

An Analysis of the Effectiveness of the City of Durham Fire Departments' Fire Prevention and
Life Safety Public Education Programs

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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 proper credit is given where I have used the language, ideas, expressions, or writings of others.

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Abstract

The problem is that the City of Durham does not currently utilize a method to evaluate the effectiveness of its fire prevention and public education programs. The purpose of this applied research project is to evaluate the effectiveness of the City of Durham Fire Departments' fire prevention and public education activities. The descriptive research method was used to answer the following research questions:

1. What is the demographic profile of residential fires that occurred in the City of Durham for 2010?
2. What was the residential fire prevention activity of the City of Durham Fire Department for 2010?
3. What is the correlation between residential fire incidents and the fire prevention activity for the City of Durham?
4. Are the fire prevention activities conducted by the City of Durham Fire Department addressing the residential fire problem in Durham?

A literature review was conducted, and personal interviews were developed and fire and life safety education (FLSE) personnel from various departments were contacted to gather data. Personal interviews with internal FLSE personnel were also conducted. Census Tract and fire incident data was gathered for Durham.

Results of the research show that Durham's at risk populations do experience a higher rate of residential fires and that the department does evaluate its FLSE programs effectiveness.

The recommendations made were to develop specific workload and effectiveness measures that would indicate the effectiveness of specific FLSE programs and to encourage

personnel to provide accurate data as well as utilize Operations Division personnel during the FLSE program evaluation process.

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Introduction

A survey of United States fire departments commissioned by the Home Safety Council revealed that 86 % of U. S. fire departments perform some type of fire and life safety outreach to reduce the risk of death and injury as a result of fire (Home Safety Council [HSC] n.d.). The survey continues to say that many of the fire chiefs stated that they want to do more.

To do more generally requires more in the way of personnel and resources, many times requiring a budget increase. Today's economic uncertainties present a challenge for the Executive Fire Officer when attempting to add personnel and resources in an attempt to provide more services because taxpayers want to be certain that they are receiving effective and efficient services. Providing mayors, managers, councils, and ultimately taxpayers with an accurate "picture" of the effectiveness of fire and life safety public education programs is important in gaining approval to "do more".

The problem is the City of Durham does not currently utilize a method to evaluate the effectiveness of its fire prevention and public education programs. The assumption is that the current fire prevention and life safety education efforts are effective in reducing the number of residential fire incidents as well as reducing the risk of death and injuries as a result of residential fires.

The purpose of this applied research project is to evaluate the effectiveness of the City of Durham Fire Departments' fire prevention and public education activities. The author used the descriptive research method to answer the following research questions:

Question 1: What is the demographic profile of residential fires that occurred in the City of Durham for 2010?

Question 2: What was the residential fire prevention activity of the City of Durham Fire Department for 2010?

Question 3: What is the correlation between residential fire incidents and the fire prevention activity for the City of Durham?

Question 4: Are the fire prevention activities conducted by the City of Durham Fire Department addressing the residential fire problem in Durham?

Background and Significance

The City of Durham Fire Department provides services to over 226,000 citizens within a 100 square mile service area. The Department operates on an annual budget in excess of \$20.1 million. The Department provides fire, EMS, and rescue services with 300 personnel working within four divisions – Suppression, Training, Fire Prevention, and Administration Services.

Fire protection for the City of Durham is provided by sixteen engine companies, four ladder companies, three squad companies, a mobile support unit, and three battalion chiefs housed within sixteen stations. In addition to fire protection, the Department provides emergency medical services at the Emergency Medical Technician – Intermediate level, which in North Carolina is one level below the Paramedic level. The Department also operates various specialty teams, including two hazardous materials units, one technical rescue unit, one water response unit, one urban search and rescue (USAR) unit (water capable). The Department is a partner agency with three other local municipal departments which respond together as a regional USAR task force.

The Durham Fire Department has a long history of fire and life safety education and advocacy within the community. The public fire and life safety education division's stated goal is to enhance the quality of life for residents and visitors of Durham through fire prevention and

community education. Attainment of the goal is strived for through the efforts of one full time educator and the regular assistance of operations personnel (City of Durham 2006).

The current impact of the research problem is that one full time employee oversees the department's Fire and Life Safety Education (FLSE) programs with dual responsibilities as the department's Public Information Officer. Evaluating the effectiveness of the FLSE programs will provide the Durham Fire Department with data that can be utilized to increase the number of personnel whose primary responsibility is fire prevention and life safety education. These additional personnel will be able to reach more people, particularly those at greatest risk of death and injury as a result of fire, reducing the overall risk to the citizens of the City of Durham.

This applied research project was completed as a requirement of the Executive Fire Officers Program (EFOP). This research project supports the objectives and goals of the *Executive Analysis of Community Risk Reduction (EACRR)* course by empowering the Executive Fire Officer with the ability to lead community risk reduction in a strategic manner (Department of Homeland Security [DHS] 2011 p. SM-1-4). This research project also relates to and supports the following four United States Fire Administration operational objectives: reducing risk at the local level through prevention and mitigation, improve local planning and preparedness, improve the fire and emergency services' capability for response to and recovery from all hazards, and improve the fire and emergency services' professional status (DHS 2009 p. II-2).

Literature Review

The literature review was based on the four previously stated research questions. The first research question asked "What is the demographic profile of residential fires that occurred in the City of Durham for 2010?"

On average, there are approximately 375,000 residential home fires in the United States each year (Centers for Disease Control and Prevention [CDC] 2010). An estimated 1,800 of these fires are fatal residential building fires that result in approximately 2,635 deaths, 725 injuries, and \$196 million in property loss (United States Department of Homeland Security [DHS] 2010).

Diamantes wrote that across the United States, senior citizens over the age of 70 account for about 20 % of the fire fatalities each year. Children below the age of five account for about 12 %. These numbers combined reflect about a third of all fire fatalities each year (Diamantes 2005, p. 165). The Centers for Disease Control and Prevention (CDC) identify the following groups as those being at the greatest risk of fire-related injuries and death: Children four and under, adults 65 years of age and older, African Americans and Native Americans, the poorest Americans, persons living in rural areas, and those living in manufactured homes or substandard housing (CDC 2010).

According to the United States Census Bureau (USCB) data, the United States has an estimated population that exceeds 300 million people with just over 38 million that are 65 years of age or older and 20.8 million that are five years old or younger. The United States has an estimated African American population that exceeds 37.2 million, representing 12.4 % of the total population and an estimated 2.4 million American Indians, representing 0.8 % of the total population. The estimate for families' living in the United States that are at or below the poverty level is 9.9 %, while individuals living below the poverty level are reported to be 13.5 % (United States Census Bureau [USCB] 2010).

The North Carolina Department of Insurance Office of the State Fire Marshal reported a total of 532,341 incidents during 2010. There were 22,023 fire calls that match the incident type

found in the research results for the City of Durham Fire Department representing approximately 4 % of the total incidents. The North Carolina Fire Marshals Association (NCFMA) web site indicated that there were a total of 47 residential fire related deaths during 2010 (North Carolina Fire Marshals Association [NCFMA] n.d.). Nearly 58 % of the residential fire deaths reported during 2010 were victims over the age of 60. Five of the deaths were victims less than five years of age (NCFMA n.d.). According to USCB data, the State of North Carolina has an estimated population that exceeds 9 million with just over 1 million that are 65 or older and 634,776 that are five years old or younger. North Carolina has a reported African American population that exceeds 1.9 million which represents 21.1 % of the total population with an estimated 101,986 American Indians representing 1.1 %. The estimate for families living in North Carolina at or below the poverty level is 11.1 % while individuals living below the poverty level are reported to be 15.1 % (USCB 2010).

The City of Raleigh Fire Department reported a total of 1,319 fire calls during 2010, representing about 3.6 % of their total calls (City of Raleigh Fire Department 2010). According to United States Census Bureau data, Raleigh has an estimated population that exceeds 377,000 with 29,891 that are 65 or older and 28,866 that are five years old or younger. Raleigh has a reported African American population of 106,743 which represents 28 % of the total population with an estimated 1,292 American Indians representing 0.3 %. The estimate for families living at or below the poverty level is 8.8 % while individuals living below the poverty level are reported to be 13.9 % (USCB 2010).

The Town of Chapel Hill reported 95 fire calls, representing 2 % of total calls (Town of Chapel Hill Fire Department 2010). The NCSFMA web site reported that there were two fire fatalities, a male and a female both in their mid-60's, as a result of a single residential fire

incident (NCSFMA n.d.). According to USCB data, Chapel Hill has an estimated population that exceeds 52,000 with 4,528 that are 65 or older and 2,293 that are five years old or younger. Chapel Hill has a reported African American population of 5,547 which represents 10.6 % of the total population, with an estimated 72 American Indians representing 0.1 %. The estimate for families living at or below the poverty level is 8.8 % while individuals living below the poverty level are reported to be 23.7 % (USCB 2010).

Research question two asked "What was the residential fire prevention activity of the City of Durham Fire Department for 2010?" The City of Durham Fire Department strives to share the basics of fire prevention with citizens in order to prevent tragic incidents by fire (City of Durham Fire Department 2006). To achieve the goal of preventing tragic incidents by fire, the FLSE activities are offered to the targeted audiences of children, adults, seniors, teachers, and the general public (City of Durham Fire Department 2006).

In his book *Fire Prevention: A Comprehensive Approach*, Crawford (2002) wrote that public FLSE programs are a critical part of any comprehensive prevention effort and that they are important because most fires and fire deaths occur in residential occupancies (Crawford 2002, p. 7). The "E's" of engineering and enforcement generally do not apply to residential occupancies; therefore, the "E" of education becomes the primary method of delivering fire prevention and risk reduction strategies (Crawford 2002, p. 7).

According to the *Fire and Life Safety Education in U.S. Fire Departments: Results of a National Survey* final report written by Gielen, McDonald, and Piver (2007), the most common FLSE activities are elementary school presentations (80 %) and fire safety week or month activities (69 %). Gielen et al, (2007) went on to report that very few departments reported using specific curricula such as Risk Watch ® or Learn Not To Burn ®, reported by fewer than 10 %

and 20 % respectively (Gielen, McDonald, & Piver 2007, p. 4). In their book *Principles of fire protection*, Cote and Bugbee (1998) state the *Learn Not to Burn Curriculum* published by the NFPA provides an excellent means of reaching school age children to educate them on fire and injury prevention (Cote & Bugbee 1998, p. 40).

Diamantes (2005) wrote that FLSE within the schools was recognized almost a century ago as an effective method of instilling fire-safe behaviors and attitudes in our children (Diamantes 2005, p. 169). Crawford (2002) summarized school based FLSE programs as a basic staple of public FLSE efforts but cautions that school based programs only cover a portion of the population that “must get the fire and life safety message if efforts are to be effective” (Crawford 2002, p. 78). Klinoff agrees with Diamantes and Crawford in his book *Introduction to Fire Protection* by stating that one of the most effective forms of public education is that carried out in the school system (Klinoff 1997, p. 289). Klinoff goes on to use the simple and easy to understand concept of Stop, Drop, and Roll program as an example of success (Klinoff 1997, p. 289).

Diamantes (2005) states that FLSE for adults and the general public is often accomplished through the media or by using conduits such as children to deliver messages (Diamantes 2005, p. 171). Gielen et al. (2007) reported that approximately 40 % of the fire departments that responded to the Johns Hopkins survey conduct “older adult presentations” (Gielen et al. 2007, p. 16).

The *Lets Retire Fire* and *Prevent Fires-Save Lives* programs are two of the most successful programs developed by the U. S. Fire Administration that target the elderly population. Both of these programs identify hazards and risks that place the elderly population at risk for injury and death as a result of fires (FEMA 1999).

The NFPA program *Remembering When: a Fire and Fall Prevention Program for Older Adults* is one of the most widely used and successful programs that focus on an all-risk approach to educate the elderly on risk and injury reduction. In addition to fire safety, this program includes messages aimed at preventing slips, trips, and falls (NFPA 1999, p. 2).

In an effort to reach the general public, Cote and Bugbee (1998) wrote that many departments invite children and the public to visit the fire station to see how the department works and to learn how they may cooperate to reduce fire losses (Cote & Bugbee 1998, p. 318). Klinoff (1997) and Cote and Bugbee (1998) all agree that one of the most effective ways to reach a large section of the general public is through the use of public service announcements (PSA's) utilizing the local television, radio, and print media. The PSA's can be used for time critical information relating to special hazards such as large fires, disasters, or even seasonal hazards such as fires involving Christmas trees or turkey fryers (Klinoff 1997, p. 291 and Cote & Bugbee 1998, p. 318).

According to the *Fire and Life Safety Education in U.S. Departments: Results of a National Survey*, more than 70 % of departments reported that fire prevention, fire escape planning and smoke alarms were the main focus of their FLSE efforts. Half reported distributing and/or installing conventional smoke alarms (Gielen et al. 2007, p. 16).

The Asheville (NC) Fire Department follows the lesson plans of most of the NFPA programs from early childhood to seniors. These programs are oftentimes adapted and personalized based on the target audience according to Kelley Webb, Fire and Life Safety Educator Coordinator (Kelly Webb, personal communication, 25 June, 2011). According to Kathy Ellis, Fire Education Specialist Town of Cary Fire Department, the Town of Cary Fire Department utilizes many of the available NFPA resources and have also developed their own

programs such as a hazard house simulator, a public education trailer, and a fire safety house (smoke house) (Kathy Ellis, personal communication, 25 June, 2011). Raleigh (NC) Fire Department Fire Life Safety Educator Ronald Campbell stated that the City of Raleigh Fire Department uses NFPA material as a base curriculum and then adjusts the program to fit a target audience (Ronald Campbell, personal communication, 25 June, 2011).

Research question three asked: What is the correlation between residential fire incidents and the fire prevention activity for the City of Durham? The correlation between residential fire incidents and FLSE activities is oftentimes difficult to demonstrate. Diamantes (2005) wrote that the frequency and severity of fires in America do not result from a lack of knowledge of the causes, means of prevention or methods of suppression. We have a fire “problem” because our nation has failed to adequately apply and fund known loss reduction strategies (Diamantes 2005, p. 3). In his letter to the Honorable James Whitt, then Director of the Federal Emergency Management Agency (FEMA), the Chairman of the Commission to revisit *America Burning* wrote that the low priority placed on adequately funding fire prevention has “resulted in continued loss of life and property at levels that would otherwise have been substantially reduced” (FEMA 2002).

The CDC reported that the number of fatalities and injuries caused by residential fires has gradually declined over the past several decades (CDC 2010). According to the same CDC report, many of the residential fire-related deaths remain preventable and continue to pose a significant public health risk (CDC 2010). In the United States Fire Administration (USFA) report *Fatal Fires in Residential Buildings*, the goal of reducing fire deaths by 50 % in a generation has been met however the fire death rate remains high (USDHS 2010).

Cote and Bugbee (1998) contend that various projects in fire prevention education have demonstrated repeatedly the role that increased public awareness plays in reducing fire hazards. Awareness can be a significant factor in reducing loss of life and property (Cote & Bugbee 1998, p. 39).

Research question four asked: Are the fire prevention activities conducted by the Durham Fire Department addressing the residential fire problem in Durham? Cote and Bugbee (1998) address the question by stating that through the development of specific fire department goals and objectives that can be measured and evaluated by performance standards, the organization and management of FLSE programs can be made increasingly more efficient and effective (Cote & Bugbee 1998, p. 318). Crawford (2002) states that in today's environment, people want to know what their tax dollars are buying. Consequently, decision makers usually put pressure on planners and managers to stipulate the impact of prevention efforts (Crawford 2002, p. 28).

While Cote and Bugbee (1998) write that the benefits of a fire safety education program far exceed its cost (Cote & Bugbee 1998, p. 39), the Johns Hopkins survey report indicates that there is a clear message that limited resources – personnel and funding – are substantial impediments to progress of a FLSE program (Gielen et al., 2007, p. 5).

FLSE program evaluation is an important step in determining whether the program addresses the residential fire problem. The U. S. Fire Administration publication *Public Fire Education Planning: A Five Step Process* states that the primary goal of the evaluation process is to demonstrate that risk reduction efforts are reaching the target populations, have the planned impact, and are demonstrably reducing loss (FEMA 2008).

Crawford (2002) states that prevention programs are often the most difficult to evaluate, even though most accept that preventing an incident is cheaper than the cost of recovery after an incident (Crawford 2002, p. 12). Establishing workload measures, effectiveness measures, and efficiency measures are all important performance measures that can be used to determine if a program is reducing risk and doing so at the lowest possible cost (Crawford 2002, p. 12).

According to FEMA (2008), evaluation drives the risk reduction process. The most effective risk reduction efforts are those led by people willing to modify program strategies based on the results of ongoing evaluation (FEMA 2008, p. 5-3). The USFA Five Step Process evaluation step consists of collecting data, comparing the data to a baseline, noting interventions as necessary, modifying interventions as necessary, and reporting the results. Outcome evaluation is a long term process; it may take 3-5 years to realize major progress (FEMA 2008, p. 5-7). Klinoff (1997) adds that proper record keeping overtime is important to provide data to be utilized during the evaluation process (Klinoff 1997, p. 279).

Diamantes (2005) states that in order to be effective, fire safety education programs must target audiences that can have an impact on the jurisdiction's fire problem. Every community has high risk areas, groups, or conditions that warrant the efforts of fire prevention bureaus (Diamantes 2005, p. 165).

The City of Asheville Fire Department keeps an annual report of FLSE programs which contains the number of programs conducted, hours participating in programs, and the number of people presented to as well as the age of the audience. The information is used from year to year to track the programs however, incident data is not used to target the programs (Kelley Webb, personal communication, 25 June, 2011).

According to Deputy Chief Robert Bosworth, the Town of Chapel Hill Fire Department does not use incident data to target their FLSE efforts. Chief Bosworth did state that the department does track the number of programs delivered, the number of those in the audience, what specific program was delivered, and who the facilitator was. The FLSE coordinator is then responsible to ensure that all of the programs are being delivered consistently (Robert Bosworth, personal communication, 25 June, 2011).

The Town of Cary Fire Department and the City of Raleigh Fire Department both utilize incident data, Investigator Reports, and GIS information to establish areas of high risk to target their FLSE programs. Only the Town of Cary evaluates the effectiveness of their programs by utilizing a citizens' satisfaction survey that is completed after each event (Kathy Ellis and Ronald Campbell, personal communication, 25 June, 2011).

During the spring of 2011, the Commission on Fire Accreditation International (CFAI) issued the Accreditation Report: City of Durham Fire Department recommending that the department be awarded accreditation. The report states that:

Using a geographical information system (GIS) software program, and the department's record management system, the department is able to identify specific risks and risk audiences. The public education programs target the jurisdiction's four most at-risk populations: school aged children, seniors, diverse groups and lower socio-economic groups. The department focuses its resources on these programs based on a comprehensive analysis of the emergency response experience and historical evidence of high-loss areas. The department is in partnerships with many community groups and businesses in respect to sponsorship and participation in several of its public education programs. (McKinnon, Calderazzo, Dixon, & Valois, 2011)

Procedures

The purpose of this research was to evaluate the effectiveness of the City of Durham Fire Departments' fire prevention and public education activities. The literature review began on the campus of the National Fire Academy by utilizing the Learning Resource Center (LRC) as well as a preliminary internet search using the Google search engine. Further literature review was conducted at the following libraries: House Undergraduate and Health Sciences libraries on the campus of the University of North Carolina at Chapel Hill and the Northern Durham Campus library at Durham Technical Community College. Web based searches were performed using the Google and Bing search engines.

Data was gathered for residential occupancy fire calls for the City of Durham Fire Department that occurred during 2010 by querying the departments' information management system, Firepoint. The query provided the following data: date, time, location, incident type, cause, smoke detector present, and type of residential occupancy, fire loss, as well as the fire district in which the incident occurred.

The author used American Fact Finder found at the U. S. Census Bureau web site to obtain the needed demographic data related to fire incidents occurring in residential occupancies. The census tract data profile was created by using each of the incident locations obtained from the Firepoint query and recording the specific census tract for each location. Once the census tract was determined, the author then compared a census tract map with an established City of Durham Fire Department fire district map to develop a demographic profile, by fire district, based on risk groups identified by the CDC to include: young children, older adults (ages 65 and older), those living at or below the poverty level, African-Americans, Native Americans, and those living in manufactured homes or substandard housing (CDC, 2010).

Utilizing the North Carolina Department of Insurance Office of the State Fire Marshal web site, the author was able to access fire incident data for the state of North Carolina for all incidents reported during 2010. Specific data gathered was limited to those incident types that were identified as occurring along with the residential occupancy type used during the analysis of the data gathered from the Firepoint query.

The author contacted members of the following fire departments located within North Carolina directly and conducted phone interviews: Town of Chapel Hill, Town of Cary, City of Asheville, and the City of Raleigh. The phone interview questions are located in Appendix A.

Limitations that the author encountered while conducting this research project included the following:

1. The author chose to utilize 2010 fire incident data from the Durham Fire Department incident reporting system Firepoint. During the literature review it became apparent that most available sources of national data were from 2009.
2. The Firepoint system did not indicate census tract information nor could the author obtain necessary demographic information to classify which of the risk groups the occupants may be a member of.

An assumption made during the research was that reported residential fire incident dollar loss for the City of Durham Fire Department was accurate. Upon closer examination of the data it became obvious to the author that the potential existed for some discrepancy in that there are structure fire records that indicate zero dollar loss.

Results

All demographic information was obtained from the American Fact Finder web site operated by the United States Census Bureau. Fire incident data was obtained from the Firepoint

system maintained by the City of Durham Fire Department. This data was gathered to answer the first research question “What is the demographic profile of residential fires that occurred in the City of Durham for 2010?” Appendix D contains fire incident data by census tract to include fire districts that cover the census tract, total residential fire incidents, and estimated dollar loss. Appendix E contains census tract and related demographic information.

The City of Durham Fire Department responded to 18,839 incidents during 2010. Out of the 18,839 incidents, 460 or 2.4 % were residential fire calls with a reported loss estimate of over \$9 million. The residential occupancy types used were categorized by using the National Fire Incident Reporting System (NFIRS) categories of: one and two family dwellings, multi-family dwellings, boarding and rooming house, dormitory, and residential other. These calls occurred within one of the 46 census tracts that a City of Durham Fire Department apparatus responded to.

Census Tract 1.01 is covered by Fire Stations 1, 7, and 9 and has a total estimated population of 2,851 with 1,367 African Americans (47.9 %) and no American Indians. The population 65 years of age or older is 235 (8.2 %) with an under five years of age population of 134 (4.7 %). The estimated population of families below the poverty level is 16.4 % with an estimated 20.8 % of individuals living below the poverty line. Census Tract 1.01 had eight residential fires for a fire loss of approximately \$18,300.

Census Tract 1.02 had ten residential fire incidents with a reported fire loss estimate of \$6,700. Fire Stations 1, 2, and 7 are responsible for covering Census Tract 1.02 with a population of 3,740 of which 1,554 (41.6 %) are African American. There are no American Indians within this census tract. Approximately 1,021 (13.7 %) are aged 65 and older while there are 310 (8.3 %) people under the age of five. Approximately 11.6 % of families and 13.4 % of individuals live below the poverty line.

Fire Stations 1 and 9 cover Census Tract 2 which had a reported seven residential fire incidents with total fire losses exceeding \$29,000. Census Tract 2 has an African American population of 2,050 (46 %) and eight (0.2 %) American Indians with a total population of 4,458. There are 119 (2.7 %) people aged 65 and older and 87 (2 %) younger than five years of age. 24.5 % of families and 40.7 % of individuals within Census Tract 2 live below the poverty level.

Census Tract 3.01 is covered by Fire Station 2 and has a total estimated population of 2,170 with 919 African Americans (42.4 %) and 21 American Indians (1 %). The population 65 years old or older is 125 (5.8 %) with an under five years of age population of 74 (3.4 %). The estimated population of families below the poverty level is 6.6 % with an estimated 10.2 % of individuals living below the poverty line. Census Tract 3.01 had three residential fires with no reported fire loss.

Census Tract 3.02 had four residential fire incidents with a reported fire loss estimate of \$48,500. Fire Station 1 is responsible for covering Census Tract 3.02 with a population of 3,731 of which 859 (23 %) are African American. There are no American Indians within this census tract. Approximately 197 (5.3 %) are aged 65 and older while there are 345 (9.2 %) people under the age of five. Approximately 7 % of families and 16.3 % of individuals live below the poverty line.

Fire Station 2 covers Census Tract 4.01 which had two residential fire incidents with no reported fire loss. Census Tract 4.01 has an African American population of 513 (16.5 %) and no American Indians with a total population of 3,117. There are 304 (9.8 %) people aged 65 and older and 277 (8.9 %) younger than five years of age. 8.2 % of families and 8.5 % of individuals within Census Tract 4.01 live below the poverty level.

Census Tract 5 is covered by Fire Stations 2 and 5 and has a total estimated population of 3,634 with 1,946 African Americans (53.5 %) and no American Indians. The population 65 years old or older is 587 (16.2 %) with an under five years of age population of 323 (8.9 %). The estimated population of families below the poverty level is 42.4 % with an estimated 46.6 % of individuals living below the poverty line. Census Tract 5 had four residential fires for a fire loss of approximately \$800.

Census Tract 6 had 13 residential fire incidents with a reported fire loss estimate of \$18,400. Fire Station 5 is responsible for covering Census Tract 6 with a population of 5,599 of which 1,319 (23.6 %) is African American. There are no American Indians within this census tract. Approximately 483 (8.6 %) are aged 65 and older while there are 433 (7.7 %) people under the age of five. Approximately 13.8 % of families and 18.4 % of individuals live below the poverty line.

Fire Stations 1 and 5 cover Census Tract 7 which had a reported five residential fire incidents with total fire losses exceeding \$73,500. Census Tract 7 has an African American population of 902 (32 %) and seven (0.2 %) American Indians with a total population of 2,815. There are 384 (13.6 %) people aged 65 and older and 215 (7.6 %) younger than five years of age. 10.6 % of families and 13.3 % of individuals within Census Tract 7 live below the poverty level.

Census Tract 8.02 is covered by Fire Station 1 and has a total estimated population of 1,344 with 561 African Americans (41.7 %) and no American Indians. The population 65 years old or older is 52 (3.9 %) with an under five years of age population of 146 (10.9 %). The estimated population of families below the poverty level is 40.2 % with an estimated 32.2 % of individuals living below the poverty line. Census Tract 8.02 had two residential fires for a fire loss of approximately \$35,500.

Census Tract 9 had ten residential fire incidents with a reported fire loss estimate of \$71,000. Fire Stations 1 and 3 are responsible for covering Census Tract 9 with a population of 1,836 of which 1,293 (70.4 %) is African American. There are no American Indians within this census tract. Approximately 185 (10.1 %) are aged 65 and older while there are 268 (14.6 %) people under the age of five. Approximately 57.4 % of families and 56.3 % of individuals live below the poverty line.

Fire Station 3 covers Census Tract 10.01 which had 21 reported residential fire incidents with total fire losses exceeding \$482,432. Census Tract 10.01 has an African American population of 1,925 (61.3 %) and no American Indians with a total population of 3,141. There are 363 (11.6 %) people aged 65 and older and 404 (12.9 %) younger than five years of age. 39.3 % of families and 48 % of individuals within Census Tract 10.01 live below the poverty level.

Census Tract 10.02 is covered by Fire Stations 1, 3, and 9 and has a total estimated population of 5,314 with 2,595 African Americans (48.8 %) and no American Indians. The population 65 years old or older is 338 (6.4 %) with an under five years of age population of 632 (6.4 %). The estimated population of families below the poverty level is 23 % with an estimated 24.5 % of individuals living below the poverty line. Census Tract 10.02 had 17 residential fires for a fire loss of approximately \$1,538,109.

Census Tract 11 had 13 residential fire incidents with a reported fire loss estimate of \$131,832. Fire Stations 1 and 3 are responsible for covering Census Tract 11 with a population of 2,198 of which 1,526 (69.4 %) is African American. There are no American Indians within this census tract. Approximately 167 (7.6 %) are aged 65 and older while there are 236 (10.7 %)

people under the age of five. Approximately 22.5 % of families and 32.3 % of individuals live below the poverty line.

Fire Station 1 covers Census Tract 12.01 which had seven residential fire incidents with total fire losses exceeding \$87,500. Census Tract 12.01 has an African American population of 934 (73.9 %) and 12 (0.9 %) American Indians with a total population of 1,264. There are 116 (9.2 %) people aged 65 and older and 36 (2.8 %) younger than five years of age. 59.8 % of families and 65.7 % of individuals within Census Tract 12.01 live below the poverty level.

Census Tract 13.01 is covered by Fire Stations 1 and 4 and has a total estimated population of 1,357 with 1,260 African Americans (92.9 %) and no American Indians. The population 65 years old or older is 148 (10.9 %) with an under five years of age population of 134 (9.9 %). The estimated population of families below the poverty level is 49 % with an estimated 41.6 % of individuals living below the poverty line. Census Tract 13.01 had 12 residential fires for a fire loss of approximately \$87,550.

Census Tract 13.03 had nine residential fire incidents with a reported fire loss estimate of \$138,700. Fire Stations 1 and 4 are responsible for covering Census Tract 13.3 with a population of 2,554 of which 2,342 (91.7 %) are African American. There are no American Indians within this census tract. Approximately 257 (10.1 %) are aged 65 and older while there are 52 (2 %) people under the age of five. Approximately 26.7 % of families and 26.3 % of individuals live below the poverty line.

Fire Station 4 covers Census Tract 13.04 which had eight residential fire incidents with total fire losses exceeding \$93,000. Census Tract 13.04 has an African American population of 1,789 (79.1 %) and no American Indians with a total population of 2,262. There are 298 (13.2

%) people aged 65 and older and 362 (16 %) younger than five years of age. 36.5 % of families and 49.4 % of individuals within Census Tract 13.04 live below the poverty level.

Census Tract 14 is covered by Fire Stations 1, 3, and 4 and has a total estimated population of 3,133 with 2,914 African Americans (93 %) and no American Indians. The population 65 years old or older is 241 (7.7 %) with an under five years of age population of 525 (16.8 %). The estimated population of families below the poverty level is 52.5 % with an estimated 54.7 % of individuals living below the poverty line. Census Tract 14 had 24 residential fires for a fire loss of approximately \$136,436.

Census Tract 15.02 had 14 residential fire incidents with a reported fire loss estimate of \$3,320. Fire Stations 2 and 11 are responsible for covering Census Tract 15.02 with a population of 5,170 of which 1,595 (30.9 %) is African American. There are 24 (0.5 %) American Indians within this census tract. Approximately 365 (7.1 %) are aged 65 and older while there are 655 (12.7 %) people under the age of five. Approximately 26.1 % of families and 35.2 % of individuals live below the poverty line.

Fire Station 7 covers Census Tract 16.03 which had four residential fire incidents with total fire losses exceeding \$12,640. Census Tract 16.03 has an African American population of 554 (9.1 %) and no American Indians with a total population of 6,065. There are 668 (11 %) people aged 65 and older and 473 (7.8 %) younger than five years of age. 1.4 % of families and 2.3 % of individuals within Census Tract 16.03 live below the poverty level.

Census Tract 16.04 is covered by Fire Station 14 and has a total estimated population of 6,800 with 1,338 African Americans (19.7 %) and 45 American Indians (0.7 %). The population 65 years old or older is 994 (14.6 %) with an under five years of age population of 521 (7.7 %). The estimated population of families below the poverty level is 2 % with an estimated 2 % of

individuals living below the poverty line. Census Tract 16.04 had two residential fires for a fire loss of approximately \$62,200.

Census Tract 17.05 had ten residential fire incidents with a reported fire loss estimate of \$761,525. Fire Stations 2, 7, and 10 are responsible for covering Census Tract 17.05 with a population of 4,594 of which 1,639 (35.7 %) is African American. There are no American Indians within this census tract. Approximately 675 (14.7 %) are aged 65 and older while there are 292 (6.4 %) people under the age of five. Approximately 6.1 % of families and 9.3 % of individuals live below the poverty line.

Fire Station 10 covers Census Tract 17.06 which had three residential fire incidents with total fire losses exceeding \$6,000. Census Tract 17.06 has an African American population of 1,004 (26.1 %) and no American Indians with a total population of 3,844. There are 181 (4.7 %) people aged 65 and older and 392 (10.2 %) younger than five years of age. 12 % of families and 17.3 % of individuals within Census Tract 17.06 live below the poverty level.

Census Tract 17.07 is covered by Fire Station 10 and has a total estimated population of 6,855 with 484 African Americans (7.1 %) and no American Indians. The population 65 years old or older is 1,669 (24.3 %) with an under five years of age population of 261 (3.8 %). The estimated population of families below the poverty level is 1.6 % with an estimated 2.2 % of individuals living below the poverty line. Census Tract 17.07 had seven residential fires for a fire loss of approximately \$17,050.

Census Tract 17.08 had ten residential fire incidents with a reported fire loss estimate of \$243,900. Fire Station 7 is responsible for covering Census Tract 17.08 with a population of 3,339 of which 2,622 (78.5 %) is African American. There are no American Indians within this census tract. Approximately 417 (12.5 %) are aged 65 and older while there are 272 (8.1 %)

people under the age of five. Approximately 7.8 % of families and 13.8 % of individuals live below the poverty line.

Fire Stations 7 and 9 cover Census Tract 17.09 which had 36 residential fire incidents with total fire losses exceeding \$460,000. Census Tract 17.09 has an African American population of 3,684 (74.5 %) and no American Indians with a total population of 4,960. There are 413 (8.3 %) people aged 65 and older and 459 (9.3 %) younger than five years of age. 23 % of families and 26.2 % of individuals within Census Tract 17.09 live below the poverty level.

Census Tract 17.10 is covered by Fire Station 7 and has a total estimated population of 4,035 with 1,719 African Americans (42.6 %) and no American Indians. The population 65 years old or older is 381 (9.4 %) with an under five years of age population of 330 (8.2 %). The estimated population of families below the poverty level is 3.5 % with an estimated 7.5 % of individuals living below the poverty line. Census Tract 17.10 had seven residential fires for a fire loss of approximately \$1,000.

Census Tract 17.11 had ten residential fire incidents with a reported fire loss estimate of \$6,225. Fire Station 7 is responsible for covering Census Tract 17.11 with a population of 4,392 of which 1,507 (34.3 %) is African American. There are no American Indians within this census tract. Approximately 311 (7.1 %) are aged 65 and older while there are 510 (11.6 %) people under the age of five. Approximately 12.8 % of families and 19.5 % of individuals live below the poverty line.

Fire Station 9 covers Census Tract 18.01 which had 14 residential fire incidents with total fire losses exceeding \$455,000. Census Tract 18.01 has an African American population of 3,090 (52.6 %) and 40 (0.7 %) American Indians with a total population of 5,874. There are 668

(11.4 %) people aged 65 and older and 394 (6.7 %) younger than five years of age. 6.6 % of families and 11.3 % of individuals within Census Tract 18.01 live below the poverty level.

Census Tract 18.02 is covered by Fire Stations 3 and 8 and has a total estimated population of 6,616 with 4,763 African Americans (72 %) and no American Indians. The population 65 years old or older is 537 (8.1 %) with an under five years of age population of 538 (8.1 %). The estimated population of families below the poverty level is 22.5 % with an estimated 25.9 % of individuals living below the poverty line. Census Tract 18.02 had 14 residential fires for a fire loss of approximately \$48,600.

Census Tract 18.04 had 15 residential fire incidents with a reported fire loss estimate of \$602,750. Fire Stations 3 and 8 are responsible for covering Census Tract 18.04 with a population of 12,837 of which 6,536 (50.9 %) is African American. There are 60 (0.5 %) American Indians within this census tract. Approximately 769 (6 %) are aged 65 and older while there are 1,046 (8.1 %) people under the age of five. Approximately 4.7 % of families and 8.4 % of individuals live below the poverty line.

Fire Stations 3, 8, and 13 cover Census Tract 18.05 which had 13 residential fire incidents with total fire losses exceeding \$135,000. Census Tract 18.05 has an African American population of 3,696 (38.2 %) and nine (0.1 %) American Indians with a total population of 9,665. There are 566 (5.9 %) people aged 65 and older and 842 (8.7 %) younger than five years of age. 5 % of families and 8.8 % of individuals within Census Tract 18.05 live below the poverty level.

Census Tract 19 is covered by Fire Station 8 and has a total estimated population of 2,345 with 171 African Americans (7.3 %) and 10 American Indians (0.4 %). The population 65 years old or older is 377 (16 %) with an under five years of age population of 190 (8.1 %). The

estimated population of families below the poverty level is 0.7 % with an estimated 3.5 % of individuals living below the poverty line. Census Tract 19 had one residential fire for a fire loss of approximately \$60,000.

Census Tract 20.07 had six residential fire incidents with a reported fire loss estimate of \$8,000. Fire Stations 5 and 6 are responsible for covering Census Tract 20.07 with a population of 5,401 of which 1,576 (29.2 %) is African American. There are no American Indians within this census tract. Approximately 880 (16.3 %) are aged 65 and older while there are 220 (4.1 %) people under the age of five. Approximately 4.6 % of families and 4.2 % of individuals live below the poverty line.

Fire Station 6 covers Census Tract 20.08 which had two residential fire incidents with total fire losses exceeding \$15,000. Census Tract 20.08 has an African American population of 61 (2 %) and no American Indians with a total population of 3,082. There are 454 (14.7 %) people aged 65 and older and 231 (7.5 %) younger than five years of age. 9.9 % of families and 13.5 % of individuals within Census Tract 20.08 live below the poverty level.

Census Tract 20.09 is covered by Fire Stations 4 and 5 and has a total estimated population of 4,771 with 4,110 African Americans (86.1 %) and no American Indians. The population 65 years old or older is 631 (13.2 %) with an under five years of age population of 260 (5.4 %). The estimated population of families below the poverty level is 6.2 % with an estimated 8.6 % of individuals living below the poverty line. Census Tract 20.09 had 15 residential fires for a fire loss of approximately \$35,801.

Census Tract 20.10 had 19 residential fire incidents with a reported fire loss estimate of \$483,770. Fire Stations 4 and 12 are responsible for covering Census Tract 20.10 with a population of 10,247 of which 6,230 (60.8 %) is African American. There are no American

Indians within this census tract. Approximately 679 (6.6 %) are aged 65 and older while there are 1,026 (10 %) people under the age of five. Approximately 8.9 % of families and 14.4 % of individuals live below the poverty line.

Census Tract 20.11 Fire Stations 1 and 9 cover Census Tract 20.11 which had six residential fire incidents with total fire losses exceeding \$275,000. Census Tract 20.11 has an African American population of 1,974 (20.8 %) and eight (0.1 %) American Indians with a total population of 9,504. There are 964 (10.1 %) people aged 65 and older and 832 (8.8 %) younger than five years of age. Census Tract 20.11 has 5.4 % of individuals living below the poverty level.

Census Tract 20.12 is covered by Fire Stations 6, 12, and 16 and has a total estimated population of 17,804 with 4,012 African Americans (22.5 %) and 94 American Indians (0.5 %). The population 65 years old or older is 1,181 (6.6 %) with an under five years of age population of 1,483 (8.3 %). The estimated population of families below the poverty level is 2.8 % with an estimated 6 % of individuals living below the poverty line. Census Tract 20.12 had 21 residential fires for a fire loss of approximately \$2,314,550.

Census Tract 20.13 had four residential fire incidents with a reported fire loss estimate of \$214,000. Fire Station 12 is responsible for covering Census Tract 20.13 with a population of 4,641 of which 1,101 (23.7 %) is African American. There are 27 (0.6 %) American Indians within this census tract. Approximately 323 (7 %) are aged 65 and older while there are 440 (9.5 %) people under the age of five. Approximately 1.6 % of families and 3.6 % of individuals live below the poverty line.

Fire Stations 4, 6, 12, 13, and 16 cover Census Tract 20.14 which had 17 residential fire incidents with total fire losses exceeding \$56,000. Census Tract 20.14 has an African American

population of 3,506 (33.2 %) and no American Indians with a total population of 10,576. There are 433 (4.1 %) people aged 65 and older and 904 (8.5 %) younger than five years of age. 8.8 % of families and 11.2 % of individuals within Census Tract 20.14 live below the poverty level.

Census Tract 20.15 is covered by Fire Stations 5 and 11 and has a total estimated population of 4,769 with 1,617 African Americans (33.9 %) and no American Indians. The population 65 years old or older is 560 (11.7 %) with an under five years of age population of 536 (11.2 %). The estimated population of families below the poverty level is 9.8 % with an estimated 16.9 % of individuals living below the poverty line. Census Tract 20.15 had ten residential fires for a fire loss of approximately \$4,720.

Census Tract 20.16 had five residential fire incidents with a reported fire loss estimate of \$1,550. Fire Stations 5, 6, and 11 are responsible for covering Census Tract 20.16 with a population of 4,807 of which 1,386 (28.8 %) is African American. There are no American Indians within this census tract. Approximately 133 (2.8 %) are aged 65 and older while there are 497 (10.3 %) people under the age of five. Approximately 17.9 % of families and 20 % of individuals live below the poverty line.

Fire Station 11 covers Census Tract 20.17 which had nine residential fire incidents with total fire losses exceeding \$33,000. Census Tract 20.17 has an African American population of 501 (7.4 %) and no American Indians with a total population of 6,774. There are 1,101 (16.3 %) people aged 65 and older and 492 (7.3 %) younger than five years of age. 2.4 % of families and 4.9 % of individuals within Census Tract 20.17 live below the poverty level.

Census Tract 20.18 is covered by Fire Station 6 and has a total estimated population of 7,474 with 791 African Americans (10.6 %) and 12 American Indians (0.2 %). The population 65 years old or older is 1,021 (13.7 %) with an under five years of age population of 359 (4.8 %).

The estimated population of families below the poverty level is 7.9 % with an estimated 15.1 % of individuals living below the poverty line. Census Tract 20.18 had seven residential fires for a fire loss of approximately \$1,250.

Personal interviews were conducted with Assistant Fire Marshal Edward Reid and Public Affairs Specialist/Public Information Officer Sierra Jackson, both members of the City of Durham Fire Department, to answer the second research question: What was the residential fire prevention activity of the City of Durham Fire Department for 2010?

When responding to the question “What is the City of Durham Fire Departments’ Fire and Life Safety Education Strategy?” Sierra Jackson stated that “Through our community education programs and services, we provide a level of service designed to educate City of Durham residents with fire safety/prevention methods to prevent the loss of life from the effects of fires. Our strategy to achieve this is by maintaining our presence in the community at an average of 30 events per month, city wide.” (Sierra Jackson, personal communication, 28 June, 2011). Sierra Jackson went on to point out that detailed program information was available from the Departments’ web site <http://www.durhamnc.gov/departments/fire/prevention.cfm>.

The fire prevention, life safety education programs that are offered by the City of Durham and listed on the web site are:

- Pre-Fire Planning
- Fire Extinguisher Training
- Remembering When
- Learn Not to Burn
- Learn Not to Burn Preschool Program
- Fire Station Tours

- Smoke Detector Program
- Fire Safety Presentations

(City of Durham Fire Department, 2006).

The fire prevention activity for the City of Durham Fire Department according to the FY 2009-2010 and FY 2010-2011 Workload Indicators was that 249 smoke detectors and CO detectors were given away and/or installed. Fire suppression personnel performed five home inspections and spent 2,061 hours participating in community service activities (City of Durham Fire Department 2010 & 2011b).

Research question three asked “What is the correlation between residential fire incidents and the fire prevention activity for the City of Durham?” The author was not able to locate any data that would allow an analysis of the correlation of residential fire incidents and the fire prevention activity for the City of Durham during 2010, therefore, the author is unable to provide a specific result for this research question.

The final research question was: Are the fire prevention activities conducted by the Durham Fire Department addressing the residential fire problem in Durham? Sierra Jackson stated that the department utilizes fire data from Firepoint, NFIRS data, reports from Fire Investigators as well as Incident Reports to ensure that the available fire prevention/FLSE resources are utilized as efficiently as possible. (Sierra Jackson, personal communication, 28 June, 2011).

Assistant Fire Marshal Edward Reid stated that one of the targeted prevention methods used by the department to address the residential fire problem is a “knock and talk”: after fatal fires in residential occupancies, members of the prevention division and first due company from the operations division “blitz” a several block radius from the location of the fatal fire in hopes

of raising awareness of prevention and risk reduction strategies. (Edward Reid, personal communication, 28 June, 2011). Reid continued to say that the department has been successful in reaching some residents using this method that might otherwise not have received the prevention message. Data gathered indicated that there was one fire related death, a twelve year old female, in the City of Durham during 2010.

Discussion

The problem addressed in this paper is the City of Durham does not currently utilize a method to evaluate the effectiveness of its fire prevention and public education programs. The assumption is that the current fire prevention and life safety education efforts are effective in reducing the number of residential fire incidents as well as reducing the risk of death and injuries as a result of residential fires. Research question one asked “What is the demographic profile of residential fires that occurred in the City of Durham for 2010?” The City of Durham Fire Department responded to 18,839 calls for service during 2010. There were 460 fire calls that occurred in residential occupancies accounting for 2.4 % of all calls with a reported fire loss estimate exceeding \$9 million. Diamantes (2005) wrote that elderly adults and young children reflect about a third (0.4 %) of all fire fatalities each year. Fortunately, the City of Durham was below the national trend with only one (0.2 %) fire fatality during 2010, a 12 year old female.

The Centers for Disease Control and Prevention (2010) identified younger children, the elderly, African Americans, American Indians, and the poorest Americans as those populations living at the highest risk of death and injury as a result of fire. According to U.S. Census Bureau statistics, the City of Durham has an elderly population of just over 19,000 or 8.8 %, which is less than the national average of 12.6 %. Durham’s population under the age of five is 8.1 %

which is slightly higher than the national average of 6.9 %. The national average for African Americans and American Indians is 12.4 % and 0.8 % respectfully. Durham has an African American population that is significantly higher than the national average at 39.7 %. Durham's American Indian population is much lower than the national average at 0.1 %. Durham has an 11.7 % rate of families and a rate of 16.3 % of individuals that are below the poverty level. The national average for families and individuals below the poverty level is 9.9 % and 13.5 % respectfully (USCB 2010).

Utilizing the residential fire occupancy incident data retrieved from the City of Durham Fire Department reporting system and U. S. Census Bureau statistics for each census tract, the author was able to determine a demographic profile of residential fire incidents based on CDC risk groups. Fire incident and fire loss totals were conducted for each risk group. The under five years of age risk group totaled 367 fires, or approximately 80 %, and had a total fire loss estimate that exceeds \$7.2 million. The risk group for adults over 65 years of age experienced 86 fires (19 %) with a fire loss estimate of \$1.4 million. African Americans in Durham experienced 430 fires, almost 93 % of the total of all residential fire incidents totaling \$9.1 million (98 %) in estimated fire loss. In contrast, the American Indian risk group experienced a total of ten reported residential fire incidents for a loss of \$87,500. Families in Durham that live below the poverty level experienced 254 or 55 % of the total for a loss estimate of \$3.5 million, while those individuals who live below the poverty level experienced 287 (62 %) fire incidents with a loss total exceeding \$4.1 million (USBC 2010 and CDC 2010). The results of the research are in line with the literature review in that the under five years of age, African American, and poorest Americans populations are at higher risk for fire death and injury.

Research question two asked: What was the residential fire prevention activity of the City of Durham Fire Department for 2010? The fire prevention activity for the City of Durham Fire Department appears to be in line with most of the other fire departments nationally as well as locally. The Johns Hopkins Fire and Life Safety Education survey indicated that 86 % of departments that responded to the survey perform some form of FLSE and that the vast majority participated in fire prevention, fire escape planning, and smoke detector programs (Gielen et al, 2007, p. 4). All of the local fire departments contacted for this research project participate in a smoke detector program. Klinoff (1997) stated that a working smoke detector doubles a person's chance of surviving a fire. Nearly half the residential fires and three-fifths of the residential fatalities occur in homes with no smoke detectors (Klinoff 1997, p. 69). During 2010, the City of Durham Fire Department gave away and/or installed 249 smoke detectors. The author realized that the fire reporting system data was not reliable in regards to the number of residential occupancies that experienced a fire incident and had operating smoke detectors.

The *Learn Not to Burn* and *Learn Not to Burn Preschool Program* are the two main FLSE programs offered by the Durham Fire Department that target young children. According to Sierra Jackson, these two programs have been adapted somewhat from the original curriculum to satisfy specific needs within a particular elementary school (Sierra Jackson, personal communication, 28 June, 20110). In contrast, the Johns Hopkins survey revealed that fewer than 20 % of the departments in the U.S. use specific curricula such as *Learn Not to Burn* (Gielen et al. 2007, p. 4). Diamantes (2005), Crawford (2002), and Klinoff (1997) agree that school based programs are considered the most effective FLSE programs targeting children, instilling fire-safe behaviors and attitudes. The City of Durham Fire Department participated in over 2,000 hours of community service activities. Fire Prevention Week in October is

traditionally a busy time for FLSE programs and school visits. During 2010, the Durham Fire Department personnel participated in delivery of FLSE displays and events at all twenty-nine elementary schools in the Durham Public Schools system. The author was unable to determine the number of hours spent participating in specific programs due to the manner in which reporting is done for the departments workload indicators (City of Durham Fire Department 2010 & 2011b).

All of the North Carolina fire departments contacted by the author reported participating in some form of a smoke detector program. Most are funded through some form of grant (Ronald Campbell and Kelley Webb, personal communication, 25 June, 2011). The City of Durham Fire Department provides smoke detectors on request in a targeted area based on the percentage of families and individuals living below the poverty level. Reid added that in the beginning of the smoke detector program, the departments command staff agreed that the targeted area was also at the highest risk of fires, based on a collective memory of fire incidents (Edward Reid, personal communication, 28 June, 2011). Although the smoke detector program is targeted to a specific area, the reality is that all residents of the city may request and receive a smoke detector. The Durham Fire Department provided (installed if requested) 249 smoke detectors during 2010.

Research question three asked “What is the correlation between residential fire incidents and the fire prevention activity for the City of Durham?” Diamantes (2005) wrote that the frequency and severity of residential fires do not result from a lack of knowledge of cause or means of prevention. We have a fire problem because we have failed to apply and fund known loss reduction strategies (Diamantes 2005, p. 3) With limited resources, establishing a correlation between residential fire incidents and FLSE efforts is difficult at best. Based on the definition of “correlation”, a loose relationship is generally assumed between the amount of

FLSE activities and the frequency and severity of residential fire incidents. The CDC report that the number of fatalities and injuries that are caused by fires in residential occupancies is declining (CDC 2010) and the USFA report *Fatal Fires in Residential Buildings* states that the goal of reducing fire deaths by 50% in one generation has been met (USDHS 2010). Cote and Bugbee (1998) support the correlation of FLSE efforts and reduced residential fire incidents resulting in deaths and injury by stating that various projects in fire prevention have demonstrated repeatedly the role in reducing loss of life and property (Cote & Bugbee 1998, p.39). Establishing a positive correlation based solely on the residential fire incident data and FLSE activities data available to the author was not possible for this ARP.

The final research question asked “Are the fire prevention activities conducted by the Durham Fire Department addressing the residential fire problem in Durham?” Crawford (2002) points out the importance of establishing effectiveness measures such as educational gain, risk reduction, and loss reduction as well as workload measures to be able to determine the impact of a prevention program (Crawford 2002, p. 28). Cote and Bugbee (1998) also wrote that FLSE programs can be made increasingly more efficient and effective by developing specific goals and objectives that can be measured and evaluated (Cote and Bugbee 1998, p. 318).

The CFAI *Accreditation Report* (McKinnon et al. 2011) stated that an annual appraisal is conducted, on a spreadsheet, by the public educator. Fire Prevention Bureau staff conducts meetings to track trends in respect to emergency responses and to discuss program effectiveness and program requirements within the community. Resources are typically realigned annually, based on the recommendations flowing from the quarterly meetings (McKinnon, et al., 2011 p. 22). Community Relations Coordinator/PIO Sierra Jackson and Assistant Fire Marshal Reid both stated that the FLSE program effectiveness evaluation process began as a result of the

Accreditation Self-Assessment process in early 2010 and that adjustments to the evaluation process is ongoing (Sierra Jackson and Edward Reid, personal communication, 28 June, 2011).

The literature review and personal communications indicated a direct contradiction to the authors problem statement that there is no method for evaluation of the effectiveness of FLSE programs delivered. The contradiction is easily explained in that at the time the problem statement was written, communication to the Operations Division personnel concerning the FLSE program effectiveness evaluation process had not yet occurred.

Recommendations

The problem, as previously stated, is that the City of Durham Fire Department does not currently utilize a method to evaluate the effectiveness of its Fire Prevention Life Safety Education programs. The assumption is that the current FLSE efforts are effective in reducing the number of residential fire incidents as well as reducing the risk of death and injuries a result of residential fires. Based on the literature review and the results of the original research, the following recommendations are suggested to the City of Durham Fire Department to demonstrate by way of annual FLSE program evaluations

1. Create specific and measurable work load and effectiveness indicators. As an example, current workload indicators report the number of hours personnel participate in community service events. An updated workload indicator would report the total number of specific programs delivered as well as the percent of the targeted audience that participated in the program. One other adjusted workload indicator would be to specify the number of smoke detectors that are distributed within a targeted area in addition to those smoke detectors distributed to residents outside of the targeted area.

2. Encourage those personnel who fill out fire incident reports to provide as much accurate data as possible. The author experienced some difficulty in establishing fire loss comparisons due to many of the incident reports having no reported loss. Providing accurate report data will enable the Fire and Life Safety Education efforts to be more effective and efficient by ensuring that at risk populations of the city are receiving the resources necessary to reduce the risk of fire and death and injury as a result.

3. Seek assistance from Operations Division personnel. Personnel in the Operations Division currently deliver the majority of the FLSE programs to the public. Utilizing these personnel during the FLSE program evaluation process would provide real-time feedback and the opportunity for the Community Relations Coordinator/PIO to demonstrate that their efforts are making a difference. Seeing a positive impact in reducing the occurrence of death and injury as a result of fire, the Operations Division personnel would have more “buy-in” of fire prevention efforts.

In conclusion, this research project identified that contrary to the authors stated problem, the City of Durham Fire Department has begun to evaluate the effectiveness of its Fire and Life Safety Public Education programs in reducing the frequency of residential fires as well as the number of deaths and injuries as a result of fire. This evaluation process is one step out of many that help the City of Durham Fire Department achieve its mission of enhancing the quality of life for the citizens and visitors of Durham through the delivery of comprehensive fire suppression, prevention, training, and emergency medical services.

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Appendix A: Personal Communication / Phone Interview Questions and Personnel Contacted

1. Does your department have an established Fire and Life Safety Education Strategy? If so, please provide some details on the strategy.
2. What specific programs do you offer?
3. Does your department utilize fire incident data to target your FLSE programs or do you simply provide the FLSE programs as requested by the public?
4. How do you evaluate the effectiveness of your FLSE programs?
5. How do you track your FLSE programs? (example: number of programs provided, hours, detectors handed out etc.)
6. Who does your FLSE? (is it the operations division units or from within prevention or a combination?)

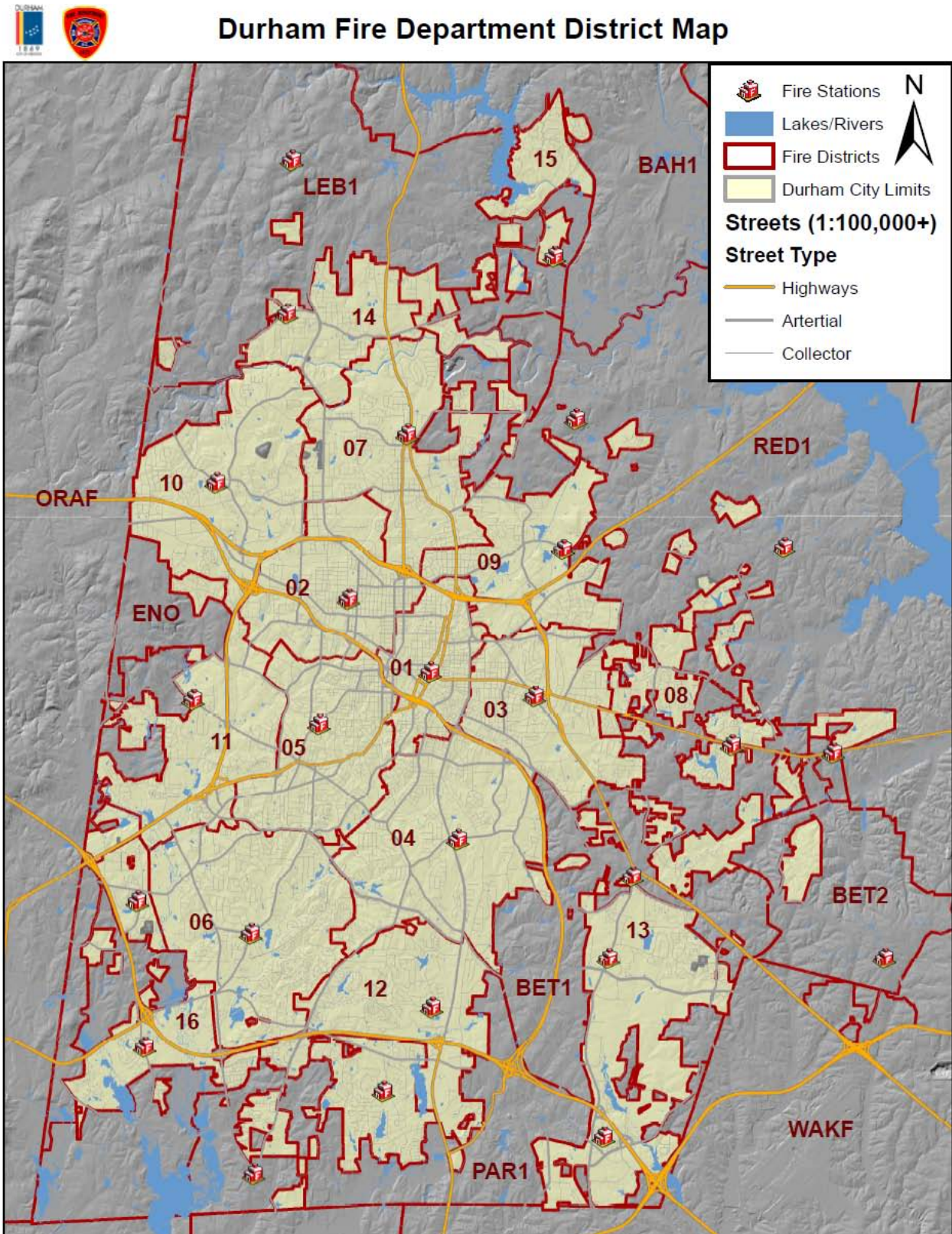
Robert Bosworth
Deputy Chief
Town of Chapel Hill Fire Department

Ronald Campbell
Fire and Life Safety Educator
City of Raleigh Fire Department

Kathy Ellis
Fire Code Official/Public Education Specialist
Town of Cary Fire Department

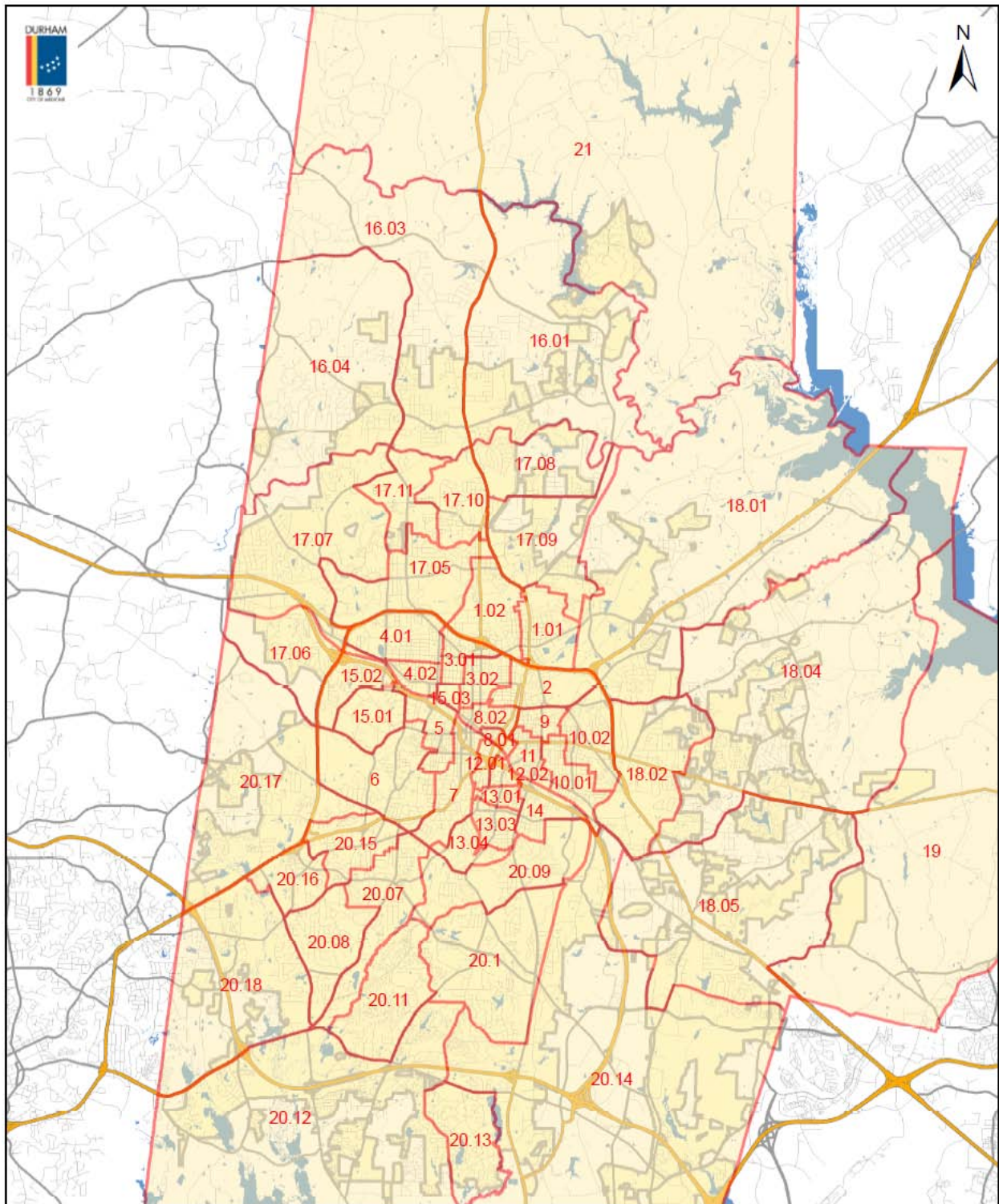
Kelley Webb
Fire and Life Safety Educator Coordinator
City of Asheville Fire Department

Appendix B: City of Durham Fire Districts



Appendix C: City of Durham Census Tracts

Durham Census Tract 2010



Appendix D: Census Tract Fire Incidents and Loss Amounts

Census Tract	Fire Districts	Fires	Loss	Fire Calls %	% Total \$
1.01	1,7,9	8	\$18,300	1.74%	0.20%
1.02	1,2,7	10	\$6,700	2.17%	0.07%
2	1,9	7	\$29,578	1.52%	0.32%
3.01	2	3	\$0	0.65%	0.00%
3.02	1	4	\$48,500	0.87%	0.52%
4.01	2	2	\$0	0.43%	0.00%
5	2,5	4	\$800	0.87%	0.01%
6	5	13	\$18,400	2.83%	0.20%
7	1,5	5	\$73,500	1.09%	0.79%
8.02	1	2	\$35,500	0.43%	0.38%
9	1,3	10	\$71,000	2.17%	0.76%
10.01	3	21	\$482,432	4.57%	5.18%
10.02	1,3,9	17	\$1,538,109	3.70%	16.51%
11	1,3	13	\$131,832	2.83%	1.41%
12.01	1	7	\$87,500	1.52%	0.94%
13.01	1,4	12	\$87,550	2.61%	0.94%
13.03	1,4	9	\$138,700	1.96%	1.49%
13.04	4	8	\$93,000	1.74%	1.00%
14	1,3,4	24	\$136,436	5.22%	1.46%
15.02	2,11	14	\$3,320	3.04%	0.04%
16.03	7	4	\$12,640	0.87%	0.14%
16.04	14	2	\$62,200	0.43%	0.67%
17.05	2,7,10	10	\$761,525	2.17%	8.17%
17.06	10	3	\$6,000	0.65%	0.06%
17.07	10	7	\$17,050	1.52%	0.18%
17.08	7	10	\$243,900	2.17%	2.62%
17.09	7,9	36	\$460,200	7.83%	4.94%
17.10	7	7	\$1,000	1.52%	0.01%
17.11	7	10	\$6,225	2.17%	0.07%
18.01	9	14	\$455,368	3.04%	4.89%
18.02	3,8	14	\$48,600	3.04%	0.52%
18.04	3,8	15	\$602,750	3.26%	6.47%
18.05	3,8,13	13	\$135,500	2.83%	1.45%
19	redwood,8	1	\$60,000	0.22%	0.64%
20.07	5,6	6	\$8,000	1.30%	0.09%

20.08	6	2	\$15,800	0.43%	0.17%
20.09	4,5	15	\$35,801	3.26%	0.38%
20.10	4,12	19	\$483,770	4.13%	5.19%
20.11	6	6	\$275,590	1.30%	2.96%
20.12	6,12,16	21	\$2,314,550	4.57%	24.84%
20.13	12	4	\$214,000	0.87%	2.30%
20.14	4,6,12,13,16	17	\$56,400	3.70%	0.61%
20.15	5,11	10	\$4,720	2.17%	0.05%
20.16	5,6,11	5	\$1,550	1.09%	0.02%
20.17	11	9	\$33,220	1.96%	0.36%
20.18	6	7	\$1,250	1.52%	0.01%

Appendix E: Census Data

Census Tract	Population	% pop below poverty (families)	% pop below poverty (individual)	Population over 65 years of age	%	Population under 5 years of age	%	African American	%	Native American Indian	%
1.01	2,851	16.4	20.8	235	8.2	134	4.7	1,367	47.9	0	0
1.02	3,740	11.6	13.4	335	9	310	8.3	1,554	41.6	0	0
2	4,458	24.5	40.7	119	2.7	87	2	2,050	46	8	0.2
3.01	2,170	6.6	10.2	125	5.8	74	3.4	919	42.4	21	1
3.02	3,731	7	16.3	197	5.3	345	9.2	859	23	0	0
4.01	3,117	8.2	8.5	304	9.8	277	8.9	513	16.5	0	0
5	3,634	42.4	46.6	587	16.2	323	8.9	1,946	53.5	0	0
6	5,599	13.8	18.4	483	8.6	433	7.7	1,319	23.6	0	0
7	2,815	10.6	13.3	384	13.6	215	7.6	902	32	7	0.2
8.02	1,344	40.2	32.2	52	3.9	146	10.9	561	41.7	0	0
9	1,836	57.4	56.3	185	10.1	268	14.6	1,293	70.4	0	0
10.01	3,141	39.3	48	363	11.6	404	12.9	1,925	61.3	0	0
10.02	5,314	23	24.5	338	6.4	632	11.9	2,595	48.8	0	0
11	2,198	22.5	32.2	167	7.6	236	10.7	1,526	69.4	0	0
12.01	1,264	59.8	65.7	116	9.2	36	2.8	934	73.9	12	0.9
13.01	1,357	49	41.6	148	10.9	134	9.9	1,260	92.9	0	0
13.03	2,554	26.7	26.3	257	10.1	52	2	2,342	91.7	0	0
13.04	2,262	36.5	49.4	298	13.2	362	16	1,789	79.1	0	0
14	3,133	52.5	54.7	241	7.7	525	16.8	2,914	93	0	0
15.02	5,170	26.1	35.2	365	7.1	655	12.7	1,595	30.9	24	0.5
16.03	6,065	1.4	2.3	668	11	473	7.8	554	9.1	0	0
16.04	6,800	2	2	994	14.6	521	7.7	1,338	19.7	45	0.7
17.05	4,594	6.1	9.3	675	14.7	292	6.4	1,639	35.7	0	0
17.06	3,844	12	17.3	181	4.7	392	10.2	1,004	26.1	0	0
17.07	6,855	1.6	2.2	1,669	24.3	261	3.8	484	7.1	0	0
17.08	3,339	7.8	13.8	417	12.5	272	8.1	2,622	78.5	0	0
17.09	4,960	23	26.2	413	8.3	459	9.3	3,684	74.5	0	0
17.10	4,035	3.5	7.5	381	9.4	330	8.2	1,719	42.6	0	0
17.11	4,392	12.8	19.5	311	7.1	510	11.6	1,507	34.3	0	0
18.01	5,874	6.6	11.3	668	11.4	394	6.7	3,090	52.6	40	0.7
18.02	6,616	22.5	25.9	537	8.1	538	8.1	4,763	72	0	0
18.04	12,837	4.7	8.4	769	6	1,046	8.1	6,536	50.9	60	0.5
18.05	9,665	5	8.8	566	5.9	842	8.7	3,696	38.2	9	0.1
19	2,345	0.7	3.5	377	16.1	190	8.1	171	7.3	10	0.4
20.07	5,401	4.6	4.2	880	16.3	220	4.1	1,576	29.2	0	0

20.08	3,082	9.9	13.5	454	14.7	231	7.5	61	2	0	0
20.09	4,771	6.2	8.6	631	13.2	260	5.4	4,110	86.1	0	0
20.10	10,247	8.9	14.4	679	6.6	1,026	10	6,230	60.8	0	0
20.11	9,504	0	5.4	964	10.1	832	8.8	1,974	20.8	8	0.1
20.12	17,804	2.8	6	1,181	6.6	1,483	8.3	4,012	22.5	94	0.5
20.13	4,641	1.6	3.6	323	7	440	9.5	1,101	23.7	27	0.6
20.14	10,576	8.8	11.2	433	4.1	904	8.5	3,506	33.2	0	0
20.15	4,769	9.8	16.9	560	11.7	536	11.2	1,617	33.9	0	0
20.16	4,807	17.9	20	133	2.8	497	10.3	1,386	28.8	0	0
20.17	6,774	2.4	4.9	1,101	16.3	492	7.3	501	7.4	0	0
20.18	7,474	7.9	15.1	1,021	13.7	359	4.8	791	10.6	12	0.2

Appendix F: Residential Fire Incident Data

Date	IR #	District	Number	Name	USBC Tract	Property Use	Incident Type	Loss Total
1/13/2010	1001382	1	101	St. PAUL	1.01	419	100	0
7/13/2010	1021038	1	3523	ROXBORO	1.02	429	113	200
1/6/2010	1000548	1	1501	HOLLYWOOD	2	419	111	650
10/17/2010	1031415	1	1201	ROXBORO	2	419	113	0
1/4/2010	1000333	1	1717	ALSTON	2	439	113	0
9/16/2010	1028119	1	414	MACON	3.02	419	111	48000
12/25/2010	1038787	1	420	MACON	3.02	419	113	500
4/19/2010	1011770	1	910	TRINITY	3.02	429	113	0
5/22/2010	1015365	1	810	DUKE	3.02	429	150	0
10/11/2010	1030770	1	2209	PARKSIDE	7	419	111	50000
2/21/2010	1005602	1	202	NORTHWOOD	8.02	419	111	35500
4/12/2010	1010968	1	610	MORGAN	8.02	429	113	0
1/14/2010	1001500	1	418	DOWD	9	419	111	5500
1/16/2010	1001699	1	403	Canal	9	419	111	3000
1/30/2010	1003227	1	610	GRAY	9	419	111	45500
5/27/2010	1015944	1	908	GURLEY	9	419	111	10000
5/27/2010	1015948	1	320	GRAY	9	419	111	2000
6/24/2010	1019004	1	1010	DREW	9	419	111	5000
5/20/2010	1015179	1	2319	QUINCY	10.02	419	113	60000
1/19/2010	1001990	1	799	LIBERTY	11	419	113	0
9/7/2010	1027132	1	1608	MAIN	11	419	118	10000
12/21/2010	1038376	1	131	COMMERCE	11	419	151	200
1/3/2010	1000175	1	143	Commerce	11	429	100	200
2/3/2010	1003719	1	219	ALSTON	11	429	111	3000
3/25/2010	1009036	1	545	LIBERTY	11	429	111	78000
4/7/2010	1010431	1	920	MAIN	11	429	111	0
6/2/2010	1016571	1	115	COMMERCE	11	429	113	13000
10/12/2010	1030901	1	519	Main	11	429	140	1500
1/22/2010	1002365	1	300	QUEEN	11	460	113	200
3/25/2010	1009048	1	712	LIBERTY	11	NNN	131	500
9/4/2010	1026801	1	510	GURLEY	11	NNN	131	1000
2/18/2010	1005298	1	700	Roxboro	12.01	419	111	53000
3/1/2010	1006484	1	108	ENTERPRISE	12.01	419	111	31500
4/14/2010	1011126	1	1114	SCOUT	12.01	419	111	2000
6/25/2010	1019157	1	212	UMSTEAD	12.01	419	113	1000
11/18/2010	1034937	1	210	ENTERPRISE	12.01	419	113	0
12/30/2010	1039343	1	1000	FARGO	12.01	429	113	0
3/30/2010	1009495	1	114	BOND	13.01	419	111	28200

12/28/2010	1039120	1	1211	SAWYER	13.01	419	151	4250	
1/31/2010	1003352	1	499	GRANT	13.01	NNN	131	5000	
3/16/2010	1008001	1	408	BRANT	13.03		429	113	0
3/23/2010	1008820	1	504	COLFAX	14	419	111	0	
1/8/2010	1000815	1	4001	MERIWETHER	17.09	419	131	6500	
9/2/2010	1026592	2	902	LEON	1.02	419	113	0	
9/27/2010	1029389	2	605	RUBY	1.02	419	113	500	
12/11/2010	1037326	2	2521	WILBON	1.02	419	150	4000	
5/10/2010	1014057	2	1309	HUDSON	1.02	429	111	500	
10/8/2010	1030500	2	2303	LEDNUM	1.02	429	113	1000	
11/28/2010	1035914	2	2112	BROAD	1.02	429	113	0	
5/9/2010	1013989	2	1109	SEDGEFIELD	3.01	419	118	0	
10/4/2010	1030077	2	1408	IDA	3.01	419	118	0	
7/26/2010	1022439	2	920	LANCASTER	3.01	429	100	0	
7/9/2010	1020678	2	1507	MOUNTAINVIEW	4.01	419	113	0	
7/10/2010	1020732	2	2117	CLUB	4.01	419	113	0	
3/25/2010	1009021	2	1499	MAIN	5	460	118	0	
1/12/2010	1001278	2	1015	SHERWOOD	15.02	429	111	0	
1/30/2010	1003247	2	13308	MCQUEEN	15.02	429	111	0	
3/10/2010	1007472	2	311	LASALLE	15.02	429	111	0	
5/1/2010	1013073	2	311	LASALLE	15.02	429	113	0	
5/1/2010	1013084	2	311	LASALLE	15.02	429	113	0	
7/1/2010	1019780	2	1011	MORREENE	15.02	429	113	1000	
9/22/2010	1028770	2	311	LASALLE	15.02	429	113	1000	
11/7/2010	1033686	2	904	LAMBETH	15.02	429	113	0	
11/15/2010	1034605	2	311	LASALLE	15.02	429	113	20	
11/17/2010	1034845	2	2752	CAMPUS WALK	15.02	429	113	1000	
11/20/2010	1035137	2	311	LASALLE	15.02	429	118	0	
12/5/2010	1036632	2	3408	MORDECAI	15.02	429	143	0	
3/25/2010	1008995	2	2720	OMAH	17.05	419	111	33000	
7/8/2010	1020529	2	2710	SHAFTSBURY	17.05	419	111	0	
9/19/2010	1028487	2	2022	STREBOR	17.05	419	114	100	
10/31/2010	1033013	3	1109	SPRUCE	9	419	118	0	
12/2/2010	1036347	3	1300	MANTEO	9	419	118	0	
12/20/2010	1038271	3	1500	HYDE PARK	9	419	140	0	
3/13/2010	1007787	3	1402	Calvin	9	429	150	0	
1/15/2010	1001540	3	107	MAPLE	10.01	419	100	31000	
2/7/2010	1004061	3	1119	EVA	10.01	419	100	0	
2/11/2010	1004508	3	1119	Eva	10.01	419	111	7000	
4/10/2010	1010757	3	222	Benjamine	10.01	419	111	38038	
4/15/2010	1011278	3	211	DRIVER	10.01	419	111	0	
5/1/2010	1013097	3	310	BENJAMINE	10.01	419	111	12000	
5/19/2010	1015120	3	216	Maple	10.01	419	111	12919	

6/13/2010	1017698	3	2508	HARVARD	10.01	419	111	35000
6/25/2010	1019134	3	2718	Ashe	10.01	419	111	100
7/16/2010	1021422	3	415	SALEM	10.01	419	111	50
7/21/2010	1021958	3	420	HYDE PARK	10.01	419	111	0
7/22/2010	1022040	3	906	Spruce	10.01	419	111	25
8/2/2010	1023179	3	2606	ASHE	10.01	419	111	125000
8/23/2010	1025440	3	503	BRUCE	10.01	419	111	18000
10/15/2010	1031195	3	2605	SATER	10.01	419	111	6500
11/1/2010	1033072	3	201	MAPLE	10.01	419	113	0
11/14/2010	1034482	3	1910	CARDEN	10.01	419	113	1000
11/22/2010	1035307	3	1910	CARDENS	10.01	419	118	29100
11/22/2010	1035329	3	2212	TAYLOR	10.01	419	150	0
12/11/2010	1037253	3	1220	FERN	10.01	419	150	40000
7/27/2010	1022544	3	429	Driver	10.01	419	150	1700
12/10/2010	1037215	3	107	CHERRY GROVE	10.01	439	111	125000
1/1/2010	1000068	3	1114	PARK	10.02	419	111	0
1/1/2010	1000078	3	1154	FISKE	10.02	419	111	0
1/4/2010	1000321	3	1306	IVY	10.02	419	111	0
1/31/2010	1003386	3	908	Park	10.02	419	111	25000
2/15/2010	1004948	3	313	BRIGGS	10.02	419	111	0
5/3/2010	1013271	3	1617	HOLLOWAY	10.02	419	112	8000
5/20/2010	1015167	3	2319	QUINCY	10.02	419	113	6000
7/19/2010	1021686	3	1008	DRIVER	10.02	419	113	1000
7/28/2010	1022746	3	1137	MIAMI	10.02	419	113	1000
11/4/2010	1033373	3	1100	GUTHRIE	10.02	419	150	20
1/29/2010	1003091	3	1835	Cheek	10.02	429	111	200
3/11/2010	1007594	3	1012	Geer	10.02	429	113	103469
8/29/2010	1026168	3	652	HARDEE	10.02	429	118	0
6/22/2010	1018796	3	1711	LIBERTY	10.02	439	118	0
11/15/2010	1034589	3	2101	Holloway	10.02	449	111	1333420
12/31/2010	1039372	3	1206	Worth	11	459	111	24232
2/8/2010	1004203	3	500	Bacon	14	419	100	0
9/12/2010	1027639	3	670	TROY	14	419	113	20000
10/1/2010	1029810	3	407	Plum	14	419	113	0
12/4/2010	1036581	3	615	Middle	14	419	142	300
2/10/2010	1004454	3	714	CARTER	18.02	419	111	0
6/16/2010	1018092	3	426	IDLEWOOD	18.02	419	111	0
6/17/2010	1018180	3	3026	HURSEY	18.02	419	113	22000
9/17/2010	1028188	3	2604	WEDGEDALE	18.02	419	118	7000
11/1/2010	1033090	3	714	LINDLEY	18.02	419	150	0
12/15/2010	1037747	3	2810	Dodson	18.02	419	151	15300
2/4/2010	1003811	3	322	JUNCTION	18.02	429	111	0
7/4/2010	1020151	3	322	JUNCTION	18.02	429	113	0

7/21/2010	1021894	3	322	JUNCTION	18.02	429	113	4000
8/21/2010	1025318	3	8	Atka	18.02	429	118	300
12/12/2010	1037409	3	2819	ROCHELLE	18.02	429	142	0
12/4/2010	1036509	3	821	Riverbark	18.04	419	113	0
12/12/2010	1037432	3	3004	IVEY WOOD	18.04	419	113	0
3/11/2010	1007492	3	100	LANG STRAWBERRY	18.05	419	111	0
9/12/2010	1027615	3	17	RIDGE	20.11	419	111	2000
2/11/2010	1004618	4	713	MASSEY	13.01	419	100	500
4/15/2010	1011285	4	906	COLFAX	13.01	419	111	0
7/2/2010	1019901	4	1208	GRANT	13.01	419	111	200
9/2/2010	1026594	4	1409	LINCOLN	13.01	419	113	2150
10/8/2010	1030441	4	808	MASSEY	13.01	419	113	0
11/6/2010	1033604	4	1610	Fayetteville	13.01	419	113	20500
12/21/2010	1038403	4	511	PRICE	13.01	419	131	500
1/20/2010	1002166	4	711	MASSEY	13.01	439	111	25000
5/12/2010	1014329	4	605	LINWOOD	13.01	439	111	1250
2/18/2010	1005240	4	2220	LINCOLN	13.03	419	100	12000
2/19/2010	1005446	4	213	LAWSON	13.03	419	111	800
4/3/2010	1010021	4	2303	NEBO	13.03	419	111	0
8/15/2010	1024621	4	2409	NEBO	13.03	419	111	122400
9/4/2010	1026838	4	2228	OTIS	13.03	419	118	0
10/28/2010	1032590	4	603	Nash	13.03	419	142	2500
12/25/2010	1038764	4	506	HOPE	13.03	460	100	0
7/21/2010	1021880	4	116	EAGLE CAMPUS	13.03	460	113	1000
2/20/2010	1005542	4	610	RED OAK	13.04	419	100	90000
2/27/2010	1006257	4	2833	WYETH	13.04	419	100	1000
4/24/2010	1012319	4	2508	WHITE OAK	13.04	419	111	0
6/1/2010	1016381	4	317	WAYNE	13.04	419	111	0
5/23/2010	1015468	4	412	PILOT	13.04	429	111	1000
6/18/2010	1018322	4	412	PILOT	13.04	429	111	0
8/1/2010	1023155	4	414	PILOT	13.04	429	118	1000
12/18/2010	1038113	4	3146	FAYETTEVILLE	13.04	459	113	0
4/6/2010	1010352	4	614	Bacon	14	419	111	17136
7/5/2010	1020237	4	910	PLUM	14	419	111	0
9/27/2010	1029349	4	1424	WABASH	14	419	113	0
10/15/2010	1031272	4	1300	ROSEWOOD	14	419	118	6000
12/5/2010	1036601	4	1002	BACON	14	419	150	0
1/7/2010	1000724	4	1254	DAYTON	14	429	111	0
1/12/2010	1001236	4	1510	LAKELAND	14	429	111	0
3/18/2010	1008316	4	1506	WABASH	14	429	111	0
4/15/2010	1011313	4	1405	LAKELAND	14	429	111	76500
5/25/2010	1015724	4	1241	RIDGEWAY	14	429	113	0

6/17/2010	1018210	4	1130	WABASH	14	429	113	0
7/8/2010	1020570	4	1414	LAKELAND	14	429	113	0
7/22/2010	1022093	4	1510	SIMA	14	429	118	0
7/23/2010	1022108	4	1499	SIMA	14	429	118	0
11/1/2010	1033049	4	1107	DAYTON	14	429	118	1500
11/22/2010	1035366	4	422	POTTER	14	429	118	9000
11/26/2010	1035663	4	1502	LAKELAND	14	429	131	0
12/9/2010	1037089	4	1220	WABASH	14	429	154	6000
12/13/2010	1037468	4	1500	LAKELAND	14	429	154	0
1/2/2010	1000125	4	2003	NC 55	20.09	419	111	1
1/8/2010	1000794	4	1605	HOMWOOD	20.09	419	112	0
2/7/2010	1004148	4	1713	CAPPS	20.09	419	113	0
3/6/2010	1007008	4	304	COOK	20.09	419	113	0
4/29/2010	1012793	4	3	MELODY	20.09	419	113	0
6/30/2010	1019643	4	1910	GILMORE	20.09	419	114	500
8/20/2010	1025191	4	907	RED OAK	20.09	419	118	5000
9/23/2010	1028897	4	3011	SPRUCEWOOD	20.09	419	118	19500
10/20/2010	1031796	4	901	MEDINA	20.09	419	118	2000
11/18/2010	1034926	4	2119	BALTIC	20.09	419	118	0
11/25/2010	1035601	4	2016	MATILENE	20.09	419	131	0
12/27/2010	1038975	4	908	MEDINA	20.09	419	131	0
9/4/2010	1026773	4	1124	HEARTHSIDE	20.09	UUU	151	0
2/20/2010	1005506	4	3615	SANA	20.1	419	111	0
9/20/2010	1028519	4	5027	ROBINWOOD	20.1	419	111	87000
9/24/2010	1029014	4	1211	CHOWAN	20.1	419	111	250000
11/17/2010	1034832	4	418	PEARSON	20.1	419	111	0
11/26/2010	1035715	4	2518	KIRBY	20.1	419	111	97920
12/19/2010	1038149	4	4202	FAYETTEVILLE	20.1	419	113	1000
12/26/2010	1038922	4	3816	FAYETTEVILLE	20.1	419	113	1000
4/16/2010	1011424	4	5206	PENRITH	20.1	419	131	0
10/23/2010	1032115	4	3381	TARLETON EAST	20.1	429	111	7800
12/26/2010	1038853	4	1725	CORNWALLIS	20.1	429	111	12000
3/25/2010	1009042	4	2	CILANTRO	20.1	429	113	6000
8/28/2010	1026089	4	310	AVON LAKE	20.1	459	100	0
2/24/2010	1005973	4	5749	BARBEE	20.14	419	100	0
7/19/2010	1021757	4	1299	ELLIS	20.14	419	100	0
10/3/2010	1029957	4	2611	ALSTON	20.14	419	111	400
2/20/2010	1005509	5	807	WILKERSON	5	419	100	0
9/11/2010	1027515	5	1704	GUNTER	5	419	100	700
9/29/2010	1029614	5	718	UNDERWOOD	5	419	111	100
4/13/2010	1011074	5	2416	VESSON	6	419	100	500
7/7/2010	1020407	5	2604	NATION	6	419	111	2500
10/9/2010	1030582	5	1717	WALLACE	6	419	113	50

11/13/2010	1034365	5	1506	CHAPEL HILL	6	419	113	300
12/14/2010	1037672	5	713	ANDERSON	6	419	114	0
2/21/2010	1005647	5	2417	VESSON	6	429	100	0
2/21/2010	1005649	5	2299	CHAPEL HILL	6	429	111	0
3/4/2010	1006773	5	2117	BEDFORD	6	429	111	1000
3/19/2010	1008374	5	2100	HOUSE	6	429	113	2000
6/23/2010	1018937	5	2607	LEXINGTON	6	429	113	6000
8/23/2010	1025525	5	1901	MOREHEAD	6	429	113	6000
10/11/2010	1030838	5	1711	PALMER	6	429	113	0
11/7/2010	1033663	5	1611	DUKE UNIVERSITY	6	429	143	50
6/13/2010	1017753	5	807	DUKE	7	400	113	0
1/2/2010	1000100	5	505	YANCEY	7	419	111	23500
9/25/2010	1029168	5	807	DUKE	7	429	113	0
11/13/2010	1034369	5	3518	RACINE	20.07	419	114	0
12/20/2010	1038290	5	2713	PRINCETON	20.07	419	131	5000
12/29/2010	1039225	5	2431	ALPINE	20.07	419	151	2000
1/3/2010	1000208	5	211	CORNWALLIS	20.07	459	100	1000
1/7/2010	1000695	5	112	PARQUET	20.09	419	111	0
4/23/2010	1012123	5	2311	CHARLES	20.09	419	113	8800
4/7/2010	1010367	5	2920	CHAPEL HILL	20.15	400	113	1500
1/9/2010	1000896	5	3204	DIXON	20.15	419	100	3000
4/7/2010	1010472	5	3034	UNIVERSITY	20.15	419	113	0
10/23/2010	1032113	5	3035	UNIVERSITY	20.15	419	150	0
4/10/2010	1010711	5	3231	SHANNON	20.15	429	113	0
6/19/2010	1018356	5	3549	MAYFAIR	20.15	429	113	20
3/20/2010	1008474	5	3015	WEYMOUTH	20.15	459	113	0
10/24/2010	1032194	5	3031	WEYMOUTH	20.15	459	113	200
8/14/2010	1024559	5	4600	UNIVERSITY	20.16	429	111	0
1/30/2010	1003236	6	3515	MANFORD	20.07	419	111	0
10/31/2010	1033014	6	3447	SHERIDAN	20.07	419	113	0
2/26/2010	1006201	6	4029	NOTTAWAY	20.08	419	111	800
7/23/2010	1022154	6	3919	KING CHARLES	20.08	419	111	15000
1/31/2010	1003332	6	19	Spreading Oak	20.11	419	100	1500
7/2/2010	1019911	6	21	KISSIMEE	20.11	419	100	250000
8/4/2010	1023460	6	5	FALLEN OAK	20.11	419	111	90
9/27/2010	1029386	6	806	PARKRIDGE	20.11	419	113	22000
11/19/2010	1034977	6	6	ENZO	20.11	429	100	0
2/20/2010	1005499	6	100	VILLAGE CIRCLE	20.12	429	113	500
5/19/2010	1015046	6	1522	SAVANNAH	20.14	429	118	0
9/7/2010	1027068	6	4800	UNIVERSITY	20.16	419	140	0
5/24/2010	1015616	6	1800	WILLIAMSBURG	20.16	429	111	500
2/20/2010	1005519	6	5827	WOODBERRY	20.18	419	113	0
3/20/2010	1008478	6	3900	KELLY	20.18	419	114	0

4/6/2010	1010317	6	4110	NEW BERN	20.18	419	118	0
7/8/2010	1020584	6	4109	COBBLESTONE	20.18	419	140	0
8/5/2010	1023488	6	4128	TROTTER RIDGE	20.18	419	142	750
9/24/2010	1029020	6	4045	KELLY	20.18	419	143	0
6/6/2010	1017005	6	3910	STERLING RIDGE	20.18	419	143	500
7/29/2010	1022871	7	506	MAYNARD	1.01	419	143	0
7/28/2010	1022730	7	2904	FIRTH	1.01	NNN	131	15000
2/7/2010	1004062	7	3809	PENDERGRASS	1.02	419	111	500
7/4/2010	1020166	7	111	CHANNING	1.02	NNN	118	0
7/7/2010	1020424	7	2699	DUKE	1.02	NNN	118	0
7/17/2010	1021481	7	6204	WHITT	16.03	419	111	400
3/31/2010	1009656	7	209	LONG CRESCENT	16.03	UUU	141	0
5/6/2010	1013637	7	7	CHANTER	17.05	419	111	18525
11/30/2010	1036118	7	2600	CARVER	17.05	419	118	0
12/6/2010	1036739	7	3316	WINSTON	17.05	419	151	0
11/1/2010	1033085	7	2706	SHAFTSBURY	17.05	429	113	400
2/2/2010	1003612	7	2709	ASHLEY	17.05	NNN	131	9000
8/29/2010	1026143	7	624	WHEAT MILL	17.08	400	113	100
3/2/2010	1006556	7	722	JUSTICE	17.08	419	111	0
3/23/2010	1008812	7	5301	SHADY BLUFF	17.08	419	111	25000
6/23/2010	1018878	7	615	RIPPLING STREAM	17.08	419	113	0
9/18/2010	1028284	7	4900	ROXBORO	17.08	419	114	0
10/22/2010	1032014	7	4900	ROXBORO	17.08	429	113	0
9/30/2010	1029639	7	509	FELICIA	17.08	429	113	98800
7/4/2010	1020115	7	508	SUMMER BREEZE	17.08	429	143	0
4/29/2010	1012856	7	3799	SNOW HILL	17.08	NNN	131	60000
4/29/2010	1012860	7	3799	SNOW HILL	17.08	NNN	131	60000
1/6/2010	1000520	7	3628	DEARBORN	17.09	419	111	200000
3/7/2010	1007039	7	513	GRAMMERCY	17.09	419	111	1900
5/10/2010	1014121	7	512	TODD	17.09	419	111	0
10/27/2010	1032472	7	3915	DEARBORN	17.09	419	111	1500
11/23/2010	1035465	7	4426	RYAN	17.09	419	111	0
12/4/2010	1036511	7	4419	MOUNT LEVEL	17.09	419	113	102000
1/1/2010	1000096	7	4001	MERIWETHER	17.09	419	118	0
3/3/2010	1006616	7	4001	MERIWETHER	17.09	419	142	0
3/27/2010	1009243	7	4001	MERIWETHER	17.09	429	100	0
8/27/2010	1025872	7	3520	DANUBE	17.09	429	100	0
9/21/2010	1028705	7	4001	MERIWETHER	17.09	429	111	0
9/23/2010	1028935	7	4001	MERIWETHER	17.09	429	113	0
1/7/2010	1000719	7	3702	DANUBE	17.09	429	113	100
2/28/2010	1006346	7	3700	MERIWETHER	17.09	429	113	0
3/6/2010	1006980	7	3500	ROXBORO	17.09	429	113	0
3/6/2010	1006987	7	4001	MERIWETHER	17.09	429	113	0

3/8/2010	1007143	7	4001	MERIWETHER	17.09	429	118	0
3/23/2010	1008817	7	807	OLD OXFORD	17.09	NNN	118	0
3/23/2010	1008840	7	3500	ROXBORO	17.09	NNN	118	0
3/31/2010	1009708	7	500	CARVER	17.09	NNN	141	0
9/16/2010	1028080	7	215	WILLIAM PENN	17.09	NNN	142	3100
9/19/2010	1028442	7	3129	GENLEE	17.09	NNN	142	0
9/2/2010	1026621	7	215	WILLIAM PENN	17.09	NNN	151	100
12/5/2010	1036661	7	215	WILLIAM PENN	17.09		111	0
1/21/2010	1002288	7	15	STONE VILLAGE	17.1	419	111	1000
5/26/2010	1015840	7	1117	CHALK LEVEL	17.1	419	113	0
11/6/2010	1033571	7	1344	MARNE	17.1	419	113	0
4/30/2010	1012967	7	4206	ORAN	17.1	429	111	0
11/9/2010	1033940	7	901	CHALK LEVEL	17.1	429	113	0
12/22/2010	1038507	7	1314	MARNE	17.1	429	113	0
9/19/2010	1028439	7	3600	DUKE	17.1	NNN	118	0
7/25/2010	1022320	7	5	Severna	17.11	419	140	0
9/13/2010	1027783	7	99	SIDBROOK	17.11	419	150	500
4/9/2010	1010696	7	2406	CAMELLIA	17.11	429	100	500
6/30/2010	1019632	7	3835	GUESS	17.11	429	111	125
9/4/2010	1026815	7	1442	NEW CASTLE	17.11	429	113	100
10/31/2010	1033000	7	1312	WYLDEWOOD	17.11	429	113	0
12/10/2010	1037202	7	1321	NEW CASTLE	17.11	429	113	0
5/18/2010	1015009	7	2511	CAMELLIA	17.11	NNN	118	5000
6/13/2010	1017757	7	1332	NEW CASTLE	17.11	NNN	131	0
9/4/2010	1026817	7	1446	NEW CASTLE	17.11	NNN	154	0
3/19/2010	1008403	8	3015	INDEPENDENCE	18.02	419	111	0
7/26/2010	1022510	8	313	Alcona	18.02	419	113	0
3/5/2010	1006826	8	363	KILARNEY	18.02	NNN	118	0
3/8/2010	1007168	8	3413	FREEMAN	18.04	419	100	22000
3/8/2010	1007188	8	509	CHADBOURNE	18.04	419	111	0
3/14/2010	1007828	8	14	WETHERBURN	18.04	419	111	0
4/28/2010	1012766	8	504	LODESTONE	18.04	419	111	150
7/29/2010	1022849	8	310	WESLYN TRACE	18.04	419	111	145000
10/17/2010	1031412	8	14	WETHERBURN	18.04	419	113	600
1/5/2010	1000433	8	232	Pebblestone	18.04	419	113	0
3/20/2010	1008443	8	3601	TURQUOISE	18.04	419	151	90000
8/22/2010	1025367	8	19	OLIVENE	18.04	429	113	5000
2/20/2010	1005538	8	2813	PROSPECT	18.05	429	113	30000
10/17/2010	1031425	8	2501	TEERMARK	18.05	429	118	0
9/28/2010	1029513	8	102	HARVEST OAKS	18.05	NNN	143	0
3/19/2010	1008320	9	809	DA VINCI	1.01	419	113	200
4/27/2010	1012579	9	511	HUGO	1.01	419	113	0
5/10/2010	1014075	9	307	HAMMOND	1.01	419	118	0

8/4/2010	1023453	9	518	CLUB	1.01	419	151	0
8/15/2010	1024693	9	502	HUGO	1.01	439	111	3100
5/15/2010	1014643	9	1001	CAMDEN	2	400	111	26928
5/2/2010	1013209	9	1011	CAMDEN	2	429	100	0
6/15/2010	1017882	9	1011	CAMDEN	2	429	113	2000
7/23/2010	1022179	9	1011	CAMDEN	2	429	113	0
11/21/2010	1035227	9	1806	ROBINHOOD	10.02	419	151	0
5/2/2010	1013203	9	1208	ORCHARD	17.09	400	100	0
9/25/2010	1029152	9	719	MARTIN	17.09	400	150	0
1/6/2010	1000589	9	3628	Dearborn	17.09	419	111	0
2/7/2010	1004114	9	814	SHARI	17.09	419	111	0
4/5/2010	1010239	9	503	CRAVEN	17.09	419	111	0
12/11/2010	1037325	9	710	OLD OXFORD	17.09	419	113	0
12/12/2010	1037389	9	2716	HINSON	17.09	419	114	85000
12/18/2010	1038084	9	1425	MAPLEWOOD	17.09	419	118	45000
12/30/2010	1039309	9	835	BERWYN	17.09	419	118	15000
12/18/2010	1038095	9	1104	GOLDEN CREST	17.09	NNN	143	0
1/11/2010	1001093	9	2413	Barry	18.01	419	111	53856
2/8/2010	1004247	9	1832	Geer	18.01	419	111	78336
2/18/2010	1005331	9	2506	MAHALA	18.01	419	111	0
4/5/2010	1010134	9	2000	BUNDY	18.01	419	111	0
5/26/2010	1015823	9	2310	LINDMONT	18.01	419	111	6000
12/7/2010	1036841	9	3306	HAMLIN	18.01	419	114	0
2/6/2010	1003952	9	4236	AMBER STONE	18.01	419	142	222300
6/22/2010	1018682	9	2011	BUFFALO	18.01	419	142	500
9/24/2010	1029043	9	4327	CHIMNEY STONE	18.01	419	160	0
6/11/2010	1017568	9	2016	SPRING CREEK	18.01	NNN	150	0
8/22/2010	1025424	10	3723	MEDFORD	17.05	419	113	700000
3/20/2010	1008499	10	2800	CROASDAILE	17.05	429	111	500
1/22/2010	1002386	10	700	Morreene	17.06	429	113	0
9/25/2010	1029166	10	700	MORREENE	17.06	429	113	0
4/24/2010	1012247	10	3201	WILDERNESS	17.07	419	111	2550
7/24/2010	1022038	10	3212	Ridgestone	17.07	419	111	0
10/23/2010	1032070	10	3528	WORTHAM	17.07	419	111	1000
10/31/2010	1032981	10	2206	CAROLINE	17.07	419	111	0
11/16/2010	1034742	10	4	KARA	17.07	419	114	1500
12/4/2010	1036506	10	4520	REGIS	17.07	419	118	2000
5/19/2010	1015105	10	4629	PINEDALE	17.07	419	131	10000
4/9/2010	1010601	11	1011	MORREENE	15.02	429	113	100
4/21/2010	1011985	11	1034	SHERWOOD	15.02	429	113	200
4/10/2010	1010735	11	2701	PICKETT	20.15	429	118	0
10/2/2010	1029846	11	3007	PICKETT	20.15	429	118	0
2/18/2010	1005302	11	4600	University	20.16	429	100	1050

11/25/2010	1035627	11	4600	UNIVERSITY	20.16	429	113	0
1/10/2010	1001011	11	3524	Randolph	20.17	419	111	5000
3/20/2010	1008531	11	3300	PINAFORE	20.17	419	111	2000
3/21/2010	1008563	11	3300	PINAFORE	20.17	419	111	26000
10/31/2010	1033017	11	3220	COACHMANS	20.17	429	113	20
1/17/2010	1001820	11	5507	BUTTERFLY	20.17	429	113	0
3/20/2010	1008543	11	5512	SUNLIGHT	20.17	429	113	0
12/5/2010	1036589	11	500	IVY MEADOW	20.17	429	142	0
2/8/2010	1004219	12	4821	FAYETTEVILLE	20.1	419	100	0
8/17/2010	1024898	12	4799	FAYETTEVILLE	20.1	419	111	0
12/8/2010	1036968	12	5211	FAYETTEVILLE	20.1	419	113	0
1/11/2010	1001171	12	5224	PENRITH	20.1	419	113	0
8/21/2010	1025274	12	5321	Penrith	20.1	429	100	15750
6/10/2010	1017432	12	409	EBON	20.1	429	113	300
7/12/2010	1020982	12	3	CIBOLA	20.1	429	113	5000
4/13/2010	1011090	12	6000	BARBEE	20.12	419	100	0
5/16/2010	1014765	12	19	BOXWOOD	20.12	419	111	16000
1/16/2010	1001637	12	6319	GREENS HOLLOW	20.12	419	111	0
4/28/2010	1012741	12	5907	TATTERSALL	20.12	419	113	1000
8/27/2010	1025950	12	3200	SUGAR PINE	20.12	419	143	50
1/23/2010	1002436	12	216	LANDRETH	20.12	429	100	175000
1/23/2010	1002454	12	216	LANDRETH	20.12	429	100	175000
9/21/2010	1028624	12	6716	ROSSFORD	20.12	429	111	5500
12/12/2010	1037447	12	502	GOLDFLOWER	20.12	429	113	0
1/14/2010	1001469	12	5300	PELHAM	20.13	419	111	0
3/13/2010	1007734	12	1435	SEDWICK	20.13	419	112	74000
12/31/2010	1039407	12	1329	Clermont	20.13	419	142	140000
10/4/2010	1030056	12	3210	STONESTHROW	20.14	429	111	2000
6/2/2010	1016539	12	1005	GOLDMIST	20.14	429	113	600
2/20/2010	1005494	12	100	GLEN FALLS	20.14	429	113	0
4/30/2010	1012994	12	900	FALLS POINTE	20.14	429	113	12500
9/19/2010	1028440	12	801	WOODCROFT	20.14	449	113	0
1/14/2010	1001518	13	612	Merrion Park	17.06	429	100	6000
3/10/2010	1007471	13	125	LANG	18.05	419	111	65000
7/7/2010	1020405	13	4319	ANGIER	18.05	419	141	0
12/4/2010	1036486	13	500	FOXRIDGE	18.05	419	142	3000
9/9/2010	1027331	13	2900	NEW HAVEN	18.05		112	0
9/6/2010	1027031	13	5710	ARRINGDON PARK	20.12	NNN	131	1000
2/13/2010	1004768	13	4610	MIAMI	20.14	419	113	0
9/16/2010	1028137	13	200	ALLAGOSH	20.14	419	118	1500
9/18/2010	1028315	13	4922	OLD PAGE	20.14	429	111	0
6/6/2010	1017051	13	300	MEREDITH	20.14	429	111	0
12/5/2010	1036625	13	4919	MIAMI	20.14	429	112	5000

6/3/2010	1016722	13	2808	Skybrook	20.14	429	113	33000
6/12/2010	1017630	13	2405	FOLSOM	20.14	429	140	0
1/8/2010	1000800	14	403	RIVERDALE	16.04	419	111	61200
3/2/2010	1006512	14	612	CONTINENTAL	16.04	419	113	1000
1/28/2010	1003007	16	1906	BEARKLING	20.12	400	111	11000
3/1/2010	1006458	16	1213	CRANEBRIDGE	20.12	400	162	11500
3/6/2010	1007009	16	8303	MASSEY CHAPEL	20.12	419	100	0
5/1/2010	1013044	16	1904	BEARKLING	20.12	419	100	0
5/2/2010	1013160	16	5140	COPPER RIDGE	20.12	419	114	0
7/10/2010	1020753	16	6205	FARRINGTON	20.12	419	114	1914000
10/8/2010	1030525	16	6910	FAYETTEVILLE	20.12	419	150	3000
11/6/2010	1033615	16	8005	SOMERDALE	20.12	429	113	0
12/10/2010	1037207	16	1011	SOPHOMORE	20.12	429	113	0
8/17/2010	1024904	16	1029	TRAIL VIEW	20.14	449	100	1400
3/4/2010	1006757	Beth	1101	PENNOCK	18.05	419	100	0
3/6/2010	1007002	Beth	216	OLIVE BRANCH	18.05	419	111	0
4/22/2010	1012113	Beth	4609	HOLDER	18.05	419	111	37500
9/23/2010	1028939	Beth	512	OLIVE BRANCH	18.05	419	142	0
11/30/2010	1036115	Beth	3706	ANGIER	18.05	419	151	0
10/11/2010	1030788	Eno	44	WILHELM	20.17	419	114	0
3/14/2010	1007872	Leba	6821	LOCKWOOD	16.03	419	100	0
8/25/2010	1025691	Leba	801	WALSENBURG	16.03	419	111	12240
9/5/2010	1026915	New	3815	PICKETT	20.17	419	111	200
1/27/2010	1002905	Park	7105	KEPLEY	20.12	400	100	1000
3/16/2010	1008068	Redw	122	WOLFPACK	17.09	NNN	142	0
1/31/2010	1003286	Redw	1220	Thompson	18.01	400	100	29376
9/24/2010	1029047	Redw	3910	DODGE	18.01	419	111	0
9/30/2010	1029690	Redw	817	COLONIAL HEIGHTS	18.01	419	113	65000
11/30/2010	1036098	Redw	825	COLONIAL HEIGHTS FLETCHERS	18.01	419	113	0
1/8/2010	1000792	Redw	1812	CHAPEL	18.04	419	100	140000
9/6/2010	1027011	Redw	4215	SWEET GUM FLETCHERS	18.04	419	111	0
9/10/2010	1027419	Redw	1730	CHAPEL	18.04	419	111	0
11/21/2010	1035224	Redw	619	STALLINGS	18.04	419	113	200000
12/23/2010	1038577	Redw	7408	KEMP	19	419	100	60000
1/9/2010	1000879		807	DUKE	7	429	113	0