PREVENTING RESIDENTIAL FIRES IN THE CITY OF FAIRFIELD, OHIO

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A research project submitted to the Ohio Fire Executive Program

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CERTIFICATION STATEMENT

I hereby certify that the following statements are true:

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

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ABSTRACT

Over the past four years the City of Fairfield, Ohio has had 105 structure fires. Sixty-nine percent of those fires have occurred in residential properties. The problem this study will address is how the Fairfield Fire Department can reduce the occurrence and severity of residential fires.

The following questions will be answered:

1. What are the causes of residential structure fires in the U.S.?
2. What are the causes of residential structure fires in the City of Fairfield?
3. What procedures and/or programs have other departments implemented to reduce the occurrence of residential structure fires?
4. What procedures and/or programs could the City of Fairfield implement to reduce the occurrence of residential structure fires?

By reviewing NFPA data and City of Fairfield fire reports it was determined that the top four causes of residential fires in the U.S. and the City of Fairfield were identical. They are cooking, heating equipment, electrical distribution, and arson.

It was also determined that in the United States and City of Fairfield that 33 to 34 percent of the homes are renter occupied. Although the percentage of residential fires in renter occupied homes across the United States is approximately 35.6 percent, the City of Fairfield was significantly higher at 54.2 percent.

To answer the question what procedures and/or programs have other departments implemented to reduce the occurrence of residential fires, a survey was sent to 90 fire departments in Southwest Ohio.

The results of the survey indicated that although most departments are inspecting the common areas of multi-family property, only a few are inspecting the actual living areas. The survey also indicated that a very small number of departments require or have any kind of educational material on residential sprinkler systems.

The research shows that if the City of Fairfield made changes regarding residential fire inspections, residential sprinkler systems, and changed the focus of public education on to renter occupied property the occurrence and severity of residential fires could be reduced.

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INTRODUCTION

Statement of the Problem

The City of Fairfield has many property types including single family residential, multi-family residential, commercial, industrial, and public assembly. However, the majority of fires and fire loss occurs in residential property. Over the past four years, 68.6% of the structure fires in the City have occurred in residential properties. *The problem this study will address is how The City of Fairfield Fire Department can reduce the occurrence of residential fires.*

Purpose of the Study

The City of Fairfield was established in 1955. Over the years, there has been a slow decrease in the occurrence of residential fires. *The purpose of this study is to be proactive so the trend of residential fires continues to decline.* The goal of the study is to determine what the main causes of residential fires are in the United States and determine if they apply to the City of Fairfield. Once the causes of fires in the United States have been determined, that information will be used to identify ways to prevent residential fires in the City of Fairfield. The results of this study will be used by the Department's administrative staff and city administration to improve the safety of the residential community. The type of research conducted will be descriptive.

Research Questions

The following questions will be answered by this descriptive research:

1. *What are the causes of residential structure fires in the United Sates?*
2. *What are the causes of residential structure fires in the City of Fairfield?*
3. *What procedures and/or programs have other departments implemented to reduce the occurrence of residential structure fires?*
4. *What procedures and/or programs could the City of Fairfield implement to reduce the occurrence of residential structure fires?*

BACKGROUND AND SIGNIFICANCE

The City of Fairfield has an area of approximately 20 square miles and population of 42,097 as of 2000. The City estimates that the population will grow 1.7% to 42,814 by 2011. As of 2006, it was estimated that the city had 18,166 total residential housing units and approximately 1,900 business units. For this study, the definition of a residential property will include all one or two-family homes, multifamily apartment dwellings and manufactured homes. It does not include assisted living facilities, nursing homes, or hospitals though people may reside in them for a long period of time. Those properties are included in the approximately 1,900 business units in the City.

The following table shows a breakdown of the residential property in the City of Fairfield.

Table 1

Estimated Residential Property Types in the City of Fairfield as of 2006

	Number	Percentage	Number of Occupants*
Total housing units	18,166	100.0	42,311
Occupied housing units	17,320	95.3	42,311
Owner occupied housing units	11,414	65.9	29,776
Renter occupied housing units	5,906	34.1	12,535
Vacant housing units	846	4.7	0

**The total number of occupants does not equal the total population due to some occupants living in nursing homes and long- term care facilities which are not defined as residential property for this study.*

The City of Fairfield Fire Department hires a combination of full-time and part-time employees. Currently the Department employs 29 full-time and 44 part-time employees. The Department responds to approximately 2,000 fire runs and 4,500 EMS runs per year. The Department is also responsible for fire prevention and public education.

One full-time and two part-time employees are dedicated to fire prevention. The majority of their time is dedicated to inspections of non-residential property. Every business in the City is inspected at least once per year. All high hazard and public assembly businesses including schools, hospitals and nursing homes are inspected twice per year. Residential property is not inspected on a routine basis. The common areas of apartment buildings are inspected at the end

of the year if all business property inspections have been completed for that year. Also, the homes of foster care parents are inspected if they are requested by the homeowner to meet the requirements of the foster care agency. Rental property will be inspected if the occupant has a complaint with the landlord. Lastly, owner occupied homes will be inspected if requested by the owner. Overall, the residential inspections make up less than five percent of all the inspections completed in the City.

With over 18,000 residential properties and the majority of fire prevention efforts being dedicated to the 1,900 business properties, the City has an opportunity to make an impact on the reduction in the occurrence of residential fires.

The potential impact this study could have on the City of Fairfield is a reduction in the occurrence of residential fires which in turn will increase the safety for the citizens and fire department employees.

LITERATURE REVIEW

The literature review was conducted at the Lane Public Library in Fairfield, Ohio, the National Fire Academy's Learning Resource Center, and the Federal Emergency Management Agency (FEMA) United States Fire Administration National Fire Data Center. According to the National Fire Protection Association (NFPA) report entitled *Fire Loss in the United States 2007,* residential fires outnumbered non-residential by three to one. In 2007, 84% of all fire deaths occurred in residential fires. Only three percent occurred in commercial or public properties. The remaining occurred in motor vehicles or outside. The numbers do not improve when compared to other nations. The U.S. fire death rate average is two times that of several European nations, and 20% higher than many industrialized nations. There were 414,000 residential

structure fires in 2007 causing 2,865 deaths, 14,000 injuries, with a loss of $7.5 billion. Even though the number of residential fires has decreased over the past 100 years due to better heating and electrical systems, newer building codes and the use of smoke detectors, the numbers show a further decrease can improve the safety of our communities.

To help determine how to prevent residential fires, research was completed to find the characteristics of a city and its citizens that lead to a higher rate of fire. The research indicated that the increase in residential fires can be attributed to the climate of the city, the age of the homes, age of the citizens, educational attainment, income, unemployment, and home ownership (New South Wales Fire Brigades, 1997). According to the U.S. Fire Administration (2007), 90% of all residential fires are due to arson, children playing, careless smoking, heating, cooking and electrical distribution. In the next section, each of these causes will be discussed to show the link to the characteristics of a city and its citizens.

Arson Fires

In the United States Fire Administration report entitled *An NFIRS Analysis: Investigating City Characteristics and Residential Fire Rates* the report indicated a relationship between arson fires and the income of the residents and the number of rental housing units. The report stated the lower the personal income and the higher the percentage of rental units the higher the occurrence of residential fires. Cities with more rental housing also tended to have older housing stocks and higher proportions of people living in poverty.

Children Playing Fires

Not surprisingly, the higher the percentages of children under age five in a city, the higher the incidence of residential fires due to children playing. In other words, the more kids the more likely kids will be playing with fire.

Careless Smoking Fires

Careless smoking accounts for seven percent of all residential fires but 26% of all fire deaths and 15% of all injuries. Lower income individuals are 8.5 time more likely to have a fire due to smoking (Gunther, 1981). There is a link between careless smoking fires and the age of the housing stock. This is probably due to the fact that people with a lower income live in older homes and people with a lower income also have the highest rate of smokers. Communities with older homes also tend to have more rental housing and higher unemployment levels.

Heating Fires

Annual precipitation and percent of rental housing are related to the number of residential fires. The more rain and snow in a community, the more time that is spent heating a home thus more residential fires due to heating. As for rental units, the higher the percentage, the lower the rate of fire due to heating. This is probably due to the fact that apartments tend to have better maintained heating systems (Gunther, 1981).

Cooking Fires

In a study of Toledo, Gunther (1981) found a relationship of residential cooking fires and low income areas as compared to higher income areas. This was not found to be true in the United States Fire Administration (1998) report. FEMA further indicates that this may be due to the fact the research was completed at the city level and not broken down by neighborhood as the Gunther (1981) report did.

Electrical distribution fires

Climate seems to be the only factor that can be attributed to electrical fires. No research indicated a logical reason for this relationship.

The following chart created from the NFPA's Overview of the U.S. Fire Problem is a good summary of the causes of residential structure fires across the entire United States between 2003 and 2006.

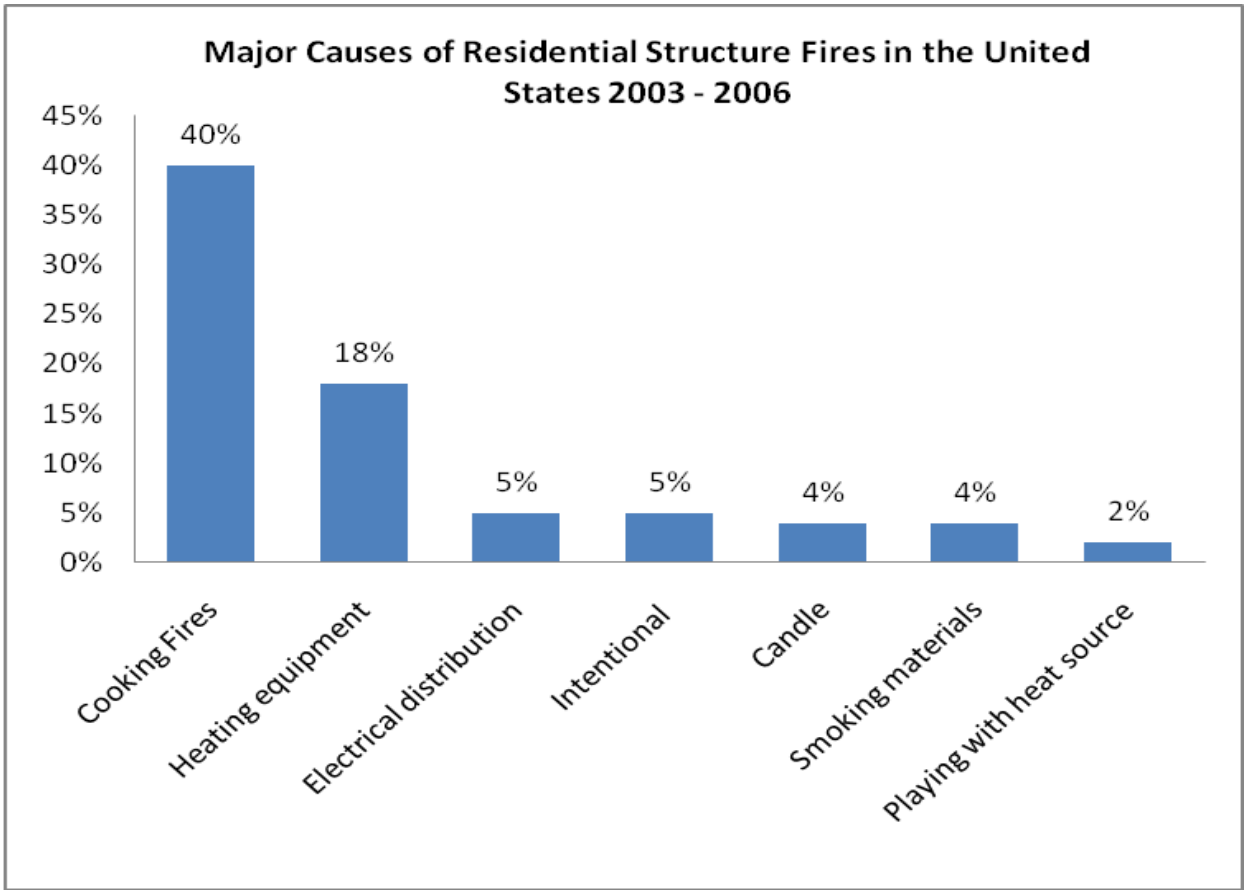

Figure 1.

Four characteristics, age of the citizens, overcrowding, owner-occupied homes, and single-parent homes were not found to have a direct link to the major causes of residential fires, but other research indicates they may be areas that should be focused on when determining fire prevention efforts. Elderly people over the age of 70 represented eight percent of the U.S. population yet they accounted for 18% of those killed in residential fires (United States Fire Administration, 1997). The elderly may not cause an increase in residential fires, but when a fire

occurs in their homes they are more likely to be killed then the rest of society. Jennings (1996) also reported that the increase in the percent of the population under 17 and over 64 were shown to indicate a higher fire risk.

Overcrowding, defined as more than one person per room in a residence has a greater wear and tear on a dwelling unit's mechanical systems, causing an increase in the risk of fire (Jennnings, 1996). Also, overcrowding may be an indication of lower income. Overcrowding also indicates that more children may be in the home. As stated above, more children lead to more fires. Overcrowding also increases the number of possible victims. The more victims, the harder it will be to get them all out of a structure unharmed.

Owner occupied homes tend to have a lower level of fire risk. (Munson and Oates, 1983) believe this is due to maintenance of owner occupied homes. The home owner tends to take better care of the home and is more likely to spend money on fire prevention and detection items like smoke detectors and alarm systems. Data from the United States Census Bureau and the NFPA supports the belief of Munson and Oates. Across the United States in the year 2000, 66.2% of the residential homes were owner occupied and 33.8% were renter occupied. In that same year, 35.6% of the residential structure fires occurred in renter occupied homes.

Single-parent households tend to have a higher risk since they most likely have lower income levels and also tend to have child care issues that lead to unattended children. Children naturally are curious about fire and when left alone this leaves them the opportunity to start a fire. Lower income homes are less likely to have working smoke detectors and therefore face a higher risk of fire. Since single-parent households tend to have lower incomes, it can be concluded that they are more likely to have non-working smoke detectors.

Smoke detectors have contributed significantly to the reductions in fire deaths. Between 1980 and 1990, the U.S. experienced a decrease in residential fire deaths of about 25%. Most fatal fires occur at night therefore smoke detectors alert occupants. Smoke detectors also give occupants the opportunity to extinguish a small fire before having to call the fire department.

There is not much a fire department can do about the characteristics of the community they serve; however, the information can help them focus their fire prevention resources. This literature review has provided many areas that can be further studied to determine how to prevent the occurrences of residential fires in the City of Fairfield.

PROCEDURES

The goal of this research project was to determine ways the City of Fairfield Fire Department could reduce the occurrence and severity of residential structure fires. To accomplish this, the major causes of residential structure fires throughout the United States must first be determined. This was done by reviewing many articles and research papers from the National Fire Academy, the Federal Emergency Management Agency, the Fairfield Lane Public Library, and the Internet.

Next, it was determined what the major causes of residential fires are in the City of Fairfield. This was be done by collecting data from fire reports from January 1, 2005 through December 31, 2008. The data was collected from two sources. From January 2005 through September 2007 data was collected from the Fairfield Fire Departments Emergency Reporting Database. From October 2007 through December 2008, the information was collected from the Fairfield Fire Department Firehouse Software database. All residential structure fire reports were reviewed to determine if a cause was determined. Over the four year period, 72 residential

structure fire reports were reviewed and a cause of the fire was determined on 44.8% of the reports. Eighty-seven percent were due to arson, children playing, careless smoking, heating, cooking or electrical distribution. As indicated in the Literature Review, according to the U.S. Fire Administration (2007), 90% of all residential structure fires in the United States are due to the same factors. This data shows that the City of Fairfield falls in line with the averages across the United States for residential structure fire cause.

The next step is to find out what procedures and/or programs other departments have implemented to reduce the occurrence of residential fires. This may include public education, changes in the inspection policies, and changes in community ordinances. This question will be answered by sending out a survey to all Hamilton, Warren, Clermont and Butler County Ohio Fire Departments. The survey will focus on the causes of residential structure fires that tend to occur in the City of Fairfield. For example, the survey will not try to find a prevention of residential structure fires that started from wild land fires since this is not a major cause of residential structure fires in the City of Fairfield. The survey will be used to answer Question #3, "what procedures and/or programs have other departments implemented to reduce the occurrence of residential fires?"

The survey will be sent via e-mail using an online survey tool (SurveyMonkey.com). The survey will focus on four areas: Residential Fire Inspections, Smoke Detectors, Residential Sprinkler Systems, and Public Education. The complete survey can be found in Appendix 1 with the complete results found in Appendix 2.

The final question "what procedures and/or programs could the City of Fairfield implement to reduce the occurrence of residential fires?" will be answered from the data collected during the research of the first three questions.

Limitations of the Study

There were two limitations to this research. First, the United States Census data used was from 2000. The next United States Census will not be performed until 2010. Although, there was no literature found that indicates a significant change in the census data used, it still must be indicated that the data used is over nine years old.

Second, the City of Fairfield Fire Department does not capture if a residential structure is owner or renter occupied when a fire occurs. This was determined through the knowledge of the author of the location of the structure. It was assumed that if a fire occurred in an apartment complex then it was renter occupied. Likewise if a fire occurred in a single family home it was assumed it was owner-occupied. Using these assumptions, the number of fires in renter-occupied homes is most likely understated.

RESULTS

A total of 6,381 City of Fairfield fire reports were reviewed. The incidents reviewed occurred between January 1, 2005 and December 31, 2008. Each report was reviewed to determine if the fire was a structure fire, the type of structure involved and the cause of the fire. Of the fire reports reviewed, 105 were determined to be structure fires and 72 of those were residential structure fires. The results of the review are indicated below in the Table 2 and 3.

Table 2

Number of Structure Fires in the City of Fairfield for years 2005 - 2008

	Number	Percentage
Total structure fires	105	100.0
Non residential fires	33	31.4
Residential fires	72	68.6
Owner occupied housing units	33	45.8
Renter occupied housing units	39	54.2

Table 3

Cause of Residential Structure Fires in the City of Fairfield for years 2005-2008

	Number	Percentage
Undetermined	58	55.2
Determined	47	44.8
Cooking	20	42.5
Heating equipment	12	25.5
Electrical distribution	6	12.8
Smoking materials	2	4.3
Intentional	1	2.1
Playing with heat source	1	2.1
Other	5	10.6

Table 2 indicates that almost 2/3 of the structure fires in the City of Fairfield occurred in residential occupancies. Of those, slightly more than half (54.2%) occurred in renter occupied housing units. Table 3 indicates that the cause of more than half (55.2%) of the residential structure fires is undetermined. When the cause is determined, cooking fires lead the way at 42.5%, while heating equipment, electrical distribution, and careless smoking round out the top four causes of residential structure fires in the City of Fairfield. This data gives the answer to question number two, "what are the causes of residential fires in the City of Fairfield?"

Too answer question number three, what procedures and/or programs have other departments implemented to reduce the occurrence of residential fires, a survey was sent to 90 fire departments in Hamilton, Warren, Clermont and Butler County Ohio. Fifty-one percent (46) of the departments responded to the survey. The detailed results of the survey can be found in Appendix 2.

The first section of the survey asked questions about residential fire inspections. Almost 84% of the departments conduct inspections on multi-family property, while less than 16% conduct inspections on one and two-family property. Of the 39 departments that inspect multi-family property only 22% (10) inspect the individual living units. The other 74% (29) only inspect the common areas of the building. Almost all (91.3%) of the departments only conduct inspections of a residential property at the request of the resident. Only two of the departments have building codes that require the inspections.

The second section of the survey asked questions regarding smoke detectors. Ninety-three percent of the departments, at no cost, will provide and install smoke detectors for its residents. Also, 91.1% will check the functioning of smoke detectors while on a run to a residential property.

The third section of the survey asked questions about residential sprinkler systems. Ninety percent (40) of the departments do not require the installation of residential sprinkler systems in new construction. Of the departments that do require sprinkler systems, all of them have the requirement for multi-family property. Only one has the requirement for one and two family property. Not only do a small number of departments require residential sprinkler systems, most (89.9%) don't have any educational material on the subject.

The final section of the survey questions focused on public education. More than 75% of the departments conduct public education by providing student education in the schools and at the fire house, providing education at local businesses, having pamphlets on fire safety available at the fire department and conducting training on the use of fire extinguishers. Half of the departments provide educational material on their web sites. Less than one quarter (23.9%) provide seminars on fire safety at the fire house. Only one department charges any kind of fee for public education. The fee is only changed for fire extinguisher training.

DISCUSSION

The data and information gathered from the research points out three things. First, the City of Fairfield has a higher level of residential structure fires occurring in renter-occupied residential property. Second, the top four and six out of the top seven causes for residential structure fires in the City of Fairfield are the same as across the entire nation. Finally, the City of Fairfield has implemented many if not all the top procedures and or programs that focus on reducing residential structure fires. However, there still remain changes that can be made to continue to reduce residential structure fires in the City of Fairfield. This section will focus on these three points.

As indicated in the Background and Significance section (page 6), 65.9% of the residential property in the City of Fairfield is owner occupied and 34.1% is renter-occupied. One would think that the percentage of fires in each type of property would be in proportion to the amount of each type within the city. However, as determined in the Results section (page 15), between 2005 and 2008 the percentage of fires in renter-occupied housing was much higher at 54.2%. In other words, only 34.1% of the homes are renter-occupied within the City of Fairfield, but 54.2% of the residential fires occur in those same properties.

When looking across the United States the percentages don't get any better. In 2000, 33.8% of the homes in the United Sates were renter-occupied (United States Census Bureau) and 35.6% of the residential structure fires occurred in the same type of property. These percentages being fairly close, is another indication that the City of Fairfield should focus on renter-occupied structures when trying to reduce the occurrence of residential structure fires.

When comparing the top causes of residential structure fires across the entire United States to the City of Fairfield, it was determined that the top causes are very similar. As a matter of fact, the top four are identical and the top six out of seven are also the same. Figure 2 below is a comparison of major causes of residential structure fires for the United States as compared to the City of Fairfield. The figure indicates that when trying to reduce the occurrence of residential structure fires in the City of Fairfield the focus should be on cooking, heating and electrical fires as these make up over 80% of the fires. The figure also indicates that if a method can be found to reduce the major causes across the United States that same method has a good probability of working in the City of Fairfield.

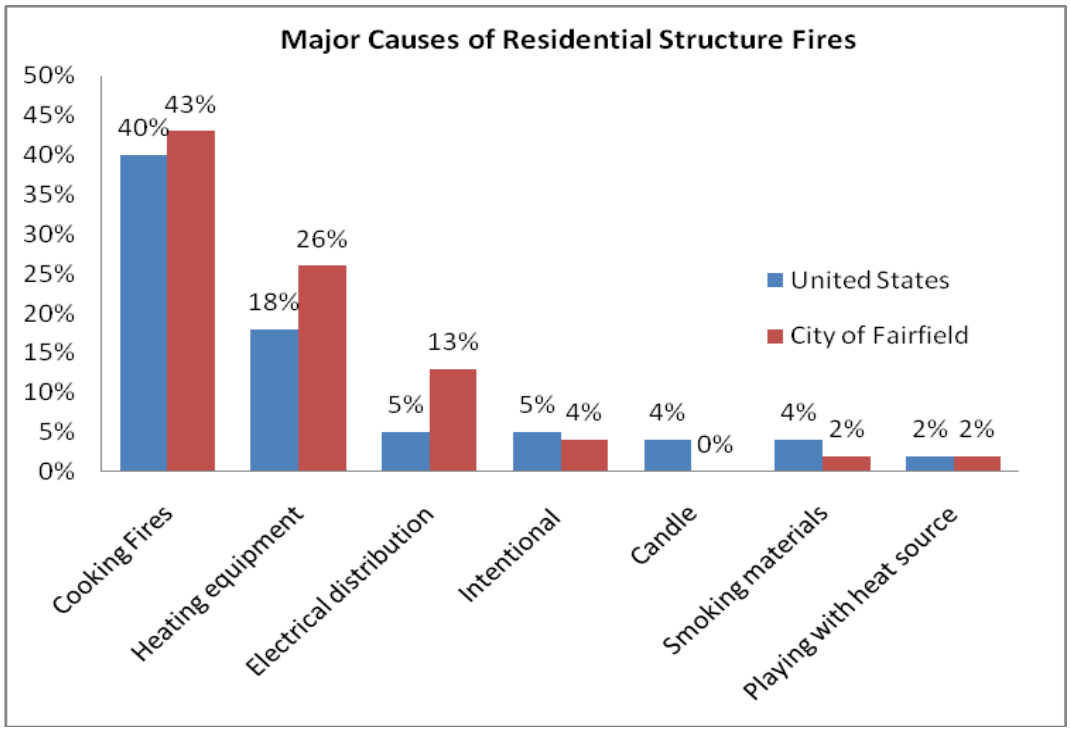

Figure 2.
A comparison of major causes of residential structure fires between the United States and the City of Fairfield for years 2005 - 2008

When comparing the major causes of fire to the type of occupancy, renter vs. owner occupied, there does not seem to be any kind of connection. The percentage of cooking, heating, and electrical fires in renter occupied property in the City of Fairfield from 2005 – 2008 was 45%, 25%, and 15% respectively. These are all within two percentage points of the cause for all property within the city.

When looking at what program and/or procedures the City of Fairfield could implement to reduce the occurrence of residential fires, it was determined that the City has been proactive in its attempts by implementing many of the same programs that many other departments have implemented.

These include the following:

- The Department will provide and install smoke detectors at the request of a homeowner
- If time permits when making a run to a home, the department will check that smoke detectors are functioning correctly
- The Department will conduct education at the fire house or school, for students when requested
- Fire prevention material is available on the department's web site
- Pamphlets on fire safety are available at the fire station
- The Department will conduct training on the use of fire extinguishers upon request for businesses

As indicated in the survey results, all but one of the above have been implemented by 80% of the departments that responded to the survey. The only one less than 80% were having fire prevention material available on the department web site which was at 50%.

The same does not hold true for the implementation of programs for residential fire inspections and residential sprinkler systems. As most departments (84.8%) are inspecting multi-family property, they are only inspecting the common areas. Only 22.2% will inspect individual living units and 91.3% of those only inspect at the request of the resident. This is a very interesting fact as it has already been determined that the majority of residential fires have occurred in renter occupied property and the top two causes are cooking and heating equipment. With the stove and heating equipment in the individual living units, currently the inspection process is bypassing the top two causes of residential fires in the City of Fairfield.

Only 11.1% of the departments surveyed have any requirement for the installation of residential sprinkler systems. Even more disturbing, less than 12% have any kind of education material on the subject. The City of Fairfield would be included in the departments that don't require any type of sprinkler system and have little if any educational material on the subject.

While the installation of residential sprinkler systems is increasing, it is estimated that three percent of residential property in the United States have them installed (NFPA). Also, according to the NFPA, if you live in a home with a sprinkler system you are 82% less likely to die in a fire. As for the possibility of water damage, it was determined in a 10 year study in Scottsdale, AZ. that in 1996 when reviewing water flow for 109 fires the average amount of water used in a building with sprinklers was 299 gallons vs. 6,000 in buildings without sprinklers (Ford). Even more amazing is the fact that the study also determined that a minimum of eight lives were saved in homes with a sprinkler system.

The cost of a sprinkler system in new construction is approximately $.50 to $1.00 per square foot. Using these figures, a newly constructed home in the City of Fairfield of 2000 square feet would have an installation cost of $1000 to $2000 for sprinklers. However, a home owner can save money on homeowners insurance by five to ten percent and the average cost of damage from a fire in a home with sprinklers is $2,100 versus $45,000 in a home without.

RECOMMENDATIONS

The following recommendations are made to lower the occurrence of residential structure fires in the City of Fairfield.

Inspections:

1. Develop and implement a plan for inspecting the living areas of multi-family rental property types.
2. Study the feasibility of inspecting of one and two–family rental property.

Sprinkler Systems:

3. Change building codes to require sprinkler systems in new construction multi-family property.
4. Study the feasibility of requiring sprinkler systems in all new construction residential property.

Public Education:

5. Develop public education that can be focused to multi-family property.

Data Collection:

6. Develop and implement a way to better track the following data for residential fires:
    - rental vs. owner-occupied
    - age of occupants
    - number of occupants

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APPENDIX 1 – SURVEY

My name is Jeff Kenworthy and I am a Captain with the Fairfield Fire Department. I am currently enrolled in the Ohio Fire Executive (OFE) program. I am doing a research paper on the prevention of residential structure fires. Could you please take 10 minutes to answer the attached survey that will provide data for my research paper? Please complete the survey by Feb. 6th 2009. If you would like to receive a copy of the results of the survey you will have the opportunity to enter your e-mail information below.

Residential Fire Inspections

1. Does your fire department conduct fire inspections on the following? (Please check all that apply)

   _____ One and Two family, owner-occupied property

   _____ One and Two family rental property

   _____ Multi-family property

   _____ None of the above

   If you answered "None of the above" advance to Question #5.

2. If you selected Multi-family property in Question #1 above, does your fire department inspect? (Please check all that apply)

   _____ Common Areas

   _____ Individual Living Units

   _____ N/A

3. If your fire department conducts any kind of residential fire inspections is it?

   _____Required by fire department or jurisdictional code

   _____Only upon request of the resident

   _____ N/A

4. If your fire department conducts any kind of residential fire inspections do you charge a fee for the inspection?

   _____ Yes If Yes, what is the dollar amount charged $_____

   _____ No

   _____ N/A

Smoke Detectors:

5. Does your fire department provide and install residential smoke detectors if requested by the resident?

   _____ Yes

   _____ No

   If you answered "No" advance to question #7.

6. If you answered yes to question #5, does your fire department charge a fee for installing smoke detectors?

   _____ Yes If Yes, what is the dollar amount charged $_____

   _____ No

7. If your fire department makes a run to a residential property and time permits will you take the time to determine if smoke detectors are functioning in the structure?

   _____ Yes

   _____ No

Residential Sprinkler Systems:

8. Does your jurisdiction or fire department require the installation of residential sprinkler systems in new construction?

   _____ Yes

   _____ No

   If you answered "No" advance to question #10.

9. If you answered yes to question #8, in what type of property are residential sprinkler systems required?

   _____ One and Two family, owner-occupied property

   _____ One and Two family rental property

   _____ Multi-family property

10. Does your fire department conduct any type of education on residential sprinkler systems? (i.e. seminars, pamphlets, website)

    _____ Yes

    _____ No

Public Education:

11. Does your fire Department conduct any type of public education on fire safety? (Check all that apply)

_____ Students come to the fire department for education

_____ Fire department conducts education within the schools

_____ Fire department conducts education at businesses

_____ Education material is available on fire department web site

_____ Pamphlets on fire safety is available at the fire department

_____ Fire department conducts training on the use of fire extinguishers

_____ Fire department conducts seminars on fire safety at the fire department

_____ Other Please explain: _____

_____

12. If your fire department conducts any type of public education on fire safety do you charge a fee for the education?

_____ Yes If Yes, what is the dollar amount charged $_____

_____ No

_____ N/A

13. If your fire department conducts public education on fire safety is it?

_____ Reactive (only upon request)

_____ Proactive

14. If you would like the results of the survey please give your information below:

Name: _____

E-Mail address: _____

APPENDIX 2 – RESULTS OF SURVEY

Residential Fire Inspections:

1. Does your fire department conduct fire inspections on the following? (Please check all that apply)

	Response Percent	Response Count
One and Two family, owner occupied property	10.9%	5
One and Two family rental property	15.2%	7
Multi-family property	84.8%	39
None of the above	10.9%	5
answered question		46
skipped question		0

2. If you selected Multi-family property to the previous question, does your fire department inspect? (Please check all that apply)

	Response Percent	Response Count
Common Areas	86.7%	39
Individual Living Units	22.2%	10
N/A	13.3%	6
answered question		45
skipped question		1

3. If your fire department conducts any kind of residential fire inspections is it?

	Response Percent	Response Count
Required by fire department or jurisdictional code	4.3%	2
Only upon request of the resident	91.3%	42
N/A	4.3%	2
answered question		46
skipped question		0

4. If your fire department conducts any kind of residential fire inspections do you charge a fee for the inspection?

	Response Percent	Response Count
Yes	0.0%	0
No	97.8%	44
N/A	2.2%	1
If Yes, what is the dollar amount charged?		0
answered question		45
skipped question		1

Smoke Detectors:

5. Does your fire department provide and install residential smoke detectors if requested by the resident?

	Response Percent	Response Count
Yes	93.5%	43
No	6.5%	3
answered question		46
skipped question		0

6. If you answered yes to the previous question, does your fire department charge a fee for installing smoke detectors?

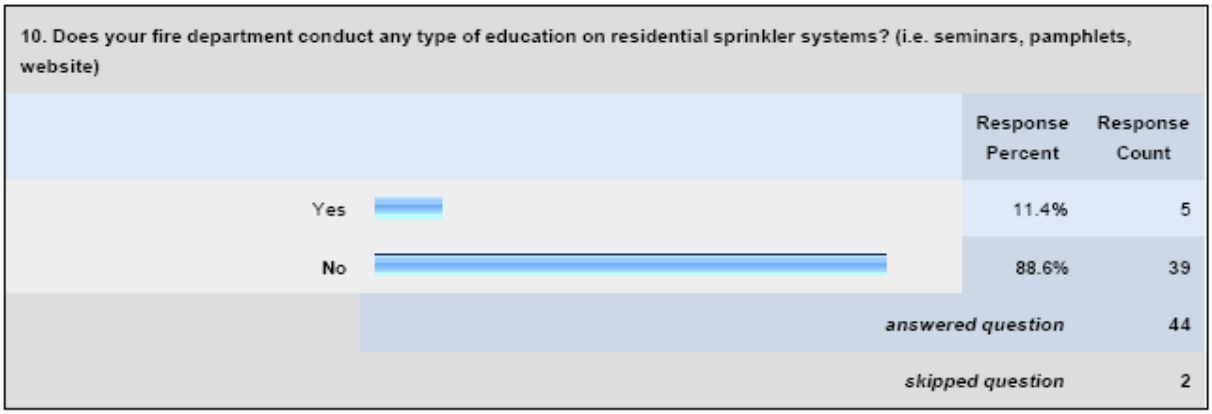
	Response Percent	Response Count
Yes	0.0%	0
No	93.3%	42
N/A	6.7%	3
If Yes, what is the dollar amount charged?		0
answered question		45
skipped question		1

7. If your fire department makes a run to a residential property and time permits will you take the time to determine if smoke detectors are functioning in the structure?	Response Percent	Response Count
Yes	91.1%	41
No	8.9%	4
answered question		45
skipped question		1

Residential Sprinkler Systems:

8. Does your jurisdiction or fire department require the installation of residential sprinkler systems in new construction?	Response Percent	Response Count
Yes	11.1%	5
No	88.9%	40
answered question		45
skipped question		1

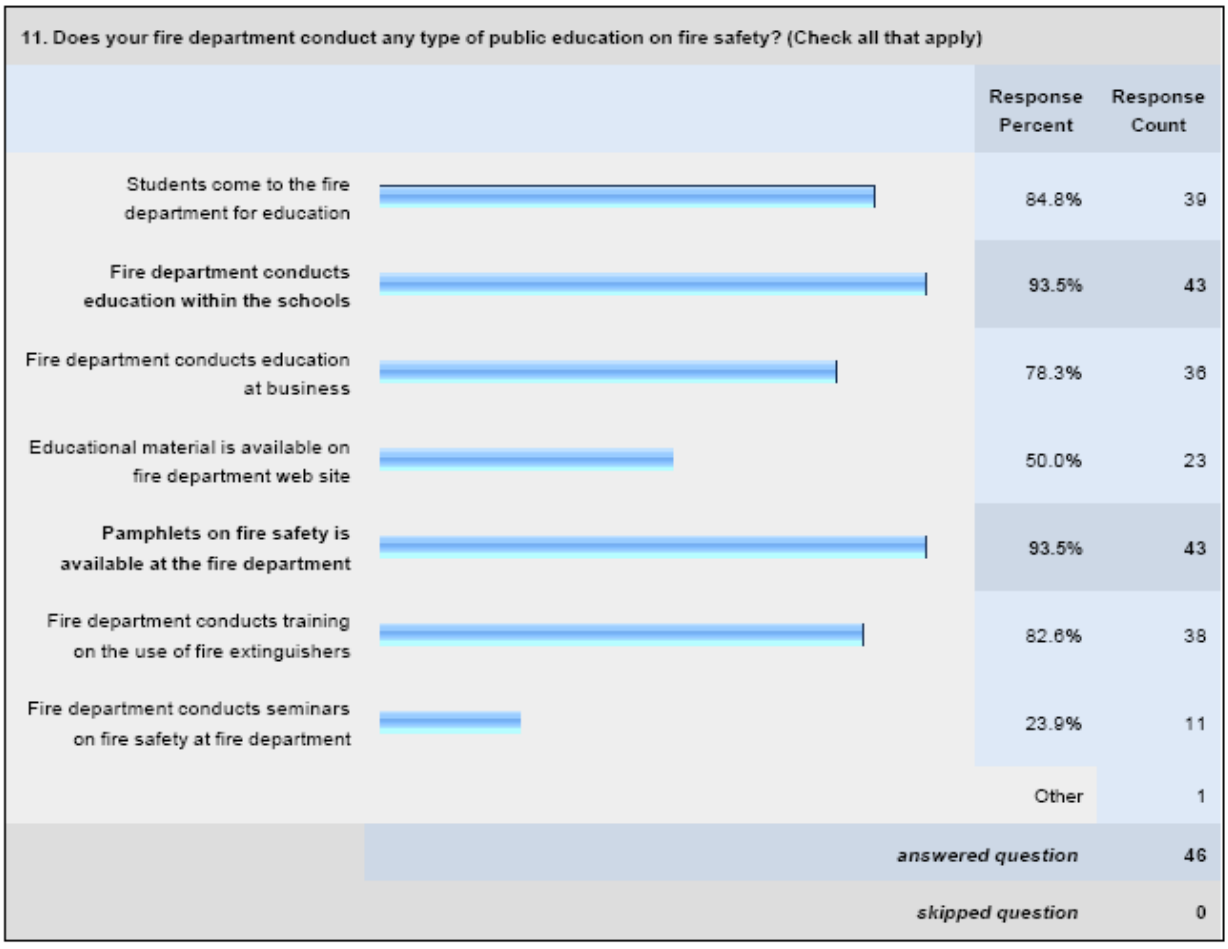
9. If you answered yes to the previous question, in what type of property are residential sprinkler systems required? (Choose all that apply)	Response Percent	Response Count
One and Two family, owner-occupied property	3.3%	1
One and Two family rental property	3.3%	1
Multi-family property	16.7%	5
N/A	83.3%	25
answered question		30
skipped question		16



10. Does your fire department conduct any type of education on residential sprinkler systems? (i.e. seminars, pamphlets, website)

	Response Percent	Response Count
Yes	11.4%	5
No	88.6%	39
answered question		44
skipped question		2

Public Education:



11. Does your fire department conduct any type of public education on fire safety? (Check all that apply)

	Response Percent	Response Count
Students come to the fire department for education	84.8%	39
Fire department conducts education within the schools	93.5%	43
Fire department conducts education at business	78.3%	36
Educational material is available on fire department web site	50.0%	23
Pamphlets on fire safety is available at the fire department	93.5%	43
Fire department conducts training on the use of fire extinguishers	82.6%	38
Fire department conducts seminars on fire safety at fire department	23.9%	11
Other		1
answered question		46
skipped question		0

Other: Summer Safety Camps

12. If your fire department conducts any type of public education on fire safety do you charge a fee for the education?	Response Percent	Response Count
Yes	2.2%	1
No	**97.8%**	**44**
N/A	0.0%	0
If Yes, what is the dollar amount charged?		1
answered question		**45**
skipped question		**1**

If Yes, what is the dollar amount charged? $75.00 per hour for fire extinguisher training only

13. If your fire department conducts public education on fire safety is it?	Response Percent	Response Count
Reactive (only upon request)	31.1%	14
Proactive	**68.9%**	**31**
N/A	0.0%	0
answered question		**45**
skipped question		**1**