Preparing for an Aging Population within Chesterfield County, Virginia

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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

The applied research project examined a problem that is mounting in Chesterfield County, Virginia. The population of older adults is rising and many of whom struggle to remain independent. The problem is that the service requests for non-emergency assistance to the elderly mark a considerable call volume for Chesterfield Fire and EMS (CFEMS). The purpose of the research was to find a method to offer assistance to the elderly from within the community, while alleviating the demand for service requests for non-emergency assistance by CFEMS. Using the descriptive method, the research explored (a) the magnitude of the rising older population, (b) the current impact of elderly citizens on the call volume, (c) what CFEMS leaders believe will be the impact of the growing older population on service delivery, (d) the culture of the rising older population, (e) how other communities prepare for an aging population, and (f) the available resources that can contribute to a program. The findings from the literature review were complemented by original data from interviews, personal correspondence, analyses of raw data, and a survey.

The older population in Chesterfield County is projected to increase by 73.41% by 2020. CFEMS responded to 410 requests for non-emergency assistance to elderly citizens in 2009, which constitutes 21.07% of all public service calls. Surprisingly, the number of these assistance calls has declined over the past three years. In general, the CFEMS leadership under-estimated the increase in the older population but acknowledged the need for changes to the current service delivery practices and for additional resources. The next older generation is predicted to be more demanding of public service. The intensity of purposeful planning varies considerably among communities. There is a multitude of potential resources. The key recommendation is a 24/7 clearing-house that orchestrates volunteer resources and matches needs with services.
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Introduction

“The population ageing is unprecedented, a process without parallel in the history of humanity” (United Nations Department of Economic and Social Affairs [U.N.], 2009, p. viii). The U.S. Census Bureau (U.S. Census) states that “a substantial increase in the number of older people will occur during the 2010 to 2030 period, after the first Baby Boomers turn 65 in 2011” (U.S. Census Bureau [U.S. Census], 2005, p. 1). “However, with the impact of globalization, rising urbanization, migration and an increasing trend towards nuclear families, the co-residence arrangements are coming increasingly under stress and tending to disintegrate. Often older persons are left to fend for themselves without any family support” (Nizamuddin, 2003, p. 102).

Chesterfield County is not exempt from this global phenomenon. The population of older adults in Chesterfield County is rising and many of whom struggle to remain independent. The problem is that the service requests for non-emergency assistance to the elderly mark a considerable call volume for Chesterfield Fire and EMS (CFEMS).

The research purpose was to find a method to offer assistance to the elderly citizens from within the community, while alleviating the demand for service requests for non-emergency assistance by CFEMS. For consistency in this research project, the term “elderly” represents adults who are 65 years old or older (≥65). The descriptive method was used within the research project. The focus was on identifying the present issue, its future implications, and alternatives. The approach was to review existing research on the aging population, to analyze demographic and Computed Aided Dispatch System (CADS) data, and to conduct interviews with stakeholders.

In order to work towards a solution to the research problem, the project concentrated on
six research questions. The research questions were (a) what is the magnitude of the rising older population, (b) what is the current impact of elderly citizens on the call volume in Chesterfield County, (c) what do CFEMS leaders believe will be the impact of the growing older population on service delivery, (d) what is the culture of the rising older population in Chesterfield County, (e) how do other communities prepare for an aging population, and (f) what are available resources that can contribute to a program?

Background and Significance

Chesterfield County is located in Central Virginia on the outskirts of the capital city of Richmond. The County encompasses 446 square miles, which makes it the fourth largest county in the Commonwealth of Virginia (Chesterfield County Planning Department [CC Planning Dept.], 2008). The 2000 census data indicated a population of 259,903, from which 8.1% (21,007) were ≥65 years old (U.S. Census, 2010b).

CFEMS manages 21 fire stations with 415 full-time, uniformed personnel assigned to the Emergency Operations Division. Overall, CFEMS is 466 members strong, including 43 civilian positions (T. Tucker, personal communication, May 27, 2010). The Emergency Operations Division responded to 31,849 calls for service in calendar year 2009, including 7,389 medical calls (23.2%) that were generated by patients ≥65 years old (J. Kelly, personal communication, June 11, 2010). Out of the total number of calls for service in 2009, 1,946 (6%) were coded as public service calls. A substantial volume of these public service calls (21.07%) were non-emergency requests for assistance to an older citizen. In general, the elderly are reluctant to dial “911” to call for help, but do so because they have no one else to turn to.

Chesterfield County’s population demography is changing rapidly. The elderly citizens will represent an increasingly larger portion of the County’s population and, consequently,
change CFEMS’ customer base. By 2010, the elderly population had increased by 12,093 residents (57.57%) since the 2000 Census and is forecasted to grow a further 24,300 residents (73.41%) by 2020 and from that an additional 23,800 residents (41.46%) by 2030 (Z. Mayo, personal communication, May 18, 2010).

It has been common practice for CFEMS to dispatch the closest available fire apparatus to handle non-emergency assistance to elderly residents in their home. The wide variety of requests include helping the elderly off the floor; assisting to the car or from the car to the house; helping off the lavatory or out of the bathtub; taking care of water leaks; helping maneuver with the wheelchair; helping to bed; checking home-oxygen supply, generators, and smoke detectors; and to simply check on their welfare.

While the engine or truck companies are committed to non-emergency assistance calls, they are no longer available in the CADS for emergency response. The current level of commitment to non-emergency assistance to the elderly, combined with the drastic increase in the elderly population, a declining response reliability of fire units, and competition of scarce resources, warrant CFEMS to gain a situational awareness of the demographic evolution and to understand the changing needs for service and resource allocation. The increasingly larger proportion of elderly citizens will affect CFEMS’ current service delivery practices and, therefore, simply cannot be downplayed.

The anticipation of an escalating demand for non-emergency assistance, in response to the growing elderly population, is not an exclusive CFEMS challenge, but affects departments indiscriminately across the United States and abroad. As a result, this research project has the potential to impact the fire service as a profession. A seamless continuum in quality of life in all stages of life is morally and ethically important to the author. The author believes that people
deserve the privilege and the dignity to age in place. For the purpose of this research project, the term *aging in place* refers to growing older in your own home, gracefully and independently, for as long as possible. His vision as an Executive Fire Officer (EFO) and future leader in the fire service is to build a resilient community that fosters an admirable quality of life from one generation to the next. The analysis of the potential impact of unaddressed community risks by the rapidly growing elderly population relates directly to the Executive Analysis of Community Risk Reduction (EACRR) course. Furthermore, the nature of the research problem precisely supports the three objectives of goal number 2 of the United States Fire Administration (USFA) 2010-2014 Strategic Plan, which is to improve local planning and preparedness. The three objectives under Goal number 2 are (a) increase fire service personnel participation in local planning and preparedness processes, (b) expand the use of modern data and information analysis in planning and preparedness, and (c) enhance the fire and emergency services’ performance in response to all hazards (United States Fire Administration [USFA], 2009a, p. 23).

Dr. Denis Onieal, superintendent of the National Fire Academy, appropriately claimed that “the fire department of the future will be an agency of first and last resort,…” and that it was our choice to make this either the best or the worst opportunity for the fire service (Onieal, 2010).

This research project will inspire CFEMS to not only overcome the challenge, but to embrace it as an opportunity to implement sustainable aging in place. This in return will promote Chesterfield County as the model community in Virginia where aging in place is not a theory but a championed way of life.
Literature Review

The literature review starts with a global view of the problem. It then directs its focus on the United States and continues to zoom in on the Commonwealth of Virginia and, finally, on Chesterfield County. The main body of knowledge reviewed was gathered from the United Nations Department of Economics and Social Affairs (ESA); the United States Census Bureau (U.S. Census); the Administration on Aging (AoA) and the Centers for Disease Control and Prevention (CDC) within the United States Department of Health & Human Services; state and local government agencies in Virginia; State of Arizona Office of the Governor; aging related non-government and non-profit organizations; articles from relevant trade journals; original research from the medical and pre-hospital field; the Chesterfield County Planning Department; the Chesterfield County Emergency Communications Center (ECC); the CFEMS Planning Unit; and the Chesterfield County Office of the Senior Advocate (OSA). These sources were selected for their relevancy to the research problem, their credibility, and their attributes that helped conceptualize the problem and formulate the recommendations.

The first source reviewed was the United Nations Department of Economic and Social Affairs (ESA). Its Population Division maintains a sophisticated data collection from the majority of countries. Its international studies helped the author to place in perspective the magnitude and impact of the soaring elderly population worldwide and to approach the research problem well-informed and with an open mind.

The shifting demography is not a localized phenomenon, but is occurring worldwide. For that reason, it was important to the research project to place the research problem into a global context to better understand the social, economic, and political environment that surround the research and the evolution leading up to the problem.
The question of equivalence, however, makes cross-national comparison challenging and warrants caution when comparing statistics. The author points out that the United Nations applies the age 60 and older to identify older persons for their statistics. For ratios, though, the United Nations applies age 65 to classify older persons. The U.S. Census, on the other hand, consistently applies 65 years or older for demographic data. The author made the decision to adopt age $\geq 65$ to identify the elderly.

The *World Population Ageing 2009* report explained how the population aging is unparalleled in the history of humanity. Globally, the number of people age 60 years or older will outnumber the children age 15 years and younger by 2045. This demographic shift has far reaching implications in the social, economic, and political spheres that may not be apparent at first glance, but were important to the project for a better understanding of cause and effect.

In the social sphere, the demographic shift affects the family structure, living arrangements, housing demand, migration trends, epidemiology, and healthcare. In the economic sphere, it influences economic growth, savings, investments, consumption, labor market, pension, taxation, and intergenerational transfer of wealth. In the political sphere, it shapes voting patterns and political representation (U.N., 2009, p. viii).

While the world’s population is growing at a rate of 1.2%, the 60 plus age group is growing more than twice as fast at 2.6%. Even though the developed countries are currently ahead of the demographic shift, the developing countries are expected to undergo the same demographic transformation by 2050 (U.N., 2009, p. ix).

The United Nations utilizes the Potential Support Ratio (PSR) as a measurement to illustrate how many people between 15 and 64 years of age, which is the potential working group, there are for people $\geq 65$ years old. When the age of a population increases, the PSR
decreases. From 1950 to 2009, the PSR declined from 12 to 9 and is expected to further shrink to 4 by 2050. The PSR serves as a measure of the impact on social security funding and tax revenues. Another instructive U.N. ratio to measure the magnitude of the rising older population is the Dependency Ratio (DR). This ratio compares children (<15 years) and elderly (≥65 years) to the working group (15 to 64 years), expressed per 100 population. The DR is an indicator of the “dependency burden” in a society (U.N., 2009, pp. 17-18). Appendix A defines the formulas under “Definition of Terms”. Both U.N. measuring strategies were instructive for this project because they illustrated some of the social and economic implications of the rising older population. The author will elaborate on both measures later in the project when comparing the U.N. and the U.S. Census ratios with Chesterfield County’s ratios.

Another informative document was a paper by M. Nizamuddin, senior technical adviser on aging for ESA. He had written the document for the Fifth Asian and Pacific Population Conference in Bangkok in December 2002. Nizamuddin’s discussion on the demographic transition, the socio-economic implications, and the best practices in current policies and programs for older persons is, in essence, as applicable for Chesterfield County as it is for the Asian and Pacific Region. Nizamuddin emphasized the importance of community support for the well-being of older people and cautioned that while some communities possess an established, sophisticated public service framework, others have no public support structure at all (Nizamuddin, 2003). Nizamuddin’s remarkable expertise in the subject matter was of great value to this research project.

The next source explored was the U.S. Census. Its 2008 international populations report addressed many of the same key issues as the U.N. report did and was, for the most part, in line with it. The U.S. Census pointed out how the growth of older populations increases pressure on
societies and their ability to adapt to and manage the needs of elderly citizens. Inadvertently, this creates competition for resources between the young and the old. The U.S. Census utilized the Older Dependency Ratio (ODR) as a measuring strategy to illustrate the magnitude of the rising older population. The ODR measures the number of people ≥65 years per 100 people age 20 to 64 years. This is an enlightening measure of how many working taxpayers support elderly, non-working people. The higher the proportion of older citizens in relation to the overall population is, the higher the ODR. In 2008, the ODR for the United States was 21, Japan was the highest with 36 and Kenya the lowest with 6 (Kinsella & He, 2009). In a recent press release, the U.S. Census reported that the ODR for 2010 is 22 and is expected to jump to 35 in 2030. This timeframe coincides with the Baby Boomers entering the ≥65 year age group. After 2030, the ODR’s rapid climb is forecasted to slow down to 37 in 2050 (U.S. Census, 2010a).

In a 2006 press release U.S. Census Director Louis Kincannon proclaimed, “The social and economic implications of an aging population – and of the baby boom in particular – are likely to be profound for both individuals and society” (U.S. Census, 2006, para. 2).

In the special study 65+ in the United States: 2005, the U.S. Census stated that “the older population is on the threshold of a boom” (He, Sengupta, Velkoff, & DeBarros, 2005, p. 1). The study projected a major increase in the older population in the United States between 2010 and 2030, once the Baby Boom Generation starts turning 65 in 2011. It is estimated that the older population will double between 2000 and 2030 from 35 million to 72 million and will represent 20% of the population in the United States. He et al. also provided an interesting discussion on the future social and economic implications of the Baby Boom Generation, which was enlightening to the author.

In a recently released report, the U.S. Census reported that the U.S. population is
projected to grow by 42% from 310 million in 2010 to 439 million by 2050. During the same time period, the population of ≥65 year old Americans is expected to more than double from 40.2 million in 2010 to 88.5 million in 2050. The U.S. Census then pointed out how the aging Baby Boom Generation will change the age structure in the United States and utilized the ODR to illustrate the social and economic impact (Vincent & Velkoff, 2010). The same report cautioned that the age structure will continue to shift upward as the Baby Boomers grow older and join the oldest-old (≥85 years of age) and pointed out that “…those in the oldest ages often require additional care giving and support” (p. 4).

The U.S. Census’ website was utilized for reference throughout the project. While there were minor variances on demographic data interpretations, the project adopted the official national population projections for this project. The national population projections are based on the 2000 Census and were released on August 14, 2008 (U.S. Census Bureau, 2008).

The Administration on Aging (AoA), within the Department of Health and Human Services, was a helpful resource because of its rich history of using volunteers for its elderly support programs and the subsequent in-depth experience in the use of volunteers. The AoA claimed that each year half a million volunteers deliver services to ten million older people. These are services that are sanctioned by the Older Americans Act (Administration on Aging [AoA], 2010). The AoA was also a good resource to learn more about the Older Americans Act and its legal ramifications. The Act was created in 1965, when it became evident that social services for the elderly were insufficient (AoA, 2010).

In the document A Profile of Older Americans: 2009, the AoA discussed a great number of issues that directly addressed some of the research questions. The AoA created the profile, based on data from the U.S. Census, the National Center on Health Statistics, and the Bureau of
Labor Statistics. The profile showed that in 2005, Americans age 65 to 74 years made 6.5 doctor visits per year, and those over 75 years made 7.7 visits. This data was an interesting find that helped better explain why CFEMS is routinely requested for non-emergency assistance to help elderly from the home to a car or the reverse. Another astonishing statistic showed that in 2007 over 25% of community-resident Medicare beneficiaries age ≥65 years have trouble managing one or more activities of daily living (ADLs). Examples of ADLs are (a) bathing, (b) dressing, (c) eating, and (d) moving around inside the home. An additional 14.6% admitted that they struggle with instrumental activities of daily living (IADLs). Examples of IADLs include (a) cooking, (b) shopping, and (c) taking medication (AoA, 2009). These statistics were an interesting discovery that helped interpret CADS data for research question 2. Furthermore, the AoA’s civic engagement activities and programs, as well as the extensive network of partnerships with other aging related organizations, were helpful with assessing the current status of resources in Chesterfield County and with exploring further opportunities.

The Centers for Disease Control and Prevention (CDC) enriched the research project with information on the epidemiologic transition. The CDC estimates that 80% of Americans ≥65 years of age suffer from at least one chronic condition and 50% endure at least two (CDC, 2003). In the CDC journal Preventing Chronic Disease, the authors illustrated how chronic conditions, such as arthritis, hypertension, heart disease, diabetes, and respiratory disorders often times lead to severe disability. CDC statistics indicate that nearly 50% of ≥65 year old Americans suffer from hypertension, 36% from arthritis, 20% from coronary heart disease, 20% from cancer, 15% from diabetes, and 9% from a stroke. Chronic conditions prevent the elderly from continuing ADLs (Aldrich & Benson, 2008). CDC’s information is in line with studies by the United Nations and the U.S. Census. This is not surprising because the CDC has been referencing ESA’s
Population Division and the U.S. Census’ international data base for their research and publications. The most relevant documents, used as references by the CDC, have been included in the literature review for this project and are referenced above. The CDC studies helped better understand the variables that propagate the service requests for non-emergency assistance in Chesterfield County.

The website for Virginia’s Department for the Aging (VDA) enriched the project with demographic, health status, and socio-economic data and trends. Especially, the state plan Virginia’s Four-Year Plan for Aging Services (State Plan) was enlightening. The VDA is the state’s central point of contact for age related information and services and works closely with 25 Area Agencies on Aging (AAA), as well as public and private organizations (VDA, 2007). The State Plan serves as a framework that highlights the mutually dependent relationship between older Virginians and communities. It also provides recommendations for individuals to adapt with aging and for officials to build communities that support aging in place. Virginia’s older population is projected to more than double during the next two decades. As a result, one out of every five Virginians will be ≥65 years old by 2030, and the ≥85 age group will become the fastest growing population group. The State Plan then focused on the continuum of aging, the resulting cultural change, and identified the existing formal and informal support services in Virginia, and how these systems must change to meet the future needs. The recommendations of the plan encompassed input from stakeholders such as policy makers, service providers, researchers, planners, and advocates of the elderly (VDA, 2009). The State Plan’s quality that the author appreciated the most was how it viewed the demographic shift as an opportunity rather than a crisis.

The on-line labor market information data (LMI Tools), operated by the Virginia
Employment Commission (VEC), was a resource that the author utilized later into the project to obtain the most current population projections. The LMI Tools is a practical instrument that allows the user to filter specified, up to date demographic data.

The VDA, the State Plan, and VEC’s statistics were commendable sources for up to date information that were constructive to the research questions.

Another planning document that influenced the research project was the 2020 Community Plan on Aging – Making Our Community a Great Place to Age (2020 Plan). This plan was developed in 2003 by the Thomas Jefferson Planning District (TJPD) in Virginia. The TJPD is composed of Charlottesville and the counties of Albemarle, Fluvanna, Greene, Louisa, and Nelson. The plan claimed that “building communities that are good for seniors will benefit everyone” (Thomas Jefferson Planning District [TJPD], 2003, p. 4). Despite the conveyed optimism, the 2020 Plan cautioned that the impact of the “aging tsunami” will alter the present culture and be felt “at the personal level, in our communities, and at the highest levels of federal policy-making” (TJPD, 2003, p. 13). Similarly to the VDA’s State Plan, the 2020 Plan is a rich source of information that provided good information to research questions 1, 5, and 6.

In addition to Virginia plans, the literature review incorporated Arizona’s Aging 2020 plan. One of the reasons why the author chose to study the Arizona plan was its sponsor; the Governor at that time, Janet Napolitano. It was an enticement for this project to learn how the former Governor, and now Secretary of Homeland Security, was planning for her State’s changing demography. One of the guiding principles of the planning process was to incorporate “strategies to create communities where persons of all ages, with and without disabilities, can live meaningful, productive, healthy independent lives” (State of Arizona, Office of the Governor, 2005, p. 2). The Arizona plan benefited several research questions with interesting
facts and ideas.

A further source that benefited research question 6 was Volunteers of America® (VoA). VoA’s CEO Chuck W. Gould argued that “seniors are a vital resource and an asset to their communities” and explained that one of AoA’s goals is to expand the current in-home services and to seek new, innovative ones that would help the elderly remain independent in their homes for as long as possible. He then further discussed the potential of “volunteer banks” and the “village” concept where “the community is brought together in a common cause with each other’s needs at the heart” (Gould, 2009, p. 2). Mr. Gould’s philosophy was inspiring for this research project.

An interesting source of information was found in the journal *Prehospital and Disaster Medicine*, an official publication of the World Association for Disaster and Emergency Medicine (WADEM). The journal published an original research by Lauren S. Fernandez, Deana Byard, Chien-Chih Lin, Samuel Benson, and Joseph A. Barbera on the vulnerabilities of elderly to disasters and on strategies to address these vulnerabilities. Fernandez et al. (2002) found four primary attributes that increase vulnerability of the elderly. They are (a) impaired physical mobility, (b) diminished sensory awareness, (c) pre-existing health conditions, and (d) social and economic constraints (Fernandez, Byard, Lin, Benson, & Barbera, 2002, p. 69). Their study supported research questions 2 and 6.

A description of the culture of the next older generation entails an examination of the Baby Boom Generation. In her 2010 article, posted on suite101®.com, Christina Gregoire argued that the characteristics of Baby Boomers were developed during the 1960s. Gregoire (2010) looked at the Baby Boomers’ needs and trends from a business marketing perspective (Gregoire, 2010). The website *Answer-My-Health-Question.Info* summarized the common
characteristics of Baby Boomers and explained that there are two distinct groups within the Baby Boom Generation that differ greatly from each other. First came the “Vietnam Group”, followed by the “Me Group” (Answer-My-Health-Question.info, 2008-2010). The website lovetoknow.com contributed to research question 4 with additional characteristics and explained the transition from Hippies of the Vietnam era to Yuppies of the “Me Generation”. At the same time, the website pointed out that because the Baby Boomers are such a diverse generation, it is difficult to describe their common traits (LoveToKnow Corp., 2010). Another interesting source of information came from the About.com™ website and was written by Sally Kane. What made her article stand out was her perspective from a legal career’s point of view. Kane (2010) stated that “This generational segment constitutes a large majority of today’s law firm leaders, corporate executives, senior paralegals, and legal managers” (Kane, 2010, para. 1). The distinct strong background of power and authority will have to be taken into consideration when portraying the culture of the next generation of older citizens, especially when defining their expectations of public service.

While doing research at the Learning Resource Center (LRC) at the National Emergency Training Center (NETC), Emmitsburg, Maryland, the author found an informative resource in, Children as Volunteers – Preparing for Community Service, a guidebook for volunteer management. Even though the 1991 publication is fairly dated, it was surprisingly educational for the project in terms of volunteerism related vocabulary, resources, and legal considerations. The guidebook conveyed that if children are introduced to volunteer work within the community, it prepares them to become compassionate and responsible members of the community. Especially the concept of “intergenerational programming”, which aims at blending the younger with the older generation, became an intriguing idea for the project’s recommendations. The
authors of the book claimed that with intergenerational programming, “It is often purposely difficult to tell who is the giver and who is the recipient of service” (Ellis, Weisbord, & Noyes, 1991, p. 4).

Next, the research at the LRC was extended to Fire and EMS trade journals. The search produced three intriguing articles, relevant to the research problem. The first article, *Linking the Elderly to Community Services*, was written by Lowell W. Gerson, Roger Hoover, Sam McCoy, and Barbara Palmisano and was published in 1991 in the *Journal of Emergency Medical Services (JEMS)*. Even though written almost two decades ago, the discussed concerns back then are even more significant today. Gerson et al. (1991) argued that across the country more and more elderly struggle with “basic or home-management functions” and because community services are insufficient, the elderly risk “continuing decline and eventual institutionalization”. Gerson et al. predicted that the inadequate community support for the elderly would become “an even greater concern in the future”. Gerson et al. claimed that there are three common reasons why the elderly are not receiving the assistance they need. They are (a) lack of available services in the community, (b) inability to identify people who need assistance, and (c) difficulty linking individuals to the appropriate service network (Gerson, Hoover, McCoy, & Palmisano, 1991, p. 45). The *JEMS* article helped better understand the findings from research question 2 and supported research question 6 and the recommendations.

The second article was written by Jose A. Nochea and was published in *Firehouse®* magazine. Nochea (2009) explained how traditional EMS calls have segregated into three categories: (a) emergency calls (e.g., heart attack, stroke, etc.), (b) urgent calls (e.g., cut finger, fever, etc.), and (c) public service calls (e.g., place in bed, TV remote control programming; p. 22). Nochea cautioned how committing high dollar apparatus and highly trained firefighters to
non-emergency public service calls strain fire department resources and will eventually erode their budgets. As a possible solution, Nochea proposed “the creation of a non-emergency operation section to handle any call that is not considered or coded as an emergency” (p. 23). Nochea’s analysis of the problem relates directly to the research problem and enriched the project with a different perspective.

The third article found was authored by the superintendent of the National Fire Academy, Dr. Denis Onieal, and was published in *Fire Chief®* magazine. In his article *2010 Decade Forecast: Booming Woes*, Onieal (2010) talks about the fire department of the future. It was enlightening for this project to learn what Dr. Onieal had to say about the impact the Baby Boomers will have on the fire service. Dr. Onieal anticipates an increase in service requests for non-fire and non-EMS calls and argued that “while the future is fairly predictable, the preparation for it isn’t as obvious” (para. 1). Dr. Onieal’s analogy of the future challenges enriched the research project with a better understanding of the magnitude and implications of the next generation of older Americans.

The next part of the literature review took a closer look at specific information on Chesterfield County. Ms. Lynette Luke, automation analyst for the Emergency Communications Center (ECC) was contacted to learn more about the processing of non-emergency service requests for CFEMS. Ms. Luke supplied the author with a copy of the current policy for entry and disposition codes, Policy #2-28 (review date 11/16/10). The purpose of this policy is to “ensure what each code means and when they are to be used” (Emergency Communications Center [ECC], 2010, p. 1). It was instrumental for research question 2 to gain a clear understanding of how the ECC has been managing these types of service requests. Appendix B summarizes the core questions discussed with Ms. Luke. It was especially important to learn the
definitions of all the codes that constitute public service calls. The code abbreviations and definitions are listed in Appendix C.

The Chesterfield County Planning Department was asked to supply specific population data from 1990 to present and for estimates until 2030. Gaining access to the most current data and best estimates was indispensable for measuring the magnitude of the rising older population in Chesterfield County. In addition, it was prerequisite for calculating valid ratios and conducting meaningful comparisons.

The CFEMS Planning Unit supported the project with data of public service calls for calendar years (CY) 2007, 2008, and 2009. The Planning Unit compiled an excel spreadsheet that cataloged all public service calls by date and listed the appropriate dispatch comments for each call. In addition, the Planning Unit was asked to supply the precise number of calls for service for CY 2005 until 2009, the number of Patient Care Reports (PCRs) generated by patients ≥65 years old, and data that showed the response reliability of fire units in their first due district (response reliability). The data from the Planning Unit was fundamental to factually and accurately approach the research problem.

Lastly, the research project approached Ms. Debbie Leidheiser, senior advocate for Chesterfield County. With Ms. Leidheiser, the research project gained a priceless subject matter expert who enthusiastically shared her experience and expertise in community support for the elderly. Additionally, Ms. Leidheiser shared with pleasure her extensive and well established network of older adult supporters. Ms. Leidheiser is the only full-time person working for the Office of the Senior Advocate (OSA). The office was established in May 2003 and is integrated into the County’s Human Services Division. The OSA orchestrates a wide variety of services, programs, and collaborative partnerships. Its mission is “to enhance the quality of life of older
adults and their caregivers in Chesterfield County and to promote the ability to live active,
independent lives as long as possible” (Chesterfield County Government, 2010). Ms. Leidheiser
provided the project with a copy of the results from the 2008 Community Needs Assessment
Survey. The survey was distributed to over 400 Chesterfield citizens between 60 and 85 years of
age and generated a 20% reply rate (Leidheiser, 2009). The survey results provided insight into
the needs and concerns of the current elderly population. One question, for instance, asked the
respondents if they had problems performing ADLs. Another question asked if they had
problems shopping or getting to the doctor’s office independently (Leidheiser, 2008). This
information was interesting to compare with the findings from research question 2.

During the meeting, Ms. Leidheiser expanded on three services that were inspiring for the
project. They were (a) the Telephone Reassurance Program, (b) the Transportation Service, and
(c) the Handy Hands Service. The Telephone Reassurance Program is being managed by
volunteers working for the OSA. These volunteers call the elderly who live alone or who feel
isolated, either daily or weekly, and check on their well-fare (D. Leidheiser, personal
communication, May 28, 2010). The Transportation Service and the Handy Hands Service are
managed by the Shepherd’s Center of Chesterfield (Shepherd’s Center). The Shepherd’s Center
is an interfaith, community based organization that provides, among other services to the elderly,
free transportation and minor home repairs (Shepherd’s Center of Chesterfield [Shepherd’s
Center], 2010).

It became clear after the meeting that Ms. Leidheiser would be an indispensable resource
for and a main stakeholder of the research project. Her insights, combined with the extensive
directory of senior resources listed on the Chesterfield County Government website, were major
contributors to research questions 1, 5, 6, and the recommendations. A copy of the interview
The last document studied in the literature review was the Executive Analysis of Community Risk Reduction (EACRR) Student Manual. The research purpose requires a solid understanding of how to reduce the risks of older citizens in the community. The student manual points out that “A great majority of human-related risks are preventable occurrences” (USFA, 2009b, p. 1-10). This statement will be confirmed later in the project with the findings from research question 2. The Student Manual stresses the value of the Community Risk-Reduction Model (CRR Model). The author made full use of the CRR Model and followed it like a roadmap along the process of working towards a functional solution to the research problem. A copy of the applied CRR Model is illustrated in Appendix E. In addition, the concepts of the five Es were utilized in the development of the project’s recommendations. The five Es are (a) education/behavior change interventions, (b) enactment/enforcement interventions, (c) engineering/environmental modifications interventions, (d) economic incentive interventions, and (e) emergency response interventions. The Student Manual points out that “Each of the Es produces a synergistic effect on the others” (p. 3-33). This was significant in designing a sustainable, effective solution.

The extensive literature review impacted the research project in many ways. Most importantly, it elucidated the impending demographic transition with qualitative and quantitative findings and observations. This was prerequisite for deciphering the explicit and implied effects the transformation will have on the future volume of service requests for non-emergency assistance to the elderly. The findings of the literature review were astounding and reemphasized the importance of this research project. It disclosed that the demographic transformation will be enormous, unprecedented and will indiscriminately affect the social framework of communities.
Aging Population in the United States and worldwide. The data supplied by the CFEMS Planning Unit allowed valid measurement of the impact the non-emergency assistance calls had had on the call volume. The culture of the next generation of older adults is predictable based on known characteristics of Baby Boomers. There are sophisticated strategic plans for the changing demography that indicate how other communities prepare. And, there is a multitude of resources available that can be utilized to better support the elderly citizens in Chesterfield County.

Procedures

The research project applied the descriptive research method. In addition to the all-embracing literature review, original data for this project was collected through a face-to-face meeting with the Chesterfield County senior advocate; an in-person meeting and multiple telephone conversations and e-mail correspondence with the data analyst within the CFEMS Planning Unit; e-mail correspondence with the education program coordinator with the Virginia Department of Fire Programs; e-mail correspondence with the Chesterfield County demographer, a telephone conversation and e-mail correspondence with the automation analyst for the Emergency Communications Center (ECC), and a ten question survey that was submitted to the CFEMS leadership.

The CRR Model emphasizes the importance of building and maintaining support throughout the risk-reduction process (see Appendix E). For that reason, the author deliberately initiated communication with key stakeholders early on and then maintained these relationships throughout the project.

The author identified the CFEMS Planning Unit and the Office of the Senior Advocate (OSA) as two key stakeholders. On April 27, 2010, the author initiated communications with Battalion Chief Jim Fitch, who is in charge of the Planning and Finance Division. The author
introduced the project and asked for permission to utilize the Planning Unit for specific data requests. Chief Fitch granted the request and assured his support. The author met with Mr. Jim Kelly, data analyst for the Planning Unit, on April 30, 2010. The purpose of this meeting was to explain what data the author was looking for and to learn the Planning Unit’s ability to extract and sort that data. Based on the meeting with Mr. Kelly, the author defined the data request in writing and submitted it to Mr. Kelly’s supervisor, Captain Tommy Tucker, for approval. The formal data request asked for (a) total calls for service for CY 2005 until 2009; (b) public service calls for CY 2007, 2008, and 2009, including dispatch comments; (c) number of PCR’s for patients ≥65 years old for CY 2007, 2008, and 2009; and (d) response reliability county-wide for fire calls for the past four calendar years. This data was fundamental for establishing internal and external validity of the research project. Captain Tucker authorized Mr. Kelly’s time to work on the data request. Mr. Kelly completed the data collection on May 26, 2010. Extracting the data of all public service calls for the past three years was challenging and time consuming. Mr. Kelly was able to import the raw data for 5,952 public service calls into an Excel® spreadsheet. The author then reviewed each public service call to see which calls had been the result of a non-emergency request for assistance to elderly citizens. The age of the person in need of assistance has not been mandatory information for generating a call for service at the ECC. For that reason, the author had to decipher the dispatch comments to figure out if the request was to help an elderly citizen. Consistent interpretation of the CADS comments required the author to develop a set of rules. For example, when the dispatch comments mentioned that the caller was the son, daughter, son-in-law, daughter-in-law, or caregiver and the subject in need of help was described as elderly, mother, father, or hospice patient; then it could reasonably be assumed that old age was the leading factor for the service request. On the other hand, if the involved parties were
described as wife, husband, or subject and there was no evidence of a generation differential, the service request was not included in the statistics. Appendix F displays the applied set of rules. Next, the author grouped the service requests for non-emergency assistance to the elderly into twelve categories (see Appendix G). Organizing these service calls into most common call types allowed for identification of hazards and causal factors. This is a critical objective in Step II of the CRR Model and proved to be helpful for research question 2 and 6. The process of examining the 5,952 public service calls took the author eleven days.

Also on April 27, 2010, the author contacted Senior Advocate Debbie Leidheiser and informed her of the impending research project. Ms. Leidheiser expressed her interest in the project and enthusiastically offered her support. A meeting was scheduled for May 28, 2010, at Ms. Leidheiser’s work place at the OSA. At the meeting, the author introduced the research project and explained how the research will benefit not only CFEMS but also the OSA and the Chesterfield County community. Ms. Leidheiser kindly explained best practices in the Richmond Metro Region, how the OSA and the counterparts in other communities in Virginia prepared for the demographic shift, and the capability and capacity of the OSA. The subsequent discussion covered the challenges and opportunities of the rising older population and ideas of how CFEMS and the OSA could mutually complement and support each other. Ms. Leidheiser’s compassion for older citizens, as well as her experience and understanding of community support for the elderly, made the meeting an inspiring experience and enriched the project with priceless new insights.

On April 30, 2010, the author contacted Mr. John D. Jenkins Sr., education program coordinator with the Virginia Department of Fire Programs (VDFP), to inform him of the research project. Mr. Jenkins was intrigued by the research topic and offered his assistance. In
return, the author was asked to share the research document with VDFP. Mr. Jenkins is well-known in the Virginia fire service community for his commitment to public education and prevention programs. Additionally, he has access to VDFP resources and maintains a well-established network of education and prevention experts. Mr. Jenkins posted the author’s inquiry to the 387 members of the National Fire and Life Safety Educator (NFLSE) Yahoo!® group to find out how other communities plan on handling the demographic change. Appendix H shows a copy of the posting. Besides the NFLSE, Mr. Jenkins also utilized his contacts within the Virginia education and prevention community to gather any information. On May 19, 2010, the author posted a separate inquiry to the 865 members of the Prevention Advocacy Resources and Data Exchange (PARADE) Yahoo!® group. The posting is copied in Appendix I.

On April 30, 2010, an e-mail was sent to Ms. Lynette Luke, automation analyst for the Emergency Communication Center (ECC). The email explained the project and listed the core questions the author wanted to discuss (see Appendix B). It was imperative for the project to learn how the ECC manages service requests for non-emergency assistance. Ms. Luke was chosen as the subject matter expert based on her tenure with the ECC and her in-depth knowledge of the processes at the ECC. A telephone meeting was scheduled for May 5, 2010. The dialog with Ms. Luke was instructive and enabled the author to interpret the CADS data more precisely and to understand the call processing procedures.

On May 7, 2010, the author sent an e-mail to Mr. Kirk Turner, director of the Chesterfield County Planning Department. The author introduced the research project and requested the department’s assistance with specified, most current data. Mr. Turner authorized the request and asked Mr. Zachary Mayo, the County’s demographer, to assist the project with the data request. The buy-in from the county’s planning department and the commitment of Mr.
Mayo, a professional demographer, had two distinct benefits to the project. First, Mr. Mayo was able to sort demographic data according to the author’s specifications. The author specified the age groups to make them equivalent to the age groups the United Nations and the U.S. Census applied to calculate their ratios. Equivalence enabled the author to calculate the PSR, DR, and ODR for Chesterfield County while conforming to the rules of comparability. Second, Mr. Mayo privileged the project with the most up-to-date demographic projections available for Chesterfield County.

Another selected method to gather original data was through a survey. The purpose of the survey was to assess the perspective of and gather ideas from the CFEMS leadership. The author designed ten questions, consisting of open-ended, closed-ended, and force choice questions. A draft version of the survey was sent out as a pilot through SurveyMonkey™ to six CFEMS firefighters in the Emergency Operations Division, plus Deputy Chief of Emergency Operations Mark Sacra and Battalion Chief in Emergency Operations David Bailey. Both chief officers are EFO graduates and were added to the pilot sample group for their objectivity of and experience in applied research. The objective of the pilot survey was to test the functionality of the survey and the understanding of the survey questions. The feedback by the pilot sample group suggested unintentional bias toward CFEMS not assuming more responsibility for elderly assistance. The much appreciated feedback helped the author rephrase and clarify the survey questions. This demonstrated unmistakably the value of conducting a pilot survey. The revised, finalized survey was sent out through SurveyMonkey™ on May 23, 2010. The survey questions are posted in Appendix J. The 22 CFEMS chief officers of the department plus the medical director were selected as the survey sample. The criterion for the selection of the sample group was the level of decision making authority. The author considered the 23 individuals as an appropriate
representation of the CFEMS leadership, which makes up the total survey population. Appendix K lays out the composition of the survey sample. The survey generated 12 responses (52%) by the conclusion of the survey on June 21, 2010.

A limitation of the survey was an over-representation of emergency response chief officers at the expense of civilian managers. Also, all sample subjects were males, which was unintentional. It would have widened the perspective to incorporate more civilian managers in the EMS Division, the Office of Emergency Management, IMT Unit, Finance Unit, and Human Resources Unit. This would have not only expanded the range of opinions, but would also have included females in the sample group.

Results

The first research question was to quantify the magnitude of the rising older population. At the world level, the age group of 60 years old or older is rising at an annual rate of 2.6%, while the overall population is climbing by 1.2%. At that rate, older persons, 60 years old or older will outnumber children, younger than 15 years old, in 2045. This is an unprecedented phenomenon in the history of humanity (U.N., 2009). The aging population, in the United States and worldwide, is the consequence of declines in fertility and increases in life expectancy (CDC, 2003). Globally, the Potential Support Ratio (PSR) decreased from 12 in 1950 to 9 in 2009 and is forecasted to further decline to 4 by 2050. The Dependency Ratio (DR) worldwide increased from 65 in 1950 to 74 in 1975, reflecting the increased fertility and decrease in child mortality during this time period. In 2009, the global DR was 53 and is expected to remain steady at 52 until 2025. After that, the DR is predicted to start elevating again to 56 by 2050 (U.N., 2009). The U.S. Census utilizes the Older Dependency Ratio (ODR), which is a simplified variation of the United Nations’ DR, as an indicator of societal support.
Base revealed an ODR of 21 for the United States in 2008, as compared to 26 for the United Kingdom and 36 for Japan (Kinsella & He, 2009, p. 79). The ODR in the United States is forecasted to jump from 22 in 2010 to 35 in 2030. This is the same time period the Baby Boom Generation enters the ≥65 year age group. After 2030, the ODR in the United States is expected to slow down to 37 in 2050. The rapidly rising ODR is a reflection of the forecasted percentage of this age group, which amplifies from currently 13% to 19% of the total U.S. population in 2030 (U.S. Census, 2010a). The first of the 77 million Baby Boomers will turn 65 years old in 2011. The ≥65 year age group accounted for 35 million in 2000. It is estimated to be at 40.2 million in 2010 and is forecasted to further swell to 54.8 million by 2020 and to 72.1 million by 2030 (AoA, 2009). He et al. (2005) stated that in 2030, this population group will constitute 20% of the U.S. population (He et al., 2005). In 2008, the ≥65 year old group numbered 38.9 million and represented 12.8% of the U.S. population, which translates to one out of eight Americans (AoA, 2009).

Vincent & Velkoff (2010) stated that the U.S. population is projected to grow by 42% from 310 million in 2010 to 439 million in 2050. During the same time period, the population of ≥65 year old Americans is expected to more than double from 40.2 million (13%) in 2010 to 88.5 million (19%) in 2050. The share of oldest-old moves proportionally upwards as the Baby Boomers grow older. The oldest-old made up 14% of the older population in 2010 and will ascend to 21% by 2050. While the oldest-old are expected to represent 2.3% of the total U.S. population in 2030, their numbers are presumed to make up 4.3% by 2050. Coinciding with the changing age structure, the ODR is anticipated to elevate from 22 in 2010 to 35 in 2030 before it will settle at 37 by 2050.

The official U.S. Census’ national population projections, based on the 2000 Census,
indicate a population of 310,233,000 in 2010. The percentile of the ≥65 year old population is stated as 12.97%. As Table 1 illustrates, the percentile is projected to increase to 16.05% by 2020 and to 19.30% by 2030 (U.S. Census, 2008).

Table 1

Comparative Population Projections

<table>
<thead>
<tr>
<th>Area</th>
<th>2010</th>
<th>2020</th>
<th>2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. Population</td>
<td>310,233,000</td>
<td>341,387,000</td>
<td>373,504,000</td>
</tr>
<tr>
<td>U.S. % ≥65 group</td>
<td>12.97%</td>
<td>16.05%</td>
<td>19.30%</td>
</tr>
<tr>
<td>Virginia Population</td>
<td>8,010,239</td>
<td>8,917,396</td>
<td>9,825,019</td>
</tr>
<tr>
<td>Virginia % ≥65 group</td>
<td>12.25%</td>
<td>15.54%</td>
<td>18.48%</td>
</tr>
<tr>
<td>Chesterfield Population</td>
<td>317,800</td>
<td>370,700</td>
<td>431,200</td>
</tr>
<tr>
<td>Chesterfield % ≥65 group</td>
<td>10.42%</td>
<td>15.54%</td>
<td>18.83%</td>
</tr>
</tbody>
</table>

Source: Population Division, U.S. Census Bureau, 2008; Virginia Employment Division, 2010; Chesterfield County Planning Department, 2010

The 2000 Census confirmed that longevity continues to rise from 47.3 years in 1900 to 76.9 years in 2000 (He et al., 2005). At this rate, a child born in 2007 can expect to live 77.9 years, which is 30 years longer than if it had been born in 1900 (AoA, 2009). Baby Boomers who reach 65 years of age will likely be rewarded with an average life expectancy of 20 to 25 more years (VDA, 2009).

Of all older Americans in 2008, 38% acknowledged some type of challenge that limited their ability to move around the house and to live independently. In 2005, 16% of the same age group indicated that they needed some type of assistance due to a disability. Disabilities increase proportionally with age. At age 80, 56% indicated they had a disability and 29% admitted that they required assistance as a result of it (AoA, 2009).
The most current data obtained from the Virginia Employment Commission (VEC) measured the ≥65 year age group in Virginia in 2010 to be 980,890 strong, which constitutes 12.25% of the state’s population. As Table 1 shows, the group’s percentile is projected to elevate to 15.54% in 2020 and to 18.48% in 2030 (Virginia Employment Commission [VEC], 2010). One out of five Virginians will be ≥65 years old within the next two decades and, following the national trend, the oldest old will be the fastest growing age group (VDA, 2009).

Chesterfield County’s 2010 populace is assessed at 317,800 and is forecasted to increase by 52,900 citizens (16.65%) during the next decade and by a total of 113,400 residents (35.68%) by 2030. Currently in 2010, the ≥65 year age group is 33,100 person (10.41%) strong. The County’s Planning Department predicts a 73.41% increase of the older population within the next decade, which will account for 15.48% of its citizens (see Table 1). The Chesterfield older population is forecasted to amplify by 145.32% by 2030 and make up 18.83% of its populace. The PSR continues to decline from 7 in 2010 to 3 in 2030 (see Table 2). The DR is amplifying from 44 in 2010 to 63 in 2030 (see Table 3). And, the ODR is jumping from 17 in 2010 to 35 in 2030 (see Table 4).

Table 2

<table>
<thead>
<tr>
<th>Potential Support Ratio (PSR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 – 64</td>
</tr>
<tr>
<td>65+</td>
</tr>
<tr>
<td>PSR</td>
</tr>
</tbody>
</table>

Note. Raw data provided by Chesterfield County Planning Department. Calculations by author.
The second research question was to measure the current impact of elderly citizens on the call volume in Chesterfield County. The capturing of calls for service in the current CAD system started in July 2004. As a result, calendar year 2005 was the first annual total available (J. Kelly, personal communication, June 11, 2010). The data shows a steady increase from 27,785 calls in CY 2005 to 32,086 calls in CY 2008 and then a slim drop to 31,849 calls in CY 2009. Figure 1 illustrates the total calls for service for the past five calendar years.
The administration of Patient Care Reports (PCRs) was transferred to Fire Records Management System (FRMS) in February of 2006. Consequently the first data for a full calendar year was 2007. The data revealed that in 2007, there were 5,842 PCRs generated by patients ≥65 years old. The number of PCRs for this age group increased to 7,455 (+27.61%) in 2008 and then declined to 7,389 (-0.88%) in 2009 (J. Kelly, personal communication, June 11, 2010).

The CFEMS Planning Unit provided the project with an Excel® spreadsheet that listed the public service calls for the past three calendar years. Table 5 illustrates the public service calls by calendar year and CADS codes (see Appendix C for description of CADS codes).
Table 5

Breakdown of Public Service Calls by Year and Code

<table>
<thead>
<tr>
<th></th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOOD</td>
<td>2</td>
<td>ADWM/DOAM 1</td>
<td>ALARMM 1</td>
</tr>
<tr>
<td>MVAP1</td>
<td>1</td>
<td>ALARMM/PSMED 1</td>
<td>DOAM 1</td>
</tr>
<tr>
<td>PSFIR</td>
<td>1,803</td>
<td>PSFIR 1,702</td>
<td>GOOD 1</td>
</tr>
<tr>
<td>PSMED</td>
<td>211</td>
<td>PSMED 197</td>
<td>PSFIR 1,937</td>
</tr>
<tr>
<td>STFIR</td>
<td>1</td>
<td>SICK 2</td>
<td>PSMED 5</td>
</tr>
<tr>
<td>STORM</td>
<td>24</td>
<td>STORM 58</td>
<td>STORM 1 1</td>
</tr>
<tr>
<td>UPGRD</td>
<td>1</td>
<td>UNCI 1</td>
<td></td>
</tr>
<tr>
<td>UPGRD/CP</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2,043</strong></td>
<td><strong>Total</strong></td>
<td><strong>1,963</strong></td>
</tr>
</tbody>
</table>

Note. Raw CADS data provided by CFEMS Planning Unit.

The total analyzed public service calls for the three years was 5,952. Based on context in the CADS comments, 483 calls were identified as service requests for non-emergency assistance to elderly citizens ≥65 years of age in 2007. Another 86 requests for non-emergency assistance were excluded in the statistics because the age of the person needing help was inconclusive. In 2008, the number of requests for non-emergency assistance to the elderly was 431 and 113 were left out because no clear age was stated. Data also revealed that out of the total of 1,963 public service calls, 28 required some type of medical attention that generated a PCR. In 2009, there were 1,946 public service calls, 410 were identified as non-emergency assistance to an elderly citizen, 110 were excluded because no clear age was given, and 25 calls warranted a PCR for an
elderly person.

Table 6 illustrates the decline in numbers of non-emergency assistance calls and the respective percentage of the total number of public service calls and total number of calls for service per calendar year.

**Table 6**

*Service Requests for Non-Emergency Assistance to ≥65 Year Old Citizens*

<table>
<thead>
<tr>
<th></th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calls</td>
<td>483</td>
<td>431</td>
<td>410</td>
</tr>
<tr>
<td>% of Total Public Service Calls</td>
<td>23.79%</td>
<td>22.15%</td>
<td>21.07%</td>
</tr>
<tr>
<td>% of Total Calls for Service</td>
<td>1.55%</td>
<td>1.35%</td>
<td>1.29%</td>
</tr>
</tbody>
</table>

*Note.* Raw data provided by CFEMS County Planning Unit. Calculations by author.

The large majority of the excluded requests for non-emergency assistance were fall related. Even though the context suggested old age, the calls were excluded from the statistics because there was no precise age mentioned in the CADS comments. This decision was made to preserve the external validity of the research.

Figure 2 exhibits an analysis of response reliability of fire resources county-wide for the past four calendar years. Fire resources include fire engines and trucks but not ambulances. The data revealed that the response reliability has been steadily declining over the past four calendar years. The response reliability in 2006 was 85.6% and declined to 83.0% in 2009.
The third research question examined what CFEMS leaders believe will be the impact of the growing older population on service delivery. Survey question 1 explored the level of awareness of the magnitude of the rising older population among CFEMS leaders. The question asked by what percentage the \( \geq 65 \) age group in Chesterfield County was increasing over the next ten years. The 23 member sample group (N=23) produced 12 replies (n=12). One respondent (8.3%) chose “0%-20%”, seven (58.3%) selected “21%-40%”, two (16.7%) voted for “41%-60%”, one (8.3%) picked “61%-80%”, and one (8.3%) answered “do not know”.

Survey question 2 asked what the population shift means to CFEMS. None of the respondents selected “no big deal”, two (18.3%) chose “an adjustment”, four decided on “a major concern”, and five (45.5%) opted for “an opportunity”. One respondent expressed his opinion under “other” and stated that it could be an opportunity but expressed concern about the necessary political support.
Survey question 3 asked CFEMS leaders what they thought the impact of the number of requests for non-emergency assistance to the ≥65 age group will be over the next ten years. The majority, 11 respondents (91.7%) selected “significant, will require additional resources”. Only one respondent (8.3%) chose “reasonable, can be absorbed with existing resources”.

Survey question 4 was a follow-up to question 3. Seven respondents (58.3%) agreed with the statement that a substantial shift in numbers of the ≥65 age group will alter current service delivery practices. Five (41.7%) selected “strongly agree”.

The project found it to be of value to incorporate what CFEMS leaders believed the expectations of the elderly citizens are. Survey question 7 asked the respondents what service expectations they thought the elderly citizens had of CFEMS. The commonalities in the responses given were (a) emergency medical care, (b) assistance with basic needs, (c) problem solving, and (d) transportation.

Survey question 9 supported research question 3 indirectly when the respondents were asked if they had been, currently were, or anticipated becoming a caregiver for an elderly person. The purpose of the question was to weigh the deeper, personal authenticity of the respondents to the subject matter. Eight (66.7%) confirmed personal experience in care giving for an elderly person, whereas four respondents (33.3%) did not make that claim. The detailed replies to all survey questions are copied in Appendix L.

The fourth research question investigated the culture of the rising older population in Chesterfield County. He et al. (2005) argued that the changing marital and family structure in the United States will likely impact the existing level of family support to the elderly. The higher level of education of the Baby Boomers suggests that the next generation of elderly will be better educated than the current older population. The higher levels of education may lead to better
Aging Population

health, higher incomes, and as a result, may offer a higher standard of living. Lastly, He et al. claimed that research efforts on genetic, biological, physiological challenges of aging, as well as chronic diseases, are likely to positively affect the quality of life for the future older population.

The U.S. Census reported that the proportion of college educated Americans with a bachelor’s degree increased between 1950 and 2003 from 3.4% to 17.4% and forecasts that the share of college educated Americans will continue to increase to more than 25% by 2030. The U.S. Census reported a link between higher levels of education and better health and standard of living. It predicts that the higher levels of education continue to rise among the older population ≥65 years old. (U.S. Census, 2006).

The next generation of older Americans will be “more racially and ethnically diverse” (Vincent & Velkoff, 2010, p. 1). The U.S. Census projections indicate that the share of minorities in the next generation of ≥65 year olds will increase from 20% in 2010 to 42% in 2050. The ≥65 year old white population, on the other hand, is expected to decline by 10% from 87% in 2010 to 77% in 2050. The African American ≥65 year old population is projected to increase from 9% in 2010 to 12% in 2050 and the older Asian population from 3% to 9% during the same timeframe (U.S. Census, 2010a).

The Virginia Department for the Aging reported a national trend that suggests a change in “cultural mindset of institutional care for the elderly to supporting individuals at home with the necessary level of care to thrive and contribute as members of the community” (VDA, 2009, p. iii). Arizona’s 2020 Plan pointed out that the elderly from the Baby Boom Generation will be different from today’s elderly. The future older population will require “new approaches, different language, and better use of technology” (State of Arizona, Office of the Governor, 2005, p. 2). Additionally, Arizona’s Aging 2020 plan pointed out that the Baby Boomers
“…generally enjoyed more education than past generations, raised half as many children than their parents, expect to continue to enjoy their lifestyle during retirement with proportionally less savings than generations before them” (p. 4).

Gregoire (2010) described the characteristics of Baby Boomers as “individualistic, defiant (rejecting rules), pragmatic but idealistic, raised with a sense of entitlement, unlikely to be anything like the elderly of today, and difficult to define” (Gregoire, 2010, Baby Boomer Characteristics section). Some of the common characteristics of Baby Boomers the website Answer-My-Health-Question.Info listed, include better educated, mistrust government, reject authority, love technology, feel individualistic and unique, and have had large impact on public policies and demand for public services, etc. (Answer-My-Health-Question.info, 2010, Common Characteristics of Baby Boomers section). The website lovetoknow.com offered an elaborate selection of characteristics that included independent and confident, self-reliant, involved in their communities, competitive, idealistic, individualistic and not afraid to reject rules, interested in issues of health and wellness, free-spirited and optimistic, better educated, exhibit a sense of entitlement, distrust government and authority, pragmatic, and adapt well to new technologies. The website emphasized that the Baby Boomers are part of a “unique group that is difficult to define” (LoveToKnow Corp., 2010, Baby Boomer Characteristics section, Additional Characteristics of Baby Boomers section). Kane (2010) summarized the characteristics of the Baby Boom Generation as work-centric, independent, goal-oriented, and competitive.

The fifth research question looked at how other communities prepare for the aging population. The Virginia Department for the Aging (VDA) claims that the type of community developments built over the past few decades do not support aging in place. The majority of Virginians live in suburbs, in homes that were not built with elderly or mobility impaired in
mind, away from public transportation. “When driving is no longer an option, we become isolated from grocery stores, pharmacies and medical services, and even friends and family” (VDA, 2009, p. iv). The VDA cautions that while some Virginia communities prepare better than others for the rising older population, not enough is being done (VDA, 2009). A Virginia community that stood out in its preparations for the aging population is the Thomas Jefferson Planning District (TJPD). The TJPD developed the 2020 Community Plan on Aging document in 2003 that serves as a “beginning step in a dynamic and ongoing process” and provides recommendations for the TJPD to become an “age-friendly community” (TJPD, 2003, p. 9).

Appendix M replicates the outline of the planning document. The plan lists three top priorities for early implementation. They are (a) promoting access to high-quality healthcare, pharmaceuticals and support services; (b) providing a variety of quality affordable and accessible senior housing options integrated within the community, and (c) providing safe, more convenient, and flexible transportation options (p. 9).

The State of Arizona initiated an aggressive planning process to prepare the state for the demographic changes. Then Governor Janet Napolitano issued Executive Order 2004-07 in March 2004 to launch the Aging 2020 planning project. The Aging 2020 plan is the final, combined product of the individual plans for an aging population from fourteen state agencies and community input from 40 public forums. The plan aims for eight goals that emphasized access to help, awareness, community engagement, welfare, workforce development, suitable infrastructure, quality of care, and appropriate management. The eight goals are copied in full length in Appendix N.

The inquiry to the 865 members of the PARADE Yahoo!® group produced three replies. The first response recommended relying on a “Meals on Wheels type of program” to look after
the elderly. The second response explained that their Utilities Department offered a registration form that citizens with a special need can utilize. The third response suggested a “buddy” system where a neighbor keeps an eye on an elderly person. The detailed responses are listed in Appendix O. The posting to the 387 members of the NFLSE Yahoo!® group did not generate useful responses.

In addition to looking at other communities to see how they are preparing, the project wanted to learn from the CFEMS leadership, how they thought the organization should be preparing. The suggestions from survey question 6 that stood out included (a) delivering prevention and public education programs, (b) evaluating non-traditional transportation options, (c) building partnerships, (d) providing training in geriatric needs and handling, (e) improving current planning and budget processes, (f) developing a gap analysis based on current trends and future projections, and (g) learning from other communities. The comprehensive list of recommendations is shown in Appendix L.

Research question 6 analyzed the available resources that can contribute to a program. The AoA pointed out that the Baby Boomers themselves represented a potential source of volunteers, not only because of their large numbers, but also because of their level of education, wealth, and skills. The AoA argued that “harnessing their skills and accommodating their expectations will be critical to solving a wide range of social problems in the years ahead” (AoA, 2010, Older Volunteers Help in Aging Programs section, para. 4). On the other side of the age spectrum is the younger generation. “Volunteering is the perfect way for children to be welcomed as productive, active members of a community” (Ellis et al., 1991, p. 1). Older children, ages 15 through 19, offer another large pool of volunteer resources, especially as part of a school sponsored program. Some of the high schools even require students to invest a
predetermined number of hours of service in the community as a requirement to complete course credit or as a prerequisite to graduate (Ellis et al., 1991). As Table 7 illustrates, this age group currently represents 8% of the population and is forecasted to maintain its share of the populace at 7% through 2030.

Table 7

*Potential Juvenile Volunteers in Chesterfield County*

<table>
<thead>
<tr>
<th>Age Group</th>
<th>2010</th>
<th>2015</th>
<th>2020</th>
<th>2025</th>
<th>2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 – 19</td>
<td>26,200</td>
<td>25,000</td>
<td>26,400</td>
<td>26,800</td>
<td>29,000</td>
</tr>
<tr>
<td>% of Population</td>
<td>8%</td>
<td>7%</td>
<td>7%</td>
<td>7%</td>
<td>7%</td>
</tr>
</tbody>
</table>

Source: Chesterfield County Planning Department, 2010

Survey question 5 asked the sample group who, in their opinion, had the capability and capacity to best assist the elderly citizens in Chesterfield County with requests for non-emergency assistance. Three respondents (25%) each selected non-government organizations (NGOs) and faith-based groups. Two respondents (16.7%) chose social services, one (8.3%) decided for Fire and EMS, and no one chose law enforcement. Three respondents opted for “Other” and elaborated on their opinions. While one person suggested CERT members, the other two concluded that no single entity was currently able to fill that role alone. Appendix L lists the answers in detail.

In survey question 8, the sample group was asked what resources, other than emergency operations personnel, would be available in the County to assist the elderly citizens with requests for non-emergency assistance. Among the repertoire of recommendations, social services was mentioned the most frequently (4 respondents), followed by senior programs/senior advocate and
the health department (2 respondents each). Other suggestions were (a) volunteers/CERT, (b) church groups, (c) younger family members, (d) health care professionals, (e) volunteer rescue squads, (f) community groups, (g) parks and recreation department, (h) non-traditional Fire and EMS staff, and (i) new private enterprise. The comprehensive list is cataloged in Appendix L.

The meeting with Senior Advocate Debbie Leidheiser unveiled multiple available resources within Chesterfield County. Besides serving as the spokesperson and advocate of the County’s older citizens, the senior advocate offers information, conducts referrals, and coordinates services. Currently, the OSA works collaboratively with (a) Chesterfield Aging and Disabled Services, (b) Chesterfield Council on Aging, (c) Chesterfield TRIAD, (d) Elder Friends, (e) Lifelong Learning Institute, (f) Senior Connections – The Capital Area Agency on Aging, (g) Senior Navigator, (h) Shepherd’s Center of Chesterfield, (i) Virginia Center on Aging, and (j) Virginia Association of Area Agencies on Aging (Chesterfield County Government, 2010, Senior Services section).

Three services stood out during the discussion with Ms. Leidheiser. The first service was the Telephone Reassurance Program, which is being managed by volunteers working for the OSA. The volunteers call elderly citizens, who live alone, daily or weekly and check on their well-being. The second service was the Transportation Service that offers free transportation for medical appointments and grocery shopping. The third service was the Handy Hands Service that provides minor home repairs to the elderly who live in their own homes. Both services are run by the Shepherd’s Center of Chesterfield. Ms. Leidheiser pointed out that the demand for these services far exceeds current capacities (D. Leidheiser, personal communication, May 28, 2010).
Discussion

The objective of the first research question was to establish a clear picture of the magnitude of the rising older population from the larger global experience to the local community impact. The far reaching effects of the shifting demography in the social, economic, and political spheres are not apparent at first glance and are difficult to measure quantitatively. A further challenge the “big picture” approach entailed was the establishment and consistent use of uniform units of measurements that permitted valid cross-border comparisons. The project made full use of meaningful ratios to put numbers into context. This allowed the author to demonstrate the magnitude factually and to interpret local data by comparison with global data.

The data from the U.N.’s Department of Economic and Social Affairs indicated a declining Potential Support Ratio (PSR) from 12 in 1950 to 9 in 2009 and, eventually to 4 by 2050 (U.N., 2009). Chesterfield’s PSR is falling faster. It is dropping from 11 in 1990 to 3 in 2030, as illustrated in Table 2. The rapidly declining PSR for Chesterfield County reveals that the proportion of potential workers per older citizen is shrinking faster than worldwide. This trend suggests three unavoidable challenges. First, Chesterfield County will have to rely on less wage-earning citizens to fund its social framework. Second, recruitment for public service will be in more competition with other job sectors. Third, as it relates to the research problem, there will simply be fewer citizens, strong enough and in close proximity, to potentially support the larger number of fragile citizens.

The next ratio utilized to demonstrate the magnitude was the Dependency Ratio (DR). The DR is another method to measure the potential social support needs. There is an inverse relationship between fertility and DR. A decrease in fertility will produce an increase of the DR. Worldwide, the DR was 53 in 2009 and is expected to be 52 in 2025 and to be 56 in 2050 (U.N.,
Nationwide in the United States, the DR is currently 67 in 2010 and is forecasted to elevate to 85 by 2050. In Chesterfield County the DR is 44 in 2010 and is estimated to climb to 53 by 2020 and to 63 by 2030 (see Table 3). The DR is a different method to measure the potential social burden on the working-age population. In respect to the research project, the fast climbing DR for Chesterfield County forewarns a substantial increase in the social liability on the working-age citizens. The author argues that the present working-age group is preoccupied with raising children, career ambitions, and busy social lives. Additionally, they are highly mobile and commonly emigrate away from their hometowns. It is reasonable to assume that there will be a void between what is expected of this population group and what they will be capable and/or willing to commit. The author cautions that part of that void will likely become evident through an escalating demand for non-emergency assistance to the elderly.

The last ratio considered for the project was the Older Dependency Ratio (ODR). The ODR was utilized as an indicator to measure Chesterfield County’s ability to support its older citizens. Nationwide, the ODR is at 22 in 2010 and is projected to increase to 28 by 2020 and to 35 by 2030 (Vincent & Velkoff, 2010). Even though Chesterfield’s ODR is presently 17, lower than the national average of 22, it is forecasted to surge and catch up with the national projection of 35 in 2030 (see Table 4). The rapid surge in the ODR from 17 to 35 in only two decades is a spectacular and worrisome development. The author warns that the current social framework is threatened to collapse under the massive weight of the age wave. Furthermore, the author advises to monitor Chesterfield’s ODR like a “tide gauge” and to reinforce the social support framework appropriately. The ODR is a key indicator that validates this research project and emphasizes the urgent need for a solution to the problem.

The comparative population projections for the national, state, and county level on Table
I demonstrate the indiscriminate nature of the shifting demography. Chesterfield’s forecasted percentiles for the next two decades for ≥65 year olds are equal to or vaguely higher than the Virginia average, but slightly lower than the national average. Despite the miniscule variances, the comparison verifies that the projections for Chesterfield County are realistic and in line with the State and the Nation as a whole.

Measuring the current impact of elderly citizens on the call volume in Chesterfield County quantitatively was the objective of the second research question. It was fundamental to the research project to establish a numerical value to the impact of service requests for non-emergency assistance to the elderly. This was a tricky challenge because it has been common practice at the ECC to designate non-emergency service requests into the catch-all “Public Service” category. Public service calls encompass everything from the “child locked inside a car” to the “tree across the roadway”. In addition to the sheer number of 5,952 public service calls from the past three calendar years, the inconsistent documentation of the individual service requests added to the challenge. With the help of the established rules (see Appendix F), the author was able to sift through the CADS comments for each public service call and to extract the calls that substantiated a non-emergency assistance to an elderly citizen. In addition to measuring the non-emergency requests quantitatively, it was important to the project to look at common types of requests. All identified requests for assistance fit into one of the twelve established categories (see Appendix G). Categorizing the calls enabled the project to understand cause and effect, which in return was invaluable for the development of the project’s recommendations. Research question 2 led the project into uncharted territory with an unexploited source of information. Research question 2 did not only produce original data but also formed the backbone of the research project.
The data analysis of the public service calls revealed an unexpected twist to the research project. As Table 6 illustrates, the demand for service requests for non-emergency assistance to the elderly actually declined over the past three calendar years. The number dropped from 483 calls in 2007 to 410 in 2009. Compared to the total number of public service calls, the percentage of elderly assistance shrank from 23.79% in 2007 to 21.07% in 2009. And, compared to the total calls for service, the percentage diminished from 1.55% in 2007 to 1.29% in 2009. While the percentage of elderly assistance calls decreased, there was no increase in any other call types (see Table 5) to compensate for the decrease. That ruled out the possibility that the ECC had changed the way they were coding the non-emergency calls, thus causing the decline. Out of the 1,963 public service calls in 2008, only 28 generated a PCR for an elderly person. In 2009, the 1,946 public service calls led to only 25 PCRs. The insignificant number of PCRs that were initiated as a result of a public service call suggests two findings. First, the ECC is effective at recognizing service requests that require medical attention and code them appropriately as an EMS call. Second, it confirms that the large majority of public service calls, and by inference elderly assistance calls, are truly non-emergency in nature with no need for medical attention.

Looking at the total EMS call volume per year, there was a sharp increase (27.61%) in the number of PCRs generated by patients ≥65 years of age from 2007 to 2008 that provoked suspicion. However, further investigation by Data Analyst Jim Kelly from the CFEMS Planning Unit uncovered two factors that explained the sizeable increase of PCRs by the elderly. First, the EMS Division was “pushing for better documentation through late 2007 and early 2008 for better billing returns”. Second, the Planning Unit received a major FRMS upgrade in March of 2008 that likely included “design features that facilitated better documentation” (J. Kelly, personal communication, June 11, 2010). These explanations cleared up the suspicion that requests for
elderly assistance shifted to the EMS side of service requests.

Admittedly, the author anticipated seeing an increase in the demand of non-emergency assistance to the elderly. Research question 2, however, attests the value of quantitative measures as opposed to qualitative interpretations for this particular research project. Even though the findings from research question 2 were unexpected, they do not diminish the need to assess the demand for non-emergency assistance to the elderly citizens once the age wave hits the “shoreline”.

The results from research question 2 also clarified the speculation that response reliability of fire resources county-wide was affected by non-emergency requests for assistance to the elderly. The data, in fact, proved a null hypothesis between the “response reliability” variable and the “elderly assistance” variable. The author cautions, however, that the hypothesis reflects historical, pre-age wave data. The author argues that the null hypothesis will likely change to a directional hypothesis, where the two variables will affect each other in an inverse relationship.

The third research question unveiled interesting insights into the perception of the impact the growing older population will have on the service delivery. The survey’s modest response rate of 52% in itself was viewed as an indicator of the perceived urgency of the subject matter among the CFEMS leadership. A reluctant sense of urgency was not limited to CFEMS but was also witnessed by the short list of replies by the members of the two Yahoo!® groups.

The older population in Chesterfield County will increase by 73.41% over the next decade. Only one respondent selected the appropriate percentage range in the survey. The majority (58.3%) thought the expected growth would amount to 21% to 40%. This suggests that the leadership is aware of the older population growth but not to what extent. The author was glad to see that none of the respondents considered the population shift to be “no big deal” but
that most of them regarded it as a “major concern” or even as “an opportunity”. This can be interpreted as a balanced level of respect and optimism in view of the challenge ahead. The response to the follow-up question followed along the same line when the vast majority acknowledged that the impact of the number of requests will be significant and will require additional resources. Not surprisingly, the respondents confirmed their opinion in the following question, when they all admitted that a substantial shift in the number of elderly citizens will alter current service delivery practices. This eliminated worries that any respondents were unmindful of the need for reallocating resources in response to the demographic shift.

Survey question 7 explored the perception of service expectations by the elderly. The all-encompassing range of services described in the replies match current service delivery practices. It was interesting to learn from the CFEMS leadership what they thought the elderly citizens expected of the organization. The answers disclosed the general perception of being a “servant of first and last resort” to the elderly. The rationalization of this opinion can be found in CFEMS’ deeply rooted organizational culture, which emphasizes the distinct sense of duty to meet citizen’s expectations. While this devotion is commendable, the author cautions that the size and the culture of the next generation of older adults will likely overwhelm this liberal practice of providing non-emergency services.

It was interesting to learn from survey question 9 that two-thirds of the respondents had personal experience as a caregiver for an elderly person. The high level of first-hand experience in elderly care by the respondents added to the value of the answers from the survey. It can also be argued that the personal authenticity of the respondents to the subject matter endorsed the findings from the survey.

The objective of research question 4 was to examine the culture of the next older
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The author felt that the cultural implications were as equally important as the magnitude of the rising older population. The characteristics of the Baby Boomers differ from the traits of the current older population that are familiar to the fire service. While it became evident that the Baby Boom Generation was difficult to portray, there are distinct characteristics that will demand change in how services will be delivered in the future. The attribute that stood out consistently in the examined sources was the higher level of education of Baby Boomers as compared to past older generations. It is reasonable to expect the next generation of older “customers” to be better informed and more demanding with a distinct sense of entitlement. The next older population might not be as appreciative and humble as the elderly of today. Instead, the findings propose that the next older generation will not hesitate to ask for more from public servants for two reasons. First, they feel society owes it to them and, secondly, there is no one else to turn to. The author emphasizes the need to prepare for a different culture of older citizens as this will amplify the impact of the rising older population on service delivery by CFEMS and the U.S. fire service in general.

With research question 5, the project was looking at how other communities prepare for an aging population. Before looking to the outside, the author wanted to learn from the CFEMS leadership what the organization could do now to prepare for an increase in elderly assistance calls. The author noticed a strong desire for education for the CFEMS members and the public, as well as a need for information, and planning. The comments were typical in view of the unfamiliar nature of the change ahead. But more importantly, they were instructive in the design of the project’s recommendations.

The author was hoping to gather more ideas and best practices from the fire service community. The literature review, the posts on the PARADE Yahoo!® group and the NFLSE
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Yahoo!® group, and inquiries through Mr. Jenkins from the VDFP, produced little evidence of fire departments making conscientious preparations for the aging population. The author concluded that the existing budgetary constraints exerted by the unfavorable economic conditions preoccupy fire service leaders with today’s operations rather than tomorrow’s challenges.

The extended search for best practices in preparation for the aging population, beyond the fire service, lead to some well-developed, promising plans. Foremost, the Thomas Jefferson Planning District stood out with their 2020 Community Plan on Aging. Virginia’s Four-Year Plan for Aging Services and Arizona’s Aging 2020 were two more advanced planning documents. There was a strong emphasis in all three plans to sophisticate transportation methods. Independence in old age is largely dictated by access to transportation. When older citizens lose the privilege of driving themselves and have no access to public transportation, they are likely to face isolation. Integration instead of isolation of elderly citizens appears to be a common vision among the studied planning documents.

While these plans provide useful insights and ideas, they remain paper documents that quickly become oblique or covered with dust unless viewed as working documents and are implemented and adequately funded. It was outside the scope of this project to assess to what extent these plans have been successfully implemented and are being maintained.

Overall, the author concurs with the Virginia Department for the Aging when it stated that some Virginia communities prepared better than others but not enough was being done (VDA, 2009, p. 22).

The sixth and last research question was searching for resources that can contribute to a program. It was not surprising to learn from the survey that there was a wide spread of opinions
as to who had the capability and capacity to best assist the elderly citizens. The single selection of “Fire and EMS” as the most suitable entity, suggests that the leadership views CFEMS to be a support agency for elderly assistance and not the primary provider. The author agrees with the two respondents who pointed out that no single entity was currently able to fill that role alone. This finding became useful for the project’s recommendations.

Survey question 8 was a follow-up question that further explored available resources within the County. Here, the author expected to see more references to the OSA. This might suggest a deficit in awareness of the OSA’s existence or extensive services. The diverse repertoire of suggestions stimulated the evaluation of potential, previously unexplored resources, which was also instructive for the project’s recommendations.

As expected, the meeting with Senior Advocate Debbie Leidheiser proved to be instrumental to the project. Ms. Leidheiser’s sincere compassion for the welfare of elderly citizens, their families and caretakers, was infectious and made the meeting a highlight of the research project. The OSA’s workload is enormous and would not be possible without the well-established network of partnerships and Ms. Leidheiser’s talent to orchestrate and motivate. The discussion revealed that there are commonalities between the major tasks the OSA is concentrating on and the type of elderly assistance calls CFEMS has been answering. Examples are (a) the Telephone Reassurance Program and CFEMS’ responses to check on the welfare, (b) the Transportation Service through the Shepherd’s Center and CFEMS’ routine responses to assist the elderly from the home to the car and then later back to the home, and (c) the Shepherd’s Center Handy Hands Service and CFEMS’ responses to assist with water leaks, power outages/generators, and other minor miscellaneous tasks around the house. The recognized parallels between OSA’s concentration of efforts and CFEMS’ types of requests for
non-emergency assistance were instrumental in designing the recommendations to the research problem.

The research project had an eye-opening effect on the author. The available demographic data analyses and projections at the global and national level were astounding. At the same time, it became evident that the availability of meaningful data diminished progressively from the global to the local community level. The lack of specific plans for the impending demographic shift in the fire service was troublesome. There was a general sense of “laissez-faire”, business as usual attitude among fire service leaders. The clientele of CFEMS is about to change and, as a consequence, so will the needs and the expectations. The research project, however, did not find any signs of urgency, let alone priority within the fire service towards this demographic evolution. There will likely be a deep gap between the demand the rising older population will have and the available public resources to meet these demands. If CFEMS does not anticipate and prepare for the shortfall of support, the organization is at risk of having to fill the gap with its emergency response assets. At that point, CFEMS would have to stretch its resources to the point of diminishing returns and would be doomed to fail at effective emergency response and fiscal responsibility. Thus, the organizational implications of this study are of vital essence to CFEMS.

Recommendations

The research project intentionally integrated the concepts of the five Es for their synergistic effects in the formulation of short- and long-term recommendations. There are five short-term recommendations that should be initiated without further delay.

First, CFEMS needs to adopt the rising older population as a priority planning item to the strategic business plan. This is an education/behavior change intervention. Research question 1 clearly demonstrated the magnitude of the rising older population and how it will impact
Chesterfield County, and essentially CFEMS. The organization needs to join the planning process with no further delay as to avoid being overrun by the changing work environment.

Second, CFEMS needs to form a workgroup with representatives from the Executive Staff, the Emergency Operations Division, the Training and Education Division, the Planning Unit, the ECC, and the EMS Division. The workgroup will be tasked with the following responsibilities: (a) definition of future data needs that support decision making; (b) implementation of more precise and consistent data collection practices; (c) development of a preliminary gap analysis, based on current resource assets and budget and the projected service demands; (d) design of a mechanism to monitor changes in demographics and resource allocation; (e) development of training and education programs for CFEMS members; (f) engagement with external stakeholders; (g) monthly updates to Executive Staff; and (h) publication of educational articles in CFEMS newsletters and broadcasts on CFEMS’ television channel. The workgroup’s tasks entail all five E intervention strategies.

Third, CFEMS needs to redefine its future role in the community. Research question 4 revealed that the expectations from the next older generation will differ from the current older generation. If CFEMS wants to maintain its high customer satisfaction ratings, then the organization will have to customize its service delivery practices to encompass the culture of the new older population. CFEMS will have to specify the role the organization is willing and able to portray and communicate it to the general public. These actions are considered engineering, education/behavior change, and emergency response interventions.

Fourth, CFEMS needs to initiate a strategic partnership with the OSA. Research question 6 unmistakably revealed that the solution to the research problem will have to include the OSA. The partnership promises to be mutually beneficial. The OSA possesses the expertise in dealing
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with elderly related issues and maintains a complex network of resources. CFEMS’ expertise, on the other hand, is limited to geriatric patient care and the organization does not currently maintain a network of outside elderly support resources. This is an economic incentive and an emergency response intervention.

Fifth, the data collected from the survey advocates a need for more education about the magnitude and implications of the demographic shift. The rapidly changing population structure in Chesterfield County necessitates a cultural change within CFEMS. This change begins with educating the members of the physical and mental needs of the older citizens, as well as the moral and ethical ramifications associated with these needs. This is an education/behavior change intervention.

In the long-term, the research project recommends substantial changes to the OSA. Research question 6 revealed that there is a tremendous amount of available resources in the County. The author noticed, however, three distinct shortcomings. First, it is cumbersome to navigate through the labyrinth of elderly support services. Second, critical services, such as the Telephone Reassurance Program, the Transportation Service, and the Handy Hands Service, are stretched to their limits. Third, large volunteer resources are currently underutilized. The project recommends that the OSA will be given the mandate to act as the County’s official clearing-house for services and volunteer resources. Eventually, all requests for non-emergency assistance to the elderly, including the ones received by the ECC, would be processed through the OSA. The OSA would then match the requests with the appropriate service or volunteer resource. In order for OSA to function as an efficient clearing-house, it would need more staff and would need to extend its services to a 24/7 operation throughout the year. Currently, the OSA is staffed by one full-time senior advocate. The project recommends that the County recruits a full-time
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deputy senior advocate, a full-time administrative assistant, and a corps of volunteers to work in the OSA. Recruitment efforts should concentrate on the large pool of juvenile volunteers (see Table 7) and the ≥65 year old age group (see Table 1). Additionally, Ms. Leidheiser’s role should be reclassified from a functional, administrative to a strategic, supervisory position with emphasis on efficient work processes, data collection and analysis, and planning. The benefit of the clearing-house concept is that the well-choreographed matching process of supply and demand will generate a synergy of service capacity. The individual resources, as a result, will complement each other and become more resourceful and effective than if left independently. This, in essence, represents the intersection where the concepts of the five Es merge and form the path to sustainable success.

The expected benefits of the recommendations are twofold. First, they direct Chesterfield County to become the model community in Virginia where aging in place is gratifying and meaningful thanks to inter-generational blending and cost-effective resource management. Second, the recommendations enable CFEMS to minimize the resource commitment to non-emergency assistance calls and maintain emergency response readiness.

The recommended changes within CFEMS should be implemented under the leadership of the workgroup by following the CRR Model (see Appendix E), which serves as the strategic roadmap. The workgroup will ensure timely and focused progress by meeting the agreed-upon process objectives and then the impact objectives. The workgroup will require uncompromised and continuous support from the CFEMS Executive Staff and buy-in from all affected stakeholders. The prospect of promoting Chesterfield County as a model community for all ages will not only entice the key stakeholders to commit but also inspire the community as a whole to engage in the risk-reduction process.
Critical follow-up evaluation of the recommendations will entail meticulous data collection and analyses. The number of responses to non-emergency assistance to the elderly in proportion to the rising older population and overall call volume will be the true impact measure. The expected impact measure will have to be formulated as part of the outcome objective. If the outcome objective is met, then the recommendations will have been a success.

As a result of the learning experience from this research project, the author has some recommendations for other researchers who would like to replicate some or all of the study. First, the zooming-in approach from a wide-angle, global view of the problem to the CFEMS community level, helped the author to approach the research without foregone conclusions and an essential level of expertise in the subject matter. The solution to the research problem led to unfamiliar, mostly unexplored territory. It was principal to the author to find a solution that was founded on knowledge-based evidence and not just ad hoc ideas. The recommendations had to be defensible, but also reasonable and welcomed. While this strategy was time consuming, it paid off later in the project when the author was able to rationalize the findings and to formulate the recommendations.

The request to the Planning Unit to filter three years worth of public service data was uncommon and a lot to ask for. It validated the importance of identifying the essential stakeholders for the research project and earning their buy-in. The project experienced the same cordial cooperation with the OSA, the County Planning Department, and the Virginia Department of Fire Programs.

The research project agreed on six research questions. The questions were designed so each would set the stage for the next question with an aim towards the final recommendations. While the “building-block” approach proved to be advantageous, the amount of research each
question stimulated, threatened, at times, to paralyze the progress of the project. In order to maintain the project’s momentum, it was vital to critically triage literature and data. This method allowed the author to keep the project moving ahead and on schedule.

Finally, the author wishes to point out that the impending demographic shift is an unprecedented, exciting phenomenon that promises to revolutionize current fire service practices and resource allocations. Flash-backs of the integration of EMS in the 1970’s come to mind. This research document is not the “golden fleece” but a start to raise awareness and to help CFEMS, and the fire service as a profession, to get ready for the transition. A lot more research needs to be done.
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Appendix A: Definition of Terms

Children | Persons under the age of 15
---|---
Dependency Ratio (DR) | The number of children and older persons (dependents) to the number of persons in the working group (supporters) expressed per 100 population

\[
DR = \frac{\text{% under 15} + \text{% over 65}}{\text{% between 15 and 64}} \times 100
\]

Elderly | Adults ≥65 years of age
---|---
Non-emergency assistance | For the purpose of this research, this term refers to a service that can be provided by an average citizen and does not require specialized skills.

Older Dependency Ratio (ODR) | Number of older persons (≥65) per 100 people aged 20 to 64 years of age
---|---
Older population | Adults ≥65 years of age
---|---
Potential Support Ratio (PSR) | The number of persons in the working group (15 – 64) for each older person (≥65)
---|---
Working group | Persons 15 to 64 years of age
---|---
Response Reliability | Indicator that measures the availability for service requests of a fire company (engine or truck) in its assigned first due district and was not already committed to another call.
Appendix B: Questions for ECC Automation Analyst

1. What are the criteria for accepting service requests for non-emergency assistance for CFEMS?

2. What is the dispatch protocol you follow for non-emergency service requests? Is there a written procedure? Is there a copy available for review by the author?

3. What is the definition of the Fire Public Service (FIRPS) code and what type of calls does it entail?

4. What other codes, besides FIRPS, are being used for public service requests?

5. Is there a mechanism to identify service requests for non-emergency assistance to elderly citizens?
### Appendix C: Code Abbreviations and Definitions

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADWM</td>
<td>Assault with a deadly weapon – Includes penetrating wound to head or trunk of body. Includes accidental, intentional, or self inflicted injuries.</td>
</tr>
<tr>
<td>ALARMM</td>
<td>Medical alarm activation – Includes calls from alarm companies advising a person has activated their medical alarm, pendant, etc.</td>
</tr>
<tr>
<td>CP</td>
<td>Cardiac Problem – Includes chest pains in patients 30 or older, traumatic or non-traumatic; includes patients under 30 years of age experiencing chest pains due to trauma, subjects experiencing tachycardia with previous history, or cardiac problems with previous history.</td>
</tr>
<tr>
<td>DOAM</td>
<td>Dead on Arrival (DOA) confirmed</td>
</tr>
<tr>
<td>GOOD</td>
<td>Good Intent</td>
</tr>
<tr>
<td>MVAP1</td>
<td>Motor Vehicle Accident Priority 1</td>
</tr>
<tr>
<td>PSFIR</td>
<td>Public Service Fire - Includes water shut off, tree removal from roadway, etc.; includes assisting citizen back in bed, into residence, etc. (may be handled by EMS or fire unit); also includes “safe place” situations.</td>
</tr>
<tr>
<td>PSMED</td>
<td>Public Service – Medical</td>
</tr>
<tr>
<td>SICK</td>
<td>Sick Case – Included are nausea, vomiting, diarrhea, fever, toothache, earache, headache with no injury, flu, rash, dehydration, etc.</td>
</tr>
<tr>
<td>STORM</td>
<td>Major Storm or Disaster Related Incident</td>
</tr>
<tr>
<td>UNC1</td>
<td>Unconscious/Altered Level of Consciousness Priority 1 – included are subjects that passed out/fainted, awake before termination of 911 calls.</td>
</tr>
<tr>
<td>UPGRD</td>
<td>Upgrade by Unit on Scene</td>
</tr>
</tbody>
</table>
Appendix D: Interview Script for Meeting with Senior Advocate

Meeting with Debbie Leidheiser, senior advocate, on May 28, 2010

1. What is the culture of our elderly citizens? What things matter to them at this stage in their lives? What is their relationship to the community? Do they, in general, feel in touch with or isolated from the community? Who are their primary and secondary caregivers?
   What are the elderly concerned about or afraid of?

2. How do the elderly view CFEMS? What do they expect from it?

3. What can CFEMS do better to support the elderly in the community? What can CFEMS do to better support the OSA?

4. What do other communities do to prepare for the aging population?

5. What resources are available within Chesterfield County that can support the elderly?
Appendix E: Applied Community Risk-Reduction Model

**I. GETTING READY**
- Understand Risk Reduction Test: Rising older population will require more public service.
- Accept Personal Responsibility: Executive Fire Officer Program.
  - Develop Personal Vision: To build a resilient community that fosters an admirable quality of life from one generation to the next.
- Evaluate Authority & Politics: Authorized by CFEMS Leadership Approved by EFOP.

**II. ASSESSING COMMUNITY RISK**
- Identify Potential Strategies: CFEMS workgroup.
- Analyze Community: See EACRR pre-course assignment by author.
  - I.D. Hazards & Causal Factors: Rapid increase in ≥ 65 year olds New culture & expectations.
- Assess Vulnerability: 73.43% increase of elderly by 2010 Increased dependency & isolation.
- Establish Priorities Based on Rated Risks: Initiate planning process Form workgroup & partnerships.

**III. INTERVENTION STRATEGIES**
- Select Risk Reduction Strategies: CFEMS workgroup.
- Develop an Evaluation Strategy: CFEMS workgroup.

**IV. ACTION**
- Identify Needed Resources: CFEMS workgroup Staffing at OSA.
- Develop Implementation Schedule: Workgroup sets timeline.
- Assign Responsibility: CFEMS workgroup Senior Advocate.
- Gain Policy Approvals: CFEMS Executive Staff County Board of Supervisors.

**V. EVALUATING**
- Evaluate Results: CFEMS workgroup.
- Report Results: CFEMS workgroup.
- Identify Risk Reduction Initiatives: CFEMS workgroup.

**COMMUNITY RISK REDUCTION MODEL**

**OUTCOMES**
- I. GETTING READY: EACRR Pre-course assignment EACRR course Work through CCR Model.
- II. ASSESSING COMMUNITY RISK: EACRRPrecourse Assignment ARP Literature review and original data.
- III. INTERVENTION STRATEGIES: Empower CFEMS workgroup Support OSA restructuring.
- IV. ACTION: Implement short-term and long-term project recommendations.

**Note:** CRR Model customized by author.
Appendix F: Applied Rules to Identify Assistance to the Elderly

Applied rules and keywords that helped identify a service request for non-emergency assistance to an elderly citizen, when there was no clear age mentioned in the CADS comments:

1. Caller was identified as son, daughter, son-in-law, daughter-in-law, or caregiver.
2. Subject in need of assistance was identified as elderly, mother, father, or hospice patient.
3. Not included in the statistics if the involved parties were described as wife, husband, citizen, or subject, and there was no clear evidence of a generation differential.
Appendix G: Categories of Non-Emergency Assistance to the Elderly

1. Checking oxygen supply
2. Assisting off the floor, indoors
3. Assisting off the ground, outdoors
4. Assisting from house to car or reverse
5. Assisting with smoke detector
6. Checking on welfare
7. Assisting to bed
8. Assisting with miscellaneous
9. Assisting with wheelchair
10. Assisting with water leak
11. Assisting with power outage/generator
12. Assisting in bathroom
Posting by John D. Jenkins on May 14, 2010 to the National Fire and Life Safety Educator

(NFLSE) Yahoo!® Group (387 members):

Here is a question from Captain Mueller with Chesterfield VA Fire and EMS. Please see the description of his request below. I am interested in your answers as well. This is something we need to be looking at as we train our educators along with preparing the departments to handle.

JD

JD Jenkins
Public Education Coordinator
Virginia Fire Marshal Academy
Virginia Department of Fire Programs
1005 Technology Park Drive
Glen, Allen 23059
(804) 249-4177 office
(804) 840-3714 Blackberry *NEW*
(804) 371-3407 fax
johnd.jenkins@...vafire.com

-----Original Message-----
From: Mueller, Kurt [mailto:MuellerK@...]
Sent: Thursday, May 13, 2010 11:45 AM
To: Jenkins, John (VDFP)
Subject: RE: EFO Project Draft Mueller

Hi John,

Right now, I am trying to find out if jurisdictions are making a conscious effort at looking at the shift in their population and what preparations, if any, they are making. In particular, I am interested in how they plan on handling the influx of service requests for non-emergency assistance to the elderly.

Kurt
Appendix I: Posting on PARADE Yahoo!® Group

Posted by the author on May 19, 2010, to the Prevention Advocacy Resources and Data Exchange (PARADE) Yahoo!® group (865 members):

Dear Colleagues,

I'm working on my applied research project for EFO that looks into the increasing older population. In my jurisdiction, the older population is expected to double by 2020. Here are some questions that I would like to pose to you:

1. How does your community prepare for an aging population?
2. How do you plan to handle the influx of service requests for non-emergency assistance to the elderly?
3. What resources within your community are available to assist the elderly, so they would not have to resort to calling Fire & EMS for non-emergency assistance?

For the purpose of this research project, the term "non-emergency assistance" refers to a service that can be provided by an average citizen and does not require specialized skills.

I appreciate any insights you are willing to share and to help me better understand the consequences of this population shift and how to prepare for it.

Thank you so much,

Kurt

Kurt Mueller, Captain
Chesterfield (VA) Fire & EMS
Appendix J: Survey Questions

1. Shifting Population in Chesterfield County

For the purpose of this research project, the term "non-emergency assistance" refers to a service that can be provided by an average citizen and does not require specialized skills.

1. To the best of your knowledge, by what percentage will the ≥ 65 age group in Chesterfield County increase over the next ten years?

- 0% - 20%
- 21% - 40%
- 41% - 60%
- 61% - 80%
- 81% - 100%
- Do not know

2. In your opinion, what does the population shift mean to CFEMS?

- No big deal
- An adjustment
- A major concern
- An opportunity

Other (please specify) ____________________________________________________________________________

3. In your opinion, the impact of the number of requests for non-emergency assistance to the ≥65 age group over the next ten years will be:

- Insignificant, will not impact current resource allocation
- Reasonable, can be absorbed with existing resources
- Significant, will require additional resources
- Alarming, will likely overwhelm current resources

Other (please specify) ____________________________________________________________________________
Appendix J: Survey Questions (cont.)

4. A substantial shift in numbers of the ≥65 age group will alter current service delivery practices.
   - □ Strongly disagree
   - □ Disagree
   - □ Agree
   - □ Strongly agree
   - □ Do not know

5. In your opinion, who has the capability and capacity to best assist the elderly citizens in Chesterfield County with requests for non-emergency assistance?
   - □ Non-Government Organizations
   - □ Faith-Based Groups
   - □ Social Services
   - □ Fire & EMS
   - □ Law Enforcement
   - □ Other (please specify)

6. In your opinion, what could CFEMS do now to prepare for an increase in service requests for non-emergency assistance to a growing older population in Chesterfield County?

7. In your opinion, what service expectations do you think the elderly citizens have of CFEMS?
Appendix J: Survey Questions (cont.)

8. In your opinion, what resources, other than emergency operations personnel, would be available in the County to assist the elderly citizens with requests for non-emergency assistance?

9. Have you been, are you currently, or do you anticipate becoming a care-giver for an elderly person?

☐ Yes
☐ No

10. Your perspective is important to the research project. Please leave your name and contact information, if you would like to further discuss the subject or your comments.
Appendix K: Composition of Survey Sample

1 Fire Chief

1 Deputy Chief Emergency Operations

1 Deputy Chief Management Services

3 Division Commanders

1 Battalion Chief Emergency Medical Services

1 Battalion Chief Resource Management

1 Battalion Chief Fire and Life Safety

1 Battalion Chief Personnel Management and Development

1 Battalion Chief Planning and Finance

1 Battalion Chief Community Relations

12 Battalion Chiefs Emergency Operations

1 Medical Director

23 Total Survey Sample
### Appendix L: Survey Results

#### Response Summary

<table>
<thead>
<tr>
<th>Question</th>
<th>Response</th>
<th>Percent</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. To the best of your knowledge, by what percentage will the ≥ 65 age group in Chesterfield County increase over the next ten years?</td>
<td>answered question</td>
<td>12</td>
<td>8.3%</td>
</tr>
<tr>
<td></td>
<td>skipped question</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Range</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>0% - 20%</td>
<td>1</td>
</tr>
<tr>
<td>21% - 40%</td>
<td>7</td>
</tr>
<tr>
<td>41% - 60%</td>
<td>2</td>
</tr>
<tr>
<td>61% - 80%</td>
<td>1</td>
</tr>
<tr>
<td>81% - 100%</td>
<td>0</td>
</tr>
<tr>
<td>Do not know</td>
<td>1</td>
</tr>
</tbody>
</table>

2. In your opinion, what does the population shift mean to CFEMS?

#### Response Summary

<table>
<thead>
<tr>
<th>Question</th>
<th>Response</th>
<th>Percent</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. In your opinion, what does the population shift mean to CFEMS?</td>
<td>answered question</td>
<td>11</td>
<td>18.2%</td>
</tr>
<tr>
<td></td>
<td>skipped question</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Response</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>No big deal</td>
<td>0</td>
</tr>
<tr>
<td>An adjustment</td>
<td>4</td>
</tr>
<tr>
<td>A major concern</td>
<td>5</td>
</tr>
<tr>
<td>An opportunity</td>
<td>1</td>
</tr>
</tbody>
</table>

1. It can be an opportunity, but is a concern because I don't believe we will have the ability to sway political leaders in order to capitalize on the opportunity. Thu, May 27, 2010 10:17 AM
### Appendix L: Survey Results (cont.)

#### 3. In your opinion, the impact of the number of requests for non-emergency assistance to the ≥65 age group over the next ten years

<table>
<thead>
<tr>
<th>Response</th>
<th>n=12</th>
<th>Answered Question</th>
<th>Skipped Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insignificant, will not impact current resource allocation</td>
<td></td>
<td>12</td>
<td>0</td>
</tr>
<tr>
<td>Reasonable, can be absorbed with existing resources</td>
<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Significant, will require additional resources</td>
<td></td>
<td></td>
<td>11</td>
</tr>
<tr>
<td>Alarming, will likely overwhelm current resources</td>
<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td></td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

This will also depend on what type of “support” you are implying — Thu, May 27, 2010 10:17 AM

#### 4. A substantial shift in numbers of the ≥65 age group will alter current service delivery practices.

<table>
<thead>
<tr>
<th>Response</th>
<th>n=12</th>
<th>Answered Question</th>
<th>Skipped Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly disagree</td>
<td></td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Disagree</td>
<td></td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Agree</td>
<td></td>
<td>58.3%</td>
<td>7</td>
</tr>
<tr>
<td>Strongly agree</td>
<td></td>
<td>41.7%</td>
<td>5</td>
</tr>
<tr>
<td>Do not know</td>
<td></td>
<td>0.0%</td>
<td>0</td>
</tr>
</tbody>
</table>
## 5. In your opinion, who has the capability and capacity to best assist the elderly citizens in Chesterfield County with requests for

<table>
<thead>
<tr>
<th>Category</th>
<th>Response</th>
<th>n=12</th>
<th>skipped question</th>
<th>12</th>
<th>answered question</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Government Organizations</td>
<td>25.0%</td>
<td>3</td>
<td></td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Faith-Based Groups</td>
<td>25.0%</td>
<td>3</td>
<td></td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Social Services</td>
<td>16.7%</td>
<td>2</td>
<td></td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Fire &amp; EMS</td>
<td>8.3%</td>
<td>1</td>
<td></td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Law Enforcement</td>
<td>0.0%</td>
<td>0</td>
<td></td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>25.0%</td>
<td>3</td>
<td></td>
<td>12</td>
<td></td>
</tr>
</tbody>
</table>

1. No one group. All current groups are already busy and resource deprived. A new group designated specifically for this need should be established. Sat, Jun 5, 2010 10:55 PM

2. To date no one group has the capacity to handle non-emergency assistance. Wed, Jun 2, 2010 8:38 AM

3. CERT Members Tue, May 25, 2010 7:53 AM
Appendix L: Survey Results (cont.)

6. In your opinion, what could CFEMS do now to prepare for an increase in service requests for non-emergency assistance?

| Response |
|-----------------|---|---|
| **answered question** | 12 | |
| **skipped question** | 0 | |

1. Provide more preventive type programs
   
   Wed, Jun 16, 2010 8:54 AM

2. Identify non-traditional methods of transporting BLS patients to ER and MD appointments. Develop a proactive wellness program for those in need. Team with the private hospitals to develop plans to reduce impacts on both entities.
   
   Mon, Jun 7, 2010 8:08 PM

3. First, be proactive in automated delivery methods using KSA's that the >65 age group can relate too. Second, analyze and study the trends for the past 3, 5 and 10 years to project the growth and future demand. Third, network and partner with current service providers to develop new more effective methods to deliver the current services in a more effective and efficient manner.
   
   Sat, Jun 5, 2010 10:55 PM

4. Provide training to employees in reference on how to handle the geriatric population and special needs of the elderly.
   
   Sat, Jun 5, 2010 8:06 PM

5. Monitor the demographic growth of the target group
   
   Sat, Jun 5, 2010 7:25 PM

6. Provide 2 non-emergency transport units & possibly 2 alternate transportation vehicles. (wheel chair vans).
   
   Wed, Jun 2, 2010 8:38 AM

7. Plan in horizons that extend beyond the next budget year. We can’t see farther than 24 months right now with the current planning mentality.
   
   Thu, May 27, 2010 10:17 AM

8. Increase public education efforts to targeted groups.
   
   Thu, May 27, 2010 9:21 AM

9. Begin to make strategic projections in call loads. Look at our gaps and our service delivery to determine if additional resources or services will be needed.
   
   Tue, May 25, 2010 7:53 AM

10. Assess and study existing areas with elderly populations (Fla.) to see what impacts they have seen and how they have adapted their service delivery model to meet these challenges.
    
    Mon, May 24, 2010 2:02 PM

11. Evaluate current trends and future projections to forecast changes in demands for service by type and volume. Start to develop strategies to meet future demands. Evaluate new service delivery methods to accommodate a change in demographics.
    
    Mon, May 24, 2010 1:19 PM

12. Start now advising these are low priority calls and that during high demand periods there may be delays (adverse weather, high call activity)
    
    Sun, May 23, 2010 7:59 PM
Appendix L: Survey Results (cont.)

7. In your opinion, what service expectations do you think the elderly citizens have of CFEMS?

<table>
<thead>
<tr>
<th>Response Count</th>
<th>Answered Question</th>
<th>Skipped Question</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>11</td>
<td>1</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Response Count</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>11</td>
</tr>
</tbody>
</table>

1. Most feel the fire service provides emergency and non emergency service to citizens. The extent of non emergency service most likely varies from person to person.  
   Wed, Jun 16, 2010 8:54 AM

2. Expected to solve their problems regardless of nature.  
   Mon, Jun 7, 2010 8:08 PM

3. I do not think elderly citizens care who provides them services as long as someone does. Examples of services are health care service at home. Transportation to essential services, health care, food, hygiene care, life safety needs.  
   Sat, Jun 5, 2010 10:55 PM

4. If 911 is called by an elderly citizen then they expect transport to a medical facility.  
   Sat, Jun 5, 2010 8:06 PM

5. Emergency care  
   Sat, Jun 5, 2010 7:25 PM

6. The same as our current patients.  
   Wed, Jun 2, 2010 8:38 AM

7. Without education, everything from a-z.  
   Thu, May 27, 2010 9:21 AM

8. When they have a problem they call 911, and they expect Fire and EMS to be there for them.  
   Tue, May 25, 2010 7:53 AM

9. Like many citizens that call the fire dept. when they don’t know who else to call for help. I also think that their primary concern is their health and related to our organization the provision of emergency medical services.  
   Mon, May 24, 2010 2:02 PM

10. Increase in non emergency medical services both in home and transport. More home safety and accident prevention programs. really depends on data analysis from question 6.  
    Mon, May 24, 2010 1:19 PM

11. They call we haul  
    Sun, May 23, 2010 7:59 PM
Appendix L: Survey Results (cont.)

8. In your opinion, what resources, other than emergency operations personnel, would be available in the County to assist the elderly citizens with requests for non-emergency assistance?

<table>
<thead>
<tr>
<th>Response Count</th>
<th>skipped question</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>answered question</td>
<td>11</td>
<td></td>
</tr>
</tbody>
</table>

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>social services can implement certain programs to assist the elderly however, it should not be the responsibility of government to manage most issues people have that can be managed by the private sector.</td>
<td>Wed, Jun 16, 2010 8:54 AM</td>
</tr>
<tr>
<td>2.</td>
<td>Social Services should be able to assist, however they are extremely understaffed.</td>
<td>Mon, Jun 7, 2010 8:08 PM</td>
</tr>
<tr>
<td>3.</td>
<td>Volunteers because as stated earlier. All existing resources are already have increased work loads without the people resources to keep up with the demands.</td>
<td>Sat, Jun 5, 2010 10:55 PM</td>
</tr>
<tr>
<td>4.</td>
<td>Social Services, Church groups, and younger family members of an elderly citizen</td>
<td>Sat, Jun 5, 2010 8:06 PM</td>
</tr>
<tr>
<td>5.</td>
<td>triage nurse or PA</td>
<td>Sat, Jun 5, 2010 7:25 PM</td>
</tr>
<tr>
<td>6.</td>
<td>Possibly volunteer rescue squads &amp; the CERT teams.</td>
<td>Wed, Jun 2, 2010 8:38 AM</td>
</tr>
<tr>
<td>7.</td>
<td>Senior Advocate would be the best first stop.</td>
<td>Thu, May 27, 2010 10:17 AM</td>
</tr>
<tr>
<td>8.</td>
<td>Take a look at to determine if an additional service is needed. Whether it be non-emergency medical care or an overall help service.</td>
<td>Tue, May 25, 2010 7:53 AM</td>
</tr>
<tr>
<td>9.</td>
<td>Health dept., senior citizens assistance agencies and community groups.</td>
<td>Mon, May 24, 2010 2:02 PM</td>
</tr>
<tr>
<td>10.</td>
<td>Social services, health and parks and recreation. Fire/EMS may have to employ non-traditional operations personnel to meets changing needs.</td>
<td>Mon, May 24, 2010 1:19 PM</td>
</tr>
<tr>
<td>11.</td>
<td>An opportunity for private enterprises to start a fee based service, similar to medical transportation companies like wheel chair vans, geezer lifters to help the elderly out of bed off the floor etc.</td>
<td>Sun, May 23, 2010 7:59 PM</td>
</tr>
</tbody>
</table>
### Appendix L: Survey Results (cont.)

9. Have you been, are you currently, or do you anticipate becoming a care-giver for an elderly person?

<table>
<thead>
<tr>
<th>Response</th>
<th>Answered Question</th>
<th>Skipped Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>66.7%</td>
<td>8</td>
</tr>
<tr>
<td>No</td>
<td>33.3%</td>
<td>4</td>
</tr>
</tbody>
</table>

10. Your perspective is important to the research project. Please leave your name and contact information, if you would like to

<table>
<thead>
<tr>
<th>Answered Question</th>
<th>Skipped Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>5</td>
</tr>
</tbody>
</table>

1. Mark Berry
   Wed, Jun 16, 2010 8:54

2. Steve Parrott (804) 347-7852 cell phone. Please call me if you have additional questions. Good
   Sat, Jun 5, 2010 10:55

3. Bryan Swanson BC04-A 744-5460
   Sat, Jun 5, 2010 7:25

4. Mike Harmon
   Wed, Jun 2, 2010 8:38

5. Robby Dawson - dawsonj@chesterfield.gov
   Thu, May 27, 2010

6. Rick Edinger
   Mon, May 24, 2010

7. James Graham
   Mon, May 24, 2010
Appendix M: 2020 Community Plan on Aging by the Thomas Jefferson Planning District

Chapter 1: Promoting Coordinated and Accessible Healthcare

- Promote access to high-quality healthcare, pharmaceuticals and support services.
- Increase recruitment, preparation, and retention of geriatrics-trained healthcare providers.

Chapter 2: Supporting Maximum Independence and Lifelong Health

- Promote access to resources that support healthy behaviors and preventive health maintenance throughout life.
- Encourage life-long planning and use of community resources for maximum independence in later life.

Chapter 3: Offering Choices: Affordable Living Options for Seniors and Support to Family Caregivers

- Provide a variety of quality affordable and accessible senior housing options integrated within the community.
- Promote a full range of long-term living arrangements and community resources so that seniors can maintain their maximum level of independence and choice.

Chapter 4: Designing Communities to Enhance Quality of Life

- Provide safer, more convenient, flexible and affordable transportation options.
- Improve quality of life through innovative community design.

Chapter 5: Fostering Vibrant Engagement in Life

- Increase the availability and awareness of opportunities to address issues of seniors’ social isolation.
- Support and present opportunities for seniors to contribute to cultural and recreational activities, including intergenerational activities.
Appendix M: 2020 Community Plan on Aging (cont.)

- Advance awareness of the benefits of regular physical activity and promote the availability of recreational and exercise opportunities for seniors.

Chapter 6: Strengthening Caring Communities through Active Citizenship

- Enhance services and advocacy activities to improve resources for seniors and caregivers.
- Foster and showcase seniors’ community participation and contributions.
Appendix N: Arizona Aging 2020 Plan

Goal 1: Make it easier for older Arizonans to access an integrated array of state and aging services.

Goal 2: Increase awareness and understanding of aging issues and help prepare Arizona for an aging population.

Goal 3: Increase the ability of older adults to remain active, healthy and living independently in their communities.

Goal 4: Increase the safety and well-being of older Arizonans.

Goal 5: Strengthen Arizona’s economy by capitalizing on an integrated and well-trained informal, paraprofessional, and professional workforce.

Goal 6: Enhance the state’s capacity to develop and maintain the necessary infrastructure to deliver services in a culturally appropriate, timely and cost effective manner.

Goal 7: Promote quality of care in all aging services.

Goal 8: Promote effective and responsive management for all aging services.
Appendix O: Replies from PARADE Yahoo!® Group

Many cities and towns have "Meals on Wheels" type programs and one of their functions is to check up on high maintenance/ high risk people. If that town has one of these, then that would be a quick easy solution.

On a serious note: we have a form that we encourage our people to fill out if they have a “special need”. The Utility department has them at the desk where bills are paid, and people sign up and interact, of course we are a small community and can afford such close knit stuff, but, we do get behind on the paper work and follow up. I myself have knocked on the door of that “special needs person” at 3 AM when the power was out, to meet the widow of that special needs person who died last year….make a short and uncomfortable moment, but, we always remind them they are “special too”.

One of the big gaps in the safety of many seniors is that as some age they become more secluded from other people. It would be helpful to link them with a neighbor who can keep an eye out for them. The buddy could be provided with awareness about what to look for and how to be able to help them in an emergency. I think that a community link like that is nearly as important as a fire protection system. If it cannot be a local buddy then it certainly sounds as though they may be eligible for some direct services in their home like meals on wheels. If there is direct home medical care it would be good to connect with the care providers and ask them to be aware or alert to some of the other risks and to call (someone?) if it looks like conditions are worsening. It almost sounds like this couple needs to be in assisted living. Many of the facilities have couples living there. There are also group homes available in many areas.

Possibly a system for home medical alert if they are not able to live in a care facility. If you google "home medical alert" a bunch of resources will come up.

These are a few ideas but I think the most important is a watchful neighbor or buddy.