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Executive Leadership

Residential Fire Sprinklers: What do they really Cost?

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### Abstract

The problem is the Gainesville Fire Rescue is promoting the use of residential sprinklers in new construction without completing a cost benefit analysis of installing these systems resulting in consumer complaints about the high cost of installing sprinkler systems.

The purpose of this research project was to assess the actual cost for installing a residential sprinkler system in the Gainesville community and to identify the best practices for making recommendations to improve the Gainesville Residential Sprinkler Ordinance Project.

The research answered questions about installation, approved materials, alternative systems, incentives, problems with owning a residential fire sprinkler, actual savings in dollars and lives in homes with fire sprinklers. The Descriptive research method was utilized which included surveys, interviews and an extensive literature review.

The following recommendations were a product of the research:

1. The City of Gainesville Commission should establish a Community Residential Fire Sprinkler Task Force with all stakeholders and City Department representation tasked with the improving the safety of the citizens of Gainesville and preventing fire deaths and saving property by establishing a mandatory residential sprinkler ordinance.
2. Gainesville Fire Rescue will partner with the City of Gainesville Building Department, Planning department to evaluate alternative methods that will facilitate and encourage the utilization of Residential Fire Sprinklers and the addition of qualified fire sprinkler installers and even homeowners to help reduce costs in all new and existing construction in the Gainesville area.
3. Gainesville Fire Rescue will create and implement a community education curriculum that focuses on the life saving benefits and actual costs of residential sprinklers in the Gainesville community.

CERTIFICATION STATEMENT

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

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

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## Residential Fire Sprinklers: What do they really Cost?

### Introduction

The future of the fire Service is in prevention and education of its citizens before catastrophic events occur with irreparable consequences of death and property destruction, one of the major fire problems in the United States that can be prevented is in the residential setting. In the United States, fire kills more people than all the natural disasters combined. Every year more than 4000 people die needlessly in fire related incidents. Almost 82% will be in their homes (NFPA, 2006). The answer is installing residential sprinklers and making them affordable for everyone. The Gainesville Fire Rescue Department (GFRD) has long been a proponent of residential sprinklers but when confronted with the question of how much do residential sprinklers cost, the Department had to use the same old stock answers that proved to be misleading to the customer who later would find out that the actual cost was a lot more. This has been a stumbling block for the widespread installation of sprinklers in the Gainesville community. The support of a strong, vibrant Residential Sprinkler Program paired with a solid educational curriculum is the key to a safer community.

The problem is the Gainesville Fire Rescue is promoting the use of residential sprinklers in new construction and advocating retrofits in existing homes without completing a cost benefit analysis of installing these systems, resulting in consumer complaints about the high cost of installing sprinkler systems.

The purpose of this research project was to assess the actual cost for installing a residential sprinkler system in the Gainesville community and other jurisdictions and identify the best practices for making recommendations for improving the residential sprinkler project in the Gainesville community.

The research answered the following six questions:

1. What are the costs associated with the installation of residential sprinkler systems?

2. What types of approved materials can be utilized in the installation of residential sprinklers?
3. What are the alternative methods of installing residential sprinklers that would not have a detrimental effect on the contractor or the home owner?
4. Are there incentives that local governments and Insurance companies offer to encourage the use of residential sprinklers?
5. What are the problems associated with owning and maintaining a residential sprinkler system?
6. What are the actual savings in dollars and lives associated with homes with sprinklers versus homes without sprinklers?

#### Background and Significance

The City of Gainesville is a mid range suburban community covering approximately 55 square miles and it has 119,000 citizens. The city is located in Alachua County in the State of Florida. In the United States fire kills more people than all the natural disasters combined. In 2006, the Gainesville community experienced six fire deaths and two civilian injuries (GFR Annual Report, 2007). Every year more than 4000 people die needlessly in fire related incidents. Almost 82% will be in their homes (NFPA, 2006). The answer is installing Residential sprinklers and making them affordable for everyone.

While Gainesville Fire Rescue has participated in an effort to promote the installation of residential sprinklers and has conducted numerous awareness campaigns to the our customers we have used the published material from the National Sprinkler Association and other reputable media sources to approximate the cost of installing residential sprinklers. The complaints we have received about the actual costs were that they were a lot higher than what the most current published information was providing. The other complaint was that most insurance companies actually gave little or no price breaks or discounts for the installation of a fire sprinkler system

and, in some cases, charged a higher premium because of the potential for water damage from a leaking system. Some customers complained about a reduced number of qualified sprinkler installers, resulting in fewer choices and higher prices. Other customers complained about the annual inspections and required maintenance of the residential sprinkler system.

The area builders complained about extended construction time, additional permits and inspection delays. One area builder refused to even offer a residential sprinkler system as an option in the homes he constructed.

These complaints prompted the need for up to date information that truly reflects what it costs to install a residential sprinkler system in the Gainesville community. The Excerpt from “Turn the Tide” found in the National Fire Academy, Executive Leadership (EL, 2005) John F. Kennedy speaks of courage, judgment, integrity, and dedication when he described the American people. When he speaks of courage to stand up to one’s enemies and resist public pressure and private greed it is this author’s opinion that this research supports that concept.

This research project supports the first operational objective of the U.S. Fire Administration by identifying areas that can help reduce the loss of life by improving the Gainesville communities ability to protect itself from fire by utilizing fire sprinkler technology as a component of a multi hazard risk reduction plan (NFA, 2002, p.11-2).

#### Literature Review

A literature review was conducted to analyze the existing body of knowledge as it related to Residential Fire Sprinklers and the cost of installation. The initial review revealed a wealth of information that related to the subject. The review included trade journals, United States Fire Administration (USFA) publications, fire service journals; Executive Fire Officer [EFO] applied research projects, National Fire Academy [NFA] textbooks, Federal Emergency Management

Agency [FEMA] pamphlets and electronic media. In an effort to answer research question number one, this researcher examined the costs associated with the installation of residential sprinkler systems. During an interview with Scott Holland, a manager with Wayne Sprinkler, he stated that the actual cost was in fact \$1.50 to \$2.00 a square foot (Scott Holland, Personnel Communication, February, 2008). He also indicated that his company used only Chlorinated Poly Vinyl Chloride (CPVC) and Tyco and Viking sprinkler heads. Mr. Holland mentioned that the City of Orlando gave incentives to developers for including residential sprinklers in their plans. Some examples Mr. Holland mentioned were less hydrants, smaller roads and reduced permit fees. Nationally, the average home fire sprinkler systems add 1 per cent to 1.5 per cent of the total building cost in new construction (NAHB, 2007).. The West Brandywine Township charges a \$100 permit fee for installing a residential sprinkler. The City of Gainesville charges a \$135 permit fee for installing a residential sprinkler system (Murdock, personal communication, January 14, 2008). According to the North Carolina Builders Association (NAHB) installation costs are far greater than what advocates state. In August 2006, the NAHB research center surveyed home builders in jurisdictions where fire sprinklers have been mandated. The survey showed that the actual cost of to the builders were from \$2.66 per square foot on average and ranged as high as \$6.88 per square foot.(NAHB, 2007). On average , home sprinkler systems cost \$1.00- \$1.50 per square foot (NFPA, 2007) The United States Fire Administration (USFA) estimates the cost to install sprinklers in a residence to be \$1.00 to \$1.50 per square foot (USFA, 2007 ). A study, completed by the National Association of Home Builders (NAHB) confirmed that the median cost for installing a fire sprinkler was about \$ 5,573.00. In that same report, the (NAHB) reported that increased permit, tap and inspection fees, as well as redesigning and engineering costs, should be included in the cost of the sprinkler system. The study also



concluded that local governments need to contribute to the affordability of the systems by lowering or omitting additional tap fees or regulatory permits for installation of residential sprinklers (NAHB, 2007). The costs for a residential sprinkler system could range from \$2,800 to \$6,700 dollars according to Sheila Hayes (Hayes, personal communication, January 14, 2008). When sprinklers are an option, the additional mark up may be substantial by the entity advertising and providing administrative support of the project (Saunders, personal communication, January 14, 2008). The sprinkler engineering design and certification plans were also a consideration when bidding a job. The costs associated with this project ran from \$500 to \$3500 depending on the size of the project. Some costs the structure to accommodate the installation of the sprinkler system and can also run from \$500 to \$2500 depending on the modifications that are required. (Kinsel, personal communication, February 21, 2008 ). In that same interview Mr. Kinsel provided a sample bid memo for a recent residential sprinkler installation (Appendix B).

The answers to research question number two, what types of approved materials can be utilized in the installation of residential sprinklers, brought about some interesting findings. Copper is the economical choice for hydraulically calculated fire sprinkler systems because of the unique properties of copper. Copper permits combining hydronic systems, using a water source heat pump with a sprinkler system can provide a way to obtain better fire protection at a lower cost than separate systems for heating, cooling, and fire protection. A single copper piping loop can supply water to both sprinkler system and heat pumps. Savings per square foot in building costs for a combined system can be great enough to pay for the entire sprinkler system (Copper, 2007). The most popular piping material utilized in modern residential sprinkler installations is Chlorinated Poly Vinyl Chloride (CPVC) the unique structure and heat resistive properties

combined with its ease of installation made it cheaper and easier to use. It did not require a skilled labor person to make the joints and the cost per foot was about \$.26 plus installation. The steel piping was the next choice at a per foot charge of \$2.50 is still being used in a lot of commercial sprinkler systems. The old standard for sprinkler installation is steel piping, but it can have some nasty side effects including corrosion, leaking and stagnant rust laden water which can affect the sprinkler performance by clogging the orifice. The steel piping is rapidly being replaced by the (CPVC) piping. The PEX tubing is also a very popular choice at about \$.42 per foot, but has drawbacks with the joints and sprinkler head fittings, it does fair well in strength and durability in the residential setting. The costs of other sprinkler components usually ran from \$25.00 to \$35.00 for individual sprinkler heads and \$1.50 for connections, the actual price depended on the number of components purchased with substantial discounts for large quantities.

Research question number three answered addressed the alternative methods of installing residential sprinklers that would not have a detrimental effect on the contractor or the home owner. The definition of a multipurpose system is a system that serves as plumbing pipe and sprinkler pipe. The use of one set of pipes reduces the cost and eliminates the need for cross connection devices, which are required to prevent contamination of the potable water supply.

“In areas where installing fire sprinklers are mandatory, Bill Northcutt stated that a multi purpose system is resolving the installer and engineering cost issues.” Multi purpose systems combine the fire sprinkler system with cold water plumbing and cost 15% less than stand alone systems (Ahrens, 2003). The industry standard for a sprinkler system malfunctioning is one in 16 million. (USFA, 2006) The most cost effective with the least impact was the multi system that utilized the potable water supply to supply the sprinkler system. Residential fire systems are categorized

in two basic configurations, the flow-through combination (FTC) and closed fire protection system (CFP) (Cole, 1995).

The fourth research question attempted to discover the incentives that local governments and Insurance companies offer to encourage the use of residential sprinklers? According to the National Fire Sprinkler Association (NFSA) there are substantial insurance savings and even tax deductible loans to install residential sprinkler systems (NFSA, 2007). The Scottsdale, Arizona project offered design freedom as a deterrent to high construction cost. Design freedom benefits helped to offset the cost of mandatory sprinkler protection. Some of the benefits included an increase of density by 4 percent, a reduction in street width from 32 to 28 feet, and an increase in cul de sacs from 600 feet to a maximum of 2,000 feet. The requirements for one hour separations were also eliminated saving even more construction costs. The fire hydrant spacing was increased from 330 to 700 feet for developments with multi family dwellings, and from 660 to 1,200 feet in fully sprinklered single-family developments. The study also indicated that the fire flow demand was reduced by 50 percent that resulted in reduction of water mains and the use of smaller storage tanks (NFPA, 2003). Arnold Schwarzenegger vetoed a measure that would have required the installation of sprinklers in small residential care facilities citing the economic impact on the healthcare providers and the healthcare industry as the reason (Gardner, 2007), New legislation may change that attitude. The State of California is offering a no interest loan to providers who install sprinkler systems (Gardner, 2007), Significant savings could lower the cost of fire insurance by about \$900 dollars a year, said Chris Smith of the Fireman's Fund (Gardner, 2007). The City of Lawrence offers two basic incentives for installing sprinkler systems, tap incentive and system installation reimbursement incentives ((Lawrence, 2007).

Barriers existed at levels of government regarding the installation of residential sprinkler systems (Dmuchowski, 2004).

The fifth research question identified the problems associated with owning and maintaining a residential sprinkler system. The major problems that a consumer encounters after they purchase and install a fire sprinkler system is the recurring maintenance and inspection costs, these costs can be substantial according to the type of system that was installed and if it is monitored and was required to have a back flow device installed along with a monitored flow switch. Some of these recurring annual expenses can be in the \$250 to \$500 range according to local fire sprinkler contractors and the requirements of the Authority Having Jurisdiction (AHJ), some jurisdictions allow the homeowner to complete annual inspections and water flow tests (Holland, personal communication, February 06, 2008).

Research question number six describes the actual savings in dollars and lives associated with homes with sprinklers versus homes without sprinklers. Homes protected by automatic sprinklers reduce the fatality rate of the occupants by one half to two thirds. (Cote, 2008) Sprinklers could save an additional 7.7 lives per million houses per year. It reduces the risk of firefighter fatalities by 0.1 lives per million houses. The addition of sprinklers could prevent 87 injuries per million houses. Fire sprinklers can reduce property loss by two thirds according to the National Fire protection Association (Ahrens, 2007). Eight out of ten fire deaths occur in the home. Home fire sprinklers can contain and may extinguish a fire in less time than it would take the fire department to arrive on the scene (Coalition, 2002). "It's like having a firefighter in your home twenty four hours a day seven days a week and you don't have to feed them (Saunders, personal communication, January 14, 2008). Every 90 seconds a home fire is reported in the United States According to the National Fire protection Association (NFPA, 2007). Eight out of ten fire

fatalities occur where Americans feel safest, In their homes. The risk of dying in a home fire is reduced by 82 percent when a residential sprinkler system is teamed up with fire escape plans, fire drills and working smoke detectors (NFPA, 2007). In another study the United States Fire Administration (USFA) concluded that in 2006 there were 412,500 residential fires, 2,620 residential fire deaths, 12,925 residential fire injuries and over \$7.0 billion in residential property damage. In that same study, the (USFA) indicated that the installation of residential fire sprinklers systems could have saved thousands of lives, prevented a large portion of injuries, and eliminated hundreds of millions of dollars in property loss. In 2000, 73 per cent (368,000) of the structure fires occurred in homes (Thorne, 2002). The National Institute of Standard Testing (NIST) conducted a cost benefit analysis that concluded that the addition of a residential sprinkler system makes good economic sense and provides a dramatic reduction in civilian deaths, injuries and property damage(NIST, 2007) In a report from the building Division of the Office of the Deputy Prime Minister (BDODPM) a formal study of the cost effectiveness and benefits of residential sprinkler systems concluded that sprinkler protection was not found to be a panacea, it stated that slow growing and shielded fires were still a problem, sprinklers did prove to be effective in reducing casualties in the room of origin, in order to be cost effective sprinkler systems maintenance and reduction of insurance costs and other indirect costs would be needed to make them cost effective in the residential setting. “Fire Service Leaders at all levels need to continue to effectively liaison within their communities’ political and social circles to ensure proper education relative to residential sprinklers” (Brower, 1994). The Florida Sprinkler Association has two bills S. 582, HR. 1742, Fire Sprinkler Incentive Act of 2007 which speak to a tax incentive to support the installation of residential sprinklers by relieving some of the financial burden.

## Procedures

The purpose of this research project was to assess the actual cost for installing a residential sprinkler system in the Gainesville community and other jurisdictions and identify the best practices for making recommendations for improving the residential sprinkler project in the Gainesville community. The process utilized in collating this research began with an extensive literature review that was conducted to analyze the existing body of knowledge as it related to Residential Fire Sprinkler systems. The initial review revealed a wealth of information that related to the subject. The review included trade journals, United States Fire Administration [USFA] publications, fire service journals; Executive Fire Officer [EFO] applied research projects, National Fire Academy [NFA] textbooks and numerous websites were reviewed to identify the best practices utilized by other agencies as they related Residential Sprinkler systems and their associated costs.

The EAFSOEM manual and discussions with classmates and instructors were utilized during the research. The use of the keywords, *Fire sprinkler costs benefits*, produced a plethora of information from the Learning Resource Center and subsequent internet searches.

A key element utilized in this project that assisted with the answering of the six research questions was a phone survey and web site search of sprinkler distributors and manufacturers, this survey produced valuable insights as to what types of sprinkler components are being utilized by contractors in Florida. The survey was sent out to 15 contractors with 12 responses returned. A chart (Appendix D) is included here with all responses to the six question survey. The primary objective of this survey was to determine the cost of sprinkler materials, components and labor associated with residential sprinkler installations. A secondary objective of the survey was to identify information and the best practices that are currently being used as

they relate to residential sprinkler installation and to uncover any hidden costs. A mock sprinkler cost summary was completed utilizing the pricing information gleaned from the research material to determine the cost of sprinkler system (Appendix C). An actual sprinkler bid provided by a local vendor is included as (Appendix B).

To determine the effectiveness of the current Residential Fire Sprinkler costs and make comment on past performance, several interviews were completed with key personnel who included sprinkler contractors, building associations and community leaders. These interviews were arranged, two weeks in advance via phone call request made to each individual. The phone message explained the reason for the interview request (i.e., the ARP as it related to residential sprinkler installation and costs, benefits, pitfalls), the 30 to 60-minute time frame for the interview, and the confidentiality of the interview results. Suggested dates and times were provided in the phone message to help make the scheduling process easier for both the author and the interviewee. The time, date, and location of each interview were set at the convenience of the interviewee. Once the date, time, and location for each interview were established, an e-mail message was sent to the interviewee to confirm the appointment and to thank the participant in advance for his/her support of the research. The following interviews were completed to gain insight into the current operations and the success or failure of past operations as they pertained to the residential fire sprinkler installation process in the Gainesville community.

1. Doug Murdock Interview, Building Official/City of Gainesville, Mr. Murdock's office Gainesville, FL January 14,2008 at 1400 hours
2. William Northcutt Interview, Fire Chief, Fire Chiefs Office Gainesville Fire Rescue Administration, Gainesville FL January 10, 2008 at 1300 hours
3. Brad Kinsell, Interview, Gator Fire Commercial Contractor, Thomas Center, Gainesville, FL

February 21,2008 at 1430 hours

4. Scott Holland, Wayne Sprinklers, Alarms Service Manager, Interview, Phone Interview,

Gainesville, FL February 06, 2008 at 1000 hours

5. Sheila Hayes, Fire Protection Technologist, Retired, Mrs. Hayes' office, January 14, 2008 at

1100 hours

6. Keith Saunders, Certified Contractor, Saunder Construction, Mr. Saunder's office, Jaunuary

14,2008 at 0900 hours

In addition to the interviews, this researcher checked websites and catalogues of 150 fire sprinkler parts and accessory distributors and manufacturers to compare and contrast the cost of the individual sprinkler system components to ascertain the true cost of materials and components for installing residential fire sprinkler systems.

A survey of local and national insurance companies to ascertain the real discounts alluded to by sprinkler proponents was also completed. This survey was completed by phone and is included in the (Appendix E).

The smaller than expected percentage of responses from the survey had a statistical impact on the accuracy of data collected in relation to the sample companies. The survey was given to fifteen of the larger insurance carriers and only seven gave responses. This low number of responses was attributed to the survey being a low priority and the secret nature of proprietary information about discounts and how they were applied was not readily available without actual quotes.

Another limiting factor of this project proved to be the large number of vendors that needed to be analyzed just on their website content with no real pricing information without a request for a quote and number of sprinkler heads and piping required for the project.



## Results

The following research questions were utilized to evaluate the cost and benefits of residential sprinkler systems:

1. What are the costs associated with the installation of residential sprinkler systems? The first research question addresses the current costs associated with the installation of residential sprinklers. The research indicated that there were many hidden costs that were not calculated into the literature being generated by proponents of residential sprinklers. There are many costs associated with installing a residential sprinkler system. The most variable cost among the contractors interviewed and the literature review was the labor cost. The labor cost were usually a per head charge in the \$25.00 to \$75.00 range. The type of head and the height at which it was installed also increased the cost. All estimates charged a minimum charge usually \$400 to \$1000 depending on the number of sprinkler heads. The type of ceiling or wall covering could also add additional costs per head usually between \$5.00 - \$15.00 per head. Any special conditions that required the use of scaffolding were billed for scaffolding plus 10%. The set up and relocation of this equipment was usually an extra per hour charge per person (Saunders, personal communication, January 14 2008).

The cost of the sprinkler heads varied very little and usually came with discounts when purchasing large quantities. The average cost was from \$20.00 to \$35.00 per head.

The cost of approved piping and fittings varied according to the type of material designated for the project. The old copper standby was by far the material with the most benefits especially in the multi-system design where the plumbing was actually a part of the sprinkler system. The only draw back for this choice was the cost and additional labor to install. The per foot charge was about \$2.76 plus installation. The most popular piping material is of course Chlorinated Poly

Vinyl Chloride (CPVC). It was cheaper and easier to use. The (CPVC) did not require a skilled labor person to make the joints and the cost per foot was about \$.26 plus installation. The steel piping at a per foot charge of \$2.50 per foot is still being used in a lot of commercial settings. The steel piping still requires a skilled labor person to install; the weight causes an increase in the material used to hang the piping. The steel pipe can have some nasty side effects including corrosion, leaking and stagnant rust laden water which can affect the sprinkler performance by clogging the orifice. The steel piping is rapidly being replaced by the (CPVC) piping. The PEX tubing is also a very popular choice at about \$.42 per foot, but it has drawbacks with the joints and sprinkler head fittings. The fitting for this tubing are limited and does require some skilled labor to complete the installation. The sprinkler engineering design and certification plans was also a consideration when bidding a job. The costs associated with this project ran from \$500 to \$3500 depending on the size of the project. Some costs were also attributed to redesign of the structure to accommodate the installation of the sprinkler system. These costs can also run from \$500 to \$2500 depending on the modifications that are required.

The permit fees and inspection fees were about \$100 to \$500, not including any tap fees if required in that jurisdiction. The local tap fee was about \$2,599, with the others surveyed at about the same or a little higher depending on the size of the required tap. A separate Fire sprinkler tap fee could also be required at \$400 for a two inch, non metered connection. Some of the builders surveyed also added a 10 to 20% mark up premium to the final cost of the sprinkler project to cover their advertising and administrative costs. The estimated cost to install a residential sprinkler system is about \$3,266.85 or \$1.81 a square foot in the Gainesville area utilizing the available contractors and material pricing.

2. What types of approved materials can be utilized in the installation of residential sprinklers?

There are several types of approved materials that can be utilized in the construction of a residential sprinkler system; they include steel, copper and plastic piping with the most affordable being Chlorinated Polyvinyl Chloride (CPVC). The Steel pipe can be found in schedule 40,10,5 and thin wall threadable. A skilled labor person is required to install this type of sprinkler pipe with very specific approved connections utilizing threaded, roll grooved or a press fit to complete the installation adding to the labor cost to the project. The copper piping comes in Type K, L or M. There are several installation methods that are approved including brazed or soldered joints or copper bond; some skilled workers use the T-Drill method that eliminates the copper T fittings. All copper tubing is approved for the potable water supply. The plastic piping is usually Chlorinated Polyvinyl Chloride (CPVC) or PEX tubing. The CPVC pipe is the cheapest approved material and requires the least skilled labor to perform the connections and installation of the sprinkler components. It utilizes cement that creates a waterproof leak proof seal at all connections. All materials used must be Underwriters Laboratory (UL) listed including the fittings and other components. (CPVC) pipe has a burst pressure of 650 psi, and fire sprinkler is tested at 500 psi. CPVC is also approved for a potable water supply so backflow problems are negated. The working pressure of the fittings should be at least 175 psi cold water pressure or 130 psi for multipurpose systems with no fire department connection. The utilization of Fire Department connection for a residential sprinkler system is usually not required by code in a 13R system which can substantially affect the cost of the entire system and the ability to utilize a plumbing system water supply. Current studies have indicated that sprinklers can be effective at much less water flow than what was normally accepted as a standard just a few years ago (Ahrens, 2007).

3. What are the alternative methods of installing residential sprinklers that would not have a detrimental effect on the contractor or the home owner? Building and Fire Code officials have been able to apply the codes to the installation of commercial structures with professional eloquence. The philosophy of the sprinkler system has changed from property protection to life safety with the movement toward the installation of residential sprinkler systems creating a gray area requiring vision and innovation to the application of the codes that for so long had not been required in the residential setting. The research provided several options that are code compliant methods for installing residential sprinklers. The most cost effective with the least impact was the multi system that utilized the potable water supply to supply the sprinkler system.

Residential fire systems are categorized in two basic configurations, the flow-through combination (FTC) and closed fire protection system (CFP). (Cote,2008). The research revealed there are distinct advantages and disadvantages for all of the fore mentioned systems. The flow through fire system contains no standing or stagnant water, no backflow protection is required and it usually requires a single meter. Some of these systems disadvantages include a service line, meter and plumbing system that must be designed hydraulically to supply both domestic and fire flow requirements. The sprinkler system must have a connection at the end for an appliance or other fixture to prevent water from becoming stagnant. The advantages of a protection system is that it contains no standing or stagnant water, no backflow is required, requires a single meter. Water use throughout the system eliminates water use at the end of the system. Some of this system disadvantages include the service line, meter and plumbing system must be designed hydraulically to supply both domestic and fire flow requirements. The closed fire protection system has two major advantages, the cost savings that occur when a separate metered line may be cheaper than upgrading an existing service. The fire service rate is usually

cheaper than a residential rate, per the City of Gainesville regional utilities provider, there is no charge for protection water (Hayes, personal communication, January 14, 2008). The disadvantages to a closed system include the additional cost of a backflow preventer resulting in additional annual testing and maintenance costs (Northcutt, personal communication, January 10, 2008). If the fire service and domestic service are combined, the fire service may not be turned off because of safety reasons. Any antifreeze or chemical application to the system requires a reduced pressure backflow assembly (Murdock, personal communication, January 14, 2008).

4. Are there incentives that local governments and Insurance companies offer to encourage the use of residential sprinklers? In all of the current literature insurance discounts are mentioned as being substantial enough to actually pay for the installation of a residential sprinkler system. The survey completed by this researcher concluded that these discounts are small and insignificant. (APPENDIX E) The discounts were usually tied to other features like burglar alarms, deadbolts and the current Insurance Service Office (ISO) ratings. The discounts would not even come close to paying for a residential sprinkler system. A survey of local governments without mandatory sprinkler ordinances also proved to be a dry well for incentives or discounts. Most municipalities and counties actually charged more permit and plans review fees. A few municipalities actually offered incentives to developers on road width and hydrant placement but still charged additional tap fees and inspection fees. The City of Gainesville charges a sprinkler permit fee based on the cost of the construction project (Appendix A) and a \$2,599 tap fee with a \$400 for existing structures. Depending on the design of the system and the areas protected, discounts range from 5 to 20 per cent. The higher discounts are available only when sprinkler protection is combined with other features, such as smoke detectors, system monitoring, fire extinguishers, and dead bolt locks. Surveys of insurers indicate that most insurers do not offer

significant discounts. The building industry, real estate folks, and individual insurance agents have reported that residential sprinklers actually increase insurance costs for residential properties because sprinklers could leak and cause massive water damage. The Scottsdale, Arizona project offered design freedom as a deterrent to high construction cost. Design freedom benefits helped to offset the cost of mandatory sprinkler protection. Some of the benefits included an increase of density by 4 percent, a reduction in street width from 32 to 28 feet, and an increase in cul de sacs from 600 feet to a maximum of 2,000 feet. The requirements for one hour separations were also eliminated saving even more construction costs. The fire hydrant spacing was increased from 330 to 700 feet for developments with multi family dwellings and from 660 to 1,200 feet in fully sprinklered single-family developments. The study also indicated that the fire flow demand was reduced by 50 percent that resulted in reduction of water mains and the use of smaller storage tanks (NFPA, 2007). “None of these features are currently allowed by the City of Gainesville Building department” said Doug Murdock, Building Official for the City of Gainesville. Mr. Holland mentioned that the City of Orlando gave incentives to developers for including residential sprinklers in their plans. Some examples Mr. Holland mentioned were fewer hydrants, smaller roads and reduced permit fees (Holland, personal communication, February 6, 2008). In a report from the (NAHB,2007) they reported that increased permit, tap, and inspection fees, as well as redesigning and engineering costs should be included in the cost of the sprinkler system. The study also concluded that local governments need to contribute to the affordability of the systems by lowering or omitting additional tap fees or regulatory permits for installation of residential sprinklers (NAHB, 2007). Barriers existed at levels of government regarding the installation of residential sprinkler systems (Dmuchowski, 2004).

5. What are the problems associated with owning and maintaining a residential sprinkler system?

The major problems that a consumer encounters after they purchase and install a fire sprinkler system is the recurring maintenance and inspection costs which can be substantial according to the type of system that was installed and if it is monitored and was required to have a back flow device installed along with a monitored flow switch. Some of these recurring annual expenses can be in the \$250 to \$500 according to local fire sprinkler contractors and the requirements of the Authority Having Jurisdiction (AHJ). Some jurisdictions allow the homeowner to complete annual inspections and water flow tests (Holland, personal interview, February 6, 2008). Some homeowners complained about the decorative features of fire sprinklers as not aesthetic to the décor of the home and that the covers look like fan installation cut outs. The other problem identified was the delicate nature of the sprinkler head bulb mechanism to being bumped or damaged during regular activities causing an accidental activation with resulting water damage and false alarm fee.

6. What are the actual savings in dollars and lives associated with homes with sprinklers versus homes without sprinklers? Eight out of ten fire deaths occur in the home. Home fire sprinklers can contain and may extinguish a fire in less time than it would take the fire department to arrive on scene (NFPA, 2001). After reviewing the current literature, this researcher concludes that the fire problem in the United States is in the residential setting. People are dying at home in structures without residential sprinklers. In 2001, 493 children ages 14 and under died in residential fires. Nearly 54 percent of these children were ages 4 and under. Each year, nearly 40,000 children, ages 14 and under, are injured by fires in the home. More than 70 per cent of all fire related deaths are from smoke inhalation, caused by toxic gases produced as fires develop and spread. Burns are responsible for an additional 25 per cent of fire –related deaths. The

chances of dying in a residential fire are cut by 73 percent when automatic sprinklers are present (Ahrens, 2007) A study completed by the National Association of Home Builders (NAHB) confirmed that the median cost for installing a fire sprinkler was about \$ 5,573.00. In that same report the NAHB reported that increased permit, tap and inspection fees, as well as redesigning and engineering costs should be included in the cost of the sprinkler system. The study also concluded that local governments need to contribute to the affordability of the systems by lowering or omitting additional tap fees or regulatory permits for installation of residential sprinklers (NAHB, 2007). Sprinklers could save an additional 7.7 lives per million houses per year. Residential sprinklers reduce the risk of firefighter fatalities by 0.1 lives per million houses. The addition of sprinklers could prevent 87 injuries per million houses. Fire sprinklers can reduce property loss by two thirds. The costs for a residential sprinkler system could range from \$2,800 to \$6,700 dollars (Ahrens, 2007). Eight out of ten Fire deaths occur in the home. Home fire sprinklers can contain and may extinguish a fire in less time than it would take the fire department to arrive on scene (Ahrens, 2007).

This researcher reviewed several cost benefit analysis and all of them came to the same conclusion, the benefits of the addition of a residential fire sprinkler system far outweigh the cost of installation and maintenance as compared to the savings of life and property. “Fire Service Leaders at all levels need to continue to effectively liaison within their communities’ political and social circles to ensure proper education relative to residential sprinklers” (Brower, 1994). The Florida Sprinkler Association has two bills S. 582, HR. 1742, Fire Sprinkler Incentive Act of 2007 which speak to a tax incentive to support the installation of residential sprinklers by relieving some of the financial burden.



## Discussion

The Residential Sprinkler program is essential to the modern day fire prevention curriculum providing a vital link to reality from perception. This research project will provide the essential information needed to make quantifiable strategic decisions resulting in quality service to our citizens. The fact that barriers existed at all levels of government regarding the installation of residential sprinkler systems unfortunately still holds true (Dmuchowski, 2004).

The results of the project confirmed that there are recurring technical and regulatory obstacles that hinder the widespread installation of residential sprinklers in the Gainesville area and are consistent with other similar jurisdictions. There are obstacles for providing water service. The installation of water based fire suppression systems usually requires additional water taps or upgrades of existing connections (Murdock, personal communication, January 14, 2008). Many local water providers charge permit fees, and hook up charges and inspection fees that add substantial cost to the project. The second obstacle is lack of competition among sprinkler installers. The ability to keep installation costs down and make the system more appealing and affordable to the consumer is paramount to making this project a reality. Most of the contractors interviewed were concerned about low profits and high overhead when installing residential sprinkler systems.

The third road block is a lack of coordination between the city building department, the city planning department and the city fire department, the City of Gainesville utilizes an enterprise fund that is guarded and inflexible concerning fees and permits and providing incentives to potential developers and builders for adding residential sprinkler options in their prospective projects.

The bottom line of this project is that sprinkler system components are affordable and can be installed with proper training and without special tools. The problem is a shortage of qualified sprinkler installers and or plumbers with knowledge of multipurpose systems. The resistance of the builders association to a mandated sprinkler ordinance is justified to a certain extent due to the extra costs associated with permitting and inspecting and the construction delays waiting for these new inspections and additional sub contractors. In the Scottsdale Arizona project the ordinance requiring the sprinklers actually created the need for more qualified installers, this caveat created competition that drove the installation costs down (Ahrens, 2001).

When the personal computer was first introduced it too was expensive and considered a luxury item. Now it's like a household appliance, everyone has to have one. Residential home sprinkler systems need to become the new home appliance that no one can live without. The key element is education of the consumer about the different options and having them available at a reasonable cost. An example is amending statute and local ordinances to allow homeowners to install residential sprinklers in owner –occupied structures, this practice would be consistent with other trade like construction, plumbing and electrical with approved permits.

The education of local fire and building officials about the installation requirements of a 13 D system, including FD connections, water flow alarms and central station monitoring and amending ordinances that prohibit the installation of these systems (Northcutt, personal communication, January 10, 2008).

The Scottsdale, Arizona project offered design freedom as a deterrent to high construction cost. Design freedom benefits helped to offset the cost of mandatory sprinkler protection. Some of the benefits included an increase of density by 4 percent, a reduction in street width from 32 to 28 feet, and an increase in cul de sacs from 600 feet to a maximum of 2,000 feet. The requirements

for one hour separations were also eliminated saving even more construction costs. The fire hydrant spacing was increased from 330 to 700 feet for developments with multi family dwellings and from 660 to 1,200 feet in fully sprinklered single-family developments. The study also indicated that the fire flow demand was reduced by 50 percent that resulted in reduction of water mains and the use of smaller storage tanks (NFPA, 2001). The ball is the court of the fire service and the fate of residential fire sprinklers being able to save countless lives and property depends on our ability to overcome the monetary cost issue. Sprinklers could save an additional 7.7 lives per million houses per year. Residential Sprinklers reduces the risk of firefighter fatalities by 0.1 lives per million houses. The addition of sprinklers could prevent 87 injuries per million houses. Fire sprinklers can reduce property loss by two thirds (Cote, 2008). The sixty four dollar question is what does a residential sprinkler system really cost. This researcher concluded that the real cost is about \$3,266.85 or \$1.81 a square foot to install a residential sprinkler system in the Gainesville area utilizing the available contractors. The cost of approved materials and installation methods is at an all time low but the cost of engineering, permits and labor are at an all time high. The Florida Sprinkler Association has two bills S. 582, HR. 1742, Fire Sprinkler Incentive Act of 2007, which speak to a tax incentive to support the installation of residential sprinklers by relieving some of the financial burden. By passing a tax incentive, Congress can play a critical role in making the places that our citizens live, work and play safer. Efforts by these types of organizations and the fire service to provide funding for known loss reduction strategies are the real solution to our nation's fire safety problem.

#### Recommendations

The new mission will focus on how well public officials work together in the future to alleviate this problem and still provide safe sprinkler friendly neighborhoods at an affordable cost. In an

effort to facilitate this new partnership and fulfill the role of leader in the communities risk reduction efforts, this researcher suggests the following keys to success should be implemented by Gainesville Fire Rescue:

1. The City of Gainesville Commission should establish a Community Residential Fire Sprinkler Task Force with all stakeholders and City Department representation tasked with the improving the safety of the citizens of Gainesville and preventing fire deaths and saving property by establishing a mandatory residential sprinkler ordinance.
2. Gainesville Fire Rescue will partner with the City of Gainesville Building Department, Planning department to evaluate alternative methods that will facilitate and encourage the utilization of Residential Fire Sprinklers and the addition of qualified fire sprinkler installers and even homeowners to help reduce costs in all new and existing construction in the Gainesville area.
3. Gainesville Fire Rescue will create and implement a community education curriculum that focuses on the life saving benefits and actual costs of residential sprinklers in the Gainesville community.

These recommendations will be forwarded to the Fire Chief for final approval and forwarded to the city Manager and the city commission for consideration. After the final approval the recommendations will be included in the work plans of appropriate staff to facilitate the enhancement of the residential sprinkler program and move toward a mandatory residential fire sprinkler ordinance.

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**APPENDIX A SCHEDULE OF FEES, RATES AND CHARGES FOR  
THE CITY OF GAINESVILLE**

**BUILDINGS AND BUILDING REGULATIONS:**

- (1) *Building permit fees* (§ 6-3(108.2 of the Florida Building Code, 2004 ed.): See subsection (6) for all new construction, addition and renovation permit fees for one- and two-family residential (i.e. dwelling). For multifamily residential projects (those designated as type R2 under section 310.1 of the Florida Building Code, 2004 ed.), there shall be one building permit issued for each multifamily building.
- a. The permit fee for all new construction and additions shall be calculated based on the cost per square foot table and estimated valuation taken from the table below or the contract price, whichever is greater. The permit fee for all renovations shall be calculated based on the contract price. If the owner builder is obtaining the permit and there is no contract, the owner must submit a sworn affidavit of the cost of the project with backup provided for the materials cost. The cost shown on the affidavit will be used in lieu of the contract price to calculate the permit fee.
    1. Where the valuation does not exceed \$1,000.00 . . . \$100.00
    2. Where the valuation is over \$1,000.00:
      - (i) First \$1,000.00 . . . \$100.00
      - (ii) Each additional \$1,000.00 or fractional part up to \$250,000.00 . . . \$6.75
    3. Where the valuation is over \$250,000.00:
      - (i) First \$250,000.00 . . . \$1,780.75
      - (ii) Each additional \$1,000.00 or fractional part up to \$1,000,000.00 . . . \$3.50
    4. Where the valuation is over \$1,000,000.00:
      - (i) First \$1,000,000.00 . . . \$4,405.75
      - (ii) Each additional \$1,000.00 or fractional part thereafter . . . \$3.50
    5. Site work only: Valuation to calculate permit fee shall be based on the cost of excavation, paving and landscaping.
  - b. Moving buildings or structures, each story . . . \$82.75
  - c. Paving of all driveways and parking lots other than public, single-family and duplex use:
    1. First 1,000 square feet . . . \$27.75
    2. Each additional 1,000 square feet or fractional part thereafter . . . \$11.25
  - d. Fences and/or walls wood frame construction (where required):
    1. First 300 lineal feet or fractional part . . . \$55.25
    2. Each 100 lineal feet thereafter . . . \$16.75

(Masonry walls shall be calculated the same as a new building permit)
  - e. Demolition of buildings, per floor . . . \$55.25
  - f. Mobile home sites and/or tie-down fees, for each location . . . \$55.25
  - g. Notice of commencement form, except where exempted by F.S. Ch. 713 . . . \$5.75

- h. Reinspection fees shall be charged under the following conditions:
  - 1. The project is not ready for the inspection requested.
  - 2. Upon any reinspection, all the prior corrections have not been made.
 The reinspection fee shall be \$110.00 each. This fee shall be paid prior to scheduling any additional inspections for that project.
- i. There shall be a double fee for all work for which a permit is required and work has commenced before a permit is applied for.
- j. For multifamily residential projects, each inspection after the first of that type per building, when requested by the contractor . . . \$60.00
- k. Building plan review fee: 20% of the permit cost.
- l. Fire plan review fee (R3 Exempt): 20% of the permit cost.

Any inspection for which no fee is specified for actual time spent inspecting . . . \$60.00

Re-roofing permits shall be calculated at a base fee of \$60.00 plus \$3.00/square foot, or contract price using the building valuation, whichever is greater.

Valuation estimates shall be based on the cost per square foot of total floor area as published in the International Code Council Building Safety Journal in February and August each year.

TABLE INSET:

Occupancy	Types of Construction 3								
	I-A	I-B	IV	II		III		V	
				II-A 1-HR	II-B UNP	III-A 1-HR	III-B UNP	V-A 1-HR	V-B UNP
<i>Assembly:</i>									
Auditorium	139.30	133.62	117.26	128.35	122.44	109.81	110.09	98.65	94.55
Church	163.60	157.92	141.56	153.66	146.75	135.13	134.40	123.97	118.86
Gymnasium	136.70	132.48	119.68	128.10	124.03	114.08	114.77	104.71	102.11
Restaurant	136.70	132.48	119.68	128.10	124.03	114.08	114.77	104.71	102.11
Theater with stage	176.90	171.15	154.79	166.88	159.97	148.38	147.66	137.22	132.12
<i>Business:</i>									
Office	140.00	134.95	117.26	130.65	124.54	111.53	110.82	99.60	95.75



Research/Eng	140.00	134.95	119.78	130.65	124.54	111.53	110.82	99.60	95.75
Service Station	140.00	134.95	119.78	130.65	124.54	111.53	110.82	99.60	95.75
<i>Educational:</i>									
School	149.10	144.06	129.32	139.93	133.69	123.37	120.45	110.19	106.00
<i>Factory-Industrial:</i>									
Light-Mfg.	85.02	81.11	70.93	76.36	73.93	63.99	64.99	54.77	51.74
<i>Hazardous (Sprinkler System Included) 3 :</i>									
Hazardous	140.00	134.95	119.78	130.65	124.54	111.53	110.82	99.60	95.75
<i>Institutional:</i>									
Convalescent Hospital	138.30	133.59	123.94	130.04	124.80	114.52	123.94	105.39	101.21
Hospital	138.30	133.59	123.94	130.04	124.80	114.56	114.52	105.39	101.21
<i>Mercantile:</i>									
Department Stores	102.60	98.32	85.52	93.94	89.97	80.45	81.15	71.08	68.48
Mall Stores	102.60	98.32	85.52	93.94	89.87	80.45	81.15	71.08	68.48
Mall-Concourse	102.60	98.32	85.52	93.94	89.87	80.45	81.15	71.08	68.48
Retail-Stores	102.60	98.32	85.52	93.94	89.87	80.45	81.15	71.08	68.48
<i>Residential:</i>									
Apartments	116.30	111.63	102.18	108.08	102.84	92.80	92.76	83.63	79.45

Dormitories	116.30	111.63	102.18	108.08	102.84	92.80	92.76	83.63	79.45
Assisted Living Bldgs.	138.30	133.59	123.94	130.04	124.80	114.56	114.52	105.39	101.21
Hotel	138.70	133.98	124.42	130.43	125.19	115.04	115.00	105.87	101.68
Motel	138.70	133.98	124.42	130.43	125.19	115.04	115.00	105.87	101.68
Single Family Residence	111.50	108.46	101.12	105.79	102.87	98.15	97.91	93.50	88.03
<i>Storage:</i>									
Parking Garage	77.75	73.84	63.66	70.09	66.68	57.88	57.88	48.46	44.63
Private Garage	77.75	73.74	63.66	70.09	66.68	57.88	63.66	48.46	44.63
Repair Garage	78.75	74.84	64.66	70.09	67.68	57.88	58.88	48.46	45.63
Warehouse	78.75	73.84	63.66	70.09	66.68	57.88	57.88	48.46	44.63

1 For sprinkled buildings other than hazardous occupancies add \$175/sq. ft.

- (2) *Electrical permit fees* (§ 6-3(108.2 of the Florida Building Code, 2004 ed.): See subsection (6) for all new construction, addition and renovation permit fees for one- and two-family residential (i.e. dwelling).
- a. Electrical permit, each . . . \$60.00
  - b. Reinspection fees shall be charged under the following conditions:
    1. The project is not ready for the inspection requested.
    2. Upon any reinspection, all the prior corrections have not been made.
  - c. The reinspection fee shall be \$110.00 each. This fee shall be paid prior to scheduling any additional inspections for that project.
  - d. A fee of double the above amounts shall be charged for any work commenced before a permit is applied for. If work is performed on an emergency basis, the master electrician shall obtain the necessary permit within forty-eight (48) hours or a double fee will be charged.
  - e. Request for inspection to be done after working hours . . . \$180.00
- (3) *Plumbing permit fees* (§ 6-2(108.2 of the Florida Building Code, 2004 ed.): See subsection (6) for all new construction, addition and renovation permit fees for one- and two-family residential (i.e. dwelling).
- a. Permit fee . . . \$60.00
  - b. Inspection fee per inspection . . . \$60.00

- c. Reinspection fees shall be charged under the following conditions:
  - 1. The project is not ready for the inspection requested.
  - 2. Upon any reinspection, all the prior corrections have not been made. The reinspection fee shall be \$110.00 each. This fee shall be paid prior to scheduling any additional inspections for that project.
- a. Double the amount of the permit shall be charged for any work commenced before the permit has been applied for. If work is performed on an emergency basis, the plumbing contractor shall obtain the necessary permit within forty-eight (48) hours of the next working day or a double fee shall be charged.
- b. Request for inspection to be done after normal working hours . . . \$180.00
- (4) *Gas permit and inspection fees* (§ 6-2(108.2 of the Florida Building Code, 2004 ed.)): See subsection (6) for all new construction,2 addition and renovation permit fees for one- and two-family residential (i.e. dwelling).
  - a. Permit fee . . . \$60.00
  - b. Inspection fee per inspection . . . \$60.00
  - c. Reinspection fees shall be charged under the following conditions:
    - 1. The project is not ready for the inspection requested.
    - 2. Upon any reinspection, all the prior corrections have not been made. The reinspection fee shall be \$110.00 each. This fee shall be paid prior to scheduling any additional inspections for that project.
  - d. Double the amount of the permit shall be charged for work commenced before a permit is applied for. If work is performed on an emergency basis, the master craftsman shall obtain the necessary permit within forty-eight (48) hours of the next working day, or a double fee shall be charged.
  - e. Request for inspection to be done after normal working hours . . . \$180.00
- (5) *Mechanical permit fees* (§ 6-2(108.2 of the Florida Building Code, 2004 ed.)): See subsection (6) for all new construction, addition and renovation permit fees for one- and two-family residential (i.e. dwelling).
  - a. Permit fee . . . \$60.00
  - b. Inspection fee per inspection . . . \$60.00
  - c. Reinspection fees shall be charged under the following conditions:
    - 1. The project is not ready for the inspection requested.
    - 2. Upon any reinspection, all the prior corrections have not been made. Reinspection fee shall be \$110.00 each. This fee shall be paid prior to scheduling any additional inspections for that project.
  - d. A double fee of the amount of the permit shall be charged for work commenced before a permit is applied for. If work is performed on an emergency basis, the master craftsman shall obtain the necessary permit within forty-eight (48) hours of the next working day, or a double fee shall be charged.
  - e. Request for inspection after normal working hours . . . \$180.00
- (6) *Permit fee for new construction, additions and renovations of one- and two-family residential* (i.e. dwellings, section R101.2.1 of the Florida Residential Code):
  - a. The permit fee for all new construction and additions shall be calculated based on the cost per square foot and the valuation table or the contract price, whichever is greater. The permit fee for all renovations shall be calculated based on the contract price. If the owner builder is obtaining the permit and there is no

contract, the owner builder must submit a sworn affidavit of the cost of the project with backup provided for the materials cost. The cost shown on the affidavit will be used in lieu of the contract price to calculate the permit fee.

1. Where the valuation does not exceed \$1,000.00 . . . \$100.00
2. Where the valuation is over \$1,000.00:
  - (i) First \$1,000.00 . . . \$100.00
  - (ii) Each additional \$1,000.00 or fractional part up to \$250,000.00 . . . \$6.75
3. Where the valuation is over \$250,000.00:
  - (i) First \$250,000.00 . . . \$1,780.75
  - (ii) Each additional \$1,000.00 or fractional part up to \$1,000,000.00 . . . \$3.50
4. Where the valuation is over \$1,000,000.00:
  - (i) First \$1,000,000.00 . . . \$4,405.75
  - (ii) Each additional \$1,000.00 or fractional part thereafter . . . \$3.50
5. Site work only: Valuation to calculate permit fee shall be based on the cost of excavation, paving and landscaping.

- b. There shall be a double fee for all work for which a permit is required and work has commenced before a permit is applied for.
- c. At least one working day prior to the first inspection of the work, the person to whom the permit was issued shall notify the building official or his/her designee and provide a list of all the licensed craftsmen who are or will be performing work under the permit. If any substitutions or additions to such list occur during the course of the work, the building official shall be notified immediately. No inspection of any work under the permit shall be conducted unless and until such list is up-to-date and complete at least one (1) day prior to any requested inspection.
- d. If, as described above, the person to whom the permit is issued is not performing all the work to be performed under the permit, such person shall procure affidavits from the licensed craftsman performing such other work stating that such work was performed by them in accordance with the code and shall present such affidavits to the inspector prior to any inspection of such other work.
- e. Reinspection fees shall be charged under the following conditions:
  1. The project is not ready for the inspection requested.
  2. Upon any reinspection, all the prior corrections have not been made.
 Reinspection fees shall be \$110.00 each. This fee shall be paid prior to scheduling any additional inspections for that project.
- f. For each request for inspection or reinspection to be done after-hours there shall be an additional charge of \$138.00\$145.00.

(7) ~~Journeyman test fees~~

- a. Application processing fee for journeyman test (§ 6-187): . . . \$33.25
- b. Certificate for journeyman--Application fee (§ 6-187) . . . \$26.25

- c. Reciprocation of certification for journeyman--Application fee (§ 6-187) . . .  
\$105.00

(8) *Contractor and craftsman certificates, annual renewal* (§ 6-193):

Beginning September 30, 2000, Contractor and Craftsman Certificates shall be renewed every two years according to the following schedule:

Year 2000 and subsequent even-numbered years: Last Name beginning with A through M.

Year 2001 and subsequent odd-numbered years: Last Name beginning with N through Z.

- a. Contractor and master certificates . . . \$55.25
- b. Journeyman craftsman certificates . . . \$55.25
- c. Late renewal, all classes of certificates . . . \$110.25

(9) *Administrative fees:*

- a. Duplicate plans provided by the customer . . . \$27.75
- b. Duplicate permit card . . . \$11.25
- c. Revisions to plans (each item changed) . . . \$11.25
- d. Letters of reciprocation . . . \$27.75
- e. Plans search (locating) . . . \$27.75
- f. Local fax application surcharge . . . \$1.25
- g. Long distance fax application surcharge . . . \$2.25
- h. Duplicate plans lost by the customer prior to the certificate of occupancy, and made available by the city, plus reproduction fees . . . \$55.25

(10) *Special services:*

- a. Pre-plan review, one-half building permit fee. Valuation is based on cost per square foot and type of construction. This fee will be applied to the building permit application.
- b. After-hours inspection . . . \$180.00
- c. Fast track surcharge; equal to permit fee, not to exceed . . . \$500.00
- d. *Special inspections:*

1. *Multi-family and mixed use buildings:*

When a building or project meets any of the following parameters, special inspections are required based on the fee in 3. below.

- (i) Contract price of \$10,000,000 or greater; or
- (ii) 50,000 or greater total gross square feet; or

*Subject Amount*

- (iii) Meets the definition of a Threshold Building as defined in F.S. § 553.71(7).

2. *Single family dwelling developments:*

Upon the written request of a developer or contractor of a single-family dwelling development in excess of 75 dwelling units and upon written approval by the building official, special inspections shall be provided to the developer or contractor of said single-family dwelling development.

Requests for special inspections must be completed by the developer/contractor in writing and will be approved by the building official in writing prior to developer or contractor filing the first application for permitting. The fees shall be due and payable on the date the first application for permitting is filed with the city. Subsequent requests to continue the special inspection service for additional 30-day periods must be

received by the city in written form two weeks prior to the expiration of the current 30-day period and shall be submitted along with the special service monthly fee. All fees are non-refundable.

The city reserves the right to suspend such special inspections in the event of impossibility or in times of natural disaster. Any fees previously paid to the city will be held in abeyance pending resumption of special inspections.

- 3. Fee per hour . . . \$52.50
- 4. Special inspection service charge for on-site, full-time inspector . . . \$9,100.00  
per 30-day period

(11) *Flat rate permit fees:*

- a. Pre-manufactured storage buildings greater than 100 square feet . . . \$60.00
- b. Tent permit . . . \$60.00
- c. Christmas tree sales lot, includes structure, and temporary pole, lights and signs . . . \$60.00
- d. Change of use--no construction . . . \$60.00
- e. Electrical service changes, upgrades only; all service sizes . . . \$60.00

(12) *Board and seal permit fee* (§ 6-20(e)) . . . \$82.75

CABLE FRANCHISE

*Application fees:*

- (1) New franchise application by first time franchisee . . . ~~\$15,750.00~~ \$16,537.50
  - (2) Transfer of franchise (other than corporate reorganization) . . . ~~5,250.00~~ \$5,512.50
- All fees are non-refundable.

CEMETERIES:

- (1) *Conversion to perpetual care* (§ 7-13):
  - a. Full lot . . . ~~661.50~~ \$694.58
  - b. Partial lot . . . ~~413.50~~ \$434.25
  - c. Half lot . . . ~~330.75~~ \$347.25
  - d. Quarter lot . . . ~~275.75~~ \$289.50
  - e. Single grave . . . ~~275.75~~ \$289.50
  - f. Baby grave (under 6 years) . . . ~~132.50~~ \$139.25
- (2) *Exchange of interment rights* (§ 7-19): . . . ~~16.75~~ \$17.50  
plus ~~\$5.75~~ \$6.00/quit claim deed

CONTROLLED VEHICULAR PARKING AREA DECALS/PERMITS (Chapter 26, Article III, Division 4)

- (1) *Residential decal/permit:*
  - a. Annual . . . ~~16.75~~ \$17.50
  - b. Replacement . . . ~~5.75~~ \$6.00
- (2) *Temporary decal/permit* . . . no charge

- (3) *Commercial permit* . . . ~~16.75~~\$17.50
- (4) *Visitor permit* . . . no charge
- (5) *Fraternity/sorority meal decal* . . . ~~16.75~~\$17.50
- (6) *Service permit* . . . ~~16.75~~\$17.50
- (7) *Fee to appeal revocation* . . . ~~110.25~~\$115.75
- (8) *Fee for reinstatement after revocation* . . . ~~110.25~~\$115.75

## FIRE/RESCUE:

- (1) *Fire alarm operators* :
  - Application for fire alarm or annual renewal application . . . ~~15.00~~\$15.75
  - Application for fire alarm or annual renewal for integrated fire and burglar alarm system . . . \$0.00
  - (Note: proportionately adjusted for initial periods exceeding one year (section 10-32))
- (2) *False alarms* :
  - First with valid permit . . . \$0.00
  - First without valid permit, or second with valid permit, each . . . ~~25.00~~\$26.25
  - Third and fourth, each . . . ~~50.00~~\$52.50
  - Fifth and sixth, each . . . ~~100.00~~\$105.00
  - Seventh and eighth, each . . . ~~200.00~~\$210.00
  - Nine and above, each . . . ~~400.00~~\$420.00
  - (Note: reduced to ~~\$10.00~~\$10.50 if false fire alarm caused by system malfunction and proof of timely service/repair is submitted to the fire department (section 10-33(d))
  - Non-permitted system, additional fee . . . ~~200.00~~\$210.00
  - (Note: reduced to ~~\$50.00~~\$52.50 if application filed within 10 days (section 10-33)
  - Fire alarm permit reinstatement fee after revocation (section 10-34) . . . ~~50.00~~\$52.50
  - Failure to respond when requested by the fire department (section 10-36) . . . ~~50.00~~\$52.50
  - Resetting of an activated fire alarm prior to arrival of fire department and approval for resetting . . . ~~125.00~~\$131.25
  - Failure to deactivate fire alarm within 15 minutes (section 10-37) . . . ~~125.00~~\$131.25
- (3) *Prohibited devices* :
  - Automatic dialing device (section 10-41 (a)) . . . ~~125.00~~\$131.25
  - One Plus Panic Alarm or single-action switch (section 10-41(b) and (c)) . . . ~~50.00~~\$52.50
  - Auxiliary power supply less that four-hour minimum (section 10-42) . . . ~~125.00~~\$131.25
- (4) *Fire alarm monitoring companies* :
  - Annual registration fee (section 10-38) . . . ~~100.00~~\$105.00
  - Failure to register or to maintain records for one year (section 10-42) . . . ~~125.00~~\$131.25
  - Failure to monitor in accordance with the Florida Fire Prevention Code (section 10-38) . . . ~~125.00~~\$131.25
  - Failure to verify alarm (section 10-39) . . . ~~125.00~~\$131.25
- (5) *Fire alarm system contractors* :
  - Annual registration fee (section 10-40(a)) . . . ~~100.00~~\$105.00
  - Failure to register annually (section 10-40(a)); failure to meet UL or NFPA 72 standards (section 10-40(d)); activation of unpermitted fire alarm (section 10-40(e)) . . . ~~125.00~~\$131.25
  - Causing false fire alarm during servicing or inspection---each violation (section 10-60(f))

... ~~125.00~~\$131.25

Installation, maintenance, repair, alteration or servicing by unregistered contractor, each violation (section 21-40(b)) ... ~~125.00~~\$131.25

Failure to furnish agents with identification cards, each violation (section 10-40(c)) ... ~~50.00~~\$52.50

Failure to provide fire alarm operators with permit applications, each violation (section 10-40(g)) ... ~~50.00~~\$52.50

(6) Fire Inspection

First fire inspection...\$50.00

First fire reinspection if deficiencies are corrected...\$0.00

Fire reinspection(s)...\$50.00 each instance

Complaint investigations...\$135.00

Pre-construction site plan reviews...\$50.00

Burn permits...\$100.00

Letters of verification, fire reports and life/safety plan review administrative fees...\$10.00

(7) Fire Sprinkler Permits

Value \$1000- \$100

Value over \$1000- \$100

First \$1000-\$100

Each Add up to \$250,000- \$6.75

First \$250,000-\$1,780

Each Add \$1000- \$3.50

First \$1,000,000- \$4,405.75

Each Add \$1000- \$3,50

Fax charge \$3.50

Fax back Charge \$2.25

Plan Review (20% of sub total amount)

HOME OCCUPATION PERMIT

An application for a permit shall be submitted for each home occupation (section 30-58).

(1) Initial filing fee, per application submitted ... ~~60.00~~\$63.00 per application submitted

(2) Permit processing fee, annually per permit ... ~~10.00~~\$10.50

(3) Reinspection fee, per permit (required every three years) ... ~~50.00~~\$52.50

LAND DEVELOPMENT CODE

(1) *Historic Preservation/Conservation:*

a. Petitions for rezoning and zoning text amendments. ... ~~551.25~~\$578.75

b. Historic preservation:

1. single family...\$100.00

2. all others...\$500.00

(2) *Planning:*

*Land use and zoning changes:*



- a. Petitions for an amendment to the land use element of the comprehensive plan:
  - 1. Small scale map amendment . . . ~~1,102.50~~\$1,500.00
  - 2. Large scale map amendment . . . ~~2,205.00~~\$3,000.00
- b. Comprehensive plan or land development code text change . . . ~~551.25~~\$578.75
- c. Zoning map change . . . ~~2,657.25~~\$2,790.00  
 \$1,000.00 will be refunded if the change does not go to a formal quasi-judicial hearing.
- d. 1. Petitions for development plan review and an amendment to a development plan, which may be authorized by the appropriate reviewing board, must be accompanied by fees according to this schedule:
  - a. Minor plan review . . . ~~727.75~~\$1,500.00
  - b. Minor plan review II . . . \$2,000.00
  - c. Amendments to development plan – board review . . . \$1,500.00
  - d. Amendments to development plan – staff review . . . \$1,200.00
  - e. Preliminary plan review . . . ~~1,907.50~~\$2,800.00
  - f. Final plan review . . . ~~948.25~~\$995.75
  - g. Both (preliminary plan and final plan as one submittal) . . . ~~2,618.50~~\$2,749.50
  - h. Major plan review . . . ~~3,803.75~~\$3,994.00
- 2. ~~Amendments to a development plan which may be authorized by the director of the department of community development or designee . . . 727.75~~  
 A resubmittal/revision fee of 25 percent of the original fee amount will be applied to all fee areas.  
 If a continuance is requested, the fee for the continuance will be the actual cost of advertising.  
 All development plan review fees in subparagraphs d.1. ~~and d.2.~~ which are for a non-one or two-family residential project certified under the Gainesville Green Building Program (Article I.5) shall be reduced by 50 percent.
- e. Petitions for rezoning to the planned development category (in addition to any other applicable development plan fees) . . . ~~3,197.25~~\$4,500.00
- f. Concept review . . . ~~1,102.50~~\$1,157.75  
 Fee shall be credited toward the rezoning fee if a subsequent petition is filed within six months for rezoning to planned development.
- g. Petitions for amendments to a planned development ordinance . . . ~~1,212.75~~\$1,273.50  
 In the event the primary purpose of the amendment is to protect trees and/or other natural features, then the fee may be refunded to the petitioner in the sole discretion of the city manager

*Other petitions:*

- h. Developments of Regional Impact (DRI) An initial fee of ~~\$11,025.00~~\$11,576.25 will be due with the submission of the application. A rate of ~~\$59.75~~\$62.75 per hour will be applied against the ~~\$10,500.00~~\$11,576.25 for time devoted to the DRI. If the ~~\$10,500.00~~\$11,576.25 threshold is eclipsed, a second payment of ~~\$10,500.00~~\$11,576.25 will be assessed . . . ~~\$10,500.00~~\$11,576.25
- i. Petitions seeking special exceptions or variances from the board of adjustment. . . ~~248.25~~\$260.75

- j. Petitions seeking street or alley closings or abandonment of any public way . . . ~~722.25~~\$758.25
  - k. Petitions to appeal administrative decisions to the board of adjustment (§ 30-354) . . . ~~330.75~~\$347.25  
 The fee shall be automatically returned to the petitioner in the event the board of adjustment finds that the order, requirement, decision, or determination of the administrative official was made in error.
  - l. Zoning verification/code compliance letter . . . ~~44.25~~\$46.50
  - m. Certificate of appropriateness, if work begun prior to application being filed . . . ~~353.00~~\$370.75
  - n. Petitions for special use permits, per petition (in addition to any other applicable development plan review fees) (§§ 30-200 and 30-234) . . . ~~893.25~~\$938.00
  - o. Petitions for commercial tree removal permits . . . (§ 30-254)
    - 1. Where the parcel is five acres or less . . . ~~55.25~~\$58.00
    - 2. Where the parcel is more than five acres . . . ~~82.75~~\$87.00
  - p. Petition to appeal a decision of the city planning board or development review board to a hearing officer (§§ 30-234 and 30-352.1) . . . ~~551.25~~\$578.75  
 The petitioner is entitled to a refund of the fee in the event the petitioner is the prevailing party. The hearing officer may decide who is the prevailing party in case of doubt or uncertainty.
  - q. Alcoholic beverage license review . . . ~~38.75~~\$40.75
  - r. Verification of signatures on a petition, as defined in Section 30-56.1, on a petition requesting imposition of a Residential Parking Overlay District, per each signature . . . 1.00
- (3) Environmental review...\$2,000.00
- (4) Traffic impact study review...\$2,000.00
- (5) *Subdivisions:*
- a. Design plat application . . . ~~441.00~~\$463.00  
 Plus, for each lot on plat . . . ~~10.00~~\$10.50
  - b. Final plat application . . . ~~303.25~~\$318.50  
 Plus, for each lot on plat . . . ~~7.75~~\$8.25
  - c. Roadway inspection fee (§ 30-185(2)e.) . . . ~~551.25~~\$578.75  
 Plus, per linear roadway center line foot . . . ~~3.75~~\$4.00
  - d. Minor subdivisions . . . ~~441.00~~\$463.00
  - e. Lot splits . . . ~~220.50~~\$231.50
  - f. Single lot replat . . . ~~551.25~~\$578.75
- (6) *Zoning:*
- a. Landlord permit:
    - 1. Initial applications:
      - a. Application received on time and payment received on or before 10 business days of city finding all other permit requirements met . . . ~~177.00~~\$185.75
      - b. Application received 1 business day to 30 calendar days late or payment received after 10 business days but on or before 30 calendar days of city finding all other permit requirements met . . . ~~261.00~~\$274.00

- c. Application received 31 to 60 calendar days late or payment received after 30 calendar days but on or before 60 calendar days of city finding all other permit requirements met . . . ~~345.00~~\$362.25
  - d. Application received 61 to 90 calendar days late or payment received after 60 calendar days but on or before 90 calendar days of city finding all other permit requirements met . . . ~~429.00~~\$450.50
2. Renewals:
- a. Payment received on or before January 31 . . . ~~177.00~~\$185.75
  - b. Payment received after January 31 but on or before March 1 . . . ~~261.00~~\$274.00
  - c. Payment received after March 1 but on or before April 1 . . . ~~345.00~~\$362.25
  - d. Payment received after April 1 but on or before May 1 . . . ~~429.00~~\$450.50
- b. Permit for family day care home, filing fee to be submitted with application . . . ~~36.75~~\$38.50
  - c. Permit for personal care group home, filing fee . . . ~~36.75~~\$38.50
  - d. Permit for foster family home for children and adults, filing fee . . . ~~36.75~~\$38.50
  - e. Permit for across-street banner . . . ~~26.25~~\$27.50
  - f. Permit for vertical pole banner . . . ~~27.75~~\$29.25
  - g. Permit for temporary outdoor alcoholic beverage sales (§ 30-67) . . . ~~330.75~~\$347.25

(7) *All land development fees herein required which are applicable to land development occurring in the area designated as the enterprise zone by Resolution R050296, shall be reduced by 50 percent.*

**PEDDLERS, SOLICITORS AND CANVASSERS:**

*Annual Spring Arts Festival (§ 19-1):*

- a. Permit application fee (nonrefundable) . . . ~~5.75~~\$6.00
- b. Permit to authorize exhibition in the designated competitive area . . . ~~22.25~~\$23.25
- c. Permit to authorize exhibition in the designated noncompetitive area . . . ~~11.25~~\$11.75

**POLICE:**

*Burglar alarm operators:*

- Application for alarm or annual renewal application . . . ~~16.75~~\$17.50
- Note: Proportionately adjusted for initial periods exceeding one year (§ 21-52)
- First false alarm with valid permit . . . No cost
- First false alarm without valid permit or second false alarm, each . . . ~~26.25~~\$27.50
- Third and fourth false alarms, each . . . ~~52.50~~\$55.25
- Fifth and sixth false alarms, each . . . ~~105.00~~\$110.25
- Seventh and eighth false alarms, each . . . ~~210.00~~\$220.50
- Ninth and above false alarms, each . . . ~~420.00~~\$441.00

False alarm from non-permitted system, additional fee\* . . . ~~210.00~~\$220.50

\*Note: Reduced to ~~\$50.00~~\$55.25 if application filed within ten days and issued within ten days thereafter (§ 21-53)

Alarm permit reinstatement fee after revocation (§ 21-54) . . . ~~52.50~~\$55.25

Failure to respond when requested by police (§ 21-56) . . . ~~52.50~~\$55.25

Failure to deactivate alarm within 15 minutes (§ 21-57) . . . ~~131.25~~\$137.75

Prohibited devices:

Automatic dialing device (§ 21-61(a)) . . . ~~131.25~~\$137.75

One Plus Panic Alarm" or single-action switch (§ 21-61(b) and (c)) . . . ~~52.50~~\$55.25

Auxiliary power supply less than four-hour minimum (§ 21-62) . . . ~~131.25~~\$137.75

*Burglar alarm monitoring companies:*

Annual registration fee (§ 21-58) . . . ~~105.00~~\$110.25

Failure to register or to maintain records for one year (§ 21-58) . . . ~~131.25~~\$137.75

Failure to verify alarm (§ 21-59) . . . ~~131.25~~\$137.75

*Burglar alarm system contractors:*

Annual registration fee (§ 21-60(a)) . . . ~~105.00~~\$110.25

Failure to register annually (§ 21-60(a)) . . . ~~131.25~~\$137.75

Failure to meet UL or ANSI standards (§ 21-60(d)) . . . ~~131.25~~\$137.75

Activation of unpermitted alarm (§ 21-60(e)) . . . ~~131.25~~\$137.75

Causing false alarm during servicing or inspection, each violation (§ 21-60(f)) . . . ~~131.25~~\$137.75

Installation, maintenance, repair, alteration or servicing by unregistered contractor, each violation (§ 21-60(b)) . . . ~~131.25~~\$137.75

Failure to furnish agents with identification cards (§ 21-60(c)) . . . ~~52.50~~\$55.25

Failure to provide operators with permit application - each violation (§ 21-60(g)) . . . ~~52.50~~\$55.25

*Burglar alarm systems:*

Assessment fee per false alarm . . . ~~11.25~~\$11.75

*Roam towing:*

Trespass towing application process fee (section 14.5-26(a)(6))

a. Properties 1--5, each . . . ~~47.00~~\$49.25

b. Properties 6--10, each . . . ~~35.00~~\$36.75

c. Properties 11--15, each . . . ~~30.00~~\$31.50

d. Properties 16--20, each . . . ~~25.00~~\$26.25

e. Properties 20 or more, each . . . ~~15.00~~\$15.75

*Records:*

General document reproduction, per page...\$0.05 + cost of labor if extensive

Block summary reports, per page...\$0.05

Background checks, each...\$5.00

Traffic reports and other case reports, per report...\$1.00

SECONDHAND GOODS:

*Secondhand dealers--Jewelry, metal, coins:*

- a. Permit (§ 22-18):
  - 1. Initial issuance . . . ~~55.25~~\$58.00
  - 2. Renewal . . . ~~27.75~~\$29.25
- b. Change of location (§ 22-19) . . . ~~11.25~~\$11.75

**STREETS, SIDEWALKS AND OTHER PUBLIC PLACES:**

- (1) *Permit for congregating on streets and sidewalks (§ 23-42(b)(2)) . . . ~~27.75~~\$29.25*  
 Driveway permits for new construction of a residential home shall not be required; the cost is included in the building permit.
- (2) *Permit to remove, construct, alter curb, driveway, gutter, etc. (excluding new residential construction) (§ 23-89(b)):*
  - a. First driveway . . . ~~27.75~~\$29.25
  - b. Each additional driveway . . . ~~5.75~~\$6.00

**TAXATION:**

- (1) *Occupational license transfer to new owner (§ 25-45(a)) . . . ~~3.50~~\$3.75*
- (2) *Occupational license transfer to new location (§ 25-45(b)) . . . ~~3.50~~\$3.75*

**TRAFFIC AND MOTOR VEHICLES:**

- (1) *Parking violations (§ 26-46(d)(4)):*
  - a. Parking in a metered space, the meter for which is expired . . . ~~5.75~~\$12.00
  - b. Unlawfully parking on private property . . . ~~16.75~~\$17.50
  - c. Unlawfully parking in any tow-away zone, except as otherwise herein stated . . . ~~22.25~~\$23.25
  - d. Unlawfully parking in a space, including the access area, provided for the disabled, either by governmental or nongovernmental entities . . . ~~110.25~~\$115.75
  - e. ~~\$21.00~~\$22.00, plus a \$3.00 surcharge (to be used for firefighter training programs pursuant to and as authorized by section 316.008(5), F.S.) for all fire hydrant and fire station safety zone parking violations.
  - f. All other violations, including parking in a space for a time longer than lawfully permitted in the parking space . . . ~~11.25~~\$12.00
- (2) *Parking in fire lanes (§ 26-47.1) . . . ~~22.25~~\$23.25*  
 Plus \$3.00 to fund firefighter training programs (per § 316.008(5), F.S.) . . . 3.00
- (3) *In addition to any other fee or charge required under subsections (1) and (2) above, a \$3.00 surcharge shall be assessed for each violation to fund the school crossing guard program.*
- (4) *Parking in violation of § 26-50.1 . . . ~~110.25~~\$115.75*
- (5) *In addition to any other fee, charge or cost required under subsection (1), (2), (3) and (4) above, \$2.25 shall be assessed as court costs for each infraction to fund criminal justice education degree programs and training courses, including basic recruit training.*

**VEHICLES FOR HIRE:**

- Franchise fee/per year (section 28-5) . . . ~~262.50~~\$275.75
- Late penalty, annual report, payment not timely filed, incomplete or inaccurate (section 28-5),

~~per month . . . 52.50~~

VEHICLES FOR HIRE

Franchise fee/per year (section 28-5) . . . ~~262.50~~\$275.75  
 Application and investigation fee . . . ~~52.50~~\$55.25  
 Medallion/permit (annual - per vehicle) . . . ~~78.75~~\$82.75  
 Annual inspection for compliance (per vehicle) . . . ~~26.25~~\$27.50  
 Individual driver permit fee (new, transfers and renewals) . . . ~~26.25~~\$27.50  
 Individual driver permit fee (duplicates for lost, stolen or destroyed . . . ~~10.50~~\$11.00  
 Airport rates and charges (annual -- per vehicle) -- as established by Resolution of the  
 Gainesville Alachua County Regional Airport Authority.  
 Late penalty, annual report, payment not timely filed, incomplete or inaccurate (section 28-5),  
 per month . . . ~~52.50~~\$55.25

VENDING:

*Vending booth permit* (§ 19-92) . . . ~~52.50~~\$55.25  
*Itinerant food vendor permit* (§ 19-92) . . . ~~52.50~~\$55.25

Section 3. It is the intention of the City Commission that the provisions of Sections 1 through 2 of this Ordinance shall become and be made a part of the Code of Ordinances of the City of Gainesville, Florida, and that the Sections and Paragraphs of this Ordinance may be renumbered or relettered in order to accomplish such intentions.

Section 4. If any section, sentence, clause, or phrase of this Ordinance is held to be invalid or unconstitutional by any court of competent jurisdiction, then said holding shall in no way affect the validity of the remaining portions of this Ordinance.

Section 5. All ordinances, or parts of ordinances, in conflict herewith are to the extent of such conflict hereby repealed.

Section 6. This Ordinance shall become effective October 1, 2007.

**APPENDIX B**

Gator Fire Equipment Company  
1032 South Main Street Gainesville, FL 32601  
Phone: 352-373-1738 / Fax: 352-338-1179  
September 25, 2007

Hanselman Investment  
Management, Inc.  
9316 SW 12th Avenue  
Gainesville, FL 32607  
Re: Campo Verde Lot 22 - Fire Sprinkler

Mr. Hanselman,  
Gator Fire Equipment Company would like to submit the following proposal for the installation of the fire sprinkler system for Lot 22 of Campo Verde in Gainesville, FL. All work will be done in accordance with the NFPA 13D codes and standards, Florida Statutes, and the Authority Having Jurisdiction.

Fire Sprinkler Base Bid:

Gator Fire will install a complete wet pipe fire sprinkler system for the proposed building beginning from 12 inches above finished floor in the fire riser room. The fire sprinkler system will be installed to protect the home as shown on the drawings provided dated September 7, 2007. Gator Fire Equipment will design and install the system to meet NFPA 13D (2002 edition), Florida Statutes, and the Authority Having Jurisdiction. All work is guaranteed to be completed in a substantial workmanlike manner for the lump sum of \$8,500.00. This price includes all materials & labor for this fire sprinkler project, as well as engineering, permit costs, shop drawings & final inspection.

Fire Sprinkler Alternate I:

In addition to the code required sprinkler protection as stated above, Gator Fire will also install an anti-freeze system to protect the covered porches and garage as shown on the drawings. This alternate will add \$4,800.00 to the base bid.

Robert, we appreciate your consideration in allowing us the opportunity to fulfill your fire protection needs. We look forward to the possibility of working with you again in the near future. Please do not hesitate to give us a call if you have any questions.

Sincerely,

Brad Kinsell  
Gator Fire Equipment Company

**APPENDIX C**

**Sprinkler Component Cost Summary**

<b>Sprinkler System Cost Components</b>	<b>Quantity</b>	<b>Units</b>	<b>Bare material Cost per unit/Foot</b>	<b>Labor cost</b>
Fire Sprinklers Heads FI/res 49 Recessed pendant Assembly	24	\$25.00	\$ 600	\$25 per head \$600
Pipe and Fittings (CPVC)	1/1000	\$.26 per ft	\$260	\$600 per 1000 ft
Accessories /hangers		\$5.95	\$148.75	\$10.00 per hanger \$200.00
Design Cost				\$350
Permits/Tap Fees		\$135/Permit fee/\$400 Tap fee		\$535
Total Costs of Project	Material \$1008.50	Labor \$1750.00 Fees\$535 Sub Total: \$3293.50	10% Mark Up  \$329.35	Final Total \$3622.85/ \$1.81 per square foot

\*Costs are approximate based on research results (2008) using a 2000 square foot average home.



**APPENDIX D- SURVEY RESULTS**

<b>Response #</b>	<b>Ques. #1</b>	<b>Ques. #2</b>	<b>Ques. #3</b>	<b>Ques. #4</b>	<b>Ques. #5</b>	<b>Ques. #6</b>	<b>OTHER</b>
1	Materials, Labor, design engineering, permits	CPVC, Copper, Steel, Pex	Multisystem, NFPA 13D, AC, Closed system, Flow through	Not many, None here	Inspections, maintenance	Saves lives	Less permits, More developer incentives
2	Labor, Permits 1.50 square foot	CPVC, Copper, Viking heads	NFPA 13R, 13D	Incentives offered in Orlando, hydrants streets	Home owner installation	Increased escape time	More Installer incentives
3	Labor, materials, permits	CPVC, Steel	Multisystem NFPA 13D	N?A	Inspections, Back flow valve failure	Life Safety	Develop new permit procedure, allow home owner installs with inspection
4	Labor, Engineering \$4.00 square foot	CPVC, Copper	NFPA 13D	Only one, none from the government	Maintenance, Plumbing issues	Not much compared to saving a life	Need to sel l the builders association
5	Permits, Labor costs copper	CPVC, copper	NFPA 13D, 13R	Developer oriented, none to consumer	Back Flow valves, annual testing	Never had a sprinkler house burn up/No deaths	Need more government incentives.
6	Labor, Architects fees 2.50 per square foot	CPVC	Multi-system, NFPA 13D	Zoning, hydrant spacing	Annual testing, water leaks, Head maintenance	N/A	Less red tape
7	Materials, Engineering, Qualified labor \$5.00 a square foot	Steel, CPVC, Copper	NFPA 13D, 13R, Flow through	Some, no good to installer, none to Home owner	Back Flow, FD connection	Increase in life safety, decrease evacuation time	More incentives, less impact fees, more contractors
8	\$3.00 a square foot	Steel, copper	NFPA 13D	Developer only,	FD connection, inspection, testing	Cheap , No lives lost to fire	Improve community support
9	Labor costs, Engineering costs	CPVC, Pex	Multi system	N/A	Back Flow, Customer damage	Increases life safety	Less permits and impact fees. Need

							builders assoc
10	Materials, Labor costs	CPVC, Viking heads, steel, copper	NFPA 13d, 13R	Hydrant placement increased allowance to 700 ft	Annual Inspections, leakage	Saves lives	Need more sprinkler contractors for residential, not profitable.
11	Engineering, labor costs	Copper, steel	NFPA 13D	N/A	Inspections, Back flow valves	Cheaper than sprinkle ring your yard	n/a
12	Labor Costs, Permit fees, Design fees	CPVC	NFPA 13D, Florida Fire Prevention Code	None known	Back flow expense, Inspections	Reduction in property and lives lost	Less Red Tape, Need to involve developers.

**APPENDIX E- Insurance Company Survey Results**

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
<b>No Incentives</b>	<b>Yes, 1% to 5%, Depending on underwriting</b>	<b>10% for 13D system , given one in 10 years</b>	<b>none</b>	<b>none</b>	<b>Yes, combined with other discounts, no more than 5 %</b>	<b>One policy , mobile home with sprinkler for 15%</b>

**\* included Cotton States, Allstate, State Farm, Nationwide, Harbour and Associates, Sunshine States, McGriff -Williams**