



December 29, 2009

Jim Pillow, Assistant Commissioner
Tennessee Department of Commerce & Insurance
500 James Robertson Parkway, 3rd Floor
Nashville, Tennessee 37243

Re: Residential Sprinkler Analysis - Request for Comments

Dear Jim,

The Tennessee Manufactured Housing Association (TMHA) represents all segments of the manufactured and modular housing industries in the State of Tennessee as well as bordering states. Over the past several weeks, TMHA has reviewed hundreds of pages of data relative to the mandate and use of residential sprinkler systems and other fire safety devices such as smoke detectors and alarms.

Included in those reviews were comments and statistical compositions of data presented and/or published from the Housing and Urban Development (HUD), the Manufactured Housing Institute (MHI), Tennessee Insurance Representatives, U.S. Census Bureau, Centers For Disease Control, U.S. Fire Administration (USFA), National Fire Protection Association (NFPA), Public Opinion Strategies, National Association of Home Builders (NAHB) and the NAHB Research Center, as well as published city data information, just to name a few of the resources.

It has been interesting to find that identical statistical data may be used to solidify the viewpoints both for and against a fire sprinkler mandate for one- and two-family dwellings. It was also interesting to note that system costs are listed separately when discussing affordability. For example, when stressing safety versus costs, a moderately priced sprinkler installation cost per square foot did not also include the component cost per square foot, and vice versa. The wording is very specific and the result becomes a skewed cost related analysis standing for a proposed benefit.

It would be helpful in this subject debate for Tennessee, if the Department could provide to interested parties, the percentage of communities that currently have fire hydrants and water facilities which meet or exceed a sprinkler manufacturer's required fire flow rating in order for systems to operate properly. In reviewing city data and talking with codes officials, a high percentage of Tennessee communities, including larger metropolitan communities, currently do not meet the minimum required fire flow ratings for their existing services. Many communities need to upgrade just to meet their requirements of today. This would certainly be true for a more rural community.

Having this information would help officials as they work towards an appropriate and reasonably sound cost estimate to improve the necessary infrastructure which would be required to adequately service residents in Tennessee, in the event of a statewide residential sprinkler mandate. Officials certainly could not require homeowners to bare the system and installation costs, if the fire flow rating in their respective communities was inadequate to service the systems once installed. More rural officials and city planners will need this information to even begin a feasibility study for service upgrades; while rural residents would need to include the costs of storage tanks, pumping equipment and generators into building construction costs, as infrastructure upgrades would take some communities decades to complete, considering the state's current economic climate.

Having said that, TMHA will comment on some of the reviewed data, however there is much more than statistical data to consider from a home manufacturer perspective and focused home affordability. TMHA would like to bring forth other considerations which might not be addressed by entities unfamiliar to the process of building homes in a manufacturing setting.

Little has been discussed relative to 1) the short and long term concerns relating to product liability imposed on home manufacturers, as noted from Federal attorneys in Washington; 2) cost increases to low and moderate priced homes; 3) as well as the long term requirements imposed to consumers through the sprinkler and insurance industries and their respective data evaluation process.

While no one advocates against consumer safety or safety products; as officials, we must also weigh the cost effectiveness of our requirements and mandates, to the general public. All codes and efficiency requirements must be weighed against the economical impact to the product producers and the end use consumers.

It should be noted that tremendous changes in construction technology, advancement in building codes, electrical and smoke detection alarm systems, and other home fire retardant products, combined with consumer education, have tremendously lowered the rate of residential fires, and deaths as a result of those fires. Research currently shows the number of residential fires have decreased at such a rate that fire fighters spend only about an average of 3 percent of their time on residential fire fighting activity.

Home Manufacturers and 3rd Party Product Liability

Home manufacturers would certainly see a significant increase in their product liability insurance due to a potential for any sprinkler product factory defect. Federal attorneys have already weighed in with the manufactured housing industry when adding fire sprinkler systems to their homes.

- In the event a county, state or federal law should mandate the use of a particular product, the home manufacturer is granted no waiver of liability for a product's operational performance, when it relates to personal injury or property damage. According to Federal attorneys, a product liability waiver [even a limited liability waiver] provided to a home manufacturer is unconstitutional, in order for the home owner's full rights to be preserved.
- In other words, the manufacturer of a home bears the greatest liability, should fire sprinkler components fail. Additionally, the home manufacturer is required to assume all future product liability if a sprinkler product manufacturer goes out of business.

The resulting liability to home manufacturers would require home prices to increase significantly to cover the following:

- increased insurance premiums to the home manufacturer for sprinkler installation and warranty requirements;
- the cost of retooling manufacturing facilities;
- the cost of lost production efficiencies... not every home built by a Tennessee manufacturer would be going to a county or state that requires sprinklers;
- the cost of the sprinkler product;
- the cost of sprinkler product installations; and
- the cost of estimating long term liability from the aftermarket product itself.

The Department of Housing and Urban Development (HUD) tasks the manufactured housing industry with a mandate to *provide* affordable housing. That is an impossible task if officials continue to impose the use of more and more aftermarket products, while imposing the liability costs of those products, to the home manufacturers.

These points are even more critical to a home manufacturer when noting there is no study that shows how long a sprinkler system or components will last, and in fact, the reliability of those systems and components can be argued. After smaller recalls by other companies in 1998 and 1999, a major fire sprinkler manufacturer recalled 35 million fire sprinkler heads in 2001. For the manufactured home industry, a product recall of this nature would be overwhelming. Customer notification and component repairs would fall to the home manufacturer, as would the financial burden of any additional home repairs caused by a defective system.

Product Costs to Manufacturers and Consumers

Let's breakdown two of the above related home manufacturer costs and add them to a typical low to moderate income home. Specifically, consider the sprinkler product and the cost of sprinkler product installations. According to sprinkler proponents, the cost of a sprinkler system **and** all associated installation costs may range from \$2.00 to \$3.66 per square foot, but as much as \$7.00 per square foot in some regions. This is still extremely conservative as these costs do not take in to account future liabilities, product replacements, system maintenance, insurance premiums, required annual inspections, etc. For the below examples, we will use \$2.83 as the average combined cost for the component and installation.

<u>Home Size</u>	<u>Square Footage</u>	<u>Cost of Home</u>	<u>Sprinkler Cost</u>	<u>% Cost Increase</u>	<u>New Home Cost</u>
16' x 80'	1280	\$25,000	\$3,622.40	14.5%	\$28,622.40
28' x 56'	1568	\$35,000	\$4,437.44	12.7%	\$39,437.44
28' x 80'	2240	\$55,000	\$6,339.20	11.5%	\$61,339.20

The above are examples only, but as you can see, the more moderately priced the home and square footage, the higher the percentage increase in cost to the consumer. This is an extreme financial burden for a low to moderate income homebuyer. Home fire sprinklers in one- and two-family dwellings are a significant expense and have an unreasonable impact on housing affordability.

Remember, in addition to these costs, will be the increased insurance premiums and estimated product liability. There will also be the costs of associated property upgrades in rural areas where water pressure and fire flow ratings are less than required by the sprinkler manufacturer. The costs of onsite pumping and water storage equipment in rural areas where property sits atop a hillside can be upwards of several thousands of dollars.

Also, many rural properties have wells and are not connected to community service providers. Owners of homes on well water need to consider how the sprinklers will operate if the power goes out or if water pressure is a problem - and solutions like the extra water tanks, pumps and generators, are costly. This again would target more of the rural low to moderate income homebuyer.

In rural areas where power outages may be frequent during winter storms, associated costs must also be addressed relative to freezing pipes and water damage as a result of unheated attic areas, where most sprinkler systems are installed.

Tennessee Insurance Representatives:

According to insurance representatives within the State of Tennessee, the following comments were noted:

- Fire sprinklers are not proven to reduce the number of fires and certainly not proven to reduce the property damage amounts. A partial property loss to the insurance company is treated the same whether due to fire or water damage. It is important to note that

sprinklers will discharge water until the fire department has been notified, arrives at the home, evaluates and determines the structure is safe, and then locates and turns off the water supply. Also, a partial property loss to the insurance company is just as bad on the claim payout and subsequent increased premiums to consumers, as a total property loss.

- If a county or state **REQUIRES** sprinklers, then a disclaimer is added to the insurance policy to reflect that a sprinkler system **MUST** have an annual inspection by a certified inspector. Typically, those inspection costs can go as high as \$200 annually, depending on the area. This would be an ongoing cost to the home owner, in an already distressed time. [As a note, claims against the insurance company have occurred when inspections were performed, and the systems were not reactivated by inspectors.]
- Language would also be needed to limit or totally disallow an insurance claim when power outages occur in cold weather, and pipes freeze, rupture and damage property. [Typically attics are not heated or cooled. Should an antifreeze-type system be installed, producers require the solution to be emptied and then refilled with an antifreeze solution every winter, and that monthly inspections and testing of all the water flow devices, pumps, air pressure and water level be performed. Further adding excessive maintenance expenses to homeowners.]
- Contrary to statements otherwise, insurance premiums for home consumers would not immediately drop in price, just because a home has a sprinkler system. The insurance companies need 3 - 5 years of hard data with claims processing, in a particular state, and with the particular product usage and performance. Even at that, it could take longer to assess the data.
 - In the end, if no claims were processed due to product failures or home damage, Tennessee residential customers could see a maximum 3% decrease, but not the 10% as has been published. Of course any savings here would be outweighed by the ongoing annual maintenance and inspection costs. A savings would not be applicable to any consumer which is already in a high risk bracket.
 - On the flip side, if the 3 - 5 years of study data shows any home damage by the sprinkler system which was ***not caused by a fire-related incident***, a Tennessee residential customer could actually see a minimum 3 - 5% increase in premiums, for having a working fire sprinkler system in their home.
- Also noted from insurance providers was an additional mandate listed by some producers of sprinkler systems which required certain components to be replaced every three years to ensure the system remained operable and to continue some aspects of the warranty. Homes which had these types of systems would have all damage claims denied, if the homeowner did not follow the components replacement requirement by the product manufacturer. Most consumers do not realize that even working components must be replaced to maintain proper fire replacement coverage from their insurance provider.

Most notably, annual sprinkler installation costs (not including maintenance costs) of which new homebuyers will be forced to pay, will greatly exceed property loss nationwide or in any jurisdictions where they are required.

- For example, if all new homes built in 2005 were required to have sprinklers, the installation cost to builders would have been \$10,183,118,400 based on the average square foot of those homes and the average cost of sprinkler installations in the jurisdictions where they are currently required (at \$2.66 sf).
- NFPA reported the total home property loss due to fire in 2005 was \$5,781,000,000. This means that installation costs paid by homebuyers would have been nearly double the claim loss. Also, these figures do not include insurance premiums or maintenance costs which would have been invested by the homebuyer.

General Comments

It is well documented that residential fire incidents, injuries and fatalities continue to decline substantially as a result of the fire safety provisions already included in the HUD-Code and International Residential Code (IRC) and because of better home safety education. This trend continues, even after a significant increase in population and housing stock over the last 10 years. Most if not all officials in fire safety state this can be directly attributed to technology, improved building codes and the requirement of electrical and smoke alarm systems, along with consumer education on the proper operation of those alarm systems.

In fact, USFA and NFPA data continue to affirm that the vast majority of home fire fatalities occur when there are no operational smoke alarms. Further stating that residential fires from 2001 - 2004 showed that 88 percent of the fatal fires in single-family homes occurred where there were no working smoke alarms. TMHA notes that this property and life saving device carries a cost and installation of approximately \$50 per home location requirement, and makes no demand on current infrastructure amenities.

TMHA also refers to the following organizations for specific statistical and market reporting data which continues to affirm the fire safety measures which have already been taken as it relates to residential property.

- U.S. Census data states that the population growth between 1977 to 2006 grew 36 percent, while at the same time the rate of fires per 1,000 population fell 63 percent, from 14.9 in 1977, to 5.5 in 2006.
- The Centers for Disease Control data states a 58 % drop in the actual death rate per million persons from house fires from 1979 - 2003.
- According to NAHB research, in 2005, fires occurred in less than four tenths of one percent (0.35%) of the existing one- and two-family homes. Of those fires, substantially less than a percent (0.86%) resulted in fatalities.

- According to the most recent NFPA report on smoke alarms, it is estimated that over 890 lives could be saved annually if every home had working smoke alarms. 65% of the fire fatalities reported from 2000 to 2004 occurred in homes where smoke alarms were not present or smoke alarms were present and did not operate.
- According to NFPA reports, the number of fires that occurs in one- and two-family dwellings equipped with sprinklers are so few, they are not shown in their respective studies.

Consumer Input

- When the firm Public Opinion Strategies asked 800 likely voters if fire sprinklers should be required in new homes, an overwhelming 89 percent said that smoke detectors already do an adequate job of protecting them in their homes and 28 percent would not want sprinklers at all, even if they were provided free of charge.
- According to a Harris public opinion poll, only 38 percent of those surveyed said they would likely purchase a home that included residential fire sprinklers, leaving 62 percent indicating they would likely not purchase one.

Any city, county or state jurisdiction considering mandatory sprinklers needs to determine and thoroughly consider what the true total cost to home buyers will be in their community (including additional fees they may be charged by water purveyors) and what their constituents will pay collectively, before making any decision to mandate sprinklers.

In summary, it is well documented that the population and housing stock continues to increase while fires, and deaths as a result of those fires, are decreasing significantly. Technology, building strategies, consumer education, smoke alarms and other fire retardant products continue to drive fire-related incidents down.

Proponents for sprinkler mandates cannot dispute nor justify the negative impact on housing affordability. Mandating a single system which can cost in upwards of 15% of a total home cost, while combining ongoing maintenance costs, annual inspection costs, and increased insurance premiums will turn many consumers away. Research states for each \$1,000 added to the price of a home, another 217,000 potential home buyers are forced to remain on the sidelines. Today more than ever, we cannot afford to deny needed housing for the sake of new requirements that are not essential to a safe and healthy home.

If you would like to discuss these comments further, please don't hesitate to call. I may be reached at (615) 256-4733.

Sincerely,

Marla Y. Jackson, MHV
Executive Director
Tennessee Manufactured Housing Association