

# INDEPENDENT LIVING FACILITY EVACUATION

## EVACUATION HABITS OF THE ELDERLY

Evacuation Habits of Elderly Residents of Independent Living Facilities

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**CERTIFICATION STATEMENT**

I hereby certify that this paper constitutes my own product, that where the language of others is set forth, quotation marks so indicate, and that appropriate credit is given where I have used the language, ideas, expressions, or writings of another.

Signed: \_\_\_\_\_

### **ABSTRACT**

This applied research paper described the impact of the evacuation habits of the elderly residents of independent living facilities (senior apartments). The problem for the Longview Fire Department is the failure of the elderly residents of independent living facilities to evacuate or respond accordingly during fire-related emergencies. The purpose of the research is for the Longview Fire Department to identify building evacuation trends of the elderly risk group at independent living facilities. The author of this applied research project utilized the descriptive research method to answer the following four questions: (a) what are the current trends in building evacuation for the elderly residents of independent living facilities; (b) what are the challenges to the Longview Fire Department regarding evacuation of the elderly at independent living facilities; (c) what role should the Longview Fire Department take in anticipating evacuation concerns at independent living facilities for the elderly? The procedures utilized for this applied research project included compilation and analysis of information obtained from the City of Longview Fire Department response records, books, trade journals, magazines, data obtained off of the world wide web (internet), similar research projects at the National Fire Academy's Learning Resource Center, conversations with elderly residents, facility management, and discussions with various emergency responders. The results of the research showed that the Longview Fire Department should immediately implement an effective strategy to facilitate open lines of communications between the department and the managers and occupants of the city's independent living facilities. The elderly, particularly those individuals age 65 and older, being defined as a population at risk by the United States Fire Administration, will ultimately be the greatest affected community due to this lack of preparedness in meeting their specific needs. Research for this paper supports the implementation, by the Longview Fire

Department, of an aggressive educational program targeted directly at this growing cross-section of our community.

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## INTRODUCTION

It is highly publicized in our country that the “baby boomers” of American lore have come of age, retirement age that is. Whether you see it on a television commercial, in a magazine article, or on a billboard, it is an obvious fact that the population of our land is generally older. The mainstream business world has been, for several years now, aiming an extreme amount of marketing at this enormous cross-section of people. They have come to realize that there is the potential of large profit returns by catering to the needs of the aging and elderly which is estimated to hold “\$2.3 trillion dollars in spending power” (Pennington, 2006). Factual information from the 2000 U.S. Census states that 35 million people in this country are 65 years old and above. These numbers represent a 12.0 percent increase since the census of 1990. Furthermore, figures indicate that of those 35 million people age 65 and up that only 1,557,800 or 4.4 percent live in nursing home or managed care facilities. It is reflective that the balance of that 35 million total, that 95.6 percent either live in their own homes (rented, leased, or owned) or independent living residential facilities. The later, “independent living facility or senior apartments,” will be the primary focus of this applied research project and more importantly, the wide spread problem of those residents failing to comply reasonably with building education during fire-related emergencies.

In January 2008, the City of Longview sought and received certification as a “retirement community” through the State of Texas Department of Agriculture. This process was part of a strategic goals package set forth by its appointed 2010 Strategic Planning Committee. The ultimate objective of this committee was to “define how the City of Longview would look, feel, and act in the year 2010” (Pennington, 2006). While not really given consideration in the committee process, an obvious unforeseen challenge with the attainment of this certification is

the anticipated influx of baby boomer retirees to the response community of the Longview Fire Department.

With an already aging established population, the potential for increase to this segment of the population of the city will cause an increase in the demand for independent living facility occupancies. The purpose of this applied research project was to examine the Longview Fire Department, its history in dealing with large-scale residential evacuation, and identify trends that will project a need to enhance the relationship between the fire department, the property management of independent living facilities, and more importantly the occupants of said facilities who are classified as a population at risk by the United States Fire Administration. The descriptive research method was used to guide the research with the following questions: (a) what are the current trends in building evacuation for the elderly residents of independent living facilities; (b) what are the challenges to the Longview Fire Department regarding evacuation of the elderly at independent living facilities; (c) what role should the Longview Fire Department take in anticipating evacuation concerns at independent living facilities for the elderly?

### **BACKGROUND AND SIGNIFICANCE**

While dealing with the retired and elderly segment of our population is nothing new for the country's fire and emergency medical services, the ability to maintain a situational awareness in relation to the special challenges presented by this aspect of the population will pose a significant challenge to those same dedicated emergency responders. The older population in our country is expected to double, "reaching nearly 80 million people (20 percent of the population) by the year 2050. The majority of this growth is expected to occur between the years of 2010 and 2030, when the baby boom generation enters retirement" (USFA, 2001). It is a reality that the need for addressing the risks associated with this age group is monumental if we plan to



minimize what has been described as “colossal implications for our society” (USFA, 2000). In 2008, the City of Longview received its certification as a “certified retirement community” through the State of Texas Department of Agriculture. The decision to seek this certification was set-forth by the Mayor of Longview’s Vision 2010 Strategic Planning Committee of 2006 and was the 5<sup>th</sup> in a set of 8 goals that were defined to guide the city in having “an immediate and substantial impact on the quality of life in Longview” (Pennington, 2006). The intent of the goal was to “capitalize on Longview’s location, cost of living, and natural surrounding to make it a retirement destination to bring individuals and families with disposable income into the community” (Pennington, 2006). In an aging society, with the City of Longview being non-exempt, the Longview Fire Department has seen and will continue to face service challenges brought on specifically by the retired and elderly population of the community.

The City of Longview is located in the Piney Woods Region of Northeast Texas between the metropolitan centers of Dallas, TX. and Shreveport, LA. The city encompasses 54.8 square miles with “an estimated population of 76,772 of which 10,144 (13.2 percent) are age 65 and over” (Claritas SiteReports, 2008). Over the next 5 years, the population “is expected to grow by 4.2 percent with a specific rise in those age 65 and over of .50 percent” (Claritas SiteReports, 2008). During the past five years, the Longview Fire Department has averaged about 15,000 calls for service per year, a number that only stands to increase as does the age of one-eighth to one-third of its citizenry. Concurrently, during the past five years to ten, there has been a proportional increase in the area of new-construction of independent living facilities or senior apartments. With this fact defined, it can be safely assumed that the demand for this occupancy type is being driven directly by that growing segment of the city’s population. The reality of this demand is further supported by the fact that during the course of this research process, a

groundbreaking was held in the city for the construction of a new five-story independent living facility for seniors. The completion of this newest facility within the 2010 year will bring the city's total number of these particular occupancies to eight and increase the combined population capacity of these citywide facilities from 842 to just over 1,000.

The time is present for the Longview Fire Department to collectively and aggressively take notice of the tragic potential looming on the horizon. The U.S. fire service has long been aware and is unfortunately all too familiar with the horrific impact that a fire in a congregated living occupancy such as this can pose. The situation is further complicated by the multitude of inherent risks poised by the elderly population at the center of this research. The City of Longview, through the continued efforts of the Longview Fire Department must come to realize the long-term implications that the "at risk" retiring and elderly population will have on our community, more specifically the ability of the Longview Fire Department to provide efficient and effective services to those customers as a whole. The time is at hand for the Longview Fire Department to reflect upon its historic target of fire prevention based activity, that being pre-school, elementary, and intermediate school-aged children, and redirect a comparable proportion of those efforts toward the at risk, elderly segment of the community.

### **LITERATURE REVIEW**

The literature review for this applied research project focused on subject areas relative to the retired and elderly population both locally and nationally, with directed consideration given to that of senior specific, independent living facilities. Through the literature review process, various fire service trade journals, technical reports, Federal publications including Congressional Reports, retirement guides, local newspapers, and Internet documents were reviewed. Data was also collected from personal communication with managers and occupants

of independent living facilities, various citizens of Longview's retired community, and through the Longview Fire Department's reports and records management system.

The combination of the literature collected and reviewed for this project allowed for a comprehensive research practicum regarding the specific challenges brought forth by those occupancies classified as independent living facilities, also commonly referred to as senior apartments. From this review process, attainable recommendations will be produced for consideration by the administration of the Longview Fire Department as well as the management and occupant base of this growing occupancy trend.

It is no secret in the East Texas area that the City of Longview has positioned itself to be a desirable destination for the retired and elderly. The attractive aspect, for the city, of catering to this segment of the population is obviously the economic implication that potentially poses a lucrative return for city-coffers into the future. Facts regarding the "baby boomer" population that support this revenue-driven line of reasoning on the city's behalf are:

- (a) 31 percent of the population will be 55 or older over the next 25 years; (b) there are an estimated 4 million new retirees annually and 1:5 of them will relocate upon retirement; (c) the retirees hold the equivalent economic impact of 3.7 factory jobs (per couple); (d) the retirees bring with them a dedicated flow of income or "mailbox money" (Social Security, pensions, and savings); (e) the highly-educated facet of this group hold an estimated \$2.3 trillion in annual spending power; (f) they will purchase new homes, pay taxes, create jobs since they want and need services; (g) there is an aspect of tourism benefit as they will visit first, then retire locally (persons over age 50 account for 70 percent of

tourism spending); (h) they will provide volunteer service and a dependable part-time and full-time work force (Community Profile, 2007).

While the City of Longview was successful in its ability to meet each of the essential needs for the certification as a retirement community, the following statistical data was most likely overshadowed while pursuing the strategic goal. In 2004, the United States Fire Administration publicized that “the relative risk of individuals age 65 and older dying in a fire is 2.5 times greater than the general population. The risk worsens as age increases: the risk is 1.8 times for adults age 65-74, but soars to 4.6 times for those over age 84. Smoking fires are the leading cause of fire fatalities among the elderly and cooking fires are the leading cause of fire injuries” (USFA, 2004). Another interesting fact is that nationally, “persons 85 years and over have more than double the number of deaths (per 100,000 population) caused by unintentional injury than most any other age group” (CDC, 2005).

In their report, *Fire Safety Risks for Special Populations* (2001), the APCO Institute reports that:

As a result of progressive degeneration in physical, cognitive, and emotional capabilities, older adults present unique challenges in the field of fire protection, prevention, and safety. Complications associated with aging increase the likelihood that an elderly person will accidentally start a fire and at the same time reduce his or her chance of surviving it. As the nation’s elderly population grows, the fire death toll, will likely rise in direct proportion to that growth unless measures are taken to eliminate the risks associated with this group. The fire safety community must address the fire safety needs of older adults or be faced with the potential for a severe public health problem (p.60). Fires are the leading

cause of death of older adults. The second and third leading causes of older fire deaths are heating and cooking. Cooking fires are the leading cause of fire-related injury to the older person. Often, these cooking-related fires are due to the accidental igniting of loose fitting sleeves or of clothes that are quite flammable, forgetting to turn off a burner, or leaving food on the stove (USFA, 2001).

Additionally, this large segment of the population that the City of Longview is attracting to call it home is, more than any other age group, at significant risk for unintentional injury and death.

Walker (1995) states:

Unintentional injury is one of the leading causes of death to elderly people. The most common types of fatal injuries to people 60 and over are motor vehicle crashes, falls, fires and burns, surgical and medical complications, poisoning, choking, and drowning. Other types of accidental death that disproportionately affect the elderly people are adverse effects of heat and cold, pedestrian accidents, malnutrition, and food poisoning (p. 1).

Each area of risk identified is the next potential for an emergency response to occur. As the only emergency service provider in the City of Longview, the responsibility to answer the anticipated increase in service request over the next several years will be carried-out by the Longview Fire Department. Emergency response data collected from the years 2004 thru 2009 already shows and sets-the-stage for what is to likely occur as fire related responses to independent living facilities has shown a gradual and proportional increase of 31 percent over those six years (Appendix C).

Additionally, to compound the potential for a gradual climb in call volume in the immediate future, the State and local fronts must be explored at a glance. A recent report

released by the U.S. Census indicated that Texas gained more people (484,000) than any other state between July 1, 2007 and July 1, 2008. Furthermore, Texas was third only to Utah and Arizona respectively, in the category of the fastest growing state with a growth rate of 2 percent (U.S. Census, 2008). In regard to the local effects, The Perryman Group, a local, Waco-based economic and analysis firm, projects that “the population of the Longview Metro Area will increase by an estimated 13,000 people between 2008 and 2013” (Perryman, 2008). It is safe to assume that a modest percentage of these new residents will be those of the retired and elderly classification, thereby further compounding the overall situation. This growth will likely be a reasonable result of the certified retirement community designation.

Throughout its history, the Longview Fire Department has seldom been called to battle any significant fires in a facility such as senior independent living. While it maintains a regular interval of responses to such facilities, these are typically medical in nature. Even with a gradual increase in non-medical responses over the last few years, the youthfulness and inexperience in dealing with a fire of significance, involving more than one living unit, has seemingly brought on a sense of complacency among the responding companies. Unfortunately for the fire service, complacency such as this has ended in tragedy for firefighters in recent times. On December 18, 1998, the Fire Department of New York responded to a fire in a 10-story high-rise apartment building specifically for the elderly in which three firefighters lost their lives. A key factor in this incident was the fact that “the resident attempted to put the fire out with small pans of water” (NIOSH Report, 1999). The exhibited habit of the elderly residents of independent living facilities attempting to fight and control the fire only led to the eventual delay of the fire department response and allowed the fire grow and extend beyond the apartment of origin. Instances like this could likely be averted by education and prevention activities sponsored by

the fire department, presented and supported by those companies who are likely to be first-due at such occupancies.

Furthermore, a recent topical report by the United States Fire Administration examined multiple fatality fires in residential buildings. The report found that, “an estimated average of 250 fires resulting in two or more civilian fire deaths occurs each year in residential buildings. These fires are also responsible for 825 civilian deaths, 200 injuries, and \$33 million in property loss” (USFA, 2009). The large numbers of the “at risk” elderly residents grouped together in the same building, coupled with the many factors that make that population class the risk category that they deserve, facilitates the concern that the fire service should maintain.

To better understand the generic thought process of the residents of independent living facilities, those who are retired and elderly, the firefighters responding to a fire-related emergency at those occupancies must be aware of how these residents are apt to respond during such an event. “Many residents have seemed to become desensitized to the fire alerting system,” this according to Ms. Cherry Sikes, who is the Administrator of Colonial Village, a local independent living facility, in Longview. Ms. Sikes goes on to state that, “in her eight years in her current position that she has personally noticed that many of her residents have progressively become disengaged regarding the facility’s quarterly fire evacuation drills. While the management and staff work very diligent to maintain a serious level of preparedness, it seems that growing numbers of residents have developed a “crying wolf” attitude toward fire safety preparation and choose to simply ignore and not comply during the fire evacuation drills.” (C. Sikes, personal communication, November 17, 2009) This pattern of disregard is not isolated to any particular independent living facility in Longview. During the research phase of this project, management and staff of each of the seven operating facilities in the city described a similar

trend emerging. It seems that culturally, the response of individuals to a fire-related emergency has shifted somewhat. The focus that was once placed on averting a panic during emergencies in such occupancies, has now seemingly gone to the other extreme from the response of those affected civilian occupants to that of simply ignoring the potential emergency at hand. If the situation doesn't immediately affect any particular individual, the reactions of "it doesn't involve me" or "I just mind my own business" apparently come into play. At one local independent living facility in Longview, the situation has apparently become so recognizable that its Executive Director, Donna Dollison of Emeritus at Eastman Estates, states that, "we are desperately seeking new ways of getting our residents into compliance with our regular practice of quarterly fire drills. It is our hope that the fire department can help in some way to better prepare our tenants for the possibility of an emergency involving a fire." (D. Dollison, personal communication, November 20, 2009) For the responding fire department, this lack of response must be prepared for and more importantly dealt with directly through an aggressive educational process aimed specifically at the target population the focus is being placed on.

The data detailed above supports the fact that the next five years should prove to be those of great consequence to the immediate and surrounding community. The City of Longview, like any other modern city striving to maintain and survive in these times of vast, recurring economic fluctuation, should fair well based on these implications for the next half-decade. The State and local data regarding population trends, being reflective of the encompassing National data which factors the unavoidable aging of the population in general, will undoubtedly place challenges on the Longview Fire Department to meet its service demands on several specific fronts, most obvious of whom are the retired and elderly of the community. It is likely that the possibility of a



significant fire with great loss of life and the negative impact it would have on a retirement community has not been considered.

In the process of defining the implications of the City of Longview becoming a Certified Retirement Community which directly impacts the overall population and demand on the existing independent living facilities, the literature review included the review of Longview Fire Department response data, U.S. Census 1990, 2000, 2008 data, and other various publications. The literature review also included a couple of survey aspects. The first survey was given to residents of all seven of the existing and operating independent living facilities in the City of Longview. The residents of these facilities, being the target group of this research, will set the tone for what are to be expected as challenges for the Longview Fire Department as it continues to increasingly respond to those occupancies. The survey instrument can be found in Appendix A. The results of the survey were intended to identify the occupant hazards that the Longview Fire Department must recognize and partner with the management of the independent living facility community to find a common-ground for education and understanding. The second survey was administered to roughly one-third of the Longview Fire Department's operational staff. That survey, found in Appendix B, was intended to shed light on the departments lack of experience in dealing with the fire related concerns of independent living facilities.

In summary, the literature content reviewed has impacted this applied research project by highlighting and reaffirming that the Longview Fire Department must attempt to do more in two very specific categories of its operations. The first is to recognize its inferior preparedness level for a fire response of significant proportion at an independent living facility. Secondly, the department must develop and implement a process for collaborating with each of the facilities in the city to prepare its residents and management for a fire department response to their location.

With the growing population of the retired and elderly identified in the United States, coupled with the projected trends in demographics by the U.S. Census, fire and emergency medical service organizations like the Longview Fire Department will soon experience the evolution of this impact area as the circle of life continues, not only for those already established in Longview, but for those who chose to make Longview their home in the future and become a part of our Certified Retirement Community. For the Longview Fire Department and the residents and management of the independent living facility community, the time is now to make informed and effective decisions about how to deal with the implications of an aging society from both present and future perspectives. The ripple effect of the Vision 2010 Committee's strategic plan in conjunction with the fact that our population is generally aging is of just consequence to the future planning of the Longview Fire Department.

### **PROCEDURES**

The purpose of this applied research project was to examine the challenges posed by the resident population of the independent living facility community, also known as senior apartments, during fire-related events in the City of Longview. Through the course of the research, justifiable recommendations were sought and identified as anticipated, unfavorable trends became evident in respect to this "at risk" and growing aspect of our retirement community. The descriptive research method was utilized to guide the applied research project to identify answers to the research questions.

The research and data collection for the project began with a literature review in the Learning Resource Center of the National Fire Academy in May 2009. While the impact of aging in general, with regard to fire safety as well as one of the populations at risk identified by the United States Fire Administration, was readily available in the media formats of trade journal

magazine articles, reference books, previous Executive Fire Officer applied research projects, medical journals, and governmental reports, there was seemingly limited data in regard to the specific topic at hand being that of independent living facilities. In July and August of 2009, further literature review was conducted at the City of Longview's Public Library and the library of Kilgore College in Kilgore, Texas. A compilation of data including emergency response records and National Fire Incident Reporting System (NFIRS) records were retrieved for the purpose of this project from the Longview Fire Department's archive. Through the course of this research project, several perspectives of data were retrieved from the Internet as well. Perhaps one of the most effective sources of data relating to the topic of independent living facilities was the direct interaction with the management and residents of those facilities in Longview. Those communities of the retired and senior-aged population provided an eye-opening insight into the specific challenges that are to be faced by the Longview Fire Department in regard to fire-related events at those occupancies. Additionally, informal interviews were conducted with various ranking members of the Longview Fire Department's operational staff. The overall youthfulness of the current department coupled with the lack of actual fire-ground experience at independent living facility occupancies enhanced the need for a mutual understanding in terms of emergency response for all of the various stakeholders involved.

For the descriptive method of research, a survey instrument was administered at each of the seven currently operating independent living facilities in the City of Longview. Those seven independent living facilities, all within the Longview city limits and the Longview Fire Department's response jurisdiction included: (1) Hillside Village located at 205 W. Whaley Street, (2) Eden Place Apartments located at 327 Eden Drive, (3) Page Place I located at 1907 Eden Drive, (4) Page Place II located at 1903 Eden Drive, (5) Buckner-Westminster Place

located at 2201 Horseshoe Lane, (6) Colonial Village Apartments located at 2910 N. Eastman Road, and (7) Emeritus at Eastman Estates located at 2920 N. Eastman Road. It was requested of the respondents to provide honest, factual, and unbiased responses as the resident of an independent living facility. The participant was first asked if he or she was indeed a resident of an independent living facility. If “yes” was the reply, the participant was asked to answer the remaining ten questions that were the body of the survey. Those remaining questions sought the following information: (a) what is your current age, (b) are you male or female, (c) how long have you been a resident of an independent living facility, (d) which floor do you live on in the facility, (e) are you limited by any personal mobility issues, (f) do you require any type of mobility assist device (please specify), (g) can you utilize the stairs, unassisted, during an emergency when the elevator may not be operable, (h) do you participate in the quarterly fire drills at the facility, (i) how long has it been since you have been exposed to a fire safety instructional program by a fire department representative, (j) if the fire alarm sounds would you feel safer inside or outside of the building (Appendix A). The purpose of these questions was to identify specific operational challenges for the Longview Fire Department as well as future educational target areas to be addressed within an enhanced partnership between the fire department and the management of the independent living facilities in Longview.

In addition to the external survey aspect of this project, a series of interviews were conducted as part of an internal department survey of the fire department’s active operational members. Those members were selected by visiting four of the eight fire stations, in closest proximity to these target occupancies on each of the three duty shifts. Those specific fire stations included: (1) Fire Station #1 located at 200 S. Center Street, (2) Fire Station #2 located at 708 N. Eastman Road, (3) Fire Station #6 located at 1515 Judson Road, and (4) Fire Station #8 located

at 3623 McCann Road. All of the fire stations are located within the corporate city limits of Longview. Questions asked in this survey included: (a) what is your current rank in the organization, (b) what is your tenure with the Longview Fire Department, (c) do you have any independent living facility occupancies in your first-due district, (d) have you personally experienced any significant fire-related responses within one of these facilities, (e) if the answer to the preceding was yes, which of the following strategies did the incident commander utilize to secure the facilities residents: protect-in-place or complete building evacuation, (f) are you familiar with the use of fire protection systems in these facilities or lack thereof, (g) do you actively embrace the opportunity to assist with fire prevention / education activities, (h) have you participated with any prevention / education activities targeted specifically at a senior adult audience, (i) in your own opinion, do you feel that the Longview Fire Department is prepared for a working fire of any significance at any of the independent living facilities, (j) would you be interested in serving on a SOP/SOG committee to develop a consistent action plan for use at independent living facilities (Appendix B).

The intent of each of the aforementioned surveys was to gain perspective and define educational target areas to build upon for the residents of independent living facilities. The surveys also identify areas for internal training that would be beneficial for the firefighters of the Longview Fire Department in gaining understanding of the specific challenges posed at independent living facilities, of both the residents and the buildings themselves.

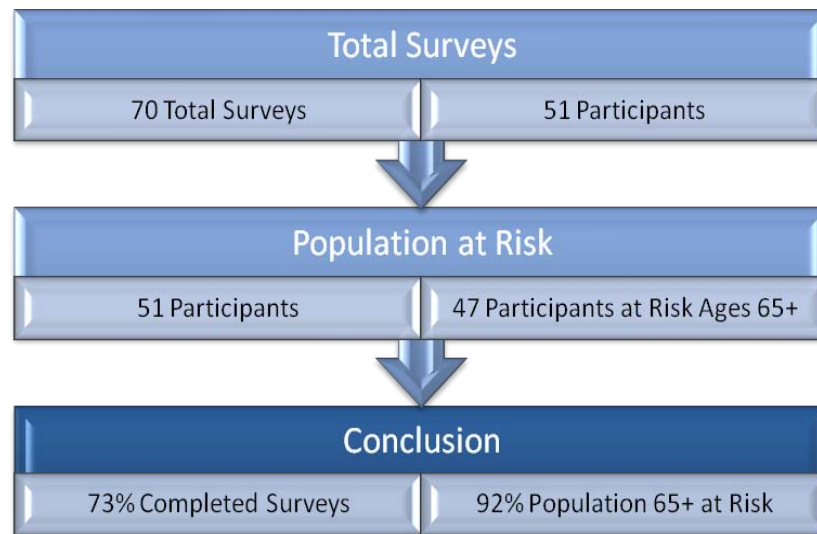
During the compilation of the data for the procedures of this research, the author was challenged by the following limitations, each specifically human in nature. First, the survey aspect for the residents of independent living facilities was difficult for some to complete. Even with the questions being kept as generic and jargon-free as possible, several of the residents,

noticeably due to age, required one-on-one assistance with completing it in a timely manner. This challenge in itself proved to be a very time-consuming avenue in respect to the research. Additionally, many of the residents who were asked to participate chose not to become involved in the project.

From the fire department perspective, it was discovered that many of the firefighters had seldom taken into consideration the challenges specific to the residents of these facilities during an actual fire-event. This required some in-depth and on-the-spot defining of common questions such as “what’s the difference between independent and assisted living” and “why wouldn’t a fire at one of these be just like a regular apartment fire?” The author repeatedly explained the overall goals of the research as these questions were routinely answered. On the facility management front, scheduling challenges were faced as well as the reluctance of some management personnel to freely divulge specific resident and building data for the misplaced fear of facing some sort of punishment by the fire code enforcement aspect of the Longview Fire Department.

## **RESULTS**

Through the implementation of the procedures, the following results were illuminated providing insight to the research questions driving the project. For the first research question, “what are the current evacuation trends in building evacuation for the elderly residents of independent living facilities,” the survey targeted at those occupants provided the following data. A total of 51 of the 70 surveys distributed were returned completed (73%). Of those participants completing the survey, the majority of the residents assisting, 47 of 51 (92%) fell into the “population at risk” class of age 65 and older (Figure A1).

**Figure A1: Age of Resident Participants**

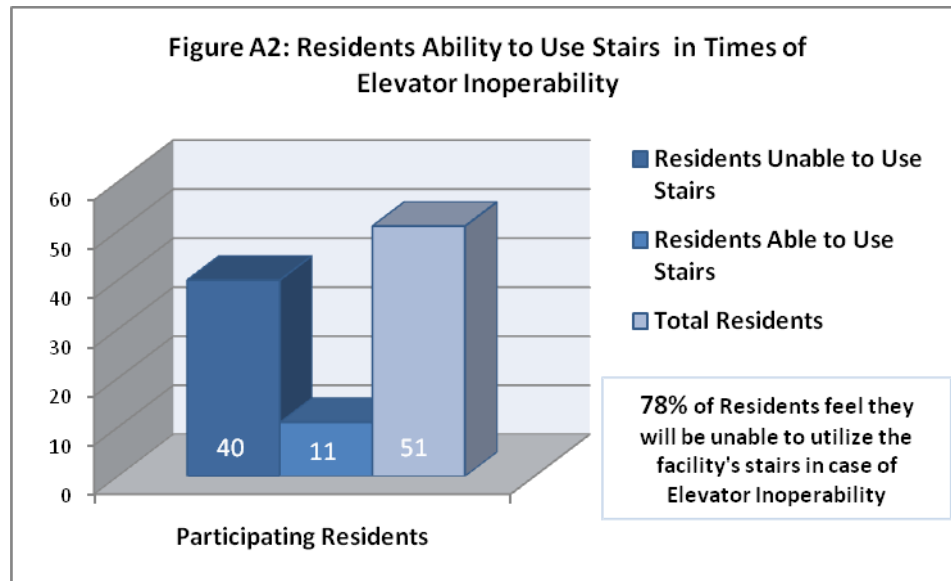
Of the respondents participating, 42 of 51 were of the female gender (82%). Within those residents surveyed, 27 of 51 (53%) had lived in this or some form of independent living facility for five or more years. When asked which floor they lived on in the facility, the majority of the residents, 39 of 51 (76%) advised that they lived on the third floor or greater within the building. This aspect will prove to be alarming in regards to the forthcoming mobility issues identified in this survey.

In conversations with various facility staff members, it was explained that tenants are assigned to their apartments on a first-come-first-served basis. Most often, those room assignments are made to accommodate a waiting list of potential residents trying to move in to the facility. In most instances, according to various staff members at each facility, satisfying the waiting list takes precedence over residents who may suffer from mobility related issues. There

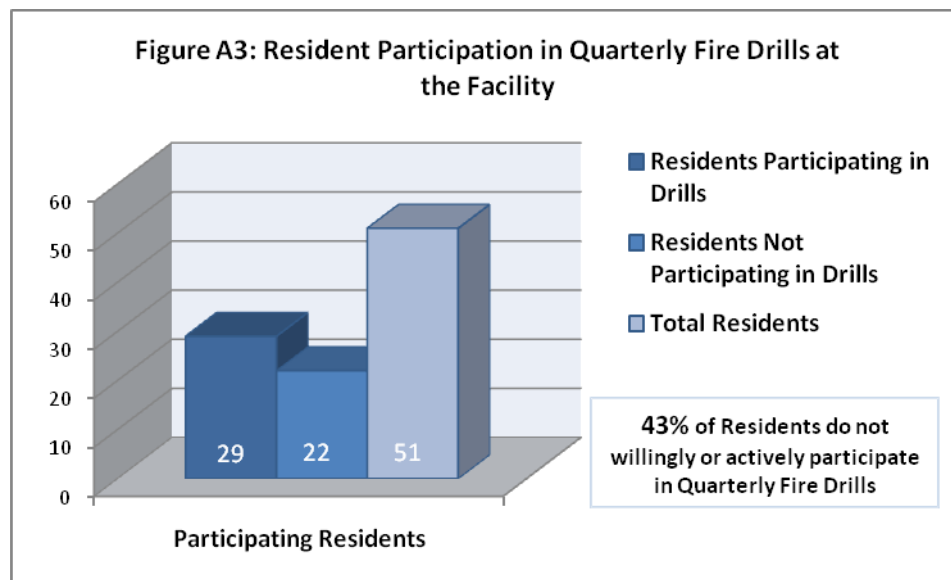
is little room for compromise in favor of creating a more favorable living condition for them individually. The occurrence of this supply and demand situation was further corroborated in that, “most prospective tenants would prefer to be located on the first floor but would settle for the second floor if available,” according to Ms. Sikes of Colonial Village, and that those requests are difficult to honor based on the availability of apartments versus the demand of the waiting list. Ms. Sikes also identified the fact that, “it is a common-place that most residents moving into the facility may not initially suffer from any type of mobility issues but that those conditions develop later in life after the resident has become established in the facility.” (C. Sikes, personal communication, November 17, 2009)

When asked about any personal mobility issues affecting them, 33 of 51 (65%) advised that they required some type of mobility assistance to move around within the facility on a regular basis. The various mobility devices ranged from the following: Cane (12), Walker (10), Electric Scooter (7), Wheelchair (4). Of the elderly residents participating, 40 of 51 (78%) stated that they felt that they would not be capable of safely using the stairs to ascend to the ground floor in the event of that the building’s elevator is inoperable. (Figure A2)



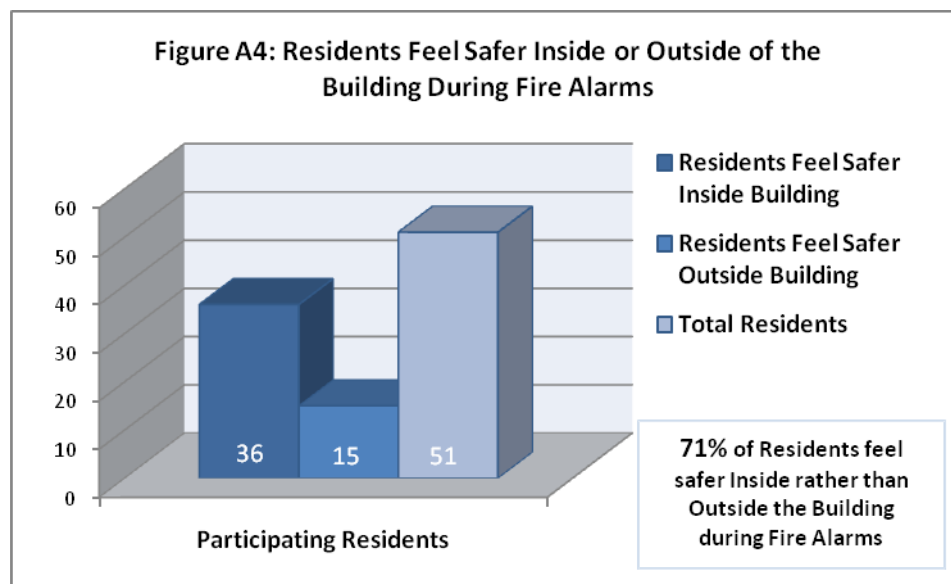
**Figure A2: Residents Ability to Use Stairs in times of Elevator Inoperability**

The residents were next asked if they participated in the quarterly fire drills conducted by their facility of residence. Of the 51 surveyed, only 29 (57%) advised that they did willingly participate or have actively participated in the drills. This identified lack of participation and further supports the impressions of concern expressed by staff and management (Figure A3).

**Figure A3: Resident Participation in Quarterly Fire Drills at the Facility**

When asked about their attendance at any type of fire department sponsored educational or prevention activity, only 11 of the 51 surveyed (22%) had participated in such an event in their adult life. More importantly, each of the 51 responding stated that they had never been exposed to such an event while residing in their independent living facility. The final survey question asked if the resident felt safer inside or outside of the building when the fire alarm in the occupancy sounds, 36 of the 51 (71%) stated that they felt safer inside. (Figure A4)

**Figure A4: Residents Feel Safer Inside or Outside of the Building During Fire Alarms**



Of those residents that the author directly assisted with the completion of the survey, when asked why they felt safer inside of the building, the surprising general response was, “they felt that the fire department would directly or individually tell them to leave the building if the situation were severe enough.” The author found the direct interaction with the residents to be highly insightful and rewarding, not to mention personally educational. It was typical that willing resident participants could easily be found at each of the identified occupancies. Simply by going

to each facility and addressing the assembled group usually gathered in a common first-floor area, the author was able to complete the resident survey portion of the research. By gaining the perspective of those individuals at the center of the research, a better understanding would emerge to guide the recommendations of the stated problem in general. The evidence of the survey provides that the residents of Longview's independent living facilities are not responding in a favorable manner for life safety during a fire-related event in their building.

The second research question asked, "what are the challenges to the Longview Fire Department regarding evacuation of the elderly at independent living facilities?" To gain internal perspective from the operational staff of the Longview Fire Department, a cross-section of the department's members were selected to provide insight. Of the 50 firefighters surveyed, all 50 of the surveys were returned completed (11 from Station #1, 15 from Station #2, 15 from Station #6, and 9 from Station #8).

The first survey question asked the participant to state his current rank in the department. The intended purpose was to gather data from firefighters of varying responsibility within the department (Figure B1).

**Figure B1: What is your current Rank in the Longview Fire Department**

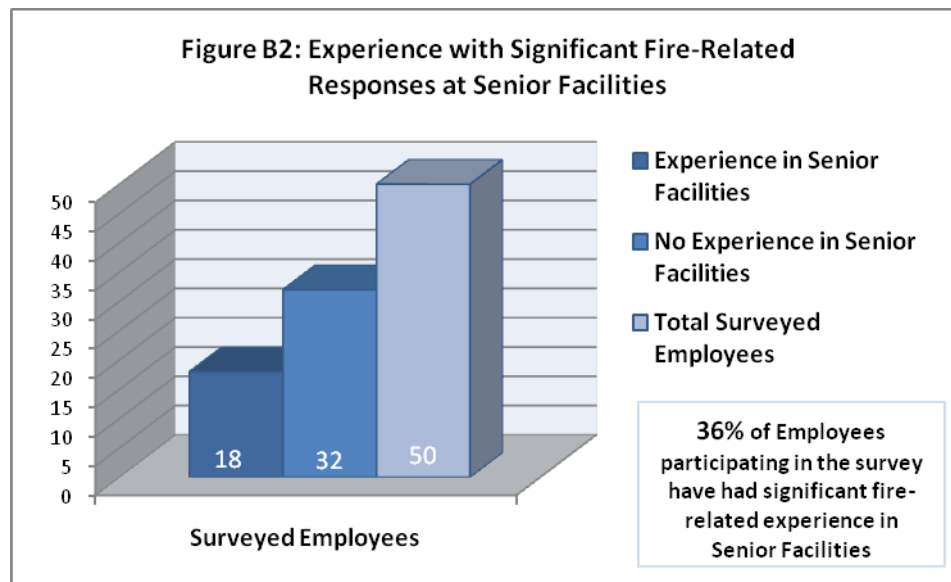


Survey question two asked the firefighter to identify his tenure in the Longview Fire Department. The purpose of this question was to establish a knowledge base of the firefighter in

regard to the department's ability and/or activity. The average tenure of all participants of the survey is 11 years, while the average tenure of all members in the department is the very same, 11 years.

The firefighters were next asked if they had any occupancies classified as independent living facilities in their current first-due primary response area. Of the 50 firefighters participating, 46 (92%) stated that they did have these facilities in their first-due areas, and 4 (8%) stated they did not. When asked if they had ever responded to any fire of significance at an independent living facility, 18 (36%) of the 50 surveyed advised that they had experienced that type of event. This question was asked to validate the overall suspected inexperience of the department in responding to a severe fire-related incident in a facility such as these (Figure B2).

**Figure B2: Experience with Significant Fire-Related Responses at Senior Facilities**

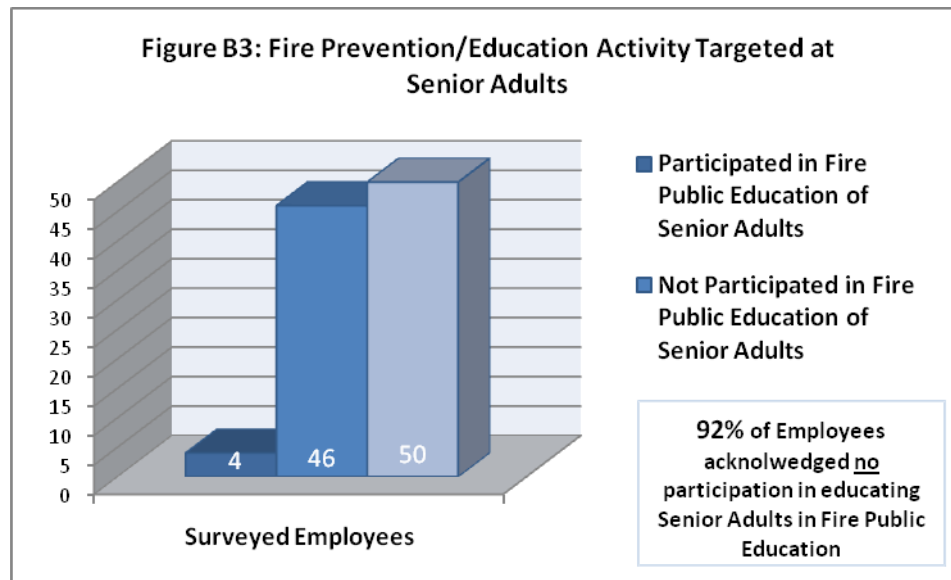


Of the 18 participants responding to the affirmative of question #4, it was stated by a margin of 2:1 that complete building evacuation had been the selected method of resident

protection as opposed to protecting in place by the Incident Commander. The purpose of this question was to look at the typical response of a Longview Fire Department Incident Commander, typically a Battalion Chief, in regard to protecting the personal safety of the residents of independent living facilities.

When asked if they were familiar with the presence and operation of built-in fire protection systems at these occupancies, or the lack thereof, 40 of 50 (80%) advise that they were familiar with such systems. For this question, it is noteworthy that 15 of the surveys (30%) consistently reflected the understanding that one of the facilities, Hillside Village, is completely lacking any type of built-in fire protection within its confines.

The next two questions were designed to address the issue of fire prevention and public educational activity. The first asked the firefighter if they actively embrace the opportunity to assist in or conduct fire prevention and/or education activities. Of the 50 surveyed, 42 (84%) supplied a positive response. For the second part of the series, the survey asked if the participant had ever participated in any fire prevention or public education activity that specifically targeted a senior adult audience. For this question, only 4 (8%) of the 50 surveyed had done such an activity. This question identifies a lacking of the department in the area of adult, specifically senior adult, fire prevention and education activity (Figure B3).

**Figure B3: Fire Prevention/Education Activity Targeted at Senior Adults**

When asked if they felt that the Longview Fire Department was currently prepared for a “working fire” at any of the currently operating independent living facilities in Longview, 28 (56%) of the 50 surveyed provided a negative reply. This survey question places direct perspective on the operational status of the department and poses a significant challenge in regard to the underlying question at hand concerning the protection of the residents of the independent living facilities in Longview. Most of the firefighters surveyed maintained the common misconception that a fire in an independent living facility would be very similar to that of a regular apartment fire and that the occupant hazards would be likewise in nature. And finally, when asked if they would be interested in participating on a SOP/SOG committee to develop a consistent action plan for use at independent living facilities, 29 (58%) of the 50 stated that they would like to help with the undertaking of such a task. The purpose of this question was to identify the need for such an item and to garner support for its creation. Through the

firefighter survey element, the Longview Fire Department faces the operational challenge of being a largely inexperienced and under trained emergency response agency when speaking in terms of being prepared for a significant fire-related response to an independent living facility.

Research question number three asked, “what role should the Longview Fire Department take in anticipating the evacuation concerns at independent living facilities for the elderly. As previously stated, the Longview Fire Department has historically targeted only the pre-school, elementary, and intermediate school-aged children in its community. For the last ten to fifteen years, the Longview Fire Marshal’s Office, through the efforts of its Fire Prevention Specialist position has effectively placed fire safety and prevention in the minds of every kindergartener and fourth grader of all three of the separately operating school districts in Longview as well as those students from two to three additional school districts from other visiting cities who’s local fire departments do not have the resources available to carry-out such programs. In addition to the organized school district entities mentioned, there are also close to ten private or charter schools who send their students to the Longview Fire Department for this type of educational exposure on a regular basis. According to Fire Prevention Specialist Monica Hanks, of the Longview Fire Department, “on an annual basis our department has direct interaction with an average of 3,000 school-aged children in a year’s time.” (M. Hanks, personal communication, October 20, 2009)

Taken for granted in the arena of Longview Fire Department’s public education and fire prevention activities are evidently the retired and elderly of its community. According to Ms. Hanks, “the senior segment of our community seldom reaches out for our assistance.” Ms. Hanks goes on to state, “about the only contact our department has with its senior population is the very

occasional group program when sporadically requested by a facility, outside of the common emergency call.” Take into account that current Longview Fire Department fire report data reflects an increase in call fire-related combined call volume, for each of its seven operating independent living facilities, of 31 percent over the last three years (2009, 2008, 2007) as compared to the three years (2006, 2005, 2004) prior to those (Appendix C).

It is important to note that the fire-related incident areas included responses for life and property threats such as building fires, cooking fires, electrical fires, smoke removal or scare, and fire-protection system activation. With the stated frequency in fire-related emergency response to these facilities, the assumption could be made that a significant fire-related event for these occupancies could be on the horizon.

If the Longview Fire Department is to play a determining role in the procedures of residential fire safety and prevention education activities of its retired and elderly community, it must step to the forefront to initiate and implement a plan of action. The same emphasis that has long been placed on the “at risk” children of the city has to also be given consideration in looking toward the elderly residents of the city who are also a separate and very different “at risk” population.

Through the research conducted during the procedures portion of the project, it became clear that to prioritize an undertaking such as a program to educate and keep safe the residents of the city’s independent living facilities, it would take the combined efforts of the management of those facilities and the Longview Fire Department to lead the “at risk” elderly resident in a direction of preparation and fire safety.



## DISCUSSION

In the results, it became clear to the author that the Longview Fire Department must address the elderly resident concern of the city's independent living facilities on two different but essential fronts. The answers to the concerns lie in both the internal and external stakeholders involved. The solutions rest with people, those representing the facilities (residents and staff) and those men and women who are the Longview Fire Department. Together, an understanding will be reached that will ultimately lead to the safety of the elderly residents, as well as a more effective service provided by the fire department as a whole, and with a common awareness of each others concerns.

The combination of the surveys conducted eluded to two very concerning issues to be discussed. First, from the elderly residents participating in the survey as well as the facility management staff interviewed, there seems to be a broad contrast. Most facility staff members seemingly understand the hazard and risk at hand but have not overwhelmingly experienced success in attaining buy-in from their residents. This contrast lies evident by looking at specifically two of the city's independent living facilities, Eden Place Apartments and Hillside Village. The Eden Place Apartments, located at 327 Eden Drive, has for several years of its own accord, implemented an internal fire action plan that has gained acceptance by its residents. The building is a three-story, Type V constructed multi-family residential occupancy. It was constructed in 1980 and has a maximum occupancy load of 162 residents. The building is equipped with modern built-in fire protection systems including wet-sprinklers throughout, Type-I stand-pipe connections, automatic-closing fire doors, and a fully automated fire alarm system.

The author, during the years of 2003 thru 2006, worked as a Captain (engine company officer) on the first due engine company to this occupancy. From the author's very first fire alarm response there on October 6, 2004, something became very noticeable with this facility. While conducting the initial investigation for the fire alarm activation, the author noticed that there were couch throw pillows placed in the corridors on each of the buildings three levels. The pillows were carefully placed against the doors of each individual apartment unit. Following the conclusion of the incident, the author inquired with the facility management about the meaning of the pillows and learned that this facility had developed its own resident evacuation plan. The pillows against the apartment doors, were placed there by the elderly residents to signify that each apartment with a pillow in the corridor was all-clear of any occupants. They had safely vacated the premises to their assigned rally point on the exterior. The action described was implemented for any and all fire alarm activations occurring at the occupancy.

Having gained an understanding of this internal procedure, it became useful in future fire responses, some of which were significant in nature. Once this method was shared with the other company officers of the department, the task of building search and rescue became as simple as looking down a corridor, matching apartment doors with pillows, and only prioritizing a search in the apartments lacking a pillow in the hallway. The on-site management also was diligent about assigning competent residents the responsibility of acting as "floor-leaders" to gather and confirm that their neighbors had indeed evacuated the building. This can-do attitude reflected by the residents of Eden Place was due largely in part because of the involvement and ownership in the process encouraged by the facility management and staff.

For the other end of the elderly resident evacuation spectrum, the research only has to focus on Hillside Village located at 205 W. Whaley St. The occupancy was built in 1979. It is a three-story structure made of Type-V construction. Within the facility is a maximum occupancy load of 100 residents. The building is equipped only with a fire alarm notification system for its residents. It is also noteworthy that within the confines of the Longview Fire Department that this facility has, even before the tenure of the author with the department, been nicknamed “the Crematorium” for its easily recognizable potential for a high loss of life in two regards, for the occupants as well as the responding firefighters. Furthermore, this occupancy has been the “target-hazard” objective during assessment centers for many of the department’s promotional exams for company officer and above. Once again, the author has gained particular insight on this facility as well. It has long been strategically concerning for many company and chief level officers the obvious lack of occupant response to fire alarms as well as actual working fires in this facility. The disassociation that exists between the residents of the facility and the intent of a fire alarm activation is staggering to say the least. Upon a response to a fire-related incident at this location, there is seldom commotion, obvious response, or noticeable movement generally taking place by the tenants.

The most recently recalled example of such an event at this locale would be the response to a “fire alarm activation with visible smoke on the second floor,” occurring on August 22, 2006. The first-due apparatus arrived to find a well involved kitchen fire, beginning to extend out of the apartment of origin, with heavy to moderate smoke in the second floor corridors and light smoke on the third floor. This situational size-up commanded the second-alarm that was ordered. The very eye-opening event of this particular incident was the fact that there were less than 10

residents present out of the possible 100, who had taken the initiative to self-evacuate to the outside of the structure prior to the arrival of the fire department. As the incident commander, the author was forced to make the strategic decision of committing the limited resources to attacking the fire or the evacuation of the balance of the residents of the fire-floor and the one above. Understanding that time was critical and mobilizing an evacuation of the elderly residents would allow for the fire to potentially take the structure, a direct attack on the fire was initiated with the first-alarm assignment. Upon the arrival of the second-alarm companies, the complete evacuation of the remaining residents was begun. Even with the method of supervised self-evacuation having been implemented, there were two resident injuries, requiring BLS transport, from elderly residents falling down the evacuation stairwells because of personal mobility issues.

By examining these two fire-related events at independent living facilities in Longview, the underlying stories of the literature review are brought to life for examination. How could there be such a broad contrast between the reactions, or non-reactions, of the elderly residents in two separate but very similar facilities in Longview?

The increasing frequency of fire-related events at each facility is consistent with the statistics documented by the United States Fire Administration in its 2004 report. That report stated that, “the relative risk of individuals age 65 and older dying in a fire is 2.5 times greater than the general population. The risk worsens as age increases: the risk is 1.8 times for adults age 65-74, but soars to 4.6 times for those over age 84. Smoking fires are the leading cause of fire fatalities among the elderly and cooking fires the leading cause of fire injuries (USFA, 2004).” In the retirement community, specifically in its independent living facility population, the risk and potential for a significant loss of life should be thoroughly evaluated by fire department leaders. Coupled to that fact is that, according to the Centers for Disease Control in their 2005 report that

states, “another interesting fact is that nationally, persons 85 years and over have more than double the number of deaths (per 100,000 population) caused by unintentional injury than most any other age group (CDC, 2005). While only a fraction of the city of Longview’s elderly resident population is congregated into independent living facility occupancies, soon to be estimated at around 1,000 residents, the specific subject of fire safety and response should be further evaluated and actions set-forth to correct such deficiencies as those regularly occurring at Hillside Village. To achieve success in such a monumental task will take the vigilant effort of both the Longview Fire Department and the management and staff of the independent living facility community. The example of the fire-safe attitude demonstrated by Eden Place Apartments benchmarks that such an effort could be successful.

Through the research process, the author, representing Longview Fire Department, has gained understanding in the people-hazards associated with independent living facilities. Within those facilities the varying individual response to a fire-related event has become evident. The further examination of the fire department itself has identified that the majority of those surveyed are not convinced that the department is adequately prepared to deal with a fire of significance at an independent living facility including the direct hands-on evacuation of the typical residents residing there. For the future safety of this specifically growing segment of our city’s population, emphasis must be placed on directing a proportional amount of public fire education and fire safety activity to the elderly “at risk” group while still maintaining attention and focus on those at the other end of the same risk scale, being that of the very young.

While this research has presented the Longview Fire Department with challenges to be faced, it has also presented an opportunity to reach and embrace a community of people that have historically only been considered from an emergency medical service perspective. By

addressing the identified areas of concern, before the incident occurs, the Longview Fire Department has the chance for making a positive impact rather than dealing with a tragic outcome. This type of activity is the focus and underlying goal of the Executive Analysis of Community Risk Reduction course as well as a key facet of the Executive Fire Officer Program.

### **RECOMMENDATIONS**

Placing the concept of the risk reduction process in the minds of those involved is paramount to set-forth a course of action to dramatically improve the relationships between the elderly residents of Longview's independent living facility community, the management and staff of those facilities, and the Longview Fire Department. Without the sincere understanding regarding the potential loss at stake, any attempt for preparation, improvement, or resolve will be unsuccessful.

The facts impacting the expressed concern are this: the elderly population in Longview will continue to grow over the next several years, those elderly residents will continue to increasingly place service demand on the Longview Fire Department, and the likelihood that Longview will experience a tragic fire with significant loss of life will grow expediently as the frequency of fire-related incidents at independent living facilities continues to gradually escalate.

The research conducted through the course of the project coupled with the newly found knowledge of the hazard risk assessment principals attained at the National Fire Academy, provide that a partnership must be established and fostered between the Longview Fire Department and the independent living facilities operating in the city. The concepts of prevention, education, and preparedness must be addressed with equal commitment by each involved party. The Longview Fire Department stands as the reasonable facilitator, key to establishing and maintaining such a relationship.

The Longview Fire Department has before it the opportunity to embrace an unfavorable situation, that being the lack and absence of elderly residents of independent living facilities to react positively and accordingly to a fire-related event in their place of residence. With a deliberate and purposeful attitude, the fire department must present those facilities with a meaningful and clear course of action to identify and establish their individual fire evacuation needs. Based on the analysis of the research obtained through the literature review, survey, and results process, the following recommendations are made:

1. The Longview Fire Department should host a forum consisting of representatives from each of the seven operating independent living facilities in Longview along with representation from the fire department made up of a varying cross-section of Battalion Chiefs (strategies), Company Officers (tactics), and Fire Prevention and Code Enforcement officials (reasonable compromise). The intent of this forum would be to establish a focus group (partnership) for the purpose of sharing ideas to meet the fire-related needs of one another.
2. The Longview Fire Department should implement a training program to thoroughly review all independent living facilities in the city and focus complete understanding of the various inherent differences possessed with each occupancy pertaining to the specific subject areas of elderly occupant hazard concerns, building construction challenges, likely fire dynamics to be encountered, and the operation and function of built-in fire protection systems. This program will introduce and refresh members of the fire department to the particular hazard and risk concerns associated with independent living facility occupancies.

3. The Longview Fire Department should immediately develop an educational program with the input of independent living facility management specifically for the populations residing in these facilities. That program should be delivered in a “blitz-like” process to coincide with the department’s October 2010 Fire Prevention Month Campaign. This process will level the preverbal playing field and provide consistent understanding regarding the fire-response process, both internally and externally. It would be the seminal event for a new direction of public fire protection by the department.

As an emergency service provider of the community, the fire department must aggressively maintain a situational awareness regarding the likely life threats to its customers and significant events threats to its jurisdiction. With the focus of this research being the elderly residents of independent living facilities, the fire department must evaluate its historical position on prevention and public education initiatives to ensure equal attention is provided. The intent of the Executive Analysis of Community Risk Reduction course at the National Fire Academy is to redirect the typical “janitorial” perspective firefighters have become content with, “cleaning up the mess after it happens.” By gaining an understanding and being sensitive to the specific hazards present in a department’s community, the firefighter or “risk reduction specialist” can establish a more effective and even more positive role as the guardian or protector by preventing the potential incident from ever occurring in the first place (M. Chiarmonte, personal communication, May 2009). What better way is there to keep those, who depend on the fire service, safe and secure?



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**APPENDIX A****INDEPENDENT LIVING FACILITY  
RESIDENT SURVEY**

Independent Living Facility Resident,

Thank you for your time in participating with this survey as part of my applied research project for the Executive Fire Officer Program of the National Fire Academy in Emmitsburg, Maryland. Your assistance will provide valuable data that will aid the Longview Fire Department in serving you better in the future.

Please provide responses that are honest, factual, and unbiased to the survey questions below:

To qualify for the survey, do you currently live in one of Longview's operating independent living facilities (also known as senior apartments)?

☐ YES   ☐ NO

|                                                                                                                            |                                                                     |
|----------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|
| 01. What is your current age in years?                                                                                     | _____                                                               |
| 02. I am (please choose one of the following):                                                                             | _____                                                               |
| 03. How many years have you resided in an independent living facility?                                                     | _____                                                               |
| 04. Which floor is your apartment on in the building?                                                                      |                                                                     |
| 05. Are you limited by any mobility issues?                                                                                | <input type="checkbox"/> YES <input type="checkbox"/> NO            |
| 06. Do you require a mobility assist device?<br>(If yes, please describe)<br>_____                                         | <input type="checkbox"/> YES <input type="checkbox"/> NO            |
| 07. Are you physically capable of using the stairs, if necessary, in times when the building's elevator may be inoperable? | <input type="checkbox"/> YES <input type="checkbox"/> NO            |
| 08. Do you participate in the quarterly fire drills conducted at your facility?                                            | <input type="checkbox"/> YES <input type="checkbox"/> NO            |
| 09. How long has it been in years since you attended a fire safety / education program sponsored by the fire department?   | <input type="checkbox"/> YES <input type="checkbox"/> NO            |
| 10. If the fire alarm sounds, for any reason, do you feel safer inside or outside of the building?                         | <input type="checkbox"/> INSIDE<br><input type="checkbox"/> OUTSIDE |

**APPENDIX B****LONGVIEW FIRE DEPARTMENT  
FIREFIGHTER SURVEY**

Longview Firefighter,

Thank you for your time in participating with this survey as part of my applied research project for the Executive Fire Officer Program of the National Fire Academy in Emmitsburg, Maryland. Your assistance will provide valuable data that will aid the Longview Fire Department in serving the residents of independent living facilities better in the future.

Please provide responses that are honest, factual, and unbiased to the survey questions below:

|                                                                                                                                                                                                                                                                     |                                                                                                                          |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| 01. What is your current rank in the Longview Fire Department?                                                                                                                                                                                                      | _____                                                                                                                    |
| 02. What is your current tenure with the Longview Fire Department?                                                                                                                                                                                                  | _____                                                                                                                    |
| 03. Do you currently have any occupancies classified as Independent Living Facilities within your first-due primary response area?                                                                                                                                  | <input type="checkbox"/> YES <input type="checkbox"/> NO                                                                 |
| 04. Have you personally experienced any significant fire-related responses occurring at an Independent Living Facility?                                                                                                                                             | <input type="checkbox"/> YES <input type="checkbox"/> NO                                                                 |
| 05. If the answer to the preceding question was <b>YES</b> , which of the following choices did the Incident Commander utilize to secure the safety of the facility's residents:                                                                                    | <input type="checkbox"/> <b>Protect-in-Place</b><br><input type="checkbox"/> <b>Complete Building Evacuation</b>         |
| 06. Are you familiar with the various components of built-in fire protection installed at any of these operating facilities?<br><br>Are you aware of any situation where any of this type of occupancy might be lacking adequate built-in fire protection?<br>_____ | <input type="checkbox"/> YES <input type="checkbox"/> NO<br><br><input type="checkbox"/> YES <input type="checkbox"/> NO |
| 07. Do you actively embrace the opportunity to assist or conduct fire prevention/education activities?                                                                                                                                                              | <input type="checkbox"/> YES <input type="checkbox"/> NO                                                                 |
| 08. Have you participated with any prevention/education activity targets specifically at a senior adult audience?                                                                                                                                                   | <input type="checkbox"/> YES <input type="checkbox"/> NO                                                                 |
| 09. Do you feel that the Longview Fire Department is prepared for a "working fire" at any of the independent living facilities currently operating in the city?                                                                                                     | <input type="checkbox"/> YES <input type="checkbox"/> NO                                                                 |
| 10. Would you be interested in serving on a SOP/SOG committee to develop a consistent action plan for use at Independent Living Facilities?                                                                                                                         | <input type="checkbox"/> YES <input type="checkbox"/> NO                                                                 |

**APPENDIX C**

**RESPONSE INCREASE FOR FIRE RELATED ACTIVITIES 2004-2009**

