visited. For example, publicity about the program may raise safety awareness and cause some households not visited to test their smoke alarms, maintain their smoke alarms, get new ones or otherwise improve their safety.

It was understood from the outset that because the number of smoke alarms that could be funded by the project was about 11,000, installed in 2500-5000 households, and the short time between completion of installations and the end of the project, it was unlikely to be able to show much impact on deaths, injuries and dollar loss during the grant period. (The national residential fire rate is a little over one fire per thousand resident, so one might expect only two or so reported fires in 5000 households in the one or two months at the end of the grant period after all smoke alarms are installed. This is obviously not long enough to see a change in outcomes. However, all of the participating cities agreed to continue to monitor the effects of this project beyond the grant period, and they collected some of the baseline data to do so.

The international programs that gave impetus to this effort typically had the goal of visiting half to all of the households in the community over a five-year period, starting with the highest risk areas. So this 18 month grant could not fully test the long range approach. But the grant was essential to stimulate the process in the participating cities, and use them as an example to stimulate other to implement an integrated risk management approach.

Unreported Fires – Having working smoke alarms affects the likelihood of reporting a fire. Many small fires detected by alarms are dealt with by the homeowner or occupant and not reported to the fire department. The project funding and time scale did not allow for a survey of the residences before and after smoke alarm installation as to whether they had unreported fires, which ideally should be tracked along with reported fires to get the total impact of the smoke alarms. Smoke alarms do not prevent ignitions, but they often prevent fires from getting large enough to be reported.

Changes in Fire Department Approach to Prevention **–** Of special interest was whether there was any change in the way in which prevention was organized and delivered by the participating fire departments, and the attitude of the line firefighters about prevention. These issues were to be described qualitatively.It is not possible to implement a household visit program on a large scale using just the prevention bureau of a fire department—prevention bureaus are too small to do this on their own. In every city visited on four continents in which the integrated risk management/household visit programs were used, line firefighters and/or volunteers were critical in order to visit large numbers of households. So another key aspect of this project was to see if the fire department changed its culture or approaches to providing fire prevention, and to involve the line firefighters more. Some cities did and some did not.

Dallas already had been doing similar projects with home visits for several years, and was easily able to continue.

Portland, on the other hand, had problems getting the project implemented when the firefighter’s union negotiated over the added work, replacing engine company commercial inspections with home safety inspections at some fire stations. Despite this, the productivity levels for installation of alarms was not adequate, and so late in their implementation process Portland had to find another path for distributing smoke alarms within the grant period. Portland installed several hundred and gave away thousands more to those who visited fire stations, and some through canvassing neighborhoods. Portland later followed up with phone calls to randomly selected households to check whether homes that had been given smoke alarms actually installed them.

Tucson used a local service organization, called the Sonoran Environmental Research Institute (SERI), to make the home visits and conduct the dialogue with the households in Spanish. The fire department supervised.

Vancouver made good progress in getting firefighters involved, in what for them was a totally new concept.

Wilmington was able to get line firefighters to make the home visits, and serves as an interesting case study. Its line firefighters were surprised early on by the number of homes visited in which they found no working smoke alarms present. They realized the need to reach more homes. Some firefighters commented that this type of in-person outreach would create a more trusting relationship with the fire department, because some neighborhoods believed there are other motives for installation of smoke alarms, and the home visits allayed their fears. The firefighters also commented that canvassing a neighborhood was probably the best way to check for working smoke alarms because many of the neediest residents would not have asked for alarms.

Several Wilmington fire department members were asked if they thought there had been a change in culture and this response was received from a fire captain.

“There was a benefit and a change in the culture among those we work with. The “risk management concept” had a tangible impact in that we provided a service and a good that helped people, but it also sparked conversation and ideas to improve current and future services. Most firefighters choose this occupation so we can help. The concept and implementation allows us to be proactive, help, train, work with people we normally would not, and serve as a visible public relations tool. Yes there were grumblings among a few, but morale improved because of the potential and real benefits of helping people.

Smoke alarm installations, mending stations, flu shot destinations; fall/ risk assessments, outreach programs, and expansion of medical services are being talked about and appear to be our future in addition to emergency response. We are educators and helpers and all these concepts fall in line with what the Fire Department should do; however current situations might make it difficult for firefighters to want to do effectively. The Department’s response to staffing, pay, benefits, promotions, hiring, and training are huge obstacles that staff needs to address in order for successful implementation.

I think the department is heading in the right direction in regards to education/ public relations and will benefit all involved.”

## Remainder of this Report

The next chapter describes the baseline approach suggested to each participating fire department and how they adapted it for their own environment. The final chapters discuss the results of the data collected, and provide recommendations for the future.

# II. Implementation Approaches Taken

In this chapter we discuss how the project was implemented in each city, including the data collected. We also discuss some dead ends and lessons learned along the way.

## Kickoff Meeting

Early in the project, the WSAFM project manager and evaluation staff held a face-to-face kick-off meeting with the project coordinators from each city to review the approach to be taken, and the degrees of freedom in implementing the project. The meeting also served as a place for the participating project managers to meet each other, and network later in the project. The WSAFM project manager explained the overall concept of the project, how the grant would be operated, and the records that needed to be kept. The meeting explained in detail how the project would be evaluated. The draft questionnaire to be used in the home visits was distributed.

Each city was given a revised budget that included the number of smoke alarms they could obtain, after getting feedback on what could realistically be delivered in the project time frame. Fire departments work in a dynamic political, financial, and labor environment. In some cities fire department or prevention leadership changed in the several months between the grant application submission and the grant award. The reduction in the number of smoke alarms requested by the initial three cities proposed in the grant allowed two more cities to be added—Tucson, AZ and Wilmington, NC. The total number of alarms to be installed remained as originally promised but the range of implementation was expanded, which enriched the final test results. As the project continued into its planned year, additional administrative changes in one of the fire departments (Portland, OR) required a second reallocation of smoke alarms and some changes in the approach taken in that department, as will be described below.

## High Risk Households Targeted

All participating cities were asked to target high risk residences for installation of the alarms provided by the grant. The identification of high risk household proceeded differently in the various cities. Some canvassed households door to door in selected high risk areas. Some installed alarms in individual households or groups of households that had been flagged as high risk by a social, health, or fire service agency, either from previous visits to the home or knowledge of the household’s risk or from other sources. Some relied on requests from households—self-identification of need.

Besides considering high fire incidence areas, a variety of approaches were tried to identify high risk households in the various cities. Although some did not produce as many requests for visits as others, they are presented here as potentially good ideas that might be useful to consider.

### Dallas

* High Incidence Areas – Selected were five census tracts with high fire incidence or high fire mortality/morbidity. The census tracts were prioritized by fire data analysts, and mapped out for a blitz. Tracts not previously visited in earlier smoke alarms installation programs were given priority.
* Code Problem Areas – The Dallas City Council specified two areas that had trash and animal control violations as well as high risk for fire, to get a synergistic effect from addressing multiple types of code violations.
* 311 Line – Households who self-identified as needy and requested help via the 311 telephone line were scheduled for visits. Ultimately they accounted for about half of the visits.

### Portland

* Households with Emergency Calls – Four fire stations in different parts of the city did a brief safety assessment of each household to which they responded for any type of emergency call, including EMS. The firefighters looked for hazards and offered free smoke alarm installation during the visit if additional smoke alarms were needed. Only a few of these households received installations, but these household tended to skew toward higher risk.
* Homes Turning Over In Sales – Sixty realtors in one realty company (Windermere) signed up for fire department training to identify smoke alarm needs in properties that were turning over. They handed out brochures on the program and encouraged the residents to call the fire department for a visit. Few residents called from this approach. While well intentioned, and involving many realtors, it was not effective in this instance; but it still seems like it is a good concept to have realtors checking on fire safety of homes when being turned over, a good time to institute changes.
* Visiting Nurses- a few homes were referred to the fire department by nurses who visited them and saw a need for fire safety follow-up . Getting Meals on Wheels, visiting nurses, and other social and health services to consider fire safety as they visit homes of people often at high risk has been a good practice in many cities.
* Giveaways – The majority of smoke alarms given out in Portland followed a media campaign asking home-owning citizens to visit any fire station to obtain free smoke alarms. They could get as many as they felt they needed to meet code. The code requirements were explained to them. Firefighters gave out the smoke alarms along with a one page sheet on smoke alarm education, and gathered basic information via the questionnaire. A 10% sample of these households was called by the prevention bureau to see if they had installed the alarms and they were working.[[3]](#footnote-4) No emphasis was placed on any particular risk group for this follow-up.
* Senior/Low Income Advocacy – Portland provided training and fliers for an organization called Unlimited Choices, an advocacy and assistance organization for low income and elderly, to offer smoke alarms and installation to those in need. About 20 calls were received, some after the program ended. (Portland FD gave smoke alarms to the latecomers through its usual, small scale smoke alarm program—it always has a few alarms for those in need and who ask for them.)

### Tucson

* High Incidence Areas – Zip codes with higher incidence of fire and EMS calls, most of which were thought to be comprised of Latino households.

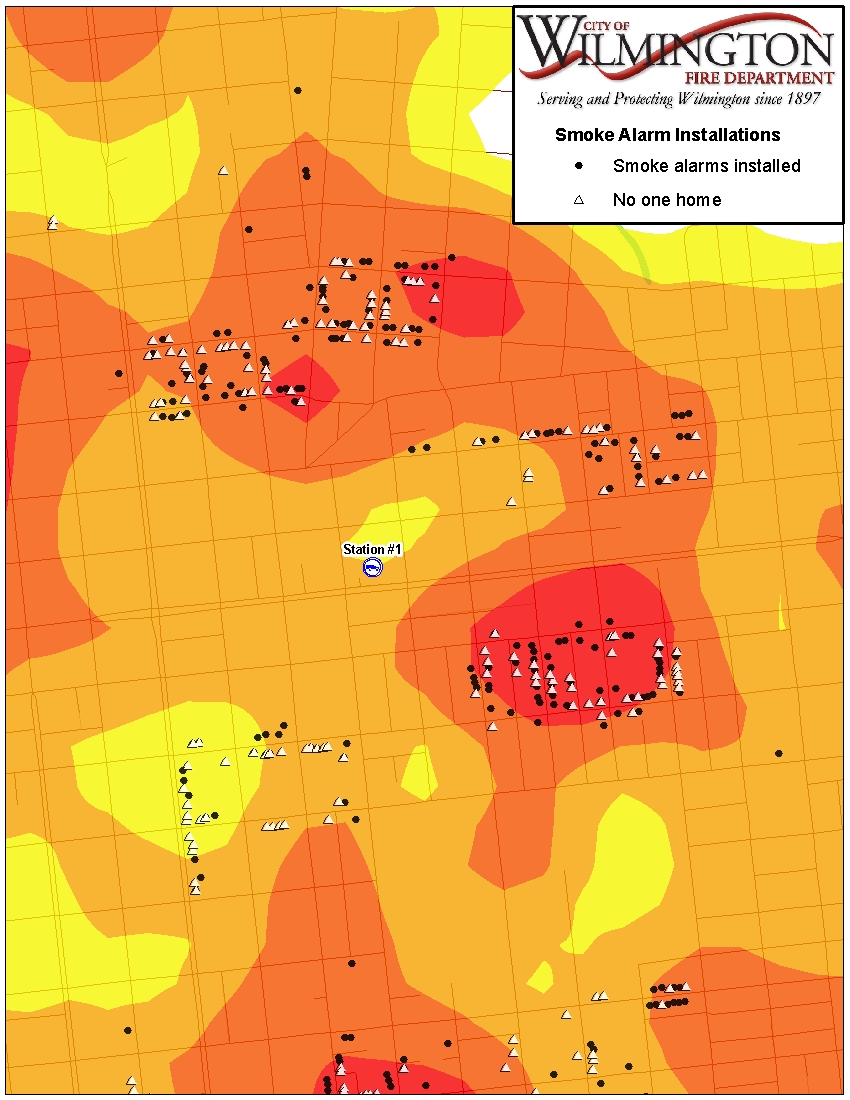
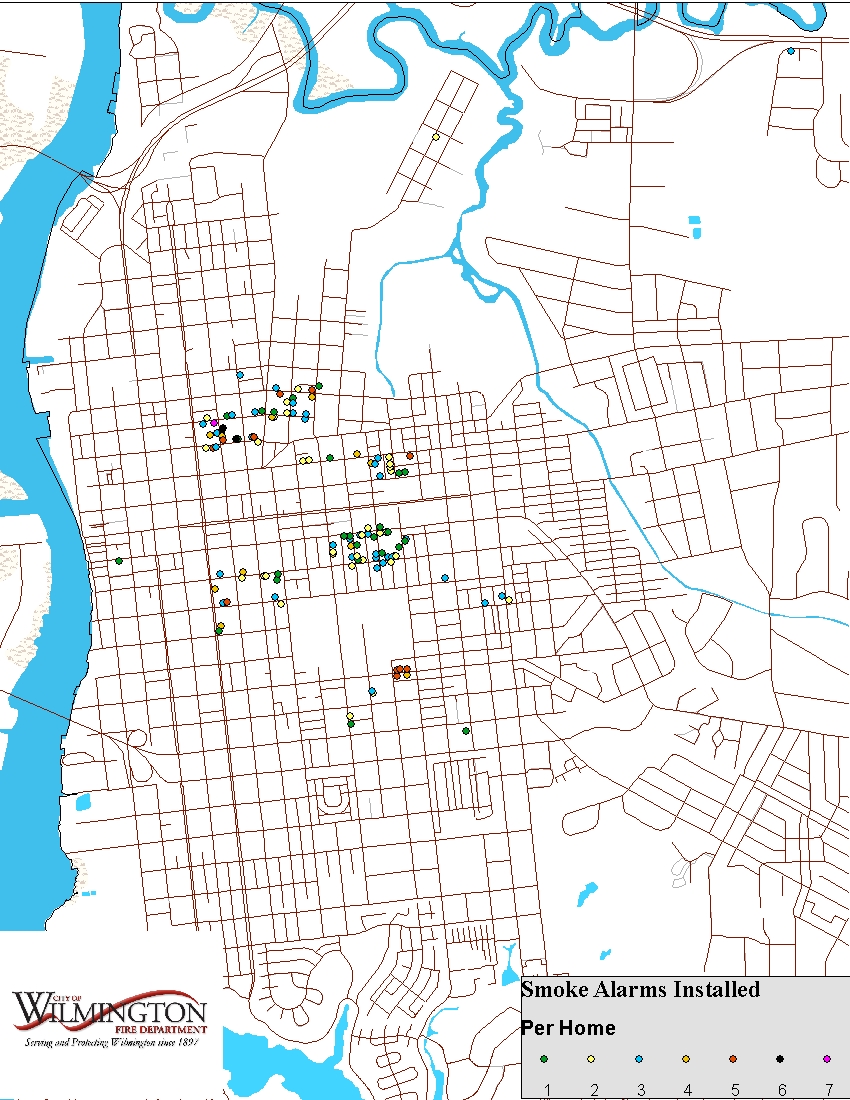
### Vancouver

* Trailer Parks – Several trailer parks had high fire incidence, or high risk of fatality when fire occurs. The higher risk trailer parks were the primary focus of the project in Vancouver.
* High-risk households—some were identified by stations based on their experience and other sources.

### Wilmington

* High Incidence Areas – Downtown neighborhoods with the highest fire incidence, 2006- 2009, were the primary target. They tended to have high elderly or low income African American and Hispanic households.
* Trailer Parks – Owners of two parks were approached but did not allow fire department visits; others did.
* Fire Fatality Neighborhoods – Homes in three areas that had recent residential fire fatalities.

Wilmington prepared two maps using GIS to show where the smoke alarms were installed, and then he relation between the households visited and fire incidence. They also considered overlaying maps of smoke alarm installations with the areas with high risk factors such as low income or high immigrant populations. These maps were an exploratory exercise and did not include all of the households given alarms, but we thought it a good idea to show the concept below, to consider for the future.



## Pre-Visit Publicity

Some cities distributed flyers to inform the citizens of the availability of the program, and then installed smoke alarms in households that made appointments. Some cities used both appointments (requests by households) and canvassing (cold calls) after publicizing the program.

Dallas advertised program on the fire department and city websites. It promoted the program whenever educational safety presentations were conducted by Fire Prevention personnel. Several fire prevention cars were “wrapped” with advertisements for smoke alarms and driven to educational presentations, fire inspections, etc. to promote the program. Dallas FR distributed pamphlets and posters or signs promoting the program to City of Dallas libraries, recreation centers, fire stations, and schools located in high risk areas. A volunteer group distributed door hangers announcing the upcoming neighborhood blitz to homes targeted for the blitz.

In Portland, volunteers and line firefighters distributed flyers to encourage citizens to set up appointments for smoke alarms testing and evaluation. The fire department advertised the program on its social media outlets, including its website, Facebook, Twitter, and blogs. There was an article in the Oregonian newspaper, and an ad in the Portland Observer.

## Composition of Home Visit Teams

In virtually every case a household was visited by a two-personteam, to add to the official appearance of the team at the doorstep, to have a witness should any impropriety be claimed, and to assist in the installation and data recording. Some visits were made by a team of two line firefighters, some by one firefighter and a volunteer, and others by two volunteers.

The team compositions were as follows:

Dallas **–** Two firefighters or firefighter plus volunteer. About three quarters of the visits were conducted by teams of two firefighters. The majority of the rest were by one firefighter and one community volunteer. About 8% involved one or more from the prevention bureau.

Dallas wanted to use volunteers from organizations other than those it had relied on in previous similar programs, to reduce the burden on any one volunteer organization. However, in the end most of the volunteers came from their CERTS again. There was limited participation of Eagle Scouts and the Citizens Fire Academy.

Portland – Firefighters andpublic education staff (for home visits). Home visit teams were comprised of about two-thirds firefighters, one-third prevention educators. Later, smoke alarms were given to households by firefighters at fire stations. A sample of those give-a-way households were called by the public education staff to check on whether the smoke alarms had been installed.

Tucson – Hispanic community organization employees. The home visits were made by employees of SERI, Sonoran Environmental Research Institute and “Community Assist in Southern Arizona” (CASA). They were able to present the information in Spanish as needed in the largely Hispanic neighborhoods targeted in this program. Fire department staff supervised the home visits in the field, but did not enter the homes.

Vancouver – Volunteer firefighters, and a few community volunteers. Volunteer firefighters were used for most visits. Community Emergency Response Team (CERT) volunteers supplement them in some visits and did the paperwork, as in Wilmington. Station captains coordinated meetings with mobile home parks, and coordinated the project in their area. This was viewed as a station-based program, an important concept for changing the fire department culture.

Wilmington **–** Pair of firefighters, or firefighter plus CERT volunteer. About three-quarters of the personnel making the home visits were line firefighters, and another 20% were volunteers. Prevention bureau personnel made only one visit, so this was truly a line company effort.

Truck company firefighters went with neighborhood volunteers (1 firefighter and 1 citizen volunteer) for 20% of the visits. The firefighter did the installation, the volunteer did the paperwork. The volunteers came from the local Community Emergency Response Teams (CERTs). That gave the CERT volunteers a public safety task to keep up their interest and participation in the teams, which are primarily formed to aid in rarely occurring disasters. Other community organizations were invited to join in, including a volunteer language interpreter organization to find volunteers who spoke Spanish to canvass in Hispanic areas. But they did not participate in the field. In many cases firefighters canvassed neighborhoods without the volunteers.

## What Was Done During the Visit

Most of the household visits were made to one or two family dwellings, because multifamily dwellings fell under codes that required smoke alarms to be installed and maintained by the owner, with significant penalties if not done, as well as liability to the owners.

In nearly all homes visited, the team tested all smoke alarms in the household. They then installed smoke alarms as needed and discussed fire and home safety information. They also left one or more handouts that addressed home safety. The safety information was delivered to the person acting as head of household, or to whatever members of the household gathered to hear what was going on.

For the few private alarms systems encountered, the alarms were not tested (to avoid triggering false alarms) but additional smoke alarms were installed if there were not enough in the private system.

Most participating communities took the stance that they wanted the households they visited to be up to code when they left. This usually meant installing multiple smoke alarms in each household visited. They were installed in bedrooms, hallways outside of bedrooms, and on each floor. An alternative approach some used was to install one or two alarms, and tell the home occupant of the additional number needed to meet code. A third approach was to give the household the number of smoke alarms it said it needed, for them to install themselves. Some departments want to reach more homes, and leave each with at least one working alarm, rather than doing fewer homes more completely. On the other hand some were concerned about liability if they did not leave a home with the code met, or simply wanted to do a thorough job on fewer homes than a partial job on more.

A form was filled out on each home visited. Each department completed a standard core of information and stored it in either an Access data base or Excel spreadsheet. Each department was responsible for populating its own data base, and TriData was responsible for analyzing the data. Cities were allowed to add data elements beyond the required core.

The forms included a “release of liability” section to be signed by the household, understanding that they were accepting the alarm and there was no warranty on its effectiveness. Vancouver foundthat residents often were relieved to sign a form empowering the visit and having a copy of the information collected—it seemed to serve as a playing field leveler with the uniformed authority figures who had come into their household.

Tucson translated its form into Spanish, for use in heavily predominant Spanish neighborhoods.

The household visit form included a question on the race/ethnicity of the household. We believe this question should be revised (and indeed it was on the next year’s AFG home visit project). The question was worded for households that are homogenous, but many households have people of more than one race or ethnic group. A better approach is to allow more than one box to be checked if there is, for example, an African American, a Hispanic, and a white person in the same household.

Some visits could not be completed because no one was home, or the address was bad, or the occupants refused the visit. Some visits were not completed because there was no one over 18 present. For all of these cases we asked that a form be completed on the attempted visit, and if the reason given for non-completion. There probably were some cases where no form was completed on a failed attempt to visit; the total number of attempted visited was probably somewhat higher than recorded.

## Number and Type of Smoke Alarms Installed

Smoke alarms were purchased centrally on behalf of the project to get the best price by economy of scale. Bids were requested from several providers.

The cities had somewhat different code requirements and preferences regarding smoke alarms. Three used ionization smoke alarms with 10-year, tamper proof batteries. The other two used dual-chamber (photoelectric and ionization) smoke alarms with long lasting batteries that need replacement. The number of alarms and choice in each city as to what type of smoke alarms it used and what policy was followed for adding or replacing alarms are shown in Table 1 below. All cities followed the latest smoke alarm code requirement, which calls for alarms in each bedroom, in hallway outside of bedrooms, and at least one on each living level.

Note that were a “+” appears in the column on the number of alarms installed or provided to households, it means that there were some more said to be installed or given away beyond the number documented in the home visit forms.

Table 2: Recorded Alarm Installations or Distributions

| **Participating City** | **Number of Alarms Installed or Provided** | **Type of Alarm** | **Replaced Old Alarm?** | **Replaced Non-Working Alarm?** | **Installed Enough Total Alarms to Meet Current Code?** |
| --- | --- | --- | --- | --- | --- |
| Dallas, TX | 2,500 | Ionization, 10 year, tamper-proof lithium battery | Yes, if over 10 years old | Yes | Yes |
| Portland, OR | 4,234 (280+) installed; 3,954 given to households | Dual-chamber, alkaline, long-lasting lithium battery | Yes, if over 10 years old | Yes | Yes, for household visited; uncertain for households handed smoke alarms, but most were advised of the requirement in the code |
| Tucson, AZ | 2,490+ | Ionization, 10 year, tamper-proof lithium battery | No, if working | Yes | Yes |
| Vancouver, WA | 985 | Dual-chamber, alkaline, long-lasting lithium battery | Yes, if over 5 years old | Yes | Yes |
| Wilmington, NC | 1,351+ (Had 1,500, plus 100 from non-grant sources) | Ionization, 10 year, tamper-proof lithium battery | Yes, if requested | Yes | Yes |
| **TOTAL** | **11,560** |  |  |  |  |

## Public Education Materials and Advice

As noted earlier, on virtually all home visits the occupants were given safety information verbally and in writing. The team queried the household about whether they had escape plans and practiced them, because having a working smoke alarm does little good if people do not take advantage of the early warning to escape quickly, or extinguish the fire if small enough to do so safely. The safety information provided often addressed household safety issues in addition to fire safety. The information given was as follows:

All Cities – Advice on maintenance and testing of smoke alarms, and the importance of having and practicing an escape plan

Dallas – Handout materials included kitchen safety, heating safety, and escape planning. These were the same materials used in the CDC SAIFE (Smoke Alarm Installation and Fire Escape) program funded by CDC.

Portland –A handout specific to smoke alarms (including the language on the liability waiver) was given to households where installations were made. They also were given other material on home safety, including fire safety and injury prevention from falls. If children or elderly lived in the household, safety issues specific to these risk groups were pointed out on the safety information left with the resident

Tucson – Materials were left on fire safety and healthy home (including air quality, molds, lead paint). Some of the written information was already available from its volunteer partner CASA, and was in Spanish. No new materials were developed just for this program.

Vancouver – Hand-out materials included an escape checklist and grid for making a plan; and a home safety and disaster checklist. About half of the checklist was covered during the visit, with the household asked to complete the rest on their own. Advice on kitchen safety was also provided verbally.

Wilmington – Information on emergency escape planning; maintenance of alarms. kitchen safety, electrical, and smoking dangers was included in a new brochure developed for this project, and translated into Spanish. Only one piece of literature had to be handed out per household. The new brochure used photos, graphics, and simple text to make it more accessible to the targeted high –risk populations.

## Project Coordination and Evaluation

The WSAFM project manager held monthly conference calls involving all of the participating cities and the evaluation team. This kept the project coordinated, answered procedural and budget questions, shared experiences and solutions to problems encountered, and ensured that the project was proceeding satisfactorily in each city. Unique problems were addressed in one-on-one calls to each city.

A separate round of discussions was held early in the grant period with the project evaluation subcommittee, which consisted of CDC, TriData, University of Washington, and WSAFM project management. This led to a revised data collection form, and agreement on the evaluation concept.

## Additional Comments on Approaches and Findings by City

Below are comments on the experience of each city that were not covered or expand on the summary above. These are intended as useful hints for other cities considering home visit programs.

Dallas **–** Dallas had been making home visits by line firefighters and volunteers for several years before this project started; it was one of several cities participating in a multi-year program funded by CDC to increase the number of households with working smoke alarms. About 5500 smoke alarms had been installed in Dallas per year under the CDC SAIFE program prior to this AFG grant, a total of about 14,200.

Dallas helped demonstrate to the four other participating cities that the project’s concept was feasible, and that there was at least one viable approach for making the home visits and collecting the data. Dallas used the AFG project resources to expand the scale of its home visit program.

Dallas had previously used various organizations, such as churches, service association/organizations, employees from corporations and CERTS, as the source for volunteers to assist with the home visit program. These same groups were recruited each year, which made coordination and training easier. However Dallas did not want to use the same organizations again for this program, to avoid straining the resources of any one organization by asking them to commit to both this grant and the SAIFE grant. So this year they worked with Eagle scouts and Citizens Fire Academy volunteers as well as CERTS, though the bulk of the volunteer effort came again from CERTS.

Dallas felt that it was better to use one volunteer organization per home blitz area, which led to using some smaller blitz areas to accommodate varying numbers of volunteers per organization.

Firefighters across the city had been trained two years ago to do the smoke alarm installations for their past CDC project. Dallas chose not to train new firefighters who joined the department since the CDC project, feeling they had enough to conduct the AFG project, and that the others could learn by example after receiving a brief orientation for firefighters before each blitz.

The fire department entered the data from their home visits into a data base.

Portland **–** At times over the last three decades Portland has been a leading innovator in public fire education approaches, including use of home visits to install smoke alarms. In fact, Portland won the first IAFC award for best prevention program, in the late 80’s.

Over time, different fire department and union leadership varied the priority given to prevention, as was the case in many cities. Union leadership also varied over time on the extent it supported prevention as a main line duty vs. additional duty. Prevention is not yet a universal priority, and home visits by line firefighters is still a novelty for most cities. To complicate matters during this project, there were unexpected changes in the staffing of the fire marshal’s office just as this project got underway. While an innovator in home visits in the past, there was no recent tradition in Portland for running prevention from the stations, nor using firefighters for a large scale home fire safety program. So despite its previous history Portland was essentially starting from scratch in getting a station-based integrated risk management approach started.

Firefighters in Portland are required contractually to do some of the simpler commercial inspections. This program had not been very successful or well liked by the firefighters. The home visits were offered as a job swap in exchange for reducing inspections. But even that approach waned, and the project changed from home visits with installations to giveaways of smoke alarms, handed to residents to install by themselves.

Portland largely abandoned its initially planned approach of installing alarms in favor of offering households free alarms if they agreed to install them. A media campaign was launched to advertise the availability of the alarms, and they were quickly used up. This approach was understood to be not as reliable as actually installing smoke alarms, because some people accept them but do not install them, and may not even keep them. To check on the use of the alarms, telephone calls were made to a 10% sample of the households who were given smoke alarms to see if they did indeed install them.

Portland printed an educational flier on the use and testing of smoke alarms for residents who were requested free alarms. Information on general home fire safety was also provided, on a separate sheet.

Portland printed the home visit form with information on escape planning on the back of the copy left with the household. This required that the data had to be manually entered.

Portland kept a small number of alarms to respond to follow- on requests for installations.

Ultimately Portland had three databases:

1. Home visit installations (from the pilot with emergency response crews and Pub Ed staff making the visits)
2. Media giveaway data (varied results and success, depending on the station and shift)
3. Follow-up to the giveaway for a sample of home recipients (were alarms installed and functioning?)

Tucson **–** Firefighters in Tucson did not want to take on visits to households; however they did provide training to their community organization partners, and provided fire safety materials.The program was conducted almost entirely by the community organizations operating under the auspices of the fire department.

Vancouver **–** Vancouver’s fire chief was in the process of moving the department toward a station-based, integrated risk management system into which this project fit. Vancouver had arranged for its battalion chiefs and most station captains to hear a presentation on the best practices found in other nations before this AFG grant project started, which helped set the stage.

Wilmington **–** The concept of station-based delivery of fire prevention in the context of integrated risk management was explained to all chief officers. It was well received at a meeting in which the four new operations battalion chiefs were considering new ways to provide service to the community. The IAFF local president was briefed and interested.

The grant served as a focal point for refocusing how Wilmington considers prevention within its scope of services. Prevention was increased in importance by having it considered part of line function responsibilities. Wayne Powell of Vision 20/20 found examples of home visit programs going back as far as 50 years, and Wilmington used them to show its firefighters that this is not something new, just forgotten, said Chief Blackley.

Two days before an area was blitzed, door hangers were distributed in the neighborhood to explain the program and not scare residents who saw more fire trucks in the street. The police department also was informed in case they get calls from the neighborhood, and to obtain intelligence from the police on areas of high danger for the volunteers to avoid.

All six battalion chiefs supported the project. The three stations that covered the higher risk areas were the principle participants.

Wilmingtonobtained an additional 100 smoke alarms from another source, which allowed it to extend its outreach.

Firefighters who interacted with public felt the visits were worthwhile, but many firefighters said they were not enthusiastic about the new program.

Wilmington firefighters were surprised by the number of homes visited where there were no working smoke alarms present, which made them realize the need to reach more homes. Another firefighter comment suggested that this type of outreach would create a more trusting relationship with the fire department because people in some neighborhoods are suspicious that there are other motives for installation of smoke alarms. This approach helped allay fears. Wilmington firefighters also felt that canvassing a neighborhood with cold calls was probably the best way to check for working smoke alarms in high risk areas because many residents who need them the most probably would not have responded to advertisements and ask for alarms. Several WFD members were asked if they thought there had been a change in culture as a result of this program. This response was received from a Fire Captain:

“There was a benefit and a change in the culture among those we work with. The “risk management concept” had a tangible impact in that we provided a service and a good that helped people, but it also sparked conversation and ideas to improve current and future services. Most Firefighters choose this occupation so we can help. The concept and implementation allows us to be proactive, help, train, work with people we normally would not, and serve as a visible public relations tool. Yes there were grumblings among few, but morale improved because of the potential and real benefits of helping people.

Smoke alarm installations, mending stations, flu shot destinations, fall/ risk assessments, outreach programs, and expansion of medical services are being talked about and appear to be our future in addition to emergency response. We are educators and helpers and all these concepts fall in line with what the Fire Department should do; however current situations might make it difficult for firefighters to want to do effectively. The Department’s response to staffing, pay, benefits, promotions, hiring, and training are huge obstacles that staff needs to address in order for successful implementation.

I think the department is heading in the right direction in regards to education/ public relations and will benefit all involved.”

Finding: Once a program of installation of smoke alarms to needy households is established, it is often much easier to get funding for additional smoke alarms from private and public sources. It is easier to continue a proven, established approach than to get it started in the first place. This is one of the great values of the AFG program—to provide the seed money to start something new.

# III. DATA ANALYSIS

This chapter discusses the analysis of the data collected on the home visits in each city. Data was not collected on every question for every household, so the numbers do not always add to the number of households visited. There also were probably some visits that were not documented. But this data overall was highly consistent and should be highly representative of the situations found, and what was done.

All summary statistics are based on the households for which entry was gained, with the one obvious exception of data on the reasons why entry could not be made. The same subheads and order of analysis are used for each city. Portland has some additional analysis on their giveaway program and its checks.

## Dallas

Homes Visited – The Dallas program visited 1025 homes. Virtually all were scheduled through requests to the 311 system, and all were entered. The majority (789) were visited by an all-firefighter team, another 148 by a combined firefighter-community volunteer team, and 86 by a prevention bureau team. Almost all of the visits were to houses.

**Type of Home:**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **House** | **Mobile  home** | **Duplex/  Townhouse** | **Multi-family** | **Other** | **Blank** | **Total** |
| Number of homes | 998 | 1 | 25 | 0 | 1\* | 0 | **1025** |
| Percent of homes | 97% | 0% | 2% | 0% | 0% | 0% | **100%** |
| \* Church | | | | | | | |

**If entry to residence not possible, why not?**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **No one home** | **Minor only** | **Language barrier** | **Vacant home/lot** | **Entry refused?** | **Total** |
| Number of homes | 0 | 0 | 0 | 0 | 0 | **0** |
| Percent of homes | 0% | 0% | 0% | 0% | 0% | **0%** |
| **Total number of homes visited** | | | | | | **1025** |
| **Total number of homes not entered** | | | | | | **0 (0%)** |
| **Total number of homes entered** | | | | | | **1025 (100%)** |

**Positions of representatives making the visit (check all that apply):**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Firefighter** | **Health-care worker** | **Volunteer** | **Prevention** | **Social worker** | **Other** | **Not answered** | **Total** |
| Number of homes | 937 | 0 | 148 | 88 | 0 | 0 | 0 | **1173\*** |
| Percent of homes | 80% | 0% | 13% | 8% | 0% | 0% | 0% | **100%** |
| \* 148 homes were visited by Firefighter + Volunteer team; 789 were visited by Firefighter team only; 88 homes were visited by Prevention team only | | | | | | | | |

Inspection Results **–** At least671 homes (65%) had at least one smoke alarm (working or non-working), with the most being 12 in one home (11 working, 1 non-working). A surprising 348 homes (34%) had no smoke alarm at all (working or non-working). There were a total of 1530 smoke alarms in all the homes, about 1.5 per home.

After testing, it was found that 572 homes (56%) had no working smoke alarm!! There were a total of 855 working smoke alarms in the homes, less than one per home. Of 1530 alarms tested, 675 (44%) were not working. These are shockingly high percentages of homes with inadequate smoke alarm coverage, and indicate that the AFG smoke alarm program in Dallas was reaching exactly the types of homes that needed the program, and why it has the potential for making a major difference in fire safety.

**Number of smoke alarms (working and/or non-working)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 Alarms** | **1 Alarm** | **2 Alarms** | **3 Alarms** | **4 Alarms** | **5+ Alarms** | **“X”** | **Total** |
| Number of homes | 348 | 230 | 208 | 123 | 63 | 47 | 6 | **1025** |
| Percent of homes | 34% | 22% | 20% | 12% | 6% | 5% | 1% | **100%** |
| **Total number of smoke alarms** | | | | | | | | **1530** |

**Number of working smoke alarms (based on testing)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 Alarms** | **1 Alarm** | **2 Alarms** | **3 Alarms** | **4 Alarms** | **5+ Alarms** | **“X”** | **Total** |
| Number of homes | 572 | 206 | 140 | 64 | 20 | 17 | 6 | **1025** |
| Percent of homes | 56% | 20% | 14% | 6% | 2% | 2% | 1% | **100%** |
| **Total number of working smoke alarms** | | | | | | | | **855** |

**Number of non-working smoke alarms (based on testing)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 Alarms** | **1 Alarm** | **2 Alarms** | **3 Alarms** | **4 Alarms** | **5+ Alarms** | **“X”** | **Total** |
| Number of homes | 600 | 256 | 103 | 37 | 17 | 6 | 6 | **1025** |
| Percent of homes | 59% | 25% | 10% | 4% | 2% | 1% | 1% | **100%** |
| **Total number of non-working smoke alarms** | | | | | | | | **675** |

**Private alarm system present (do not test)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Yes** | **No** | **Not Answered** | **Total** |
| Number of homes | 0 | 0 | 1025 | **1025** |
| Percent of homes | 0% | 0% | 100% | **100%** |

Installations **–** Almost all of the homes visited (97%) had at least one smoke alarm installed during the visit, with the most being 8 in one home that had no smoke alarms at all. Of the 31 (3%) homes where no smoke alarms were installed, 27 had anywhere from one to six working smoke alarms already; 4 homes had batteries replaced, in 2-6 smoke alarms.

After the home visits all of the homes had at least one working smoke alarm. There were a total of 3791 working smoke alarms, or an average of 3.7 per home. Most smoke alarms installed were ionization 10-year battery smoke alarms, a few were dual chamber.

All but 4 of the 1025 homes visited were reported as meeting code after the visit, and those four were advised of what was needed. (These few did not allow a full complement to be installed.)

**Number of Alarms Installed**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 Alarms** | **1 Alarm** | **2 Alarms** | **3 Alarms** | **4 Alarms** | **5+ Alarms** | **Blank** | **Total** |
| Number of homes | 31 | 216 | 338 | 222 | 164 | 53 | 1 | **1025** |
| Percent of homes | 3% | 21% | 33% | 22% | 16% | 5% | 0% | **100%** |
| **Total number of smoke alarms installed** | | | | | | | | **2500** |

**Number of working smoke alarms after the visits**[[4]](#footnote-5)**?**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 Alarms** | **1 Alarm** | **2 Alarms** | **3 Alarms** | **4 Alarms** | **5+ Alarms** | **Blank** | **Total** |
| Number of homes | 1 | 48 | 202 | 242 | 301 | 231 | 0 | **1025** |
| Percent of homes | 0% | 5% | 20% | 24% | 29% | 23% | 0% | **100%** |
| **Total number of working smoke alarms after the visits** | | | | | | | | **3791** |

**Type of alarm(s) installed:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Dual Chamber** | **Ionization** | **Photo-electric** | **Not answered** | **Total** |
| Number of homes | 28 | 958 | 0 | 39 | **1025** |
| Percent of homes | 3% | 93% | 0% | 4% | **100%** |

**Power source of alarm(s) installed:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Tamper-proof 10-year battery** | **Hard-wired** | **Replaceable battery** | **Combination (battery and hard-wired)** | **Not answered** | **Total** |
| Number of homes | 1004 | 0 | 0 | 0 | 21 | **1025** |
| Percent of homes | 98% | 0% | 0% | 0% | 2% | **100%** |

**Number of smoke alarm batteries replaced?**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **0 Alarms** | **1+ Alarms** | **Total** |
| Number of homes | 788 | 212 | **25** |
| Percent of homes | 77% | 21% | **2%** |
| **Total number of smoke alarm batteries replaced** | | | **436** |
|  | | | |

**Did the home end up with the number of smoke alarms required by code?**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Yes** | **No** | **Blank** | **Total** |
| Number of homes | 1021 | 4 | 0 | **1025** |
| Percent of homes | 100% | 0% | 0% | **100%** |
|  | | | | |

**If no, was the occupant advised of the number required?** All 4 homes were advised of the number of smoke alarms required.

Education Provided During the Visit **–** All of the households visited received verbal instruction on testing and maintaining smoke alarms. About two-thirds of the households were verbally instructed on other fire and injury subjects.

Only about a third of the households said they had a fire escape plan. Less than half of that third said they practiced it in the last year. But almost all who said they had a plan were indeed able to say where the family would meet, as a validity check.

At least 93% of the households were given written information on escape planning and also other home safety information.

**Occupant instructed on *(check all that apply):***

|  |  |  |
| --- | --- | --- |
|  | **Testing and maintaining smoke alarms** | **Other fire or injury safety subjects\*** |
| Number of homes | 1025 | 628 |
| Percent of homes | 100% | 61% |
| \* Information Packet | | |

**Ask occupant: Do you have a fire escape plan?**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Yes** | **No** | **Blank** | **Total** |
| Number of homes | 369 | 656 | 0 | **1025** |
| Percent of homes | 36% | 64% | 0% | **100%** |

**If yes…**

**Was the fire escape plan practiced in the last year?**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Yes** | **No** | **Blank** | **Total** |
| Number of homes | 165 | 200 | 4 | **369** |
| Percent of homes | 45% | 54% | 1% | **100%** |

**Where is your meeting place? (check if any credible place cited)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Yes, credible** | **No, not credible** | **Blank** | **Total** |
| Number of homes | 369 | 0 | 0 | **369** |
| Percent of homes | 100% | 0% | 0% | **100%** |

**Occupant given written fire or injury safety materials on:**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Escape planning** | **General home safety** | **Specific causes or hazards** |
| Number of homes | 957 | 957 | 0 |
| Percent of homes | 93% | 93% | 0% |

Demographics **–** The vast majority of homes visited (88%) were owner-occupied. There were close to an average of three people per household. About 44% of the households targeted had at least one elderly person. About one-quarter had at least one child under five. About 18% had at least one disabled person. And 20% had at least one smoker. All together, 71% had at least one of these risk factors, and over 90% were minority (62% African American, 28% Hispanic.) Thus the vast majority of the households fell into a higher than average risk category, and the households were well-targeted for this project.

**Do you own or rent your home?**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Own** | **Rent** | **“-“** | **Total** |
| Number of homes | 900 | 124 | 1 | **1025** |
| Percent of homes | 88% | 12% | 0% | **100%** |

**How many people live in your home?**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 People** | **1 Person** | **2 People** | **3 People** | **4 People** | **5+ People** | **Blank\*** | **Total** |
| Number of homes | 0 | 200 | 278 | 178 | 146 | 185 | 38 | **1025** |
| Percent of homes | 0% | 20% | 27% | 17% | 14% | 18% | 4% | **100%** |
| **Total number of people** | | | | | | | | **2965** |
| \* Blank includes "-", "X", and N/A | | | | | | | |  |

**How many children living in your home are under age 5?**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 Children** | **1 Child** | **2 Children** | **3 Children** | | **4 Children** | **5+ Children** | **Blank\*** | **Total** |
| Number of homes | 763 | 119 | 83 | 18 | | 4 | 1 | 37 | **1025** |
| Percent of homes | 74% | 12% | 8% | 2% | | 0% | 0% | 4% | **100%** |
| **Total number of children** | | | | | | | | | **360 (12%)** |
| \* Blank includes blank fields, "-", "X", and N/A | | | | |  | | | | |

**How many people living in your home are age 65 or older?**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 Elderly** | **1 Elderly** | **2 Elderly** | **3 Elderly** | **4 Elderly** | **5+ Elderly** | **Blank\*** | **Total** |
| Number of homes | 545 | 304 | 130 | 7 | 2 | 0 | 37 | **1025** |
| Percent of homes | 53% | 30% | 13% | 1% | 0% | 0% | 4% | **100%** |
| **Total number of elderly** | | | | | | | | **593 (20%)** |
| \* Blank includes blank fields, "-", "X", and N/A | | | | | | | |  |

**How many people living in your home are disabled?**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 Disabled** | **1 Disabled** | **2 Disabled** | **3 Disabled** | | **4 Disabled** | **5+ Disabled** | **Blank\*** | **Total** |
| Number of homes | 804 | 155 | 28 | 0 | | 1 | 0 | 37 | **1025** |
| Percent of homes | 78% | 15% | 3% | 0% | | 0% | 0% | 4% | **100%** |
| **Total number of disabled** | | | | | | | | | **215 (7%)** |
| \* Blank includes blank fields, "-", "X", and N/A | | | | |  | | | | |

**How many people living in your home are smokers?**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 Smokers** | **1 Smoker** | **2 Smokers** | **3 Smokers** | | **4 Smokers** | **5+ Smokers** | **Blank\*** | **Total** |
| Number of homes | 784 | 141 | 52 | 7 | | 1 | 2 | 38 | **1025** |
| Percent of homes | 76% | 14% | 5% | 1% | | 0% | 0% | 4% | **100%** |
| **Total number of smokers** | | | | | | | | | **280 (9%)** |
| \* Blank includes blank fields, "-", "X", and N/A | | | | |  | | | | |

**Number of risk factors in homes**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 Risks** | **1 Risk** | **2 Risks** | **3 Risks** | **4 Risks** | **Blank** | **Total** |
| Number of homes | 259 | 459 | 218 | 48 | 4 | 37 | 1025 |
| Percent of homes | 25% | 45% | 21% | 5% | 0% | 4% | 100% |

**Do you consider yourself: (can check more than one: e.g., White and Hispanic)**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **African American** | **Asian** | **Hispanic/ Latino** | **Native American** | **Pacific Islander** | **White** | **Mixed** | **Other** | **Blank** | **Total** |
| Number of homes | 635 | 3 | 289 | 1 | 0 | 89 | 0 | 3 | 9 | **1029\*** |
| Percent of homes | 62% | 0% | 28% | 0% | 0% | 9% | 0% | 0% | 1% | **100%** |
| \* Four homes checked 2 categories: (1) African American + Native American; (2) African American + White; (1) Hispanic/Latino + White | | | | | | | | | | |

## Portland

Portland was an exception to the other cities in the grant, as explained earlier. They produced three sets of data:

1. Data on households visited in the pilot program- like the other cities
2. Data on households subsequently given smoke alarms to install themselves
3. Sample of households in b. surveyed by telephone to check on self-installations

### A. Pilot Program

Homes Visited: Portland attempted to visit 105 homes in its pilot program, and gained entry to 93. The vast majority (80%) was single family dwellings; the rest were 10% duplexes or townhouses, 5% mobile homes, and 3% multifamily. The main reason for not completing a visit was “entry refused.” They were able to enter 89% of homes attempted to be visited. Almost two-thirds of those making visits were line firefighters, the rest from the public education staff.

**Type of Home:**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **House** | **Mobile  home** | **Duplex/  Townhouse** | **Multi-family** | **Other** | **Not answered** | **Total** |
| Number of homes | 74 | 5 | 9 | 3 | 1 | 1 | **93** |
| Percent of homes | 80% | 5% | 10% | 3% | 1% | 1% | **100%** |

**If entry to residence not possible, why not?**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **No one home** | **Minor only** | **Language barrier** | **Vacant home/lot** | **Entry refused?** | **Not answered** | **Total** |
| Number of homes | 1 | 0 | 1 | 0 | 10 | 0 | **12** |
| Percent of homes | 8% | 0% | 8% | 0% | 83% | 0% | **100%** |
| **Total number of homes visited** | | | | | | | **105** |
| **Total number of homes not entered** | | | | | | | **12 (11%)** |
| **Total number of homes entered** | | | | | | | **93 (89%)** |

**Positions of representatives making the visit**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Firefighter** | **Health-care worker** | **Volunteer** | **Prevention** | **Social worker** | **Other** | **Not answered** | **Total** |
| Number of homes | 58 | 0 | 0 | 33 | 0 | 0 | 2 | **93** |
| Percent of homes | 62% | 0% | 0% | 35% | 0% | 0% | 2% | **100%** |

Inspection Results:Of the 93 homes visited**,** 82 (88%) had one or more smoke alarms; one home had seven (working and/or non-working) There were a total of 204 smoke alarms in all the homes, or slightly more than two per home (2.2). There were.11 homes (12%) that had no smoke alarm (working or non-working.).

Of the 82 with smoke alarms, 17 had no working alarm. Thus a total of 28 homes (30%) had no working alarms at all. There were a total of 144 working alarms or about 1-2 per home on average, but some homes had as many as 4 working alarms. The high percent of home without working alarms in high risk homes supports the rationale for this program.

Thirty-eight (38) homes (41%) had at least one smoke alarms not working, as tested by the fire department team. Overall 60 of the 204 alarms tested, or 30%, were not working. Some homes had as many as four not working! We did not determine why so many were not working—it could be the message on the need to test alarms was not reaching these homes, or they were not motivated to test, or did not know how to test, or could not test, or could not afford replacements. The heart of the home visit program was to rectify this situation regardless of the cause.

About 12% of the homes had a private alarm system, and these were not tested to avoid false alarms.

**Number of smoke alarms (working and/or non-working)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 Alarms** | **1 Alarm** | **2 Alarms** | **3 Alarms** | **4 Alarms** | **5+ Alarms** | **Blank** | **Total** |
| Number of homes | 11 | 32 | 14 | 18 | 7 | 11 | 0 | **93** |
| Percent of homes | 12% | 34% | 15% | 19% | 8% | 12% | 0% | **100%** |
| **Total number of smoke alarms** | | | | | | | | **204** |

**Number of working smoke alarms (based on testing)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 Alarms** | **1 Alarm** | **2 Alarms** | **3 Alarms** | **4 Alarms** | **5+ Alarms** | **Blank** | **Total** |
| Number of homes | 28 | 31 | 14 | 9 | 3 | 8 | 0 | **93** |
| Percent of homes | 30% | 33% | 15% | 10% | 3% | 9% | 0% | **100%** |
| **Total number of working smoke alarms** | | | | | | | | **90** |

**Number of non-working smoke alarms (based on testing)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 Alarms** | **1 Alarm** | **2 Alarms** | **3 Alarms** | **4 Alarms** | **5+ Alarms** | **Blank** | **Total** |
| Number of homes | 55 | 24 | 8 | 4 | 2 | 0 | 0 | **93** |
| Percent of homes | 59% | 26% | 9% | 4% | 2% | 0% | 0% | **100%** |
| **Total number of non-working smoke alarms** | | | | | | | | **60** |

**Private alarm system present** (do not test)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Yes** | **No** | **Not Answered** | **Total** |
| Number of homes | 12 | 80 | 1 | **93** |
| Percent of homes | 13% | 86% | 1% | **100%** |

Installations: Eighty-two (82) homes (88%) –the vast majority visited-- had one or more smoke alarms installed during the visit. 21 homes had 5 or more smoke alarms installed. The 11 homes (12%) that did not need any had 2-7 working smoke alarms already. The Portland Fire Department installed 280 smoke alarms, or about 3 per home to bring the homes up to code. This indicates the high need that existed in the group of homes targeted. Even some homes with private alarm systems did not have enough to meet code.

At the conclusion of the home visits, 100% of the homes that were entered had one or more working smoke alarm. All but one home met the code, and that home owner was informed of the need for fuller compliance. The total number of working alarms after the visits was 424, or more than 4 per home. This should provide a major reduction in the risk of injury from fire in these homes

All of the smoke alarms installed were dual chamber with extended life batteries. No batteries were replaced in existing smoke alarms.

**Number of smoke alarms installed during the visit?**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 Alarms** | **1 Alarm** | **2 Alarms** | **3 Alarms** | **4 Alarms** | **5+ Alarms** | **Blank** | **Total** |
| Number of homes | 11 | 12 | 21 | 14 | 14 | 21 | 0 | **93** |
| Percent of homes | 12% | 13% | 23% | 15% | 15% | 23% | 0% | **100%** |
| **Total number of smoke alarms installed** | | | | | | | | **280** |

**Number of working smoke alarms after the visits?**[[5]](#footnote-6)

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 Alarms** | **1 Alarm** | **2 Alarms** | **3 Alarms** | **4 Alarms** | **5+ Alarms** | **Blank** | **Total** |
| Number of homes | 0 | 6 | 13 | 13 | 21 | 40 | 0 | **93** |
| Percent of homes | 0% | 6% | 14% | 14% | 23% | 43% | 0% | **100%** |
| **Total number of working smoke alarms after the visits** | | | | | | | | **424** |

**Type of alarm(s) installed:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Dual Chamber** | **Ionization** | **Photo-electric** | **Not answered** | **Total** |
| Number of homes | 82 | 0 | 0 | 11 | **93** |
| Percent of homes | 88% | 0% | 0% | 12% | **100%** |

**Power source of alarm(s) installed:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Tamper-proof 10-year battery** | **Hard-wired** | **Replaceable battery** | **Combination (battery and hard-wired)** | **Not answered** | **Total** |
| Number of homes | 0 | 0 | 82 | 0 | 11 | **93** |
| Percent of homes | 0% | 0% | 88% | 0% | 12% | **100%** |

**Number of smoke alarm batteries replaced?**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **0 Alarms** | **1+ Alarms** | **Blank** | **Total** |
| Number of homes | 92 | 0 | 1 | **93** |
| Percent of homes | 99% | 0% | 1% | **100%** |
| **Total number of smoke alarm batteries replaced** | | | | **0** |

**Did the home end up with the number of smoke alarms required by code?**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Yes** | **No** | **Blank** | **Total** |
| Number of homes | 92 | 1 | 0 | **93** |
| Percent of homes | 99% | 1% | 0% | **100%** |

***If no*, was the occupant advised of the number required?** –Yes, the one was.

Education Provided During the Visit: All of the homes visited were advised about testing and maintaining smoke alarms. A few were advised on other fire and injury subjects. The vast majority of the homes (86%) did not have a fire escape plan. The few who had one said they practiced it and had a credible meeting place. All of the homes were given literature on smoke alarm testing and other safety issues.

**Occupant instructed on (check all that apply):**

|  |  |  |
| --- | --- | --- |
|  | **Testing and maintaining  smoke alarms** | **Other fire or injury safety subjects\*** |
| Number of homes | 93 | 6 |
| Percent of homes | 100% | 6% |
| \* (1) Elderly evacuation; (2) Escape planning; (2) Fall hazards; (2) Medical information availability | | |

**Ask occupant: Do you have a fire escape plan?**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Yes** | **No** | **Not answered** | **Total** |
| Number of homes | 13 | 80 | 0 | **93** |
| Percent of homes | 14% | 86% | 0% | **100%** |

**If yes…**

**Was the fire escape plan practiced in the last year?**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Yes** | **No** | **Not answered** | **Total** |
| Number of homes | 12 | 1 | 0 | **13** |
| Percent of homes | 92% | 8% | 0% | **100%** |

**Where is your meeting place? (check if any credible place cited)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Yes, credible** | **No, not credible** | **Not answered** | **Total** |
| Number of homes | 12 | 1 | 0 | **13** |
| Percent of homes | 92% | 8% | 0% | **100%** |

**Occupant given written fire or injury safety materials on:**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Escape planning** | **General home safety** | **Specific causes or hazards\*** |
| Number of homes | 92 | 92 | 3 |
| Percent of homes | 99% | 99% | 3% |
| \* (2) Medical information card provided; (2) Kitchen safety; (2) Falls; (1) Electrical safety | | | |

Demographics:About three quarters of the homes were occupied by owners, the rest renters. There were 262 people in the homes, or almost 3 per home. About 20% of the homes had children, and 56% had elderly people. About a third of the people (31%) had a disability. About 24% of the homes had at least one smoker. In total, over three-quarters of the homes (77%) had at least one of these high fire risks. Many were probably low income homes though this was not explicitly asked for. One third of the homes were non-white.

**Do you own or rent your home?**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Own** | **Rent** | **Not answered** | **Total** |
| Number of homes | 65 | 24 | 4 | **93** |
| Percent of homes | 70% | 26% | 4% | **100%** |

**How many people live in your home?**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 People** | **1 Person** | **2 People** | **3 People** | **4 People** | **5+ People** | **Blank** | **Total** |
| Number of homes | 0 | 31 | 20 | 14 | 17 | 11 | 0 | **93** |
| Percent of homes | 0% | 33% | 22% | 15% | 18% | 12% | 0% | **100%** |
| **Total number of people** | | | | | | | | **262** |

**How many children living in your home are under age 5?**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 Children** | **1 Child** | **2 Children** | **3 Children** | **4 Children** | **5+ Children** | **Blank** | **Total** |
| Number of homes | 75 | 9 | 7 | 1 | 1 | 0 | 0 | **93** |
| Percent of homes | 81% | 10% | 8% | 1% | 1% | 0% | 0% | **100%** |
| **Total number of children** | | | | | | | | **30 (11%)** |

**How many people living in your home are age 65 or older?**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 Elderly** | **1 Elderly** | **2 Elderly** | **3 Elderly** | **4 Elderly** | **5+ Elderly** | **Blank** | **Total** |
| Number of homes | 45 | 37 | 10 | 1 | 0 | 0 | 0 | **93** |
| Percent of homes | 48% | 40% | 11% | 1% | 0% | 0% | 0% | **100%** |
| **Total number of elderly** | | | | | | | | **60 (23%)** |

**How many people living in your home are disabled?**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 Disabled** | **1 Disabled** | **2 Disabled** | **3 Disabled** | **4 Disabled** | **5+ Disabled** | **Blank** | **Total** |
| Number of homes | 64 | 28 | 1 | 0 | 0 | 0 | 0 | **93** |
| Percent of homes | 69% | 30% | 1% | 0% | 0% | 0% | 0% | **100%** |
| **Total number of disabled** | | | | | | | | **30 (11%)** |

**How many people living in your home are smokers?**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 Smokers** | **1 Smoker** | **2 Smokers** | **3 Smokers** | **4 Smokers** | **5+ Smokers** | **Blank** | **Total** |
| Number of homes | 70 | 15 | 5 | 2 | 1 | 0 | 0 | **93** |
| Percent of homes | 75% | 16% | 5% | 2% | 1% | 0% | 0% | **100%** |
| **Total number of smokers** | | | | | | | | **35 (13%)** |

**Number of risk factors in homes**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 Risks** | **1 Risk** | **2 Risks** | **3 Risks** | **4 Risks** | **Blank** | **Total** |
| Number of homes | 21 | 33 | 32 | 7 | 0 | 0 | **93** |
| Percent of homes | 23% | 35% | 34% | 8% | 0% | 0% | **100%** |

**Do you consider yourself: (can check more than one: e.g., White and Hispanic)**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **African American** | **Native American** | **Mixed** | **Asian** | **Pacific Islander** | **Hispanic-Latino** | **White** | **Other** | **Not Answered** | **Total** |
| Number of homes | 16 | 1 | 3 | 4 | 0 | 7 | 61 | 0 | 1 | **93** |
| Percent of homes | 17% | 1% | 3% | 4% | 0% | 8% | 66% | 0% | 1% | **100%** |

B. Households Given Alarms to Self-Install – Besides the 93 homes visited and entered to replace smoke alarms, another 1214 homes were given smoke alarms to self-install. Occupants who received smoke alarms answered some of the questions on the questionnaire used for visits. Several questions were not appropriate for giveaways and were deleted.

Most of these homes received their smoke alarms at fire stations, though some were delivered to their door. Almost all of these smoke alarms (99%) were given out by line firefighters, and 1% by prevention personnel, Most of those given smoke alarms said they lived in single family dwellings, with 6% in duplexes and 1% in mobile homes

**Type of Home:**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **House** | **Mobile  home** | **Duplex/  Townhouse** | **Multi-family** | **Other** | **Not answered** | **Total** |
| Number of homes | 1088 | 18 | 78 | 6 | 11 | 13 | **1214** |
| Percent of homes | 90% | 1% | 6% | 0% | 1% | 1% | **100%** |
| \*One home counted twice (House and Duplex/Townhouse) | | | | | | | |

**If entry to residence not possible, why not?**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **No one home** | **Minor only** | **Language barrier** | **Vacant home/lot** | **Entry refused?** | **Not answered** | **Total** |
| Number of homes | 0 | 0 | 0 | 0 | 0 | **1213** | 1213 |
| Percent of homes | 0% | 0% | 0% | 0% | 0% | **0%** | 0% |
| **Total number of homes visited** | | | | | | | **0** |
| **Total number of homes not entered** | | | | | | | **1213 (0%)** |
| **Total number of homes entered** | | | | | | | **0** |

**Positions of representatives making the visit (check all that apply)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Firefighter** | **Health-care worker** | **Volunteer** | **Prevention** | **Social worker** | **Other** | **Not answered** | **Total** |
| Number of homes | 1196 | 0 | 0 | 13 | 0 | 4 | 0 | **1213** |
| Percent of homes | 99% | 0% | 0% | 1% | 0% | 0% | 0% | **100%** |

Smoke Alarm Status: 975 homes (80%) said they had had 1 or more working smoke alarms in the home, with the most being 12 smoke alarms in 2 homes. They reported a total of 2186 working smoke alarms or a little more than two per home (about the same number as found during the actual visits noted in section A above. There were 236 homes (19%) who claimed that had no working smoke alarms, significantly lower than the 30% found in actual testing in Section A (and possibly underreported.).

The occupants were given 1-12 smoke alarms to install themselves, depending on their expressed need. A total of 3934 smoke alarms were given out, a little over 3 per home, very close to the number installed per home in the visits in Phase A.

All 1213 homes given alarms presumably then had at least one working alarm if they installed them (see Section C on the validation results). The total number of alarms- those they reported to have plus those given—was 6120, or about 5 per home, just a little higher than the 4+ alarms per home in the home visited. It is likely that the number of working smoke alarms after the giveaway was somewhat overstated, because not all were installed, and people tend to underestimate the number of their smoke alarms not working. So the actual number working is probably less than 5 per home. The problem with giveaways is that one is not sure whether they will be installed at all, let alone properly installed, and whether all smoke alarms already in the home were tested.

**Number of working smoke alarms per home (based on self-reporting)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 Alarms** | **1 Alarm** | **2 Alarms** | **3 Alarms** | **4 Alarms** | **5+ Alarms** | **Blank** | **Total** |
| Number of homes | 236 | 338 | 317 | 182 | 76 | 62 | 2 | **1213** |
| Percent of homes | 19% | 28% | 26% | 15% | 6% | 5% | 0% | **100%** |
| **Total number of working smoke alarms** | | | | | | | | **2186** |

**Number of smoke alarms given out per home**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 Alarms** | **1 Alarm** | **2 Alarms** | **3 Alarms** | **4 Alarms** | **5+ Alarms** | **Blank** | **Total** |
| Number of homes | 1 | 169 | 325 | 264 | 177 | 277 | 0 | **1213** |
| Percent of homes | 0% | 14% | 27% | 22% | 15% | 23% | 0% | **100%** |
| **Total number of smoke alarms installed** | | | | | | | | **3934** |

**Estimated total number of working smoke alarms per home after the giveaway**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 Alarms** | **1 Alarm** | **2 Alarms** | **3 Alarms** | **4 Alarms** | **5+ Alarms** | **Blank** | **Total** |
| Number of homes | 1 | 37 | 124 | 180 | 244 | 627 | 0 | **1213** |
| Percent of homes | 0% | 3% | 10% | 15% | 20% | 52% | 0% | **100%** |
| **Total number of working smoke alarms after the visits** | | | | | | | | **6120** |

**Type of alarm(s) given out:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Dual Chamber** | **Ionization** | **Photo-electric** | **Not answered** | **Total** |
| Number of homes | 1212 | 0 | 1 | 0 | **1213** |
| Percent of homes | 100% | 0% | 0% | 0% | **100%** |

Education Provided During the Visit: Over half of those requesting alarms said they had not practiced an escape plan in the last year. More than half had a credible meeting place.

**Was the fire escape plan practiced in the last year?**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Yes** | **No** | **Not answered** | **Total** |
| Number of homes | 487 | 692 | 34 | **1213** |
| Percent of homes | 40% | 57% | 3% | **100%** |

**Where is your meeting place? (check if any credible place cited)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Yes, credible** | **No, not credible** | **Not answered** | **Total** |
| Number of homes | 717 | 420 | 76 | **1213** |
| Percent of homes | 59% | 35% | 6% | **100%** |

Demographics: Only a few of the demographics questions were asked of those given smoke alarms. Household requesting free smoke alarms typically had 2-3 people per home. About 16% had children under 5, 37% had elderly, 20% had a disabled person, and 19% had smokers. In total, two-thirds (64%) had at least one of these risk factors, slightly lower than the 77% in the homes actually visited but not radically different in profile from them. About three-quarters of the homes were white, vs. two –thirds in the home visits.

**How many people live in your home?**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 People** | **1 Person** | **2 People** | **3 People** | **4 People** | **5+ People** | **Blank** | **Total** |
| Number of homes | 2 | 229 | 454 | 214 | 177 | 119 | 18 | **1213** |
| Percent of homes | 0% | 19% | 37% | 18% | 15% | 10% | 1% | **100%** |
| **Total number of people** | | | | | | | | **3152** |

**How many children living in your home are under age 5?**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 Children** | **1 Child** | **2 Children** | **3 Children** | **4 Children** | **5+ Children** | **Blank** | **Total** |
| Number of homes | 1001 | 130 | 55 | 7 | 2 | 0 | 18 | **1213** |
| Percent of homes | 83% | 11% | 5% | 1% | 0% | 0% | 1% | **100%** |
| **Total number of children** | | | | | | | | **269 (9%)** |

**How many people living in your home are age 65 or older?**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 Elderly** | **1 Elderly** | **2 Elderly** | **3 Elderly** | **4 Elderly** | **5+ Elderly** | **Blank** | **Total** |
| Number of homes | 739 | 269 | 175 | 11 | 1 | 0 | 18 | **1213** |
| Percent of homes | 61% | 22% | 14% | 1% | 0% | 0% | 1% | **100%** |
| **Total number of elderly** | | | | | | | | **656 (21%)** |

**How many people living in your home are disabled?**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 Disabled** | **1 Disabled** | **2 Disabled** | **3 Disabled** | **4 Disabled** | **5+ Disabled** | **Blank** | **Total** |
| Number of homes | 960 | 202 | 31 | 2 | 0 | 0 | 18 | **1213** |
| Percent of homes | 79% | 17% | 3% | 0% | 0% | 0% | 1% | **100%** |
| **Total number of disabled** | | | | | | | | **270 (9%)** |

**How many people living in your home are smokers?**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 Smokers** | **1 Smoker** | **2 Smokers** | **3 Smokers** | **4 Smokers** | **5+ Smokers** | **Blank** | **Total** |
| Number of homes | 969 | 154 | 58 | 9 | 2 | 3 | 18 | **1213** |
| Percent of homes | 80% | 13% | 5% | 1% | 0% | 0% | 1% | **100%** |
| **Total number of smokers** | | | | | | | | **320 (10%)** |

**Number of risk factors in homes**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 Risks** | **1 Risk** | **2 Risks** | **3 Risks** | **4 Risks** | **Blank** | **Total** |
| Number of homes | 413 | 503 | 230 | 48 | 1 | 18 | **1213** |
| Percent of homes | 34% | 41% | 19% | 4% | 0% | 1% | **100%** |

**Do you consider yourself: (can check more than one: e.g., White and Hispanic)**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **African American** | **Asian** | **Hispanic/ Latino** | **Native American** | **Pacific Islander** | **White** | **Mixed** | **Other** | **Not Answered** | **Total** |
| Number of homes | 81 | 58 | 34 | 7 | 5 | 939 | 13 | 13 | 68 | **1218** |
| Percent of homes | 7% | 5% | 3% | 1% | 0% | 77% | 1% | 1% | 6% | **100%** |
| \* 3 homes marked 2 categories (Asian + White); 1 home marked 3 categories (African American + Asian + White) | | | | | | | | | | |

C. Follow-up Calls **–** The fire department public education staff called a 10% sample (123) of the 1218 homes given smoke alarms a few weeks later to see if the alarms had been were installed. They asked the person answering the phone to go test one of the alarms so it could be heard sounding on the phone. Only 66 (54%) of those called were able to prove they had a working smoke alarm. 21 homes (17%) said they had not installed the alarms yet. A few who took the call were on mobile phones and not at home. 20% said they installed the alarm but had a variety of reasons for not testing them at that moment—too busy, too elderly, disturbing to children or dogs, or some other reason.

When asked how many working smoke alarms they had, almost everyone said they had at least one, including most of the homes which admitted they had not installed the smoke alarms given to them. That is possible-they had some working, and needed more. But then why didn’t they test at least one of those working? It was clear that relying on self-installation was not nearly as reliable as having the fire department install the smoke alarms.

**Smoke alarm sounded? If no, why?**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Yes** | **Would not work** | **Not installed** | **Call-taker not at home** | **Other\*** | **Total** |
| Number of homes | 66 | 1 | 21 | 10 | 25 | **123** |
| Percent of homes | 54% | 1% | 17% | 8% | 20% | **100%** |
| \* (1) Would Not Test; (1) Upsetting To Dog; (2) Unable To Make Remote Work; (3) Too Elderly; (5) Too Busy; (1) Too Annoying; (1) Remote Needs Cleaning; (4) Not Near Alarm To Test; (1) Not Done Yet; (1) Language Barrier; (1) In Bed Sick; (1) Husband's Job; (1) Did Not Know About Any Alarms; (2) Child Sleeping | | | | | | |

**Number of working smoke alarms claimed:**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 Alarms** | **1 Alarm** | **2 Alarms** | **3 Alarms** | **4 Alarms** | **5+ Alarms** | **Blank** | **Total** |
| Number of homes | 3 | 14 | 30 | 23 | 26 | 26 | 1 | **123** |
| Percent of homes | 2% | 11% | 24% | 19% | 21% | 21% | 1% | **100%** |
| **Total number of working smoke alarms** | | | | | | | | **395** |

Education Provided During the Visit: About 62% or two-thirds of the homes sampled said they had not practiced a fire escape plan in the past year. However, about two-thirds had a credible place to meet.

**Was the fire escape plan practiced in the last year?**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Yes** | **No** | **Not answered** | **Total** |
| Number of homes | 47 | 76 | 0 | **123** |
| Percent of homes | 38% | 62% | 0% | **100%** |

**Where is your meeting place? (check if any credible place cited)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Yes, credible** | **No, not credible** | **Not answered** | **Total** |
| Number of homes | 78 | 45 | 0 | **123** |
| Percent of homes | 63% | 37% | 0% | **100%** |

## Tucson

Homes Visited – Tucson attempted to visit 564 homes and gained entry to all of them; all were by request of the household. A little over half (51%) were single family dwellings, and another 44% were mobile homes. A few (5%) were duplex or townhouses. All of those making the visits were paid representatives of a Hispanic service organization.

**Type of Home:**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **House** | **Mobile  home** | **Duplex/  Townhouse** | **Multi-family** | **Other** | **Blank** | **Total** |
| Number of homes | 288 | 248 | 26 | 0 | 1 | 2 | **565** |
| Percent of homes | 51% | 44% | 5% | 0% | 0% | 0% | **100%** |
| \* One home was counted twice (House and Mobile home) | | | | | | | |

**If entry to residence not possible, why not?**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **No one home** | **Minor only** | **Language barrier** | **Vacant home/lot** | **Entry refused?** | **Blank** | **Total** |
| Number of homes | 0 | 0 | 0 | 0 | 0 | 0 | **0** |
| Percent of homes | 0% | 0% | 0% | 0% | 0% | 0% | **0%** |
| **Total number of homes visited** | | | | | | | **564** |
| **Total number of homes not entered** | | | | | | | **0 (0%)** |
| **Total number of homes entered** | | | | | | | **564 (100%)** |

**Positions of representatives making the visit (check all that apply):**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Firefighter** | **Health-care worker** | **Volunteer** | **Prevention** | **Social worker** | **Other** | **Not answered** | **Total** |
| Number of homes | 0 | 0 | 0 | 0 | 0 | 564 | 0 | **564** |
| Percent of homes | 0% | 0% | 0% | 0% | 0% | 100% | 0% | **100%** |

Inspection Results **–** Of the 564 homes visited**,** 72% had no alarms!158 homes (28%)had one or more smoke alarms; one home had seven. There were a total of 301 smoke alarms in all the homes, or an average of less than one per home. Of the 301 alarms, 112 were not working, or 37%. **Thus a staggering 441 homes (78%) homes had no working smoke alarm!!** This was by far the most of any city involved in this project. Some homes had as many as four smoke alarms not working. About 1% of the homes had a private alarm system, and these were not tested to avoid false alarms.

Here, too, the high percent of home without working alarms in high risk homes supports the rationale for this program. As previously noted, the heart of the home visit program was to rectify this situation regardless of the cause.

**Number of smoke alarms (working and/or non-working)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 Alarms** | **1 Alarm** | **2 Alarms** | **3 Alarms** | **4 Alarms** | **5+ Alarms** | **Blank** | **Total** |
| Number of homes | 406 | 71 | 54 | 18 | 10 | 5 | 0 | **564** |
| Percent of homes | 72% | 13% | 10% | 3% | 2% | 1% | 0% | **100%** |
| **Total number of smoke alarms** | | | | | | | | **301** |

**Number of working smoke alarms (based on testing)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 Alarms** | **1 Alarm** | **2 Alarms** | **3 Alarms** | **4 Alarms** | **5+ Alarms** | **Blank** | **Total** |
| Number of homes | 441 | 82 | 26 | 9 | 4 | 2 | 0 | **564** |
| Percent of homes | 78% | 15% | 5% | 2% | 1% | 0% | 0% | **100%** |
| **Total number of working smoke alarms** | | | | | | | | **189** |

**Number of non-working smoke alarms (based on testing)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 Alarms** | **1 Alarm** | **2 Alarms** | **3 Alarms** | **4 Alarms** | **5+ Alarms** | **Blank** | **Total** |
| Number of homes | 484 | 54 | 21 | 4 | 1 | 0 | 0 | **564** |
| Percent of homes | 86% | 10% | 4% | 1% | 0% | 0% | 0% | **100%** |
| **Total number of non-working smoke alarms** | | | | | | | | **112** |

**Private alarm system present (do not test)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Yes** | **No** | **Not Answered** | **Total** |
| Number of homes | 8 | 556 | 0 | **564** |
| Percent of homes | 1% | 99% | 0% | **100%** |

Installations **–** All but one of thehomes visited had one or more smoke alarms installed during the visit. Just under half (47%) had 5 or more smoke alarms installed. The one home where no smoke alarms were installed had 7 working smoke alarms at the start of the visit. In total, 2490 alarms were installed, or an average of over 4 per home.

At the conclusion of the visits, all of the homes but one had one or more working smoke alarms. There were a total of 2679 working smoke alarms installed, or over 4 per home on average. Over half of the homes had five or more working smoke alarms at the end of the visits. About 61% of the alarms wee dual chamber battery operated the rest ionization with long life batteries. Batteries were replaced in three alarms. All but two of the 564 homes complied with the smoke alarms code upon completion of the visits. Those two were advised on what was needed to meet code.

**Number of smoke alarms installed during the visit?**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 Alarms** | **1 Alarm** | **2 Alarms** | **3 Alarms** | **4 Alarms** | **5+ Alarms** | **Blank** | **Total** |
| Number of homes | 1 | 9 | 32 | 85 | 173 | 264 | 0 | **564** |
| Percent of homes | 0% | 2% | 6% | 15% | 31% | 47% | 0% | **100%** |
| **Total number of smoke alarms installed** | | | | | | | | **2490** |

**Number of working smoke alarms after the visits?**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 Alarms** | **1 Alarm** | **2 Alarms** | **3 Alarms** | **4 Alarms** | **5+ Alarms** | **Blank** | **Total** |
| Number of homes | 0 | 6 | 27 | 62 | 155 | 314 | 0 | **564** |
| Percent of homes | 0% | 1% | 5% | 11% | 27% | 56% | 0% | **100%** |
| **Total number of working smoke alarms after the visits** | | | | | | | | **2679** |

**Type of alarm(s) installed:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Dual Chamber** | **Ionization** | **Photo-electric** | **Not answered** | **Total** |
| Number of homes | 346 | 217 | 0 | 1 | **564** |
| Percent of homes | 61% | 38% | 0% | 0% | **100%** |
|  | | | | | |

**Power source of alarm(s) installed:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Tamper-proof 10-year battery** | **Hard-wired** | **Replaceable battery** | **Combination (battery and hard-wired)** | **Not answered** | **Total** |
| Number of homes | 217 | 0 | 347 | 0 | 1 | **565** |
| Percent of homes | 38% | 0% | 61% | 0% | 0% | **100%** |
| \* One home had two types installed: Tamper-proof and Replaceable battery | | | | | | |

**Number of smoke alarm batteries replaced?**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **0 Alarms** | **1+ Alarms** | **Total** |
| Number of homes | 561 | 3 | **564** |
| Percent of homes | 99% | 1% | **100%** |
| **Total number of smoke alarm batteries replaced** | | | **12\*** |
|  | | | |

**Did the home end up with the number of smoke alarms required by code?**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Yes** | **No\*** | **Blank** | **Total** |
| Number of homes | 562 | 2 | 0 | **564** |
| Percent of homes | 100% | 0% | 0% | **100%** |
|  | | | | |

**If no, was the occupant advised of the number required?** The 2 homes were notified of the number of smoke alarms required by code.

Education Provided During the Visit **–** All of the homes visited were instructed on testing and maintaining smoke alarms, and on other fire or injury safety issues. Only 3 of the 564 homes had a fire escape plan, which emphasized the importance of instructing them on not only maintaining smoke alarms but what to do when they go off.

**Occupant instructed on (check all that apply):**

|  |  |  |
| --- | --- | --- |
|  | **Testing and maintaining  smoke alarms** | **Other fire or injury safety subjects\*** |
| Number of homes | 564 | 564 |
| Percent of homes | 100% | 100% |
|  | | |

**Ask occupant: Do you have a fire escape plan?**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Yes** | **No** | **Blank** | **Total** |
| Number of homes | 17 | 547 | 0 | **564** |
| Percent of homes | 3% | 97% | 0% | **100%** |

**If yes…**

**Was the fire escape plan practiced in the last year?**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Yes** | **No** | **Blank** | **Total** |
| Number of homes | 13 | 4 | 0 | **17** |
| Percent of homes | 76% | 24% | 0% | **100%** |

**Where is your meeting place? (check if any credible place cited)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Yes, credible** | **No, not credible** | **Blank** | **Total** |
| Number of homes | 14 | 3 | 0 | **17** |
| Percent of homes | 82% | 18% | 0% | **100%** |

**Occupant given written fire or injury safety materials on:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Escape planning** | | **General home safety** | | **Specific causes or hazards\*** |
| Number of homes | 564 | | 564 | | 564 |
| Percent of homes | 100% | | 100% | | 100% |
| \* Not listed. | |  | |  | |

Demographics **–** The vast majority (87%) of homes visited were owner occupied. Almost all (99%) were Hispanic households. There were almost 4 people per household on the average. About one-third had children under 5. Almost a quarter had at least one elderly person. Few (8%) had someone with a disability. About 17% had one or more smokers. Two-thirds had at least one of these risk factors.

**(Ask resident)** **Do you own or rent your home?**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Own** | **Rent** | **Blank** | **Total** |
| Number of homes | 490 | 74 | 0 | **564** |
| Percent of homes | 87% | 13% | 0% | **100%** |

**How many people live in your home?**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 People** | **1 Person** | **2 People** | **3 People** | **4 People** | **5+ People** | **Blank** | **Total** |
| Number of homes | 0 | 28 | 100 | 94 | 150 | 192 | 0 | **564** |
| Percent of homes | 0% | 5% | 18% | 17% | 27% | 34% | 0% | **100%** |
| **Total number of people** | | | | | | | | **2191** |

**How many children living in your home are under age 5?**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 Children** | **1 Child** | **2 Children** | **3 Children** | **4 Children** | **5+ Children** | **Blank** | **Total** |
| Number of homes | 359 | 154 | 42 | 6 | 1 | 2 | 0 | **564** |
| Percent of homes | 64% | 27% | 7% | 1% | 0% | 0% | 0% | **100%** |
| **Total number of children** | | | | | | | | **272 (12%)** |

**How many people living in your home are age 65 or older?**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 Elderly** | **1 Elderly** | **2 Elderly** | **3 Elderly** | **4 Elderly** | **5+ Elderly** | **Blank** | **Total** |
| Number of homes | 439 | 91 | 30 | 3 | 1 | 0 | 0 | **564** |
| Percent of homes | 78% | 16% | 5% | 1% | 0% | 0% | 0% | **100%** |
| **Total number of elderly** | | | | | | | | **164 (7%)** |

**How many people living in your home are disabled?**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 Disabled** | **1 Disabled** | **2 Disabled** | **3 Disabled** | **4 Disabled** | **5+ Disabled** | **Blank** | **Total** |
| Number of homes | 518 | 41 | 5 | 0 | 0 | 0 | 0 | **564** |
| Percent of homes | 92% | 7% | 1% | 0% | 0% | 0% | 0% | **100%** |
| **Total number of disabled** | | | | | | | | **51 (2%)** |

**How many people living in your home are smokers?**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 Smokers** | **1 Smoker** | **2 Smokers** | **3 Smokers** | **4 Smokers** | **5+ Smokers** | **Blank** | **Total** |
| Number of homes | 464 | 93 | 6 | 0 | 0 | 0 | 1 | **564** |
| Percent of homes | 82% | 16% | 1% | 0% | 0% | 0% | 0% | **100%** |
| **Total number of smokers** | | | | | | | | **105 (5%)** |

**Number of risk factors in homes**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 Risks** | **1 Risk** | **2 Risks** | **3 Risks** | **4 Risks** | **Blank** | **Total** |
| Number of homes | 200 | 272 | 78 | 9 | 5 | 0 | **564** |
| Percent of homes | 35% | 48% | 14% | 2% | 1% | 0% | **100%** |

**Do you consider yourself: (can check more than one: e.g., White and Hispanic)**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **African American** | **Asian** | **Hispanic/ Latino** | **Native American** | **Pacific Islander** | **White** | **Mixed** | **Other** | **Blank** | **Total** |
| Number of homes | 0 | 0 | 561 | 0 | 0 | 3 | 0 | 0 | 0 | **564** |
| Percent of homes | 0% | 0% | 99% | 0% | 0% | 1% | 0% | 0% | 0% | **100%** |
|  | | | | | | | | | | |

## Vancouver

Homes Visited – Vancouver as noted earlier concentrated their program on mobile homes (all but 3 of 436 homes entered.) They approached 784 homes, mostly in mobile home parks, and entered 436 (56%) Several mobile home parks refused to allow the program in, and these are not included in the refusals, which refer to particular homes. For the homes not able to be entered, two-thirds had no one home, and one quarter refused to allow the team in. These were mostly cold calls. Almost all of the visits were made by firefighters, with a few from volunteers.

**Type of Home:**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **House** | **Mobile  home** | **Duplex/  Townhouse** | **Multi-family** | **Other** | **Blank** | **Total** |
| Number of homes | 3 | 433 | 0 | 0 | 0 | 0 | **436** |
| Percent of homes | 1% | 99% | 0% | 0% | 0% | 0% | **100%** |

**If entry to residence not possible, why not?**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **No one home** | **Minor only** | **Language barrier** | **Vacant home/lot** | **Entry refused?** | **Blank** | **Total** |
| Number of homes | 238\*\* | 2 | 0 | 14\*\*\* | 96\*\*\*\* | 0 | **350\*\*\*\*\*** |
| Percent of homes | 68% | 1% | 0% | 4% | 27% | 0% | **100%** |
| **Total number of homes visited** | | | | | | | **784** |
| **Total number of homes not entered** | | | | | | | **348 (44%)** |
| **Total number of homes entered** | | | | | | | **436 (56%)** |
| \*\* In 2 homes where no one was home firefighters were able to install a total of 2 smoke alarms and left fire or injury safety materials for one of these 2 homes.  \*\*\* In 2 vacant homes firefighters were able to install a total of 8 smoke alarms.  \*\*\*\* In 1 home the homeowner refused entry, but took 2 smoke alarms from firefighters.  \*\*\*\*\* Two homes were counted twice: (1) No one home and Minor only, (2) No one home and Not interested | | | | | | | |

**Positions of representatives making the visit (check all that apply):**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Firefighter** | **Health-care worker** | **Volunteer** | **Prevention** | **Social worker** | **Other** | **Not answered** | **Total** |
| Number of homes | 414 | 0 | 8 | 1 | 0 | 1 | 12 | **436** |
| Percent of homes | 95% | 0% | 2% | 0% | 0% | 0% | 3% | **100%** |

Inspection Results **–** Most of the homes visited in Tucson (85%) had at least one smoke alarm. One home had 7 smoke alarms (4 working, 3 non-working). There were a total of 785 smoke alarms in all the homes or almost two per home. However, 44 homes (10%) homes had no smoke alarm at all. At least 75 homes (17%). About 8% of the homes had private alarms systems which were not tested.

There were a total of 648 working smoke alarms in all the homes, between one and two per home on average, and well below what was needed to meet code.

At least 96 homes (22%) had at least one non-working smoke alarm. Over 21% of the smoke alarms were not working. One home had 5 not working. Overall 17% had no working alarm, which was among the lowest extreme problem rate in the five cities.

**Number of smoke alarms (working and/or non-working)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 Alarms** | **1 Alarm** | **2 Alarms** | **3 Alarms** | **4 Alarms** | **5+ Alarms** | **Blank** | **Total** |
| Number of homes | 44 | 109 | 165 | 53 | 29 | 13 | 23 | **436** |
| Percent of homes | 10% | 25% | 38% | 12% | 7% | 3% | 5% | **100%** |
| **Total number of smoke alarms** | | | | | | | | **785** |

**Number of working smoke alarms (based on testing)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 Alarms** | **1 Alarm** | **2 Alarms** | **3 Alarms** | **4 Alarms** | **5+ Alarms** | **Blank** | **Total** |
| Number of homes | 75 | 126 | 140 | 36 | 23 | 8 | 28 | **436** |
| Percent of homes | 17% | 29% | 32% | 8% | 5% | 2% | 6% | **100%** |
| **Total number of working smoke alarms** | | | | | | | | **648** |

**Number of non-working smoke alarms (based on testing)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 Alarms** | **1 Alarm** | **2 Alarms** | **3 Alarms** | **4 Alarms** | **5+ Alarms** | **Blank** | **Total** |
| Number of homes | 308 | 62 | 29 | 4 | 0 | 1 | 32 | **436** |
| Percent of homes | 71% | 14% | 7% | 1% | 0% | 0% | 7% | **100%** |
| **Total number of non-working smoke alarms** | | | | | | | | **137** |

**Private alarm system present (do not test)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Yes** | **No** | **Not Answered** | **Total** |
| Number of homes | 35 | 361 | 40 | 436 |
| Percent of homes | 8% | 83% | 9% | 100% |

Installations **–** Almost all of the homes (96%), including those with private alarm systems, had at least one smoke alarm installed during the visit. Of the 18 homes where no smoke alarm was installed, 14 had working smoke alarms and another four had the number of alarms installed left blank. The number of smoke alarms installed was 932 ,or a little over two per home. At the end of the visits, all but one home had smoke alarms installed, and there were as average of four working per home, including the alarms found working on arrival. Batteries were replaced in at least 9 homes. Virtually all of the homes met code at the end of the visits; there may have been a handful of exceptions. All of the alarms installed were dual purpose, 10-year, tamper proof battery alarms.

There were an additional 41 homes with smoke alarms installed beyond the normal visits; a few vacant homes had smoke alarms installed, one home insisted on installing the smoke alarms on their own, two fire stations installed some alarms on follow up visits, etc. The grand total of smoke alarms installed was 985. There also were about 14 defective alarms not installed, which accounts for one short of 1000 alarms.

**Number of smoke alarms installed during the visit?**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 Alarms** | **1 Alarm** | **2 Alarms** | **3 Alarms** | **4 Alarms** | **5+ Alarms** | **Blank** | **Total** |
| Number of homes | 18 | 93 | 175 | 122 | 22 | 6 | 0 | **436** |
| Percent of homes | 4% | 21% | 40% | 28% | 5% | 1% | 0% | **100%** |
| **Total number of smoke alarms installed** | | | | | | | | **932\*** |
| \* In 2 homes where no one was home firefighters were able to install a total of 2 smoke alarms and left fire or injury safety materials for one of these 2 homes. In 2 vacant homes firefighters were able to install a total of 8 smoke alarms. In 1 home the homeowner refused entry, but took 2 smoke alarms from firefighters. Station 3 installed an additional 12 smoke alarms in homes they followed up with; Station 6 installed 5; Chapman installed 12; and the City of Vancouver Mobile Home Renovation Program installed 12. There were 14 defective smoke alarms.  Including the 41 special cases noted above, the total number of smoke alarms installed was **985** (assuming the 2 smoke alarms taken by the homeowner were self-installed). | | | | | | | | |

**Number of working smoke alarms after the visits?**.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 Alarms** | **1 Alarm** | **2 Alarms** | **3 Alarms** | **4 Alarms** | **5+ Alarms** | **Blank** | **Total** |
| Number of homes | 1 | 15 | 63 | 128 | 121 | 108 | 0 | **436** |
| Percent of homes | 0% | 3% | 14% | 29% | 28% | 25% | 0% | **100%** |
| **Total number of working smoke alarms after the visits** | | | | | | | | **1,639\*** |
| \* This total does not reflect the additional 41 special cases noted above. | | | | | | | | |

**Type of alarm(s) installed:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Dual Chamber** | **Ionization** | **Photo-electric** | **Not answered** | **Total** |
| Number of homes | 418 | 0 | 0 | 18\* | **436\*\*** |
| Percent of homes | 96% | 0% | 0% | 4% | **100%** |
| \* No smoke alarms were installed in these homes, which is why the type was not designated.  \*\* This total does not reflect the additional 41 special cases noted above. | | | | | |

**Power source of alarm(s) installed:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Tamper-proof 10-year battery** | **Hard-wired** | **Replaceable battery** | **Combination (battery and hard-wired)** | **Not answered** | **Total** |
| Number of homes | 417 | 0 | 1 | 0 | 18\* | **436\*\*** |
| Percent of homes | 96% | 0% | 0% | 0% | 4% | **100%** |
| \* No smoke alarms were installed in these homes, which is why the type was not designated.  \*\* This total does not reflect the additional 41 special cases noted above. | | | | | | |

**Number of smoke alarm batteries replaced?**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **0 Alarms** | **1+ Alarms** | **Blank** | **Total** |
| Number of homes | 386\* | 39 | 11\*\* | **436\*\*\*** |
| Percent of homes | 89% | 9% | 3% | **100%** |
| \* At the end of the visits, 385 homes had anywhere from 1-12 working smoke alarms in the home. 1 home had 0 working smoke alarms.  \*\* At the end of the visits, these homes had anywhere from 1-6 working smoke alarms in the home.  \*\*\* This total does not reflect the additional 41 special cases noted above. | | | | |

**Did the home end up with the number of smoke alarms required by code?**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Yes** | **No** | **Blank** | **Total** |
| Number of homes | 436 | 0 | 0 | **436** |
| Percent of homes | 100% | 0% | 0% | **100%** |
|  | | | | |

**If no, was the occupant advised of the number required?** N/A

Education Provided During the Visit **–** All but a few homes were given verbal instructions on testing and maintaining their alarms. All were also instructed on fire and injury safety. Only a little over one-third (35%) of the homes said they had an escape plan; three-quarters of those homes had a reasonable meeting place, but only half of the 35% said they had practiced the escape plan in the last year. All of the homes were given written materials on escape planning, general fire safety, and specific safety targets.

**Occupant instructed on (check all that apply):**

|  |  |  |
| --- | --- | --- |
|  | **Testing and maintaining  smoke alarms** | **Other fire or injury safety subjects\*** |
| Number of homes | 433 | 434 |
| Percent of homes | 99% | 100% |
| \*Kitchen Safety, Home Escape Planning, & Extinguishers | | |

**Ask occupant: Do you have a fire escape plan?**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Yes** | **No** | **Blank** | **Total** |
| Number of homes | 152 | 173 | 111 | **436** |
| Percent of homes | 35% | 40% | 25% | **100%** |

**If yes…**

**Was the fire escape plan practiced in the last year?**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Yes** | **No** | **Blank** | **Total** |
| Number of homes | 72 | 77 | 3 | **152** |
| Percent of homes | 47% | 51% | 2% | **100%** |

**Where is your meeting place? (check if any credible place cited)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Yes, credible** | **No, not credible** | **Blank** | **Total** |
| Number of homes | 119 | 5 | 28 | **152** |
| Percent of homes | 78% | 3% | 18% | **100%** |

**Occupant given written fire or injury safety materials on:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Escape planning** | | **General home safety** | | **Specific causes or hazards\*** |
| Number of homes | 433 | | 431 | | 433 |
| Percent of homes | 99% | | 99% | | 99% |
| \*Kitchen Safety/Fall Safety | |  | |  | |

Demographics **–** Virtually all of the homes approached in Tucson were owner-occupied. The owners reported a total of 762 people living in them, or a little less than two per household. A little over one-third of the households had only one person. There were 319 elderly, about 42% of the people in the households. People with disabilities comprised 18% of the occupants. Smokers comprised 17% of the occupants The households had only 41 children under 5, or about 5% of the occupants. A whopping 79% of the households had one or more of the above fire risk factors. At least three-quarters of the households were white; race was not reported in another 17%, and the remainder were scattered among non-white categories.

**Do you own or rent your home?**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Own** | **Rent** | **Blank/??** | **Total** |
| Number of homes | 432 | 2 | 2 | 436 |
| Percent of homes | 99% | 0% | 0% | 100% |

**How many people live in your home?**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 People** | **1 Person** | **2 People** | **3 People** | **4 People** | **5+ People** | **Blank** | **Total** |
| Number of homes | 0 | 159 | 194 | 26 | 22 | 9 | 26 | **436** |
| Percent of homes | 0% | 36% | 44% | 6% | 5% | 2% | 6% | **100%** |
| **Total number of people** | | | | | | | | **762** |

**How many children living in your home are under age 5?**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 Children** | **1 Child** | **2 Children** | **3 Children** | **4 Children** | **5+ Children** | **Blank** | **Total** |
| Number of homes | 376 | 23 | 9 | 0 | 0 | 0 | 28 | **436** |
| Percent of homes | 86% | 5% | 2% | 0% | 0% | 0% | 6% | **100%** |
| **Total number of children** | | | | | | | | **41 (5%)** |

**How many people living in your home are age 65 or older?**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 Elderly** | **1 Elderly** | **2 Elderly** | **3 Elderly** | **4 Elderly** | **5+ Elderly** | **Blank** | **Total** |
| Number of homes | 168 | 149 | 85 | 0 | 0 | 0 | 34 | **436** |
| Percent of homes | 39% | 34% | 19% | 0% | 0% | 0% | 8% | **100%** |
| **Total number of elderly** | | | | | | | | **319 (42%)** |

**How many people living in your home are disabled?**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 Disabled** | **1 Disabled** | **2 Disabled** | **3 Disabled** | **4 Disabled** | **5+ Disabled** | **Blank** | **Total** |
| Number of homes | 284 | 112 | 12 | 1 | 0 | 0 | 27 | **436** |
| Percent of homes | 65% | 26% | 3% | 0% | 0% | 0% | 6% | **100%** |
| **Total number of disabled** | | | | | | | | **139 (18%)** |

**How many people living in your home are smokers?**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 Smokers** | **1 Smoker** | **2 Smokers** | **3 Smokers** | **4 Smokers** | **5+ Smokers** | **Blank** | **Total** |
| Number of homes | 301 | 77 | 24 | 2 | 0 | 0 | 32 | **436** |
| Percent of homes | 69% | 18% | 6% | 0% | 0% | 0% | 7% | **100%** |
| **Total number of smokers** | | | | | | | | **131 (17%)** |

**Number of risk factors in homes**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 Risks** | **1 Risk** | **2 Risks** | **3 Risks** | **4 Risks** | **Blank** | **Total** |
| Number of homes | 91 | 217 | 107 | 21 | 0 | 0 | **436** |
| Percent of homes | 21% | 50% | 25% | 5% | 0% | 0% | **100%** |

**Do you consider yourself: (can check more than one: e.g., White and Hispanic)**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **African American** | **Asian** | **Hispanic/ Latino** | **Native American** | **Pacific Islander** | **White** | **Mixed** | **Other** | **Blank** | **Total** |
| Number of homes | 1 | 4 | 21 | 3 | 0 | 337 | 1 | 2 | 75 | 444 |
| Percent of homes | 0% | 1% | 5% | 1% | 0% | 76% | 0% | 0% | 17% | 100% |
| \* Two households checked three categories: (1) Asian, White, and Mixed; (1) Hispanic/Latino, Native American, and White.  Four households checked two categories: (1) Asian and White; (1) White and Other (AA); (1) Hispanic/Latino and Native American; and (1) Hispanic/Latino and Other | | | | | | | | | | |

## Wilmington

Homes Visited – Wilmington attempted household visits to 1389 homes and was able to enter 570, or 41%. About three-quarters were single family dwellings, 11% multi-family dwellings, and 11% duplex or townhouses. The main reasons for not getting in was no one home (73% of non- turned away (21%), and vacant (6%). At least 370 of the visits were made by a team of two firefighters; and at least 141 were made by a firefighter and a volunteer from the community (about 52 visits did not record who made them.)

**Type of Home:**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **House** | **Mobile  home** | **Duplex/  Townhouse** | **Multi-family** | **Other** | **Not answered** | **Total** |
| Number of homes | 423 | 54 | 64 | 4 | 0 | 25 | **570** |
| Percent of homes | 74% | 9% | 11% | 1% | 0% | 4% | **100%** |

**If entry to residence not possible, why not?**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **No one home** | **Minor only** | **Language barrier** | **Vacant home/lot** | **Entry refused?** | **Total** |
| Number of homes | 589 | 3 | 10 | 49 | 172 | **823\*** |
| Percent of homes | 72% | 0% | 1% | 6% | 21% | **100%** |
| **Total number of homes visited** | | | | | | **1389** |
| **Total number of homes not entered** | | | | | | **819 (59%)** |
| **Total number of homes entered** | | | | | | **570 (41%)** |
| \* Four homes were counted twice (1 - No one home and Vacant home/lot; 2 - No one home and Entry refused; 1 - Language barrier and Entry refused) | | | | | | |

**Positions of representatives making the visit (check all that apply):**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Firefighter** | **Health-care worker** | **Volunteer** | **Prevention** | **Social worker** | **Other** | **Not answered** | **Total** |
| Number of homes | 517 | 0 | 141 | 1 | 0 | 6 | 52 | **717\*** |
| Percent of homes | 72% | 0% | 20% | 0% | 0% | 1% | 7% | **100%** |
| \* 141 homes visited by team of Firefighter + Volunteer; 6 homes visited by team of Firefighter + Other; 370 homes visited by team of Firefighters only; 1 home visited by team of Prevention only | | | | | | | | |

Inspection Results **–** Of the 570 homes visited, at least 25% had no smoke alarm (working or non-working). And 61% had at least one smoke alarm. (In another 14% of the homes the smoke alarm status on arrival was not reported.) Three homes had nine alarms each. There were a total of 713 smoke alarms in the homes, or an average of between one and two per home.

After testing, it was found that 242 homes (42%) had no working smoke alarm! There were a total of 461 working smoke alarms in the homes, an average of less than one per home. Out of 713, 252 (35%) were not working—a large proportion. Four homes had more than 5 smoke alarms not working. Another 42 homes (7%) had private alarm systems whose alarms were not tested.

**Number of smoke alarms (working and/or non-working)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 Alarms** | **1 Alarm** | **2 Alarms** | **3 Alarms** | **4 Alarms** | **5+ Alarms** | **Blank\*** | **Total** |
| Number of homes | 144 | 162 | 98 | 45 | 23 | 21 | 77 | **570** |
| Percent of homes | 25% | 28% | 17% | 8% | 4% | 4% | 14% | **100%** |
| **Total number of smoke alarms** | | | | | | | | **713** |
| \*Blank = nothing was entered for working or non-working | | | | | | | | |

**Number of working smoke alarms (based on testing)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 Alarms** | **1 Alarm** | **2 Alarms** | **3 Alarms** | **4 Alarms** | **5+ Alarms** | **Blank** | **Total** |
| Number of homes | 242 | 126 | 57 | 29 | 15 | 13 | 88 | **570** |
| Percent of homes | 42% | 22% | 10% | 5% | 3% | 2% | 15% | **100%** |
| **Total number of working smoke alarms** | | | | | | | | **461** |

**Number of non-working smoke alarms (based on testing)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 Alarms** | **1 Alarm** | **2 Alarms** | **3 Alarms** | **4 Alarms** | **5+ Alarms** | **Blank** | **Total** |
| Number of homes | 274 | 119 | 36 | 8 | 3 | 4 | 126 | **570** |
| Percent of homes | 48% | 21% | 6% | 1% | 1% | 1% | 22% | **100%** |
| **Total number of non-working smoke alarms** | | | | | | | | **252** |

**Private alarm system present (do not test)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Yes** | **No** | **Not Answered** | **Total** |
| Number of homes | 42 | 432 | 96 | **570** |
| Percent of homes | 7% | 76% | 17% | **100%** |

Installations **–** 496 homes (87%) had at least one smoke alarm installed during the visit. In 33 homes (6%) the firefighters reported that no smoke alarm was installed, 22 of these homes had 1-5 working smoke alarms; one had a private alarm system; but it is not clear why the other s did not have any installed (and batteries were not replaced in the smoke alarms of those homes.) Installation information was left blank for 41 homes. But overall, there were 1351 smoke alarms installed, and average of almost three per home visited. The vast majority of the smoke alarms installed were battery-powered, tamper-proof ionization alarms with 10-year batteries

Batteries were replaced in smoke alarms in 20 homes.

At the conclusion of the visits, 91% of the homes were known to have at least one working smoke alarm At least three-quarters of the homes met the code requirements for smoke alarms . Virtually all of the rest were advised on what additional alarms were needed to meet code. 12 homes were reported as having no working alarms at the end of the visits.

**Number of smoke alarms installed during the visit?**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 Alarms** | **1 Alarm** | **2 Alarms** | **3 Alarms** | **4 Alarms** | **5+ Alarms** | **Blank** | **Total** |
| Number of homes | 33 | 88 | 132 | 160 | 78 | 38 | 41 | **570** |
| Percent of homes | 6% | 15% | 23% | 28% | 14% | 7% | 7% | **100%** |
| **Total number of smoke alarms installed** | | | | | | | | **1351** |

**Number of working smoke alarms after the visits?**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 Alarms** | **1 Alarm** | **2 Alarms** | **3 Alarms** | **4 Alarms** | **5+ Alarms** | **Blank** | **Total** |
| Number of homes | 12 | 25 | 105 | 157 | 127 | 107 | 37 | **570** |
| Percent of homes | 2% | 4% | 18% | 28% | 22% | 19% | 6% | **100%** |
| **Total number of working smoke alarms after the visits** | | | | | | | | **1853** |

**Type of alarm(s) installed:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Dual Chamber** | **Ionization** | **Photo-electric** | **Not answered** | **Total** |
| Number of homes | 5 | 456 | 4 | 105 | **570** |
| Percent of homes | 1% | 80% | 1% | 18% | **100%** |

**Power source of alarm(s) installed:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Tamper-proof 10-year battery** | **Hard-wired** | **Replaceable battery** | **Combination (battery and hard-wired)** | **Not answered** | **Total** |
| Number of homes | 463 | 1 | 6 | 0 | 102 | **572\*** |
| Percent of homes | 81% | 0% | 1% | 0% | 18% | **100%** |
| \* Two homes were checked as receiving 1 Tamper-proof and 1 Replaceable battery | | | | | | |

**Number of smoke alarm batteries replaced?**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **0 Alarms** | **1+ Alarms** | **Blank** | **Total** |
| Number of homes | 446 | 20 | 104 | **570** |
| Percent of homes | 78% | 4% | 18% | **100%** |
| **Total number of smoke alarm batteries replaced** | | | | **41** |

**Did the home end up with the number of smoke alarms required by code?**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Yes** | **No** | **Blank** | **Total** |
| Number of homes | 427 | 40 | 103 | **570** |
| Percent of homes | 75% | 7% | 18% | **100%** |

**If no, was the occupant advised of the number required?**

Education Provided During the Visit **–** Three quarters of the homes were advised on testing and maintaining smoke alarms. 12% were advised on other fire or injury safety subjects, one on one. Only a little over a third of the homes (36%) said they had an escape plan. Only half of those with a plan could relate a credible meeting place, and only a third of those with a plan said they practiced it.

Half of the homes received literature on escape planning, and half of the homes were given literature on general home safety. It was not that half the homes got literature and the rest did not; rather, discretion was used as to who needed what.

**Occupant instructed on (check all that apply):**

|  |  |  |
| --- | --- | --- |
|  | **Testing and maintaining  smoke alarms** | **Other fire or injury safety subjects\*** |
| Number of homes | 435 | 67 |
| Percent of homes | 76% | 12% |
| \* (2) Smoking increases risk and leaving stove on; (1) Remove gas powered weed eater from being stored inside dwelling; (2) Purchase CO2 detector; (1) Post address on house; (1) Impact of smoke on individuals while asleep; (7) hurricane evacuation; (1) Extension cords, space heaters; (3) Evacuation plans | | |

**Ask occupant: Do you have a fire escape plan?**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Yes** | **No** | **Not answered** | **Total** |
| Number of homes | 203 | 226 | 141 | **570** |
| Percent of homes | 36% | 40% | 25% | **100%** |

**If yes…**

**Was the fire escape plan practiced in the last year?**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Yes** | **No** | **Not answered** | **Total** |
| Number of homes | 78 | 95 | 30 | **203** |
| Percent of homes | 38% | 47% | 15% | **100%** |

**Where is your meeting place? (check if any credible place cited)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Yes, credible** | **No, not credible** | **Not answered** | **Total** |
| Number of homes | 111 | 92 | **203** | 111 |
| Percent of homes | 55% | 45% | **100%** | 55% |

**Occupant given written fire or injury safety materials on:**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Escape planning** | **General home safety** | **Specific causes or hazards\*** |
| Number of homes | 278 | 274 | 24 |
| Percent of homes | 49% | 48% | 4% |
| \* 5 - Smoke detectors; 4 - flammables over windows and on floor; 2 - Fire safety; 1 - Cigarettes | | | |

Demographics **–** The program affected the fire safety of the 1367 people living in the homes visited. At least half the homes were owner-occupied, and at least 39% were renters; the rest were unreported. There were a little less than 3 people per home. About 11% had children under 5, 14% had at least one elderly person, 9% had at least one person with a disability, 21% had smokers. About three-quarters of the homes had at least one of these high risk categories. At least 42% were African American, 7% Hispanic, 2% not white, for a total of about half being occupied by minorities.

**Do you own or rent your home?**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Own** | **Rent** | **Not answered** | **Total** |
| Number of homes | 280 | 220 | 70 | **570** |
| Percent of homes | 49% | 39% | 12% | **100%** |

**How many people live in your home?**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 People** | **1 Person** | **2 People** | **3 People** | **4 People** | **5+ People** | **Blank** | **Total** |
| Number of homes | 3 | 128 | 140 | 102 | 70 | 62 | 65 | **570** |
| Percent of homes | 1% | 22% | 25% | 18% | 12% | 11% | 11% | **100%** |
| **Total number of people** | | | | | | | | **1367** |

**How many children living in your home are under age 5?**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 Children** | **1 Child** | **2 Children** | **3 Children** | **4 Children** | **5+ Children** | **Blank** | **Total** |
| Number of homes | 400 | 64 | 26 | 9 | 1 | 1 | 69 | **570** |
| Percent of homes | 70% | 11% | 5% | 2% | 0% | 0% | 12% | **100%** |
| **Total number of children** | | | | | | | | **153 (11%)** |

**How many people living in your home are age 65 or older?**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 Elderly** | **1 Elderly** | **2 Elderly** | **3 Elderly** | **4 Elderly** | **5+ Elderly** | **Blank** | **Total** |
| Number of homes | 348 | 121 | 33 | 0 | 0 | 0 | 68 | **570** |
| Percent of homes | 61% | 21% | 6% | 0% | 0% | 0% | 12% | **100%** |
| **Total number of elderly** | | | | | | | | **187 (14%)** |

**How many people living in your home are disabled?**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 Disabled** | **1 Disabled** | **2 Disabled** | **3 Disabled** | **4 Disabled** | **5+ Disabled** | **Blank** | **Total** |
| Number of homes | 395 | 97 | 9 | 2 | 0 | 0 | 67 | **570** |
| Percent of homes | 69% | 17% | 2% | 0% | 0% | 0% | 12% | **100%** |
| **Total number of disabled** | | | | | | | | **121 (9%)** |

**How many people living in your home are smokers?**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 Smokers** | **1 Smoker** | **2 Smokers** | **3 Smokers** | **4 Smokers** | **5+ Smokers** | **Blank** | **Total** |
| Number of homes | 320 | 110 | 52 | 11 | 3 | 4 | 70 | **570** |
| Percent of homes | 56% | 19% | 9% | 2% | 1% | 1% | 12% | **100%** |
| **Total number of smokers** | | | | | | | | **292 (21%)** |

**Number of risk factors in homes**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0 Risks** | **1 Risk** | **2 Risks** | **3 Risks** | **4 Risks** | **Blank** | **Total** |
| Number of homes | 147 | 206 | 116 | 31 | 3 | 67 | **570** |
| Percent of homes | 26% | 36% | 20% | 5% | 1% | 12% | **100%** |

**Do you consider yourself: (can check more than one: e.g., White and Hispanic)**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **African American** | **Native American** | **Mixed** | **Asian** | **Pacific Islander** | **Hispanic-Latino** | **White** | **Other** | **Not Answered** | **Total** |
| Number of homes | 246 | 4 | 1 | 0 | 0 | 39 | 192 | 3 | 96 | **581\*** |
| Percent of homes | 42% | 1% | 0% | 0% | 0% | 7% | 33% | 1% | 17% | **100%** |
| \* 1 household checked 4 categories: African American + Native American + Mixed + White; 8 households checked 2 categories: (5) African American + White; (3) Hispanic-Latino + White | | | | | | | | | | |

# IV. Future Directions

## Further Evaluation

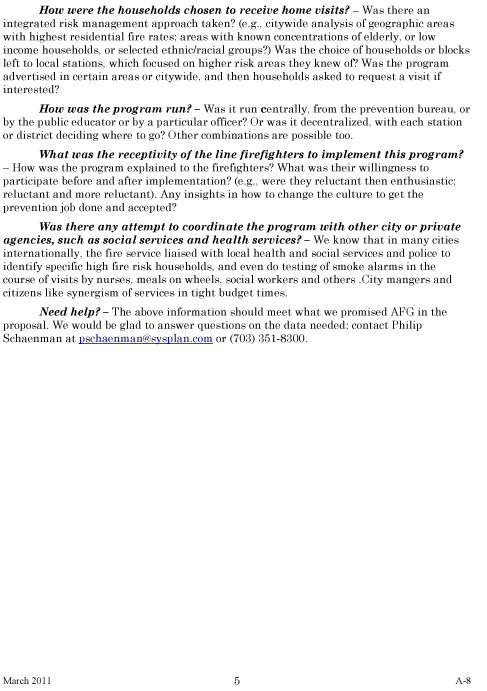
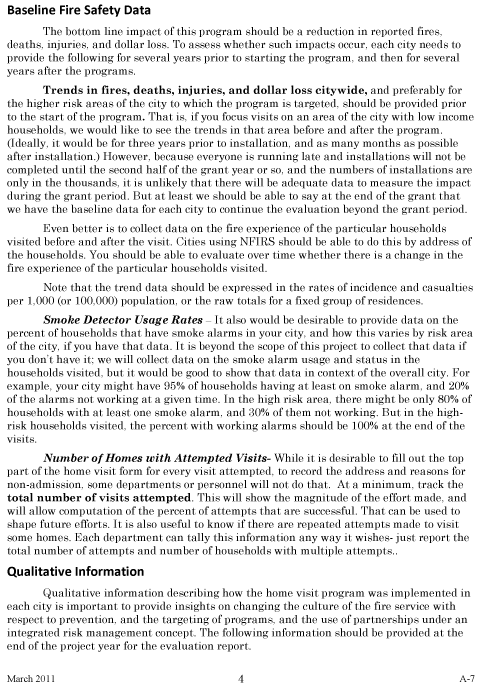
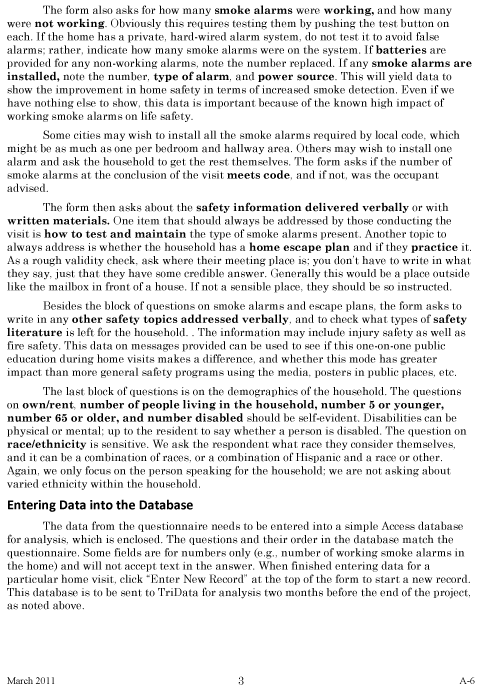
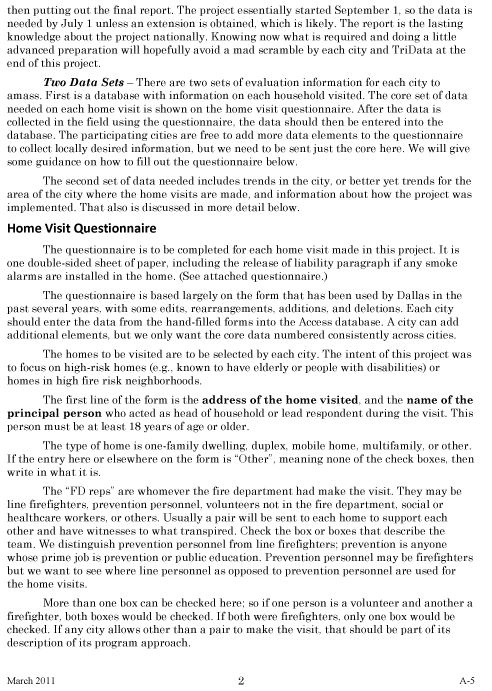
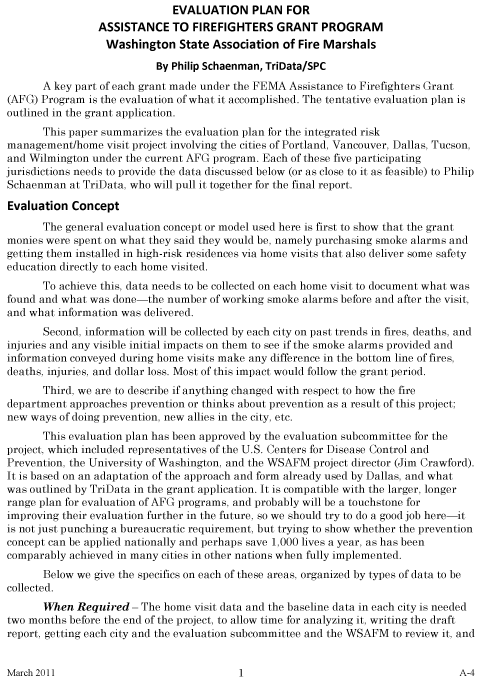
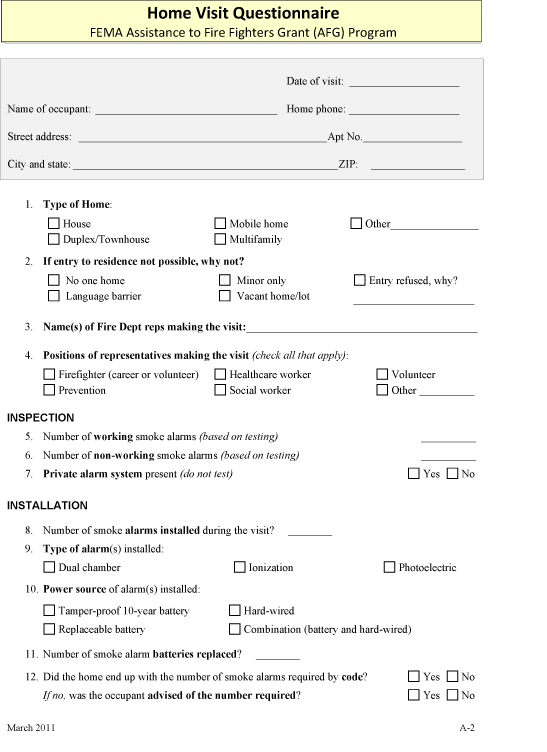
The safety environment and safety education were significantly improved for thousands of homes. How this translates into the desired outcomes of fewer deaths, injuries and dollar loss from fire and other injuries in these homes will be tracked. As noted earlier, the grant period was not long enough following the installation of the smoke alarms to measure with any good statistical significance the bottom line results.

## Further Testing of Concepts

In the grant year following this award to WSAFM, a grant was given to IFE to in part continue testing and refining for the United States the concepts of integrated risk management and home visits in an additional group of cities.

Because the project manager and evaluators will remain the same in the two projects, there has already been excellent continuity, and use of the lessons learned in this WSAFM project to improve the next one. Hopefully the concept will expand in future years.

# APPENDIX: Home visit Questionaire and Instructions



1. *Global Concepts* *in Residential Fire Safety, Best Practices from other nations, Volumes I, II, and III*, TriData Division, System Planning Corporation, Arlington, VA, 2007-2009. [↑](#footnote-ref-2)
2. Jim Crawford retired as Vancouver Fire Marshal in 2010. Initially he was project coordinator for Vancouver as well as project manager for WSAFM. [↑](#footnote-ref-3)
3. This change in the Portland part of the project was approved by AFG staff before proceeding; an alternative would have been to switch cities late in the game. We note that one of the reasons Portland was selected initially for this grant by WSAFM was their past experience in doing exactly this type of project in a low income part of the city a decade earlier. Portland won the first IAFC award for prevention as a result. However, the firefighters union and many firefighters balked at doing installations at a time when there were some cutbacks in staffing. A compromise was reached in which the firefighters would give out smoke alarms in exchange for doing some inspections of low risk commercial occupancies during the period of the grant. [↑](#footnote-ref-4)
4. Number of working smoke alarms after the visits = Number of working smoke alarms + Number of smoke alarms installed during the visit + Number of batteries replaced [↑](#footnote-ref-5)
5. Number of working smoke alarms after the visits = number of working smoke alarms at the start of the visit + number of smoke alarms installed during the visit + number of smoke alarms where batteries were replaced. [↑](#footnote-ref-6)